STRATEGIC INVESTMENT PROPOSALS AND THE BALANCED SCORECARD: HOW TO ENSURE CONSISTENCY BETWEEN INVESTMENTS AND LONG TERM STRATEGY

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Abstract

This paper examines how a balanced scorecard can be used to guide strategic investment decisions. As noted in the literature, an advantage of the balanced scorecard over the common financial metrics that are often used (e.g., net present value) is that a broader set of benefits and limitations can be recognised. Furthermore, unlike other non-financial and hybrid financial and non-financial approaches, the balanced scorecard provides relatively clear guidance. This clarity comes from its ability to make tradeoffs between the balanced scorecard measures by assigning weightings to each measure. Unfortunately, the balanced scorecard literature is silent on how these weightings are best determined. In addressing this oversight, this paper argues for and suggests that managers should use a balanced scorecard approach that relies on a multi-attribute decision model. A detailed explanation of this approach is provided and further illustration of the approach is presented through the use of a hypothetical example.

Keywords: Strategic investment decisions, capital investments, balanced scorecard

Introduction

Strategic investment decision (SID) making involves the process of identifying, evaluating, and selecting among projects that impact an organisation's competitive advantage. SIDs influence what an organisation does (i.e., the set of product and service attributes that defines its offerings), where it does it (i.e., the structural characteristics that determine the scope and geographical dispersion of its operations), and how it does it (i.e., the set of operating processes and work practices it uses).

The identification, evaluation, and selection behaviour of strategic investments is arguably one of senior management's most significant tasks (Adler 2000, Kaplan and Norton 2004). The challenge is to know both when and when not to invest. Firms that choose correctly will boost their competitive advantage and reap improved financial performance. In contrast, firms that get the decision wrong will either suffer large losses as a result of making the ill-fated investment or will incur a significant opportunity cost and erosion of their competitiveness in the event they incorrectly chose not to invest. Accordingly, the importance of getting the decision right cannot be overstated.

Financial measures have been and continue to remain the predominant means for evaluating and selecting among strategic investment opportunities (Graham and Harvey, 2001; Sandahl and Sjogren, 2003; Bierman, 1993; Trahan and Gitman, 1995; and Bruner et al., 1998). Although non-financial measures can be applied to the task as well, they seldom are (Yee-Ching and Chan, 2004).

The reticence with using non-financial measures is generally due to the lack of clear direction these measures offer. Unlike financial measures, which encapsulate the "go/don't go" decision in a succinct number, non-financial measures do not yield such seemingly unequivocal signals. As an example, managers who use the balanced scorecard for evaluating strategic investments could find themselves facing a dilemma if some of the balanced scorecard measures are predicted to improve while others are predicted to remain unchanged or decline. In fact, this situation is not only quite common but, according to Kaplan and Norton (2004), should be expected. Kaplan and Norton's notion of strategy maps, whereby learning and growth, internal business, and customer perspectives lead to (generally several periods into the future) improvements in financial performance, makes these dilemmas all the more likely. Under such (likely) situations, how does the manager reconcile the mixed "go/don't go" signals?

The common way to overcome this mixed message problem is to assign weightings to each of the balanced scorecard measures (Kaplan and Norton, 1996: 238). This solution allows tradeoffs to be made between balanced scorecard measures. It also facilitates comparisons between rival strategic investment opportunities. While it is true that Kaplan and Norton (2004, pp 258-261) highlight some ranges for investment in information capital and human capital (strategic readiness index, p. 239), the literature is silent on how the balanced scorecard weightings are best determined. This lack of specific advice is regrettable, for the determination of balanced scorecard weightings is a very challenging task and deserves more than passing attention.

The purpose of the present paper is twofold. First, the paper describes how weightings can be assigned to balanced scorecard measures. Second, the paper showcases, using a hypothetical example, a balanced scorecard approach to SIDs.

The paper is organised in the following manner. The next section catalogues the various types of SID evaluation techniques, showing where the balanced scorecard fits in this general typology. The third section discusses the importance of ensuring that the views of all major organisational stakeholder groups are represented in the SID evaluation process. This is then followed by a discussion of how to harness these stakeholder groups' expertise for the specific purpose of determining the weightings to assign to the balanced scorecard measures. The fifth section describes how ratings can be determined for each balanced scorecard measure. The approach showcased is a multi-attribute decision model. In the sixth section, a hypothetical example illustrates how a balanced scorecard can be combined with the multi-attribute decision model to evaluate strategic investments. The final section presents the paper's conclusion, and includes a discussion of the implications for practicing managers and suggestions for future research.

