The Strategist's Scorekeeper: A Quantitative Approach to the Assessment of Business Strategies

Mark Fuller
St. Francis Xavier University

This article provide an innovative method for operationalizing pan-theoretic work in the field of strategic management. It builds upon a previously published taxonomy to enable quantitative analyses of business strategies prior to implementation. Five metrics for comparatively assessing business strategies, both longitudinally and cross-sectionally, are provided. Academics will benefit from being able to assess the viability of strategies among a range of theoretical perspectives, enhancing opportunities for cross-theoretical strategic analysis. Practitioners can better document their firm's strategies, identifying strategic gaps with their rivals, and assessing the potential impact on firm performance among various strategies prior to implementation.

INTRODUCTION

The taste of peanuts and cracker jacks. The roar of the crowd. Cheers for the home team. These are some of the well-known experiences commonly associated in attending baseball games, and were immortalized in the ballad of "Take me out to the ball game" by Jack Norworth in 1908. However, it is neither the sights nor the sounds of a baseball game that represent the essence of the competition that takes place. It is the far less romanticized details embedded in the scorecard, the box score, the line score, and the many statistics derived from them, that truly recount what happened on the field. Scorecards recap the on-field activity for each player, capturing the nuances of play-by-play actions in every inning. For those interested not in the minutiae of each match, but in the effectiveness of each player and team, it is the box score that matters more, with its higher level summary of the performance for each player. By comparison, the line score is a further distillation of the game, recounting the number of runs, hits and errors on an inning by inning basis.

Of the three baseball scoring devices, it is the contribution provided by the box score that we wish to highlight for its relevance to the field of strategic management, a source of inspiration for advancing the quantification of the field. According to Schwed (1957), "the baseball box score is the pithiest form of written communication in America today. It is abbreviated history. It is two or three hours (the box score even gives that item to the minute) of complex activity, virtually inscribed on the head of a pin, yet no knowing reader suffers from eyestrain." Through the use of box scores, we can ascertain which player had the most home runs, or the most at bats, or who finds their way on base most often for any team in the present season, and as far back as historical records allow. Thus we can analyze players and teams cross-sectionally and longitudinally in a more objective fashion. This is particularly important as a single top performing player on one team does not guarantee a win in baseball. Nor does a *group* of highly talented ballplayers, relative to their rivals, make winning in baseball a certainty if they do not play effectively as a *team*. It does, however, represent an incremental improvement over the era prior to baseball scorekeeping, when the debate as to the relative performance of one player to another was a far more subjective matter. With the advent of baseball scorekeeping, much room for debate remains among baseball's legion of adoring fans, but this level of debate is elevated to a higher order: the level of factual detail captured in the annals of baseball scorekeeping enables more informed analysis and discussion.

The baseball era prior to the innovation of scorekeeping is an apt analogy for the present state of strategic management. We can assess, ex post, the results of our strategies in terms of wins and losses: returns on assets and investment, profit margins and sales volume. Though much may be gleaned from these results, they are akin to a baseball line score: one is presented with the distillate of a firm's strategy, but has little insight into the fundamentals of how those results were achieved. What is required is the strategic management equivalent of a baseball box score to provide greater analytic detail than is presently available. The benefit of such detail is that it would enhance the quality of ex ante strategic analysis prior to implementation. For business strategists, this would enable better comparisons between prospective business strategies; would facilitate more informed comparisons with rivals; and would enhance decision making prior to committing resources to a given strategy. For practitioners engaged in external business assessments, such as securities analysts, it would provide more data for both firm-level and industry-wide analyses, and support historical firm-specific comparisons such that changes in business strategy can be identified and correlated to changes in firm performance. For theorists, benefits include the potential to associate strategic firm choices with industry characteristics and firm performance to improve strategic design, to gain further insight into how firms with unlike strategies achieve like results; and to better understand how firms with like strategies produce unequal results. Therefore, the purpose of this article is to identify ex ante quantitative metrics of business strategy for the benefit of practitioners and academics.

CONTEXT

A key limitation in the field of strategic management is the limited ability to quantifiably compare and assess business strategies ex ante implementation. Prior to implementation, strategies may at best be delineated in terms of the expected budgetary costs of implementation and expected returns. However, the present pedagogical state of imprecision in defining business strategies – such as in terms of the generic business strategies and the strategic business decisions firms might choose to pursue (Porter, 1985) – serves as a constraint to our ability to consistently and reliably estimate, ex ante implementation, the costs and benefits of implementing the intended strategy. This inability creates four analytical constraints that must be addressed:

- It inhibits firms from making better reasoned and more well informed assessments of the costs and benefits arising from among a choice of potential business strategies, prior to committing to a particular course of action;
- It restricts the degree to which the firm may compare prospective strategies to either current or past strategies;
- It limits the ability to assess potential strategic choices in comparison to rivals in the marketplace; and
- It curtails the ability of the firm to model the implementation of a particular strategic choice, to that of another firm in the same or in a different industry, to serve as a benchmark for those pursuing similar strategic choices.

However, recent developments in the strategic management literature hold promise for overcoming these obstacles, and in so doing, may better facilitate the quantification of the strategic management field.

