Balanced Scorecard Approach to Sustainability and Value Creation: A Challenge for Survival in the New Economy*

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ABSTRACT

Business organizations are similar to living organisms. They need to adopt and react to changes within their environment. Similar to biological systems, business organizations need to have a system of "sensors" or metrics that will provide the necessary signals to the entity to react in a timely fashion. Thus, metrics are essential not only for measuring how the entity is doing at the present time but also to monitor risks that they may face in the future. Monitoring risks are essential for mere survival, especially in this fast changing environment of e-commerce and global economy. Thus, we need to develop metrics not only for measuring performance but also for measuring risks and ways to counteract with these risks. Risk could come from external and internal environments. For example, risk from external environment could be: customer satisfaction, quality of suppliers, quality of products and services, economic and political environment, security of company's data and client information. Businesses need metrics to measure the performance of controls in place to counteract with both kinds of risks, internal and external risks. The main purpose of this paper is to discuss the balanced scorecard approach to create value in the business in this ever-changing world of the Internet, global economy, and information technology.

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1. INTRODUCTION

Business organizations are similar to living organisms. They need to adapt to the changes within their environment. Like biological systems, business organizations need to have a system of "sensors" or metrics that will probe the environment and provide the necessary signals to the entity to react in a timely fashion. Metrics are essential not only for measuring how the entity is doing at the present time but also for monitoring its risks associated with conducting the business in this ever changing world of the Internet. A profitable strategy today does not necessarily guarantee profitability tomorrow. The Internet is not only affecting how businesses conduct their routine transactions (placing orders, making payments, receiving cash), but also creating new types of products and services that were never envisioned. Moreover the ease of information accessibility globally through the Internet has created a global economy. In this new environment businesses have to compete globally. Another characteristic of this Internet environment is the rapid change in technology, which changes every few months. Thus to stay profitable, businesses need to monitor and manage risks associated with the changes in the environment.

Kaplan and Norton (1992, see also 1992, 1993, 1996a, 1996b) first introduced the concept of "Balanced Scorecard (BSC)." In the words of Kaplan and Atkinson (1998, p. 368), "The Balanced Scorecard translates mission and strategy into objectives and measures, organized into four perspectives: financial, customer, internal business process,

and learning and growth." Traditionally, businesses used to monitor and reward performances based on financial measures only, such as net income, earning per share (EPS), return on investment (ROI), etc. However, the Balanced Scorecard framework provides a comprehensive approach to planning and implementation of the business strategies for achieving the mission and objectives of the company. The Balanced Scorecard concept is discussed in detail in Section II.

The recent surge in the use of technology, in particular information technology (IT), for improving the efficiency and effectiveness of the internal business processes has lead some researchers to apply the Balanced Scorecard concept to IT investment to evaluate whether the IT investments are adding value to the company (Van Grembergen and Van Bruggen 1997, and Van Grembergen and Timmerman 1998). Saull (2000) and Van Grembergen (2000) have extended the concept of Balanced Scorecard to IT governance. This topic will be discussed further in Section III.

