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Towards Better Classificatory Effectiveness: A Systematic Development of an Integrative Typology

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Abstract

Strategic management (SM) has been an important field of business for more than four decades. Throughout these years, a plethora of strategy models have been proposed, developed and used by academic researchers and business practitioners. However, these strategy models have limitations in terms of classificatory effectiveness for categorising strategy. Yet, no research has been attempted to conceptualise an integrative strategy typology that would offer better classificatory effectiveness. This research study intends to bridge this knowledge gap of strategy models by a systematic development of an integrative typology through qualitative assessment and correlational analysis. The research findings are expected to be of interest to corporate managers, business planners and strategy researchers.

First, this article introduces the theoretical significance of strategic management and strategy models, outlines the conditions for effective conceptual modelling and explains the motivation for developing an integrative typology. It then describes Porter's classification scheme and explains why Porter's model is appropriate to be used as a reference typology for modification and integration. Next, it shows the conceptual flow of an integrative strategy typology using Hofer's criterion as a qualitative assessment tool; and conducts a correlational analysis to test the typology based on data collected from 104 firms. In conclusion, it discusses the challenges facing research on strategy models and classification schemes and how research efforts should be channelled to integrating or unifying existing strategy models rather than developing divergent strategy models. Three areas of future research are proposed.

Keywords:

Strategic management, strategy, strategy model, typology, strategy classification, classificatory effectiveness, modification, integration and integrative typology.

Theoretical Background

Strategic Management and Strategy Models

Strategic management¹ (SM) is a central managerial activity of all successful organisations and has been an important field of business for more than four decades. Currently, no sector within the extensive management literature has received much more attention than the field itself. Given that the purpose of strategic management is to formulate and implement a series of unique decisions to improve organisational performance, a large quantity of strategy research was devoted to developing what has been termed as "the strategy model" whose underlying objectives include an effective classification of different strategies. However, the underpinning credence of these strategy models is often left unchallenged. This research intends to bridge this knowledge gap that may hopefully lead to the promulgation of more principles, theories or laws, upon which more insightful judgements or managerial decisions of strategic management may be built.

But first of all, what is strategy? One of the most enduring definitions of strategy originated from Alfred Chandler and was quoted as: "the determination of the basic long-term goals and objectives of an enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals". On the other hand, without stating the proper definition of strategy, Buzzell and Gale (1987) prescribed the way it is employed as "the policies and key decisions adopted by

management that have major impacts on financial performance; and these policies and decisions usually involve significant resource commitments and are not easily reversible". By contrast, Hamermesh (1986) defined strategy as "the determination of how a company will compete in a given business and position itself among its competitors". While strategy may sometimes be termed as business policy or long-range planning and the like, it basically aims to address the fundamental issue: the determination of how an organisation, in its entirety, can best be directed in a changing world (Bourgeois, 1996; Moore, 1992; Dugman, 1990).

As the field of strategic management evolves, many strategy models or sometimes known as conceptual models² of strategy were proposed to construct abstractions of the actual processes and procedures involved in either strategy formulation or implementation. Despite a plethora of divergent strategy models, they are regarded as theoretical substitutes and thus do not fully represent all the intricate processes occurring in strategy. Nevertheless, the use of these strategy models seems particularly relevant in situations where strategies should be specified without being absurdly over-detailed. Yet, many of these models were either partly flawed or contain limitations in terms of classificatory effectiveness. While recognising that model development is an art rather than a science, the intellectual quest of "better strategy models" remain largely unsettled as these strategy models, once established to be applicable in strategic management theory or practice or both, are prone to acquire "reference status". In other words, these models appear far more likely to be quoted rather than questioned. Given that strategic management strives to help organisations to identify different business policy decisions, the classificatory effectiveness of strategy models (e.g. the issue of classificatory effectiveness) needs to be addressed (Jones, 1998; Kazanjian and Drazin, 1990).

Conditions for Effective Strategy Modelling

Based on a comprehensive review of past and current strategy research, a few intuitive discriminations of strategy models may be discerned. Although conceptual modelling is a matter of qualitative judgement like the conception of any management ideas, it is also observed that three conditions need to be satisfied. First, an effective strategy model should provide tool(s) of analysis for empirical evaluation of strategy content without the need to examine strategy by strategy. Because a strategy model must be theoretically feasible and yet practically valid, it is also important that all dimensions contained in the model should be recognisable in management practice and linked to conventional strategy concepts. Second, an effective strategy model should facilitate the use of gestalt(s) to enable "all prospective strategies" to be classifiable for the purpose of developing "complete theories". Invariably, the inclusion of numerous strategies, without a configuration to display inter-dependence among these strategies, does not necessarily become superior in theory building and very often, having overly many strategies tend to produce weak theories, especially for insensitive constructs. Third, an effective strategy model requires some degree of parsimony to represent, classify and model strategy content. Rather than incorporating sophisticated constructs in a strategy model, the choice of suitable strategic dimensions should be rationalised and the configuration of the typology should distinguish different strategies with a relatively high level of generality.