LITERATURE REVIEW

Within the literature, we frequently encounter authors' contributions as encompassing a typology or a taxonomy of business strategies, either specific to a particular industry or phenomena (Morrison and Roth, 1992; Kaufman, Wood and Theyel, 2000) or more generic in nature (Porter, 1980, 1985; Mintzberg, 1988; Fuller, 2010). The wide applicability of these generic typologies and taxonomies contributes to the development of strategic management as a discipline because it provides practitioners and researchers some ability to comparatively assess different strategic choices prior to committing to a given course of action. However, the more generalized typologies of which Porter (1980, 1985) and Mintzberg (1988) are exemplars lack universal appeal, and therefore result in limited application by practitioners and researchers, whose theoretical lenses may differ from those of Porter and Mintzberg. In the absence of a unifying theory of strategic management within our discipline, we are left with either a fractured field of study where a plurality of theoretical contributions rarely intermingle, or finding mechanisms to bridge these theoretical divides in order to foster discussions across our theoretical differences. An example of an analytical bridging mechanism from the literature was found in the work of (Fuller, 2010) whose contribution was intended to foster communication and analysis across theoretical frames, and provided an environment where "conceptual researchers can continue to employ their preferred theoretical approaches while expanding the degree of cross-theoretical discussion by invoking the standardized referencing system" (Fuller, 2010). However, we feel there remains an opportunity to further extend the development of pan-theoretical research in strategic management, rather than solely using the Fuller (2010) contribution as a means of communication across theoretical frames.

Much work in the strategic management field has involved the identification and classification of business strategies. Historically, these have taken various different forms: list-style and simple matrix typologies as compared to multi-dimensional taxonomies and one of two different foci (academic theories versus particular phenomena). We compare these classification schemes in the following table:

TABLE 1
CLASSIFICATION SCHEMES IN STRATEGIC MANAGEMENT

Schema	**Typology**		**Taxonomy**	
Foci	Theory	Phenomena	Theory	Phenomena
Format	List or simple matrix	List or simple matrix	Nested lists or complex matrices	Nested lists or complex matrices
Key Elements	Theoretical constructs	Phenomenological attributes	Theoretical constructs	Phenomenological attributes
Dimensions	One or two dimensional	One or two dimensional	Multi-dimensional	Multi-dimensional
Presence of Hierarchies	Occasional	Occasional	Often	Often
Specificity	Limited	Limited	More extensive	More extensive
Generalizability	Broad	Narrow	Broad	Narrow
Examples	Porter, 1980, 1985; Mintzberg, 1988	Kaufman *et al.,* 2000	Fuller, 2010	Morrison and Roth, 1992

Although the terms 'typology' and 'taxonomy' are frequently used interchangeably in the literature, taxonomies are generally more extensive in the nature of the classification schema, typically employing multi-dimensional characteristics, and often involving the presence of hierarchies among taxons. Chrisman, Hofer and Boulton (1988) go further, having proposed specific characteristics required in a taxonomy of business strategies. These characteristics involve the separation of strategies into distinct groups; the generalization of information within each taxon; and the fostering of consistent identification and retrieval of information. Thus, we conclude that taxonomies are more detailed in their construction and are better suited in their application to consistent information identification and retrieval. These are important and necessary attributes for the reliable labelling of prospective business strategies, prior to the development of quantifiable assessments based on such identification.

Both typologies and taxonomies may evolve from a given theoretical frame (Porter, 1980, 1985; Mintzberg, 1988; Fuller, 2010) or focus on a particular phenomena, such as the supplier management typology developed by Kaufman *et al.* (2000), or strategies for global industries as highlighted by Morrison and Roth (1992). Typologies focus on one or two key variables, with the contribution of the taxonomy being either a list of values, or a two-by-two comparison matrix. In contrast, taxonomies generally involve multiple variables, all relevant to the given theory or phenomena. The result is that the level of detail for typologies is usually more limited in nature, leading to reduced specificity in terms of each taxon, when compared to the more elaborately detailed taxonomies in the literature. Nonetheless, this limited specificity can still be broadly generalizable, as the works of Porter (1980, 1985) and Mintzberg (1988) attest. This broad generalizability brings more value to the contributions of theory-based typologies and taxonomies than for phenomenological-based ones. However, typologies and taxonomies that are beholden to a specific theory inhibit the ability of the researcher, and the practitioner, of comparing strategies drawn from different theoretical traditions, especially ex ante, when firms still have the potential to change the course of their strategic direction.

One of the limits of the strategic management field is this inability, prior to implementation, to provide a precise, analytical assessment of the potential impact of a given strategy, and therefore to differentiate among favorable potential strategies at a very granular level of analysis. While some attempts at comparative strategic evaluation have taken place – for example, Kotha and Vadlamani (1995) empirically compared Porter’s and Mintzberg’s generic strategy typologies – the typologies under evaluation were developed under distinct theoretical lenses that were never designed to be interoperable. In comparison, Fuller’s taxonomy was developed to be pan-theoretical in nature, enabling either the researcher or the practitioner to specify a strategy in terms of the underlying strategic components, irrespective of the theoretical lens employed, thus facilitating cross-theoretical dialogue. However, in our own experience we have found that the use of the Fuller taxonomy can not only facilitate dialogue across theoretical frames, but holds the potential for supporting cross-theoretical comparisons as well. This is because the use of this taxonomy requires the documentation of four dimensions of each strategy in order to classify it by the taxonomy. These dimensions are:

- The *stakeholders* for whom the strategy is targeted;
- The *objectives* of the strategy, which can be growth, defensive or process-oriented;
- The *tactics* employed in the implementation of the strategy, such as proactive, accommodative or reactive responses to stakeholder relations; and
- The *competitive environment(s)* in which the strategy is situated, either through economic, political or social means of competition.