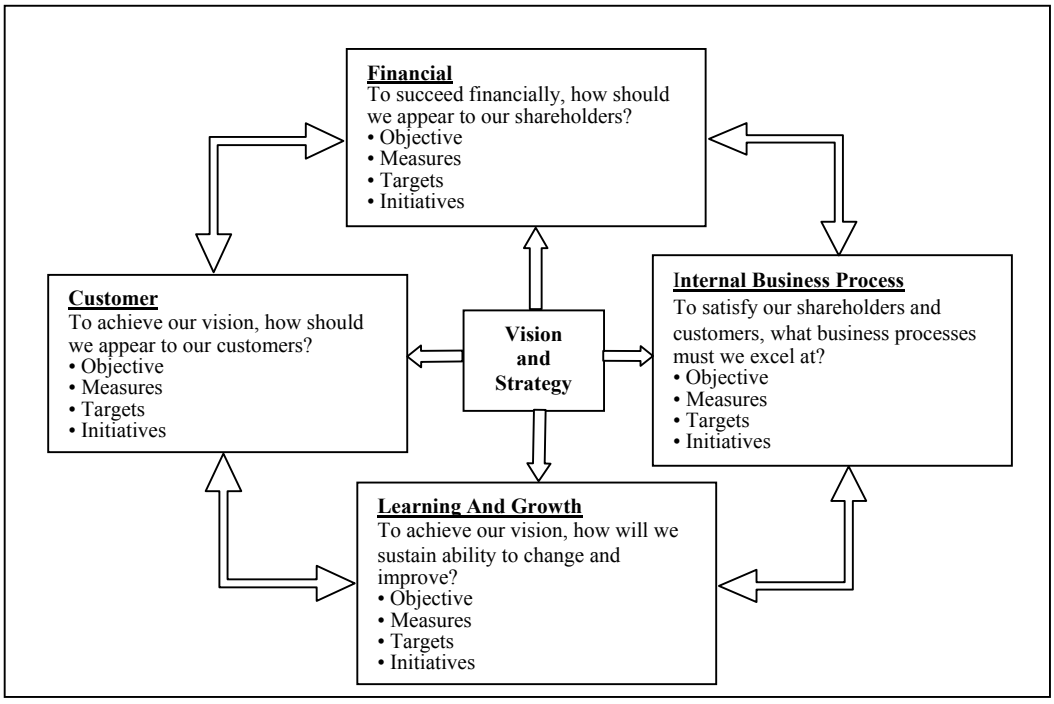
The Internet has brought new types of risks that can be disastrous to the company's success. The main characteristic of the Internet is that it lowers the barriers to entry. It often takes not much more than just a computer with a modem to start a business on the Internet, leading to a very intense competition. You have to be the first one to imagine of the opportunity. You need to hire and retain smart and creative people. The ease with which information can be retrieved globally has enabled the creation of a global economy. Moreover, the opening of the old closed economy is further energizing the global economy. This leads to new sets of opportunities and challenges. Thus, as we are already experiencing, the Internet economy is not limited to national boundaries. What does this mean to a business entity in a given country? Well, you cannot be running your

business in the status quo. You have to be imaginative; you need to find a way to change. Change is the name of the game. You cannot survive if you don't change. A Balanced Scorecard approach needs to be developed for the firms operating in the Internet environment. This topic will be discussed further in Section IV.

2. BALANCED SCORECARD CONCEPTS

As mentioned earlier, Kaplan and Norton (1992, see also 1992, 1993, 1996a, 1996b) first introduced the concept of "Balanced Scorecard." The Balanced Scorecard translates mission and strategy into objectives and measures. In general, there are four perspectives (see Figure 1): financial, customer, internal business process, and learning and growth.

Figure 1: Balanced Scorecard



The financial perspective deals with the traditional objectives and measures such as the return on investment (ROI) and earning per share (EPS). These measures provide a way to assess how well the company has performed in terms of its financial goals. However, these numbers represent the final results of the business performance. They do not provide a timely input in terms of what the management should do or could have done to achieve a better result. Under "Customer" perspective, a business entity establishes metrics that measure the customer's satisfaction. A satisfied customer is a loyal customer and in turn creates more revenue for the entity. Under "Internal Business Process" perspective, a business entity attempts to excel in the internal business processes to stay profitable and compete well. Businesses have developed various metrics that measure the efficiency, effectiveness, quality, and other relevant factors associated with profitable strategies. Efficiency and effectiveness in the business processes results in quality products, lower costs of production, and faster delivery, which in turn results in satisfied customers, and thus higher revenues.

The Learning and Growth perspective deals with the preparedness of the workforce to meet the challenges of the changing environment. These metrics deal with the training and know-how of the workforce. Although these metrics, in general, serve as "sensors" for the business entity to monitor its environment, the existing literature on these metrics does not consider the ever-changing business environment of the Internet. We plan to focus our efforts in this paper on this dimension.

The Balanced Scorecard approach provides a mechanism to manage not only the tangible assets but also the intangible assets. The intangible assets, such as human capital, have become even more important than ever in this age of the Internet. Using the

Balanced Scorecard approach, the companies can take full advantage of their tangible and intangible assets. Kaplan and Norton compare the Balanced Scorecard approach to a recipe (Kaplan and Norton 2000, p. 10):

> … Think how making a meal requires a combination of raw materials (the ingredients), tangible capital and assets (cooking implements, an oven, and a stove), and intangible, human capital (the chef). But a great meal requires a recipe to take advantage of all these tangible and intangible assets. The recipe is the critical soft asset. It transforms the raw ingredients, physical assets, and intangible assets—each with little stand-alone value—into a great meal, with considerable value. The recipe corresponds to a company strategy that combines internal resources and capabilities to create unique value propositions for targeted customers and market segments. The companies in our sample were successful with the Balanced Scorecard because they engaged all employees, not just the lead chef, to implement and improve the recipe.