Motivation for an Integrative Typology

The three conditions for effective strategy modelling signal the need to work towards a "better strategy model". Given its popular use, a typology³ can serve as a strategy model in which a huge number of strategy-related variables may be reduced to a

manageable and yet powerful few, without trivialising or over-simplification. Also known as configuration models, typologies have also generated a great deal of interest amongst strategy researchers (Bozarth and McDermott, 1998; Doty and Glick, 1994; Hambrick, 1984). Because of its usefulness in strategy classification, typologies are applied to estimate factors that are difficult to observe or measure quantitatively but may contain underlying relationships concerning strategy (Jones, 1998; Doty and Glick, 1994; Dess, Newport and Rasheed, 1993). Since no attempt has been made so far, this study uses a reference classification scheme to conceptualise an integrative typology which is independent of industrial setting or organisation type (Bailey, 1994; Hart, 1992; Chrisman, Hofer and Boulton, 1988). Prior knowledge of reliably established and influential classification systems is harnessed as antecedents for modification and integration. In addition, the selection of strategic dimensions will benefit from supplementation and be identified based on applicability and validity to strategic management practice. To implement the study, three specific areas are researched. One, an influential strategy typology, namely, Porter's typology is described, and the reasons for choosing it as the reference typology for modification and integration are explained. Two, the integrative typology is systematically conceptualised through three developmental steps based on the qualitative assessment results of Hofer's (1989) criterion for analysing classificatory effectiveness. Three, the integrative typology, once developed, is tested via a correlational analysis.

Porter Typology

Influential and Reference Typology

No single typology or classification system may be considered to be universally representative of all strategy models. In reality, most strategy models tend to be the results of apparently independent and disconnected research efforts. Yet, while various strategy typologies have been widely used for empirical classification (e.g. Miles and Snow's typology or Abell's typology), few have been as well-established as Porter's (1980) strategy typology – which is perhaps the most influential classification schemes⁴ in the strategy discipline. Based primarily on industrial organisation (IO) literature, Porter (1980) developed his strategy model based on the principles of experience curves and economies of scale to identify a four-class typology with three generic strategies: low cost, differentiation and focus. Porter's (1980) typology has been evaluated in terms of theoretical issues such as simplicity, accuracy, and generalisability, through an empirical analysis of profit impact of marketing strategies (PIMS) data (Miller and Dess, 1993; Wright, 1987). The results led to the following conclusions that supported the choice of Porter's model as a reference typology: (1) simplicity of Porter's model captures much of the complexity inherent in strategy gestalts; (2) Porter's typology could be improved by viewing it as containing three important dimensions of strategic positioning rather than three or four distinct strategies; (3) strategies described by Porter's typology are more contingent than generic in its configuration, but new strategic dimensions could be integrated to improve its overall classificatory effectiveness. While Porter (1980) has defined generic strategies with common organisational attributes that fit empirical testing, in particular, the controversy of mutual exclusivity between generic strategies⁵ remains unresolved, with researchers criticising his model for its conceptual limitations (Morrison and Roth, 1992; Segev, 1989). Nevertheless, many researchers supported the overriding proposition that Porter's (1980) generic strategies are largely relevant across most industries and often reveal useful relationships between strategic

management and business performance (Moore, 1992; Mintzberg, 1988; Wright, 1987).