The necessity with the Fuller taxonomy of having to specify strategic components for a given strategy facilitates the development of measures to compare strategies based upon these four dimensions of stakeholder inclusion; strategic objectives; tactical use; and range of competition. While the taxonomy provides an ability to systematically reference business strategies that is intrinsically valuable, further benefit may be derived from the capacity to quantitatively compare and assess business strategies prior to strategic implementation beyond typical cost-benefit analyses. Such a capability, if developed, would significantly broaden the strategic management discipline and add much value to both researchers and practitioners involved in comparative strategic analysis.

ANALYTIC MEASURES OF STRATEGIC DESIGN

We begin by employing the key dimensions of the Fuller taxonomy as the basis for developing analytic measures to compare and assess business strategies. These dimensions were specified as the stakeholders of the firm, the strategic objectives, the business tactics, and the competitive environments, which collectively define the context for any business strategy. Using internal data available to the firm, we develop five metrics that facilitate the analysis of business strategy ex ante implementation for the different dimensions of any given business strategy. These are summarized below:

TABLE 2
SUMMARY OF ANALYTIC MEASURES OF STRATEGIC DESIGN

Strategic Dimension	Analytic Measure	Type of Measure	Range	Description
Stakeholder	Stakeholder Inclusion Ratio	Comprehensiveness	[0,1]	Assesses the extent to which all stakeholders of the organization are engaged by the firm.
Business Objectives	Business Objectives Ratio	Proportionality	[0,1] : [0,1] : [0,1]	Identifies the relative emphasis on management, defensive and maintenance strategies employed.
Tactics	Stakeholder Proactivity Ratio	Scaled weighted average	[0,6]	Combines the use of proactive, accommodative and reactive strategies into a weighted measure.
	Strategic Domain Ratio	Proportionality	[0,1] : [0,1] : [0,1]	Identifies the relative emphasis on proactive, accommodative and reactive tactics employed.
Competitive Environments	Competitive Environment Ratio	Proportionality	[0,1] : [0,1] : [0,1]	Identifies the relative emphasis on economic, political and social strategies employed.

THE STAKEHOLDER DIMENSION

The first dimension provided in the taxonomy, *stakeholders*, implicitly relates to the bread of coverage for a given strategy. The more specific the stakeholder focus, the narrower the breadth of coverage whereas the more inclusive of various stakeholders, the broader the coverage. Senior management of a firm would be aware of the stakeholders that are the intended focus of a particular business strategy. Those same executives would also be able to enumerate the totality of the identified stakeholders for their given firm, as a result of either their experience, or the application of a stakeholder mapping exercise. Accordingly, an analytic measure involving the stakeholder dimension may begin with an examination of how many identifiable classes of stakeholders are targeted relative to the population of potential stakeholders for a given strategy. However, one difficulty in developing a measure based on stakeholder inclusiveness is that Fuller (2010) did not enumerate all potential stakeholders. To circumvent this limitation, we suggest it is possible to employ *relative populations* of stakeholders: the population of relevant stakeholders would vary from firm to firm, and across firms and industries. This may have a large impact on cross-industry comparisons. Yet for practical purposes of comparing strategies within the same industry, there is likely to be only a small to moderate impairment upon cross-firm comparisons, and no impairment to the comparison of strategies within the same firm. With this premise, our metric for the assessment of business strategies is the stakeholder inclusion ratio, described below:

Stakeholder Inclusion Ratio

The Stakeholder Inclusion Ratio (SIR) is a measure of comprehensiveness. Its purpose is to gauge the extent to which a business is fully engaged with their universe of prospective stakeholders. It is calculated as the number of stakeholder-domain-competitive environments that comprise the strategy for each business unit of the firm, expressed as a percentage of all such available strategic choices. This measure is irrespective of the domain tactics employed, and thus does not differentiate between proactive, accommodative and reactive tactics. Accordingly, the scale of the strategic design may vary from one firm to another while the stakeholder inclusion ratio remains constant. The maximum value for this measure is 1.0, or expressed as a percentage, 100%, which represents a strategic engagement with each and every one of a business' stakeholders. The minimum value is theoretically zero, although in practice, no firm would be able to exist without some strategic interaction with one or more stakeholders, no matter how limited or focused their business activities. There are three advantage of utilizing this metric:

- It reflects the extent to which the business strategies of the firm address each of the organization's stakeholders within their strategic planning activities;
- It ties the inclusion of stakeholders to consideration of how the firm will not only grow its operations, but continue their ongoing activities and protecting the processes through which it presently operates; and
- It links stakeholder inclusion to political and social advantages as well as economic ones, therefore providing a commentary through which the non-economic facets of various stakeholders are also addressed.