Thus, the Balanced Scorecard[1] provides a general mechanism by which the management can align their strategy and goals with the objectives and measures that will provide a monitoring mechanism to evaluate how well the entity is doing in terms of achieving its goals and objectives. If there are any deviations, then corrective action can be taken in a timely manner.

[1] See Kaplan and Norton (2000) for a list of companies who have implemented the Balanced Scorecard approach and benefited from it.

3. BALANCED SCORECARD FOR INFORMATION TECHNOLOGY

Saull (2000) and Grembergen (2000) have extended the Balanced Scorecard concepts to information technology (IT) for effective management of information technology. In the information technology environment the customers are not necessarily external users such as regulatory bodies and auditors, but also internal users such as the Board of Directors, CEOs, Mangers at all levels, and the IT organization. The information technology is perceived to be an enabler of achieving the corporate strategies and goals.

In a recent article, Saull provides a conceptual mapping of the traditional BSC to the IT BSC and provides a list of key factors, performance indicators and benchmarks for the four perspectives related to the IT BSC. He suggests the following mapping from the traditional BSC to the IT related BSC:

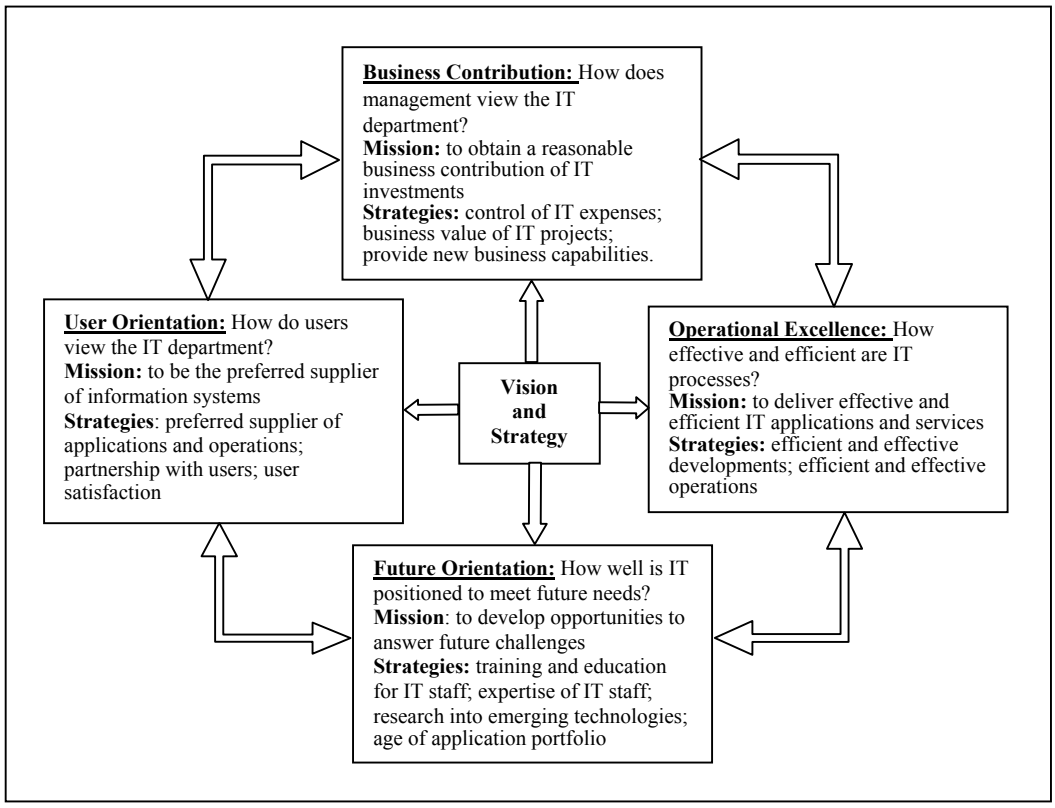
- Financial → Corporate Contribution
- Customer → Customer (User) Orientation
- Internal Business Process → Operational Excellence
- Learning and Growth → Future Orientation