An Integrative Strategy Typology

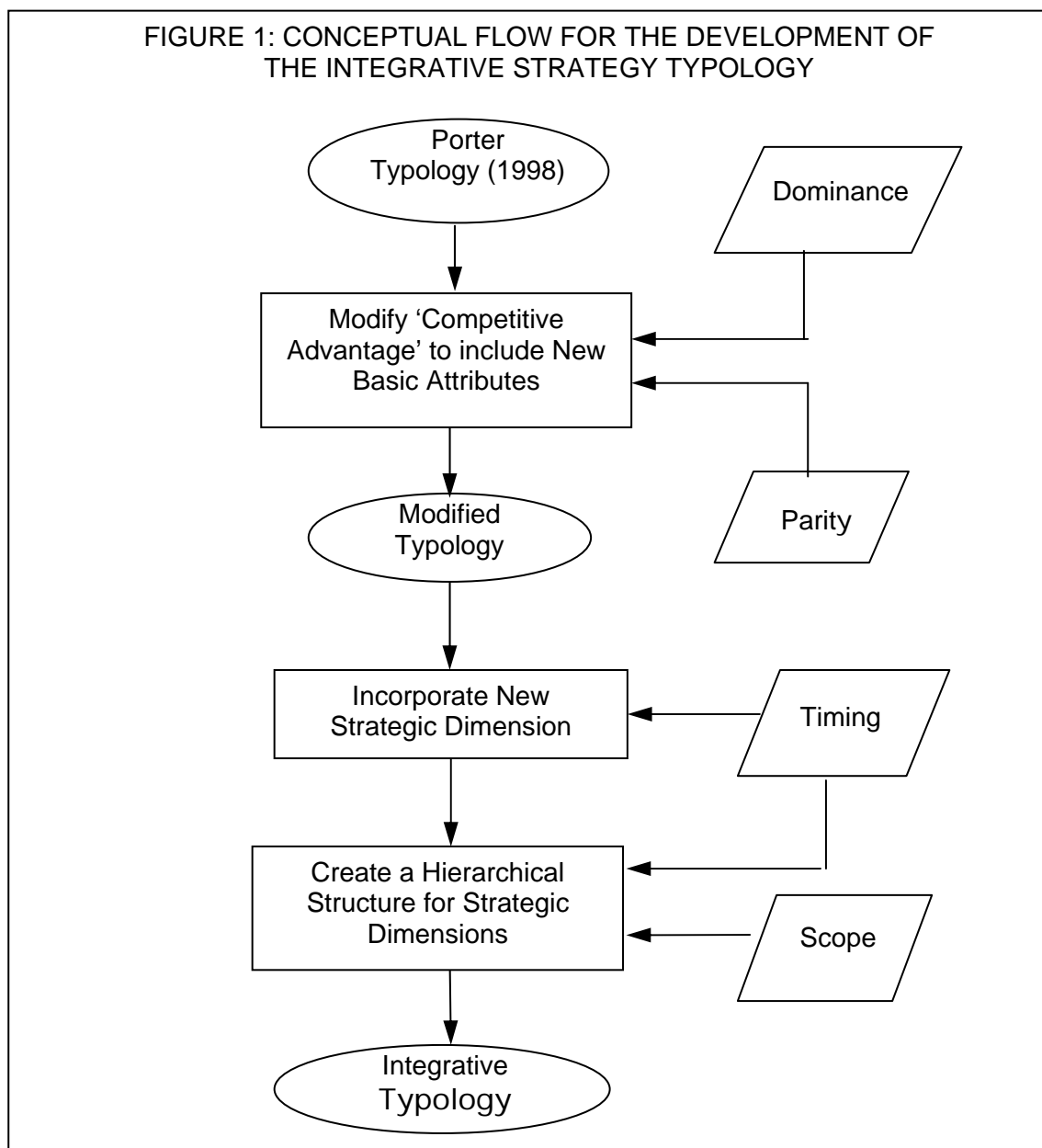
(a) Conceptual Flow

With the motivation behind this research, the development of an integrative typology is centred around how its dimensions are defined, selected and configured. The conceptual flow starts from Porter's (1998) classification scheme as the reference typology, and the number of strategic dimensions is reduced to only those that are of significance to both theory and practice in strategic management. Clearly, if one intends to exhaustively include all unique strategies in a typology, it would be impractical since an enormous amount of information would be contained in the configuration (Morrison and Roth, 1992; Doty and Glick, 1994). Thus, a rationalisation of strategic dimensions and the relative importance associated with them should be undertaken. Given that researchers have argued in favour of typological approaches to strategy classification and together with the requirement of the conditions for effective strategy modelling, the call for developing an integrative typology offers research opportunities (Mintzberg, 1988; Eisenhardt, 1989). To systematically conceptualise an integrative typology, three developmental steps are followed as articulated below: (1) Qualitative assessment of Porter's (1998) typology by Hofer's (1989) criterion; (2) Modification of Porter's (1998) typology; and (3) Integration of the modified typology. First, the dimensions (or attributes) that constitute Porter's (1998) typology of three generic strategies are analysed using Hofer's (1989) criterion to assess the classificatory effectiveness of Porter's (1998) model. Second, based on the results of the qualitative assessment, modifications are presented to enhance the classification system. The 'modified' typology is then developed accordingly to improve on the original Porter's (1998) typology. Third, the integrative typology is developed by the inclusion of new strategic dimensions to improve its overall robustness. Throughout the three developmental steps, Hofer's (1989) criterion is used as a qualitative assessment tool to test the classificatory effectiveness of Porter's (1998), modified, and integrative typologies. Figure 1 summarises the conceptual flow for the development of the integrative strategy typology.