SID Evaluation Methods

Techniques for evaluating and selecting between strategic investments can be categorised into one of four main groupings: traditional evaluation methods, modified-traditional evaluation methods, new evaluation methods, and mixed evaluation methods (Milis and Mercken, 2004). Traditional evaluation methods are techniques like payback, accounting rate of return, and discounted cash flow. Modified-traditional methods rely on traditional evaluation methods, but make adjustments for the more egregious flaws of the latter. For example, when using net present value, inflation inconsistencies and the use of inappropriately high discount factors are adjusted to more realistic amounts. Furthermore, a greater attempt is made to expand the narrow focus of traditional methods to include such commonly neglected benefits as improvements in flexibility, improvements in information quality, and improvements in firm know-how (Ramasesh and Jayakumar, 1993).

A growing disillusionment with the traditional and modified-traditional methods has led some scholars and practitioners to seek new methods. The strategic fit approach, which was originally proposed by Porter (1985), represents one of these new methods. Kaplan and Norton (2000, 2004) link the links between strategic competencies and multiple measurement methods to enable a strategic fit. Under the strategic fit approach, SID methods are evaluated on an investment's ability to contribute to a firm's competitive advantage. Other examples of new methods

include strategic cost management, value analysis, and the uncertainty model (Adler, 2000).

The final set of SID methods is called mixed methods. They feature a combination of one or more of the above techniques. The rationale behind these mixed methods is to overcome the deficiencies that are inherent in the use of any single technique (Milis and Mercken, 2004). For example, the multi-layer evaluation technique combines a strategic fit technique with a traditional or modified-traditional technique. This is generally done in a hierarchical fashion. In particular, potential investments must first pass the strategic fit test before they are further evaluated using, perhaps, a traditional method like net present value.

A second example of a mixed method is the balanced scorecard. The measures incorporating the balanced scorecard's four dimensions (financial, customer, internal business, and learning and growth) are used to evaluate potential investments (Kaplan and Norton, 1996: 238). The financial measures, which frequently feature commonly employed traditional methods of SID evaluation, combined with the strategic orientation that permeates the development of the customer, internal business, and learning and growth measures, naturally lends itself to a mixed method evaluation.

The Importance of Ensuring Wide Stakeholder Participation

An SID will influence and impact on five main groups: users, implementers, maintenance and support staff, senior management, and other indirectly affected parties (Milis and Mercken, 2004). Not surprisingly, each of these groups has different goals and objectives. Users want the best product. Price is a minor, if ever considered, factor. Implementers are the ones responsible for bringing the project on line. In their role as project managers, implementers are typically evaluated on how swiftly and efficiently the project is brought on line. Accordingly, implementers adopt a short-term focus that emphasises ease of implementation. Future project performance criteria rarely feature in their thinking.

Once the project is on-line, it is the job of the project maintainers and supporters to ensure smooth year-to-year operations. This group takes a long-term focus, at least in regard to such factors as the cost and complexity (both of which are desired to exhibit low values) of the project's ongoing operation. Senior management is principally interested in whether the project is completed on time, within budget, and according to specifications. In other words, a short-term focus is taken. And finally, other indirectly affected parties, which are composed of individuals who will be impacted by the project but have no direct influence on it,

will likely have a myriad of reactions both for and against the project's selection and operation criteria.

Frequently, and especially under the adoption of traditional SID evaluation methods, the motivations and aspirations of senior management are given priority, while the goals and objectives of other stakeholders are neglected. Such an outcome is obviously far from ideal. The realisation of the benefits of the project will largely depend on the willingness and eagerness of all stakeholders to embrace the project. Without their unequivocal, full support, the promised benefits from an SID are likely to remain elusive. One way to increase the likelihood of high stakeholder motivation is to involve the stakeholders early on in the SID process. In particular, a representative subset of each of the five main stakeholder groups can be included in the identification of SID evaluation methods and measures.

If a balanced scorecard is adopted as the SID evaluation method, then the need for these groups' identification of an SID method and measures is obviated. Nevertheless, these groups' participation can still be profitably used to determine the weightings to apply to each of the balanced scorecard measures, a topic that is often glossed over. The process for assigning weightings is now discussed.