At the business unit level of analysis, the ratio is calculated as:

$$SIR = \frac{\text{Number of stakeholder-domain-capital strategies employed}}{\text{Number of stakeholder-domain-capital strategies available}}$$

Example:
$SIR_A = .400$ $SIR_B = .760$

In the above example, Firm B has a much higher SIR score than Firm A. Given the nature of this metric – it does not articulate differences in competitive environments or domain tactics – it is difficult to predict short term performance differences between these two firms. It may very well be possible that Firm A has a much greater emphasis upon economic competition than Firm B which may take a more balanced approach to economic, political and social strategies. However, some deductions may be made. A firm that focuses exclusively upon economic competition and has the broadest, most inclusive strategy, can only achieve a maximum SIR score of .333, as economic, political and social stakeholder inclusion are weighted equally by this metric. That Firm A has a score of .400 suggests a certain amount of non-economic tactics are included in their strategy. Yet the size of the difference between Firm A's and Firm B's score suggests the latter organization has a much broader strategy overall. Further, that Firm B's score is well over the two-thirds benchmark suggests a significant focus upon political and social competitive tactics; otherwise, such a score would be beyond their ability to obtain. Ceteris paribus, we would expect Firm B to exceed the performance that of Firm A in the long term due to their more multi-faceted approach to business strategy.

BUSINESS OBJECTIVES DIMENSION

Drawing from the literature, Fuller's second dimension enumerated three business objectives: *management*, which was designed to grow the firm; *defence,* that seeks to protect the firm's existing operations; and *maintenance*, which relates to the safeguarding of the firm's business processes. Since the firm's business strategy is defined by Fuller (2010) as the sum of all the strategies for each business unit that comprise the firm, we can expect different divisions within the firm to employ different strategies. Even within the same business unit, the firm may employ differing strategies with different stakeholders, depending upon their goals and motivations. If those strategies are defined using Fuller's taxonomy, then what results is a listing of strategies which vary in terms of their business objectives, with some strategies emphasizing business expansion (i.e. management strategies), others taking a more protectionist stance (i.e. defense strategies) whereas others are focused on securing the business processes of the firm (i.e. maintenance strategies). We can compare the orientation of the business objectives for any particular firm by assessing the relative emphasis placed upon management, defense and maintenance strategies through the use of the business objectives ratio.

Business Objectives Ratio

The Business Objectives Ratio (BOR) assesses the proportional emphasis by the firm on each of three different types of available business objectives: management, defense and maintenance objectives. The benefit of such a ratio is that it provides insight in terms of the strategic orientation of the firm to growth their operations, to defend their current business activities, and to protect their process-based business objectives. We are then able to track changes in this ratio longitudinally for the firm, in order to investigate changes in strategic orientation, and to compare this orientation to rivals in the industry, in order to compare and contrast patterns of strategic behavior.

The ratio is calculated using this formula:

$$\text{BOR} = \text{MGMTSE} : \text{DSE} : \text{MAINTSE}$$

where

$$\text{MGMTSE} = \frac{\text{Number of management strategies employed}}{\text{Number of total strategies employed}}$$

$$\text{DSE} = \frac{\text{Number of defensive strategies employed}}{\text{Number of total strategies employed}}$$

$$\text{MAINTSE} = \frac{\text{Number of maintenance strategies employed}}{\text{Number of total strategies employed}}$$

If growth-oriented management strategies were employed exclusively by the firm, then the resulting BOR would be 1 : 0 : 0. Similarly, if defensive strategies were used solely by the firm, without the use of any management or maintenance strategies, then the ratio would be 0 : 0 : 0. Conversely, a firm fixated on the use of maintenance strategies to the exclusion of all others, would have a ratio of 0 : 0 : 1. The theoretical minimum score, representing a firm devoid of any strategies would have a ratio of 0 : 0 : 0, however, in practice, it would be highly unlikely that any firm would be operating at the theoretical minimum. The utility of this ratio is in comparing the distribution of the firm's strategic focus across the three types of business objectives longitudinally, to understand changing strategic behavior within the firm, and in comparing this distribution at a point in time with rivals, so as to contrast the strategic focus of firms within the industry.

Example:

$BOR_A = 0.50 : 0.25 : 0.25$ $BOR_B = 0.33 : 0.33 : 0.33$

In the above example Firm A has a business objectives ratio of 0.50:0.25:0.25 (BOR_A) compared to Firm B with a ratio of 0.33:0.33:0.33 (BOR_B). From this example, we come to understand that Firm A has placed more emphasis on growth-oriented management strategies, (50% of available growth strategies are in play), as compared to either defensive strategies (25% of availability) or process-oriented maintenance strategies (25% of availability). This firm has a clear emphasis upon growth objectives in comparison to other available business objectives. It would be interesting to see whether this was an historic pattern or whether this was a more recent development, and whether the relative emphasis placed upon certain strategic objectives was or was not correlated to firm performance. In contrast, Firm B has explicitly chosen to balance their strategic focus across all three choices of business objectives. The firm is somewhat less focused on growth objectives than their rival, but slightly more oriented toward defensive and process-based business objectives. Whether this set of strategic choices is part of a historical approach to strategic management by the firm, or an artifact of current circumstances and otherwise represents an aberration from past management practice could be determined by comparing this result to previous periods. By comparing the two firms to one another and controlling for firm and industry level effects, one could correlate the choice of strategic objectives with changes in firm performance to gather insights about key success factors within this particular industry.