(b) Modification and Integration for Porter's (1980) Typology

As one of the most preferred classification systems in the strategy discipline, both for academic research and management practice, Porter's (1980) typology is highly regarded for its profound research value. Due to its strong explanatory power, Porter's typology has remained unaltered as set out in most contemporary literature (Thompson and Strickland, 1995; Bourgeois, 1996). But in strategy research, it has for instance been employed for studying strategy-performance relationships in various aspects of management such as in manufacturing (Kotha and Orne, 1989) and logistics (McGinnis and Kohn, 1988). Undeniably, Porter's (1998) model on the concept of generic strategy are amongst the best known and better-developed, with perhaps one of the most substantial contributions made to strategic management (Hunt, 2000; Jones, 1998). However, there exists an unresolved controversy in Porter's (1980) typology that mandates cost leadership and differentiation as mutually exclusive dimensions (Hill, 1988; Jones and Butler, 1988). Research studies into generic strategies conducted by Cameron (1986) and Quinn and Cameron (1988) indicated a completely contrary view that both 'cost leadership' and 'differentiation' are attainable simultaneously as a 'composite strategy'. For example,

Japanese firms are highly competitive in terms of producing better quality (or differentiated) and relatively low cost products (Meyer and Roberts, 1986). This controversy needs to be addressed. To develop an integrative typology with better classificatory effectiveness, three perspectives are taken into consideration. One, modified configurations which include renaming and redefining strategic dimensions may out-perform original typology in conceptual clarity and descriptive capacity (Bailey, 1994; Doty and Glick, 1994). For instance, refinements and dis-aggregated classifications are employed to examine different forms of differentiation (Mintzberg, 1988), price sensitivity (Wright, 1987) and information asymmetry (Nayyar and Templeton, 1991). Two, integration (e.g. synthesised combination of existing typologies) of a reference typology by the inclusion of new strategic dimensions can compensate inherent weaknesses in classificatory effectiveness (Sandburg, 1986). Three, issues relating to internal homogeneity, mutual exclusivity and collective exhaustiveness for effective classification systems must also be dealt with.



(c) Hofer's (1989) Criterion

Given that a 'perfect' strategy typology does not exist, one needs to ascertain whether strategy classification in a typology is effective or not (Rich, 1992; Hambrick, 1984). To do this, Hofer's (1989) criterion offers a relatively comprehensive methodology to evaluate the effectiveness of a strategy classification system. While the criterion is basically qualitative in nature, it provides a twelve-point criterion to assess distinct components and to identify the "weaknesses" of specific characteristics associated with a strategy typology at three levels of abstraction. One may use the Hofer's (1989) criterion to improve the classificatory effectiveness of a typology, through discrete steps, by modifying or integrating the typology or both. Using the results from analysing the degree to which a classification system has satisfied Hofer's (1989) criterion, one can propose modification: redefining strategy classes, removing irrelevant strategy classes and changing the structure of the typology; or integration: adding new strategy classes or in combination to strengthen its classificatory effectiveness. The twelve components of Hofer's (1989) criterion for assessing a strategy typology are specified at three levels of abstraction, namely: (1) dimension, (2) class, and (3) system as shown in Figure 2. For each level, four qualitative measures are used as criteria to assess whether any characteristic of the typology needs improvements. However, one has to recognise that an "improved typology" as a result of modification or integration does not guaranteed a "perfect" classification system, but only a "more effective" one.

FIGURE 2: HOFER'S (1989) CRITERION FOR EFFECTIVE CLASSIFICATION

Components of Strategy Classification Systems	
I	The strategic dimensions (attributes) on which the system is built;
II	The set of strategy classes (categories or taxa) created from the basic strategic dimensions or attributes;
III	The system itself as a totality or integrated whole.
I. Criteria for selecting the strategic dimensions	
1	The dimensions should describe and measure basic properties of the phenomena being classified
2	The dimensions should be stable over time
3	The dimensions should be situationally generic (that is, be widely applicable)
4	The dimensions should facilitate ease of identification and classification
II. Criteria for the set of strategy classes	
5	The classes should be mutually exclusive (that is, each observation should be classifiable into only one category)
6	The classes should be internally homogeneous (that is, no category should contain observations that are fundamentally different on important dimensions)
7	The classes should be collectively exhaustive (that is, every observation should be classifiable into some category)
8	The classes should use relevant names (to facilitate ease of classification and use)
III. Criteria for the classification system as an integrated whole	
9	The system should be parsimonious (that is, it should contain as few variables as possible to enhance its simplicity and its power of prediction)
10	The system should be hierarchical or allow for a hierarchical structure (that is,

	allow observations to be classified into classes at one conceptual level and for those classes to be grouped into classes at the next higher conceptual level and