Determining Weightings for the Balanced Scorecard Measures

Kaplan and Norton (1996: 238-244) discuss the rationale behind using the balanced scorecard for guiding SIDs. They believe the balanced scorecard provides "executives with a mechanism to incorporate strategic considerations into the resource allocation process" (p. 238). Although Kaplan and Norton proceed to state that relative weightings can be established for each measure, they are silent on how this is best accomplished[1].

Some organisations have developed balanced scorecard weightings for company-wide and even subunit annual performance appraisal. Although the presence of such weightings can often be a helpful starting point, it is unwise to use the same annual performance-based weightings for evaluating strategic investments. The weightings applied to annual performance-based scorecards typically have a short-term slant. This can be seen by the relatively greater weighting that is given to financial measures over customer, internal business, and learning and growth measures. Strategic investments, in contrast, are meant to impact the firm's long-term competitive advantage. Accordingly, attempts to use the balanced scorecard to evaluate potential strategic investments should ensure there is sufficient emphasis on long-term measures. Most likely this will mean that a less than equal weighting will be given to the financial measures and a greater than equal weighting

will be given to customer, internal business process, and learning and growth measures.

In sum, the weightings used for annual performance-based balanced scorecard measures, in the event they exist at all, should be adapted to ensure a sufficiently long-term perspective is given to SID evaluation. Harnessing the contributions of all the organisation's major stakeholder groups, a need that was advocated in the preceding section, means the adaptation of the balanced scorecard weightings can best be accomplished in one of two ways: a Delphi technique or a survey approach.

Delphi Technique

The Delphi technique is based on the idea of harnessing and unlocking expert knowledge. The process begins by assembling a group of experts. The experts should represent a broad array of organisational stakeholders. This way, the views of implementers, operators, supporters, management, and other directly and indirectly affected parties can count toward the determination of the weightings and not just the views of one group as is often the case.

Following the formation of the Delphi group, each member is asked to weight the importance of each of the balanced scorecard measures. Aggregate group responses, whereby no one individual's response can be detected, are fed back to all group members. This feedback mechanism helps each group member to ground his/her thinking in terms of the whole group. Additionally, the nature of the feedback mechanism ensures confidentiality and helps prevent groupthink, or the process whereby certain individuals – usually due to their rank or charisma - constrain and substantially influence the final group decision.

After a few iterations of collecting individual group member's perceptions and feeding back group level information, a group consensus is reached. Generally three rounds are sufficient. This consensus then becomes the weightings that are used in the balanced scorecard.

Survey Approach

Surveys can be used to collect information on individuals' preferences. While numerous survey techniques exist, this paper supports the use of the analytical hierarchy method.

Unlike the Delphi technique, which concentrates on a relatively small group of experts, the analytical hierarchy method can survey a wide group of stakeholders. The analytical hierarchy method asks respondents to make pair-wise comparisons

between two balanced scorecard measures at a time. The comparisons are then analysed by a mathematical model to establish the relative weightings, which are generally scaled to equal 100%.

One of the advantages of using the analytical hierarchy method is its ability to check for consistent respondent scoring. For example, if reducing product defect rates is judged twice as important as reducing unscheduled machine maintenance, which in turn is judged to be three times as important as improving plant layout efficiency, then reducing product defect rates should be judged six times more important than improving plant layout efficiency. In the event that inconsistencies are detected in a person's responses, a follow-up interview with the individual should be conducted.

Determining Ratings for the Balanced Scorecard Measures

Once the balanced scorecard measures have been defined and the associated weightings assigned, one of the final tasks of a balanced scorecard approach to SID evaluations is to determine the relative attractiveness of competing strategic investments. To do this, ratings of a strategic investment's likely performance across each balanced scorecard measure must be prepared. This process invariably requires addressing two important issues: who should perform the ratings and how should the ratings be quantified.

Who Should Perform the Ratings?

Accountants have historically been lead players in the evaluation of strategic investments. This leading role is largely a function of the fact that traditional SID evaluation processes are heavily dominated by financial measures. By using a balanced scorecard approach, which might include such non-financial measures as "reducing product defect rates" or "reducing unscheduled machine maintenance," the accountant, though still well placed to make these evaluations, is now no longer the preferred or best placed organisational member to do so. Others can make valuable contributions as well. In fact, a cross-disciplinary group – composed of individuals who each possess excellent analytical skills and display both specialist knowledge as well as a sound understanding of the overall organisation's structures and processes – is best suited for the task.