THE TACTICAL DIMENSION

The third dimension in the Fuller (2010) taxonomy refers to the tactics employed in engaging with various stakeholders. Three forms of tactics were reported by Fuller, as drawn from the literature. These included proactive engagement, accommodative interactions, and reactive responses. This dimension represents a continuum from proactive actions that engage interactively with stakeholders, in an attempt to shape and influence their perspectives, to reactive approaches that reject contrarian perspectives held by external stakeholders and actively resists altering their held beliefs. The difference between the endpoints along this continuum is the degree to which the firm is open to proactive relations with external stakeholders. This strategic dimension provides two metrics for evaluation: a weighted-average measure of proactivity, dubbed the Stakeholder Proactivity Ratio, and a comparative ratio, defined as the Strategic Domain Ratio.

Stakeholder Proactivity Ratio

Derived from the tactical dimension, the purpose of the Stakeholder Proactivity Ratio (SPR) is to measure the degree to which the firm is proactively engaged with its stakeholders. This scaled metric is preferentially weighted higher for firms that are proactive in their stakeholder relations, and underweighted for firms that are reactionary in their use of tactics, based upon the presumption that firms that engage with stakeholders will have more beneficial stakeholder relations than those that are reactionary in response. Thus, it is a weighted measure of the firm's stakeholder inclusion at the business unit level of analysis while considering the impact of differing domain tactics. Whereas the stakeholder inclusion ratio (SIR) does not consider the potential for differences in proactivity, accommodation and reactivity among firms, the SPR metric expressly includes it. Consideration of domain tactics is important because a proactive approach is suggestive of a firm which places a higher value upon a particular strategic choice than a firm which chooses an accommodative or reactive response that is incrementally engaging of the firm's priorities.

To create a weighted average, a multiplier is required for each of the domain tactics available to each business unit in order to overweight firms that engage in proactive tactical behavior. Multiples of three, two and one were assigned to proactive, accommodative and reactive tactics respectively for the purposes of simplicity, and are not meant to imply a value relationship. Since proactive tactics by definition are ones in which the business unit is heavily invested in terms of resources and effort, it is logical to presume these are also tactics that are perceived to have significant potential benefits to one or more stakeholder groups that the firm has prioritized. In comparison, business units that pursue an accommodative approach to a particular strategic issue implicitly balance competing impacts across various stakeholders, trade-offs being necessary as some benefits for stakeholders come at the expense of others. This contrasts with reactive tactics where the business unit demonstrates reluctance or passivity in the attempt to address the concerns of stakeholders, with such a response potentially requiring fewer resource commitments than a proactive response, particularly if the reactive response is to ignore contrarian stakeholder perspectives. By weighting each of these tactics progressively less, it recognizes the differing levels of priority attributed to each tactic.

The ratio is calculated using this formula:

$$SPR = \frac{\text{Number of proactive strategies employed}}{\text{Number of proactive strategies available}} \times 3 + \frac{\text{Number of accommodative strategies employed}}{\text{Number of accommodative strategies available}} \times 2 + \frac{\text{Number of reactive strategies employed}}{\text{Number of reactive strategies available}} \times 1$$

The theoretical maximum for the SPR is 6.0 which would imply a firm is undertaking proactive, accommodative and reactive strategies with all of their stakeholders to the fullest extent possible. In reality, this is unlikely to be achieved as it would involve simultaneously engaging in contrasting domain tactics. Such a situation would likely sow confusion among the firm's stakeholders from the mixed messages the firm would be sending. The theoretical minimum rating is zero, which would suggest an absence by the firm of any tactical engagement with their stakeholders.

Example:

$SPR_A = 1.200$ $\qquad\qquad$ $SPR_B = 4.800$

In the above example, Firm B has a much higher SPR score than Firm A. Given the nature of this metric – it does not articulate differences in competitive environments or domain tactics – it is difficult to predict short term performance differences between these two firms. It may very well be possible that Firm A has a much greater emphasis upon proactive tactical competition than Firm B which may take a more balanced approach to domain tactics. However, some deductions may be made. A business unit that focuses exclusively upon reactive competition and has the narrowest, least inclusive strategy can only achieve a maximum SPR score of 1.0, whereas a firm that extensively employs all three tactics can achieve a maximum SPR of 6.0. That Firm A has a score of 1.200 suggests a certain amount of non-reactive tactics are included in their strategy. Yet the size of the difference between Firm A's and Firm B's score suggests the latter organization has a much broader tactical approach overall. Further, that Firm B's score is well over the 1.0 maximum achievable with an all-reactive tactical approach suggests a significant focus upon accommodative and proactive tactics. Consequently, over the long term, we would expect Firm B to exceed the performance of Firm A due to their more multi-faceted approach to business strategy.

Strategic Domain Ratio

An extension of the stakeholder proactivity ratio (SPR) is the Strategic Domain Ratio (SDR). The purpose of which is to delineate the firm's domain tactics into its three respective components: proactive, accommodative and reactive tactics. The advantage of this metric is discovering the relative emphasis that the firm has placed upon these three competitive tactics, and being able to compare the emphasis at present to historical patterns for the firm, to the present and historical patterns of rivals, and to industry averages.