Under the Corporate Contribution perspective, the main issue is whether the IT investment is creating value to the corporation and providing a reasonable return on the investment (ROI). Usually, the ROI for IT investments tends to be very high because of the expected short life of IT investments. On the customer side, there are several users of IT such as the board of directors, executive management committee, business management, audit and regulatory bodies, and the IT organization. Each customer type has its own key questions. For example, the board of directors would be interested in

knowing what value IT provides to the corporation, whether it enables or retards growth, and whether it is well managed. From the audit perspective, one would be interested in knowing whether proper controls are in place to protect the assets of the company and the key technology, and whether the business risks are properly managed.

Grembergen (2000) has provided another framework for the IT Balanced Scorecard very similar to the IT BSC by Saull (2000) discussed earlier. His framework is represented in Figure 2 below:

Figure 2: Standard IT Balanced Scorecard (Grembergen, 2000)



For each perspective, one has to develop a set of goals and objectives, and corresponding metrics to measure the current situation. It is important in IT that a cause-effect relationship be established between the outcome measures and the performance measures. The outcome depends on the performance drivers. Thus, it is essential to have the understanding of the performance drivers and to monitor them on a frequent basis in order to take corrective actions if the performance metrics deviate from the benchmarks.

Grembergen (2000) suggests that the relationship between the traditional Balanced Scorecards and the IT Balanced Scorecards can be explicitly expressed through a cascade of Balanced Scorecards (also, see Appendix III in COBIT, 2000; and van der Zee 1999). Under this concept, the traditional Balanced Scorecards are used to set the corporate goals, and the success is measured through the outcome metrics. These outcome metrics are related to IT enablers, i.e., IT strategies, through cause-effect relationships. The IT strategy scorecards measure the goals as outcomes of the strategies. However, the proper planning and organization (PO) of IT makes it possible to achieve the strategic goals. Thus, the IT PO serves as enabler of the IT strategies. However, the IT PO is achieved by the proper IT acquisition and implementation (IT AI scorecards) and the proper delivery and support of IT (IT DS scorecards). Along with the IT PO, AI and DS Balanced Scorecards, the monitoring (MO) scorecards provide the assurance as to whether controls are in place and IT processes are running effectively and efficiently. COBIT provides a comprehensive list of key success factors (KSF), key goal indicators (KGI), and key performance indicators (KPI) for each category of the IT BSC. KGI focuses on “what” to be achieved, the target, and KPI focuses on “How” to achieve it, the process. Table 1 below lists some KGIs and KPIs for IT processes.

Table 1: Examples of Key Goal Indicators (KGI) and Key Performance Indicators (KPIs) for IT processes (See COBIT 2000 for a detailed list of KGIs and KPIs).

Key Goal Indicators (KGI)

Financial Perspective
- Achieved targeted return on investment or business value benefits
- Enhanced Performance Measurement (EPS, NI, etc.)

Internal Business Process Perspective
- Reduced IT risks
- Productivity improvements
- Integrated supply chains
- Standardized processes

Customer Perspective
- Reaching new and satisfying existing customers
- Creation of new service delivery channels
- Number of customers and cost per customer served

Learning and Growth
- Adherence to industry standards
- Availability of bandwidth, computing power and IT delivery mechanisms, uptime and downtime

Key Performance Indicators

Financial Perspective
- Return on Investment (ROI)
- Economic Value Added measure (EVA)
- Earnings Per Share (EPS)

Internal Business Process Perspective
- Reduced cycle times
- Increased quality and innovation
- Improved cost-efficiency of the processes
- Amount of errors and rework
- Benchmark comparisons
- Number of non-compliance reporting

Customer Perspective
- Utilization of communication bandwidth and computing power
- Service availability and response times
- Satisfaction of stakeholders (survey and number of complaints)

Learning and Growth
- Number of staff trained in new technology and customer service skills
- Staff productivity

4. BALANCED SCORECARD FOR INTERNET ENVIRONMENT

As discussed in the introduction, business entities are similar to living organisms. Unless they adapt to the environment they are bound to become extinct. What does this mean to a business entity? This means that the business entity needs to be monitoring all the time the changes happening in its environment. This becomes more relevant in the current environment of the Internet, which is the topic of this section.