Quantifying the Ratings

For the balanced scorecard to be useful as a decision aid for SIDs, the ratings associated with each of the balanced scorecard measures must be combinable. In particular, the balanced scorecard measures must be linked by a common denominator. Without compatible bases, comparisons between strategic investment

initiatives cannot be made. For example, knowing that one strategic investment is expected to increase EVA by $120,000 annually and reduce product defect rates by 3%, while a second strategic investment is expected to increase EVA by $55,000 and reduce product defect rates by 10% offers insufficient information for choosing between the two strategic investments. To make informed comparisons on this particular set of information, it is necessary to know the comparable utilities associated with dollars of EVA and percentage reductions in product defect rates.

One common way to achieve this comparability is to use a rating system that features an interval scaling technique. The multi-attribute decision model (MADM) is one example of such a technique (Berliner and Brimson, 1988). When using MADM, expected effects on balanced scorecard measures are categorised as a "0" if the expected outcome is decreased performance, a "1" if the expected outcome is unaffected performance, and a "2" if the expected outcome is improved performance. While this is a rather course scaling system, consisting of just three categories, it is possible to use a finer scaling system that employs additional categories.

Some firms have found when using MADM that it is preferable to work with ranges (Adler, 2000). Such an approach recognises the uncertainties of the assumptions and estimates that underlie the ratings. For instance, instead of assigning a "1" to EVAs that are exactly zero, it may be more appropriate to assign a "1" to EVAs between -$100,000 and +$100,000. Likewise, rather than assigning a "2" to 3% reductions in product defect rates, it may be preferable to assign a "1" to changes that range from ±5%. Obviously, the determination of ranges depends on the particular circumstances and characteristics of the organisation. For example, large organisations would employ larger ranges for EVA than smaller organisations.

As a further refinement to this rating system, some organisations find it helpful to associate probabilities with each balanced scorecard measure's rating. For example, if a strategic investment is believed to have a 30% chance of reducing product defects by up to 5% and a 70% chance of reducing product defects by more than 5%, then these probabilities can be used to help quantify the expected outcome. Such an approach is consistent with the growing trend for using sensitivity analysis. Estimates of the probabilities can be obtained from the same group that is responsible for determining the balanced scorecard ratings.

The final step of MADM involves calculating a total score for each potential strategic investment. This is performed by multiplying a measure's weightings by the cross product of the measure's rating and probability of occurrence. Once this is done, it is a simple matter of summing the scores to arrive at an aggregate

score for the particular strategic investment. These aggregate scores can then be compared against each other to determine which strategic investment(s) to fund.

Using the Balanced Scorecard to Evaluate Strategic Investments: An Example

To help illustrate the use of a balanced scorecard that relies on MADM for quantifying the measures' ratings, a hypothetical example is provided. Assume a company is considering a strategic investment aimed at improving its ordering and billing process. Assume further that although customers are primarily attracted by the company's low prices, the company is aware that errors in its ordering and billing process have led to customer disquiet. To overcome this problem, the company's IT Department has proposed a computer upgrade of the company's ordering and billing process. Because the company's customers are first and foremost price sensitive, the projected increase in customer retention rates and marker share is expected to be relatively small. Furthermore, while improvements to the ordering and billing process is likely to promote process efficiencies, the cost of the upgrade means the efficiency benefits are unlikely to produce substantially improved financial performance metrics. It is expected, however, that the proposed system will produce higher level of employee satisfaction among the organisation's sales force and accounting and finance staff.

Table 1 shows how the strategic investment could be evaluated when a balanced scorecard and MADM approach are used. Implicit in Table 1 is the assumption that the balanced scorecard measures, weightings, and ratings have already been derived.

As Table 1 shows, the aggregate score for the hypothetical strategic investment is 1.02. When using a balanced scorecard that features 12 measures and a MADM that employs three categories of increased, unchanged, and deceased performance, the score for any given strategic investment will have a theoretical range of 0-24. Obviously, balanced scorecards that feature more (less) measures will lead to wider (tighter) theoretical ranges. Similarly, the use of a MADM that employs more than three categories will result in wider theoretical ranges.

Whether or not the company would proceed with the above proposal to upgrade its ordering and billing system would depend on both how this score of 1.02 compares to other strategic investment proposals and the size of the strategic appropriation budget available. The advantage of the balanced scorecard/MADM approach is that the evaluation process allows the consideration of a broader set of factors than is heeded under the traditional or modified-traditional methods.