The ratio is calculated using this formula:

$$SDR = PSE : ASE : RSE$$

where

$$PSE = \frac{\text{Number of proactive strategies employed}}{\text{Number of proactive strategies available}}$$

$$ASE = \frac{\text{Number of accommodative strategies employed}}{\text{Number of accommodative strategies available}}$$

$$RSE = \frac{\text{Number of reactive strategies employed}}{\text{Number of reactive strategies available}}$$

The theoretical maximum score that could result is 1 : 1 : 1, although in practice, this would involve the use of proactive, accommodative and reactive strategies simultaneously with the same set of stakeholders. The theoretical minimum score is 0 : 0 : 0 that would involve a complete lack of stakeholder engagement. SDR scores where the sum of the PSE, ASE and RSE values exceed a total of one suggest some overlap in the domain tactics employed – the firm is using more than one tactical approach with one or more of its stakeholders. Where the sum of the scores is less than one does not necessarily imply an absence of overlapping strategies; this situation could involve an overlap of domain tactical engagement with some stakeholders and an absence of engagement with others.

Example:

$SDR_A = 0.15 : 0.45 : 0.25$ $\qquad$ $SDR_B = 0.65 : 0.60 : 0.60$

In the above example, Firm A has a strategic domain ratio of 0.25:0.45:0.35 (SDR_A) compared to Firm B with a ratio of 0.65:0.60:0.60 (SDR_B). In this example, Firm A has chosen to emphasize accommodative tactics to a much greater degree than proactive or reactive tactics. Yet with all three components of Firm A's DSR score being less than 50% suggests a low degree of strategic formulation is taking place. Accordingly, one would expect Firm A is involved in a mature industry with few rivals, or is a cautious and less influential player in a more competitive industry where the prospects for the firm to influence industry dynamics is low. In comparison, Firm B is more actively engaged across the board in terms of the domain tactics employed. Yet it is the relative proportion of proactive, accommodative and reactive tactics that is intriguing with Firm B. The similarity in these three component ratios suggests the firm is at once proactively engaged with stakeholders in some areas, employing a balanced approach to stakeholder trade-offs in another area, and being recalcitrant in its treatment of other stakeholders through the use of reactive tactics. This mixture of domain tactics suggests the firm has diverse lines of business in which it differentiates treatment of various stakeholders; operates in an industry where complex and contrasting relationships exist in tandem with one another; or is lacking consistency in the approach to stakeholder relations.

THE COMPETITIVE ENVIRONMENTS DIMENSION

The fourth and final strategic dimension reported by Fuller (2010) is the competitive environment, which is delineated into three spheres of competition: the economic, political and social environments. As these environments do not represent a continuum, such as the tactical dimension that ranges from proactivity to reactivity, it is not possible to develop a weighted average metric like the Stakeholder Proactivity Ratio. However, it is possible to extend the Stakeholder Inclusion Ratio to provide additional analytic value from the perspective of the competitive environment.

Competitive Environment Ratio

An extension of the stakeholder inclusion ratio (SIR) concept is the competitive environment ratio (CER), the purpose of which is to delineate the strategy of a business into the different competitive environments through which it pursues its goals and objectives. Whereas the former ratio measures stakeholder inclusivity across each of the three competitive environments as a whole, the latter segments the SIR into the economic, political and social components. The advantage of doing so is to discover the relative emphasis of a business unit's focus on each competitive environment, and to compare this focus over time (longitudinally) for the firm; to the contrast the present emphasis of the firm to its rivals; and to assess the firm in comparison to industry averages, so as to improve our understanding of the relative economic, political and social emphases of each firm in the industry.

The ratio is calculated by comparing the economic inclusion ratio (ECIR) to the political inclusion ratio (POIR) and the social inclusion ratio (SOIR) using this formula:

$$\text{CER} = \text{ECIR} : \text{POIR} : \text{SOIR}$$

where

$$\text{ECIR} = \frac{\text{Number of economic strategies employed}}{\text{Number of economic strategies available}}$$

$$\text{POIR} = \frac{\text{Number of political strategies employed}}{\text{Number of political strategies available}}$$

$$\text{SOIR} = \frac{\text{Number of social strategies employed}}{\text{Number of social strategies available}}$$

with the maximum values for ECIR, POIR and SOIR each being a value of one – representing the fullest degree of engagement with stakeholders – and the minimum values for each being zero – designating an absence of engagement through that particular competitive environment. Therefore, a score of 1 : 1 : 1 reflects perfect engagement with all stakeholders in all competitive environments and a score of 0 : 0 : 0 reflects a complete absence of any engagement.