The ease of accessibility of information through the Internet has brought many problems of its own. It has become very easy to steal customers' private information (name address, age, earnings, credit card numbers etc.) from the company's files. Hackers have broken into US military computers. They have interrupted regular business functions. A common type of attack is the so-called "denial of service." In early 2000, several US major business sites were attacked, and their normal activities were paralyzed for many hours. The most serious threat now being considered by the US government is not a nuclear attack or a missile attack, but it is a cyber attack. One can think of how serious it is. In a blink of an eye, one can paralyze the US Government, its communication system, its nuclear defense, utilities' production facilities, etc. The same is true for a business entity. Security of information is important whether it is in transit, or in the entity's computer. How can we incorporate these issues in the BSC framework?

Sriram et. al (2000) have made an initial attempt to deal with the e-commerce issues in the Balanced Scorecard framework. However, their discussion is limited to the B2C (Business to consumer) environment. Also, they do not consider the risks involved in conducting business in the Internet environment. We develop a conceptual framework

similar to the one developed in COBIT (2000). We expect that our framework should be a generic one applicable to all types of e-commerce (B2B, B2C, B2G, G2B, G2G, and etc.).

Figure 3: Integration of Internet/E-Business Balanced Scorecard with Traditional Balanced Scorecard and IT Balanced Scorecard

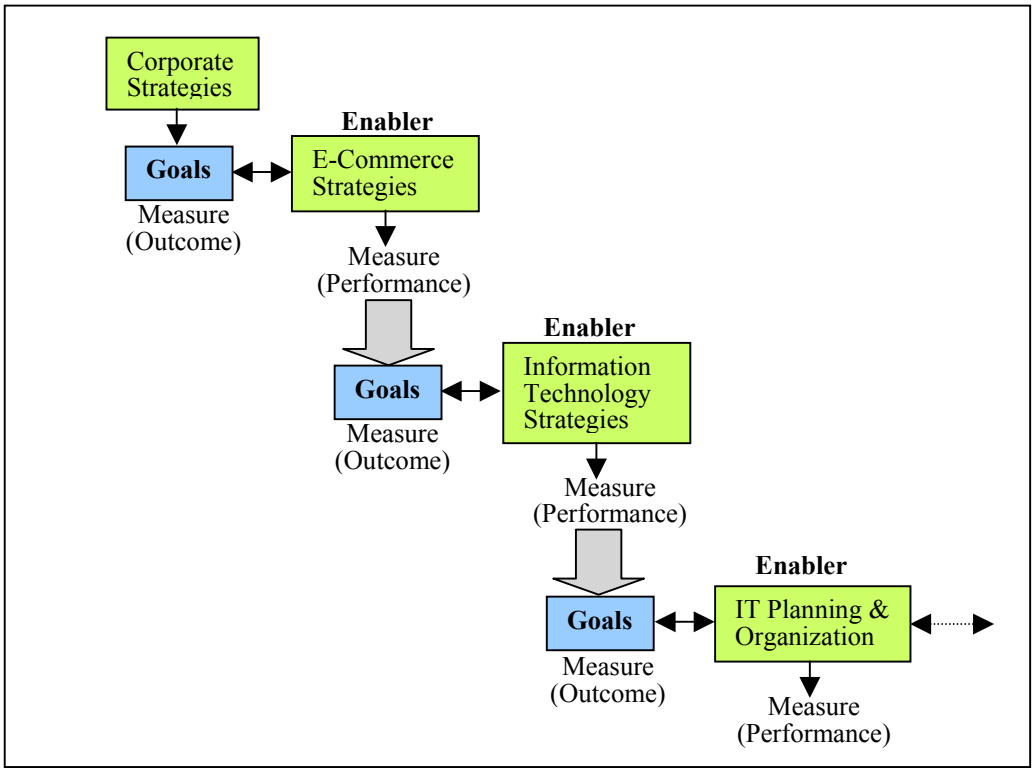
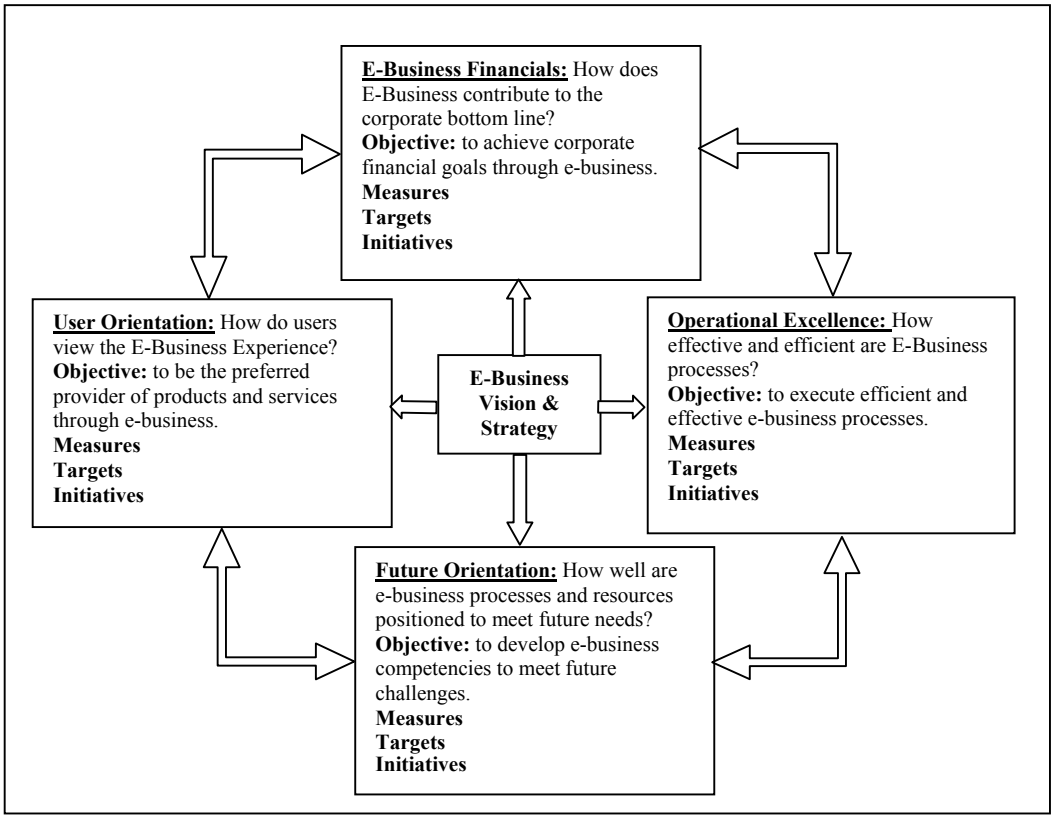