Table 1: Hypothetical Example Showing The Use of a Balanced Scorecard and Multi-Attribute
Decision Model for the Evaluation of Sids

				Rating and Probabilities					
Col. A	*Col. B*	*Col. C*	*Col. D*	*Col. E*	*Col. F*	*Col. G*	*Col. H*	*Col. I*	*Col. J*
		Increased	How	Unchanged	How	Decreased	How	Expected	SID
Balanced scorecard measures	Weighting	perf.= 2	likely	perf. = 1	likely	perf. = 0	likely	perf. Outcome*	score[†]
Financial measures:									
ROA	.05	2	10%	1	80%	0	10%	1.00	0.05
EVA	.05	2	10%	1	80%	0	10%	1.00	0.05
EPS	.05	2	10%	1	80%	0	10%	1.00	0.05
Customer measures:									
Market share	.10	2	20%	1	80%	0		1.20	0.12
Customer retention rates	.05	2	25%	1	75%	0		1.25	0.06
Customer complaints	.05	2	90%	1	10%	0		1.90	0.01
Internal business measures:									
On-time delivery	.10	2		1	100%	0		1.00	0.10
Product defect rates	.10	2		1	100%	0		1.00	0.10
Unscheduled machine downtime	.10	2		1	100%	0		1.00	0.10
Learning and growth measures:									
Employee suggestions	.10	2		1	100%	0		1.00	0.10
Employee satisfaction	.10	2	30%	1	70%	0		1.30	0.13
R&D	.15	2		1	100%	0		1.00	0.15
Total SID score									1.02

* Col. I = (Col. C * Col. D) + (Col. E * Col. F) + (Col. G * Col. H)
[†] Col. J = (Col. B * Col. J)

Furthermore, the balanced scorecard/MADM approach permits this broader view without sacrificing the ability to make comparisons between different strategic investment proposals.

Conclusion

The SID process is one of senior management's greatest challenges. Typical methods for evaluating strategic investment proposals are often criticised for their narrow focus or inability to offer meaningful comparisons between competing proposals. The use of a balanced scorecard approach that relies on MADM for quantifying the utilities of various potential strategic investments offers the chance to maintain a broad and strategic view without sacrificing rigour or comparability.

The SID model being advocated is likely to appeal to managers. First, many mangers are familiar with the balanced scorecard for annual performance purposes. Kaplan and Norton (2000) note that about 50 percent of Fortune 1000 companies in North America and 40 percent in Europe use a balanced scorecard. The balanced scorecard is thus generally well understood and accepted. Adopting the balanced scorecard measures for strategic investment purposes will reinforce employee attention to key performance measures and help to further align decision making with organisational strategy.

A second benefit of using the balanced scorecard as a SID method is that it is likely to prove helpful in revealing opportunities for synergy in strategic investments across strategic business units (SBUs). Kaplan and Norton (1996: 244), for example, note how the percolating effect of individual SBUs' balanced scorecards can be leveraged by centralised support services. A third and further advantage of using the balanced scorecard for SIDs is that it can prove helpful in highlighting strategic gaps that should be addressed with appropriate strategic investments (Kaplan and Norton, 1966: 244).

Using the balanced scorecard as a SID method is likely to resonate with managers in a way that such traditional methods as net present value and internal rate of return have not. Many managers, for instance, say they find discounted cash flow techniques confusing and are distrustful of them. The balanced scorecard is not associated with this same level of manager confusion and distrust. While it is true that the inclusion of MADM in a balanced scorecard SID approach adds complexity, the process harmonises with senior managers' understandings of performance assessment and the assignment of confidence levels to these assessments.

Research opportunities abound for studying the use of the balanced scorecard for SIDs. Very little research has been conducted in applying the balanced scorecard to SIDs. Descriptive studies showing the extent to that balanced scorecards are used for SIDs, and by what types of organisations, would be valuable. Furthermore, exploratory studies, which are likely to be survey-based, could help reveal enablers and obstacles to the use of balanced scorecard for SIDs. And finally, case studies of organisations' experiences, showcasing the perceived advantages/disadvantages and the reported successes/failures of using the balanced scorecard for SIDs, would prove helpful to both students and practitioners alike.

Note

[1]   Kaplan and Norton (2004 p. 239) narrates a case study which utilised a multi-dimensional index but how such an index can be created was silent, providing little advice or direction for would be investment appraisals.

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