Example:

$$\text{CER}_A = 0.95 : 0.30 : 0.15 \qquad \text{CER}_B = 0.95 : 0.60 : 0.52$$

In the above example, Firm A has a competitive environment ratio of 0.95:0.35:0.15 (CER_A) compared to Firm B with a competitive environment ratio of 0.95:0.65:0.40 (CER_B). In this example, both firms have chosen to focus most of their strategic emphasis on economic-based strategies, as reflected in this factor being the highest of each of the three scores for both firms. Key differences are apparent in the relative emphasis upon political and social competition. Firm B has twice as extensive the focus upon political strategies as Firm A (60% to 30%) which may involve including more stakeholders within their corporate political strategy, involving stakeholders in a broader range of political domains, or both. In regards to social competition, the difference between the firms is most acute. As it pertains to strategic formulation, Firm A's social competitive strategy is about one sixth as extensive as their economic strategy (15/95). Meanwhile, Firm B's social strategy is slightly more than half as extensive as their economic strategy. That said, Firm B's social strategy is more than three times as extensive as Firm A's (52/15). These differences have strategic implications.

It is to be expected that firms would have higher ECIR scores than either POIR or SOIR scores, given how economic means of competition tend to be dominant among most businesses today. Yet over time, firms with a greater emphasis on stakeholder inclusion and the triple-bottom line approach toward corporate social responsibility should see their POIR and SOIR scores increase. In the case of the above example, Firm B has a much broader strategic formulation in the political and social environments than does Firm A. In the long term, ceteris paribus, greater firm performance would be more likely from Firm B than from Firm A if there is truth to political and social competitive advantage, provided each business unit has a comparable ability to turn strategic formulation into strategic implementation.

DISCUSSION

According to Fuller (2010), the perceived linkage between stakeholder inclusion and firm performance suggests that the more extensive the inclusion of internal and external stakeholders and the more extensive the use of strategic domains, the greater the economic, political and social capital of the firm. In turn, the greater the combination of these three competitive advantages, the more sustainable will be the firm's performance. The use of strategic domains is thought to act as a partial moderator to the positive relationship conceived to exist between stakeholder inclusion and capital-based competitive advantages. An extension of this model is the development of the stakeholder strategy taxonomy (Fuller, 2010). His three dimensional construct is visually depicted as a cube with stakeholder inclusion, strategic domains and competitive environments serving as its main axes. This construct further defines domain tactics as being proactive, accommodative or reactive in nature. This taxonomy lays the foundation for pan-theoretical research in strategic management by being inclusive of various strategic management theories, such as the strategic positioning framework and the resource-based view; it does not supplant the research achieved in these areas, only re-conceptualizing its relationship within the strategic management paradigm.

Research Implications

This article contributes to the literature by providing five quantitative metrics that contribute to the emergent research on pan-theoretical strategic management. Without these metrics, which provide a quasi-scorecard for the academic strategist, previous work on facilitating cross-theoretical discussion within strategic management (Mintzberg, 1988; Fuller, 2010) remains largely devoid of tangible applications. This is analogous to how baseball conversations prior to scorekeeping analysis made differences of opinion as to the merits of various players and teams largely unresolvable. The metrics make a substantive contribution to the methodology of pan-theoretic strategic management, and thus contribute to scholarship in this area. It helps bridge the intellectual divide between those that subscribe to positioning theory (Porter, 1980, 1985), stakeholder theory (Freeman, 1984), the resource-based view (Wernerfelt, 1984; Barney, 1991; Collis and Montgomery, 1995) and other perspectives by encouraging the classification of business strategies in a consistent manner (Fuller, 2010) so that, with this article, these strategies may be assessed quantitatively, and compared across theoretical divides. Academics may better assess various business strategies, through quantitative means, and compare firms longitudinally and cross-sectionally from different theoretical lenses. These techniques have the potential to identify commonalities of more successful strategies and, separately, discover the weaknesses inherent in strategic pitfalls which, through the use of these five measures, may be avoided. The benefits of this contribution are the ability to refine our understanding of business strategies, to further the development of methods and processes to design and implement appropriate strategies irrespective of our theoretical lenses, and to better assist management in the enhancement of firm performance.

Practical Implications

For practitioners, the central contribution of this article is the delineation of five metrics through which business-level strategies may be evaluated by management, external consultants and securities analysts. The first of these, the stakeholder inclusion ratio, expresses the extent to which strategic choices cover the range of stakeholder, strategic domains and competitive environments. The second metric, the business objectives ratio, highlights the relative emphasis on management, defense and maintenance strategies by the firm. The third measure, the stakeholder proactivity ratio, provides a weighted average of the degree to which a firm favors proactive tactics compared to accommodative and reactive approaches. The fourth metric, the strategic domain ratio, demonstrates the proportionate emphasis of the firm for each of the three domain tactics. The final metric, the competitive environment ratio, illustrates the relative emphasis between economic, political and social competitive strategies. Benefits of these metrics include bringing greater specificity and enhanced quantification in the evaluation of business strategies which may enhance the entire strategic management process.

The implications of these metrics will change how practitioners undertake the strategic management process. The modern strategic management process of converting vision and mission statements into business objectives from whence a strategic design is formulated and then implemented can be dated back to the foundational work of Kenneth Andrews (Andrews, 1971; Christensen, Andrews and Bower, 1973). The process of formulating business strategy should now involve the documentation of the chosen strategy using Fuller`s (2010) standard referencing system; a comparison to the use of past strategies as enumerated with the referencing system; a comparison to the present strategies of their rivals; and the application of the five metrics described earlier in order to test the potential viability of the strategy prior to implementation. Prospective strategies that score higher across the most metrics should be viewed as more desirable than those that score lower. As the firm's intended strategy is altered through the course of implementation, the emergent strategy (Mintzberg and Walters, 1985) should also be catalogued using the referencing system and assessed using the five metrics. This process should be repeated whenever there is a change in the strategic direction for the firm. In so doing, the practitioner will validate the metrics within their own firm and industry, and opportunities for revisions to the existing metrics, and the addition of new metrics, can be discussed further.