Figure 3 describes a general framework for the Balanced Scorecards for the Internet environment. In the upper left corner we have the traditional Balanced Scorecards that determine the corporate strategies and goals. Next, we have the enabler of the corporate strategies and goals, the Internet/E-Business Strategies, and the corresponding Balanced Scorecard framework is further elaborated in Figure 4. Information Technology Strategy serves as the enabler of the Internet/E-Business Strategies, and one can follow the COBIT Framework for the corresponding IT Balanced

Scorecard as discussed in Section 3. Thus, the framework discussed in Figure 3 integrates the traditional Balanced Scorecards of Kaplan and Norton with the IT Balanced Score cards of COBIT, and introduces the important intermediate concept of the Internet/E-Business Balanced Scorecard.

Figure 4: Internet/E-Business Balanced Scorecard (IEB BSC)



In Figure 4, we describe the four dimensions of E-Business Balanced Scorecard: E-Business Financials, User Orientation, Operational Excellence, and Future Orientation. The main purpose under E-Business Financials is to meet the company's financial objectives through e-business. The User Orientation deals with the mission to be the preferred provider of products and services through e-business. Operational Excellence dimension deals with the mission to provide efficient and effective e-business processes

including manufacturing of products. The fourth dimension deals with Future Orientation where the mission is to develop e-business competencies to meet future challenges by training and educating staff in e-business; by researching into emerging technologies; and questioning the age of application e-business technologies, etc.

5. CONCLUSIONS

We have discussed the basic concepts of the Balanced Scorecard for corporate strategies and goals along with the Balanced Scorecard approach to determining the value of information technology. Furthermore, we have extended the Balanced Scorecard concepts to the e-business environment and have integrated these concepts with the COBIT Framework of the Balanced Scorecard for information technology.

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