Limitations

There are some important limitations to this conceptual article that must be acknowledged. First is the assumption that it is possible to quantify strategic management; that strategy is a science, more than an art. This article argues that the quantification of strategic management is possible, first through the necessary and preliminary process of enumerating business strategies in a consistent manner, followed by the analysis of the types and composition of strategies that the firm is actively pursuing. The contention is that *any* strategic design, regardless of the theoretical lens, can be defined through the Fuller (2010) taxonomy, and that it may subsequently be quantifiable assessed using the metrics described in this article. If this is not the case – that neither the Fuller taxonomy, nor indeed any taxonomy – can be devised to consistently describe a business strategy at its most elemental levels, then strategy is more art than science; that no common form of expression of strategies formulated from different theoretical lenses is possible; and that we shall forever be bound to unresolvable arguments over which theoretical perspective is superior. Whereas if we believe that theory is but metaphor in which we express the interaction of factors from which a desired outcome arises, then we must concede a plurality of theories is possible, wherein each expresses the same phenomena but through differences in metaphor, and therefore a common, unifying means of referencing such strategies is possible, and desirable, from an academic perspective – this is the argument of strategic management as a science. And yet it must be acknowledged that even with the quantitative metrics of strategy that result from this article, mere replication of a strategic formulation by one company may not replicate the success of a predecessor having applied the same strategy, and thus the subjectively interpreted *art* of strategic management also remains, more narrowly defined than previous, but nonetheless providing an avenue for further debate in our field of study.

A second potential limitation is the possibility that some may view the metrics as presented here, based upon the taxonomy developed by Fuller (2010), as being biased toward stakeholder theory and not in actuality a pan-theoretical approach to the classification of business strategies. While the taxonomy does enumerate strategies in terms of the stakeholders affected, and while stakeholders as a concept are embedded in and naturally associated with, stakeholder theory, it is a falsification to assert therefore that no other theory involves stakeholders. Stakeholders, in contrast, are associated with all strategic management theories, not just stakeholder theory. For example, Porter's (1980, 1985) positioning theory asserts the need to pursue one of three generic strategies in order to appeal to strategic stakeholders to obtain a competitive advantage. In contrast, the resource-based view emphasizes the importance of resources and skill capabilities, but such resources and skills must be appropriable and strategically valuable, and that value is influenced by stakeholders (Collis and Montgomery, 1995). From positioning theory to the resource-based view to its ubiquitous presence in stakeholder theory, stakeholders play a fundamental role in any discussion of strategic management. Indeed, in these three theories from our field of study, and in other less prominent theories, one or more stakeholders are fundamentally affected by the actions of another stakeholder. It would therefore be disingenuous to assert that the taxonomy is not pan-theoretic in nature on the basis that stakeholder terminology is employed.

A third issue, related to the preceding topics, is whether all forms of strategy can be quantified through the use of a common referencing system. The system as derived from Fuller's (2010) taxonomy enables both the practitioner and the researcher to express a wide range of business strategies from across a diversity of strategic management theories. Whether or not it is all encompassing across all strategic theories is beyond the scope of this particular article. However, the taxonomy itself is designed to be a living contribution to the field of business strategy, evolving as our understanding of the field evolves. Similarly, the metrics provided in this article represent a starting point for developing pre-implementation quantitative measures of business strategy that are pan-theoretic in nature. The degree to which the Fuller taxonomy and these metrics are sufficient to capture all historic and all future theoretical perspectives is an avenue open to future debate and discussion.

A fourth limitation is the necessity of adoption. Without widespread adoption of the Fuller (2010) taxonomy within the strategic management community, the value of our contribution in this article is constrained. At present, studies in strategic management describe managerial behavior in descriptive terms; terms that are insufficient to provide strong comparisons with pre-existing research that differ in theoretical perspectives, industry differences, country differences and the like. While Fuller`s referencing system is designed to overcome these obstacles, its success is a pre-requisite to the use of the metrics developed in this article. Failure of such widespread adoption would significantly curtail the utility of this article's contributions.

CONCLUSION

This article makes an important contribution to the strategic management literature by leveraging the taxonomy of Fuller (2010) to quantitatively assess the business strategies of the firm. The five metrics that are described herein offer a strategic business unit-level approach to the enumeration and assessment of strategies at a more granular degree than otherwise exists in the literature. This is advantageous for performing ex ante comparisons of different potential strategic choices, historical analysis to past strategic behavior, as well as intra-industry comparisons to those of rivals. At a fundamental level, it promotes the quantification of the strategic management field through the development of a *lingua franca* through which business strategies, of a variety of theoretical traditions, can be assessed, compared and contrasted. While subject to a number of constraints and limitations, widespread adoption of the pan-theoretic referencing system provided within the extant literature, coupled with the metrics offered in this article, would provide many advances in quantifying the field of strategic management and in the comparative analysis of business strategies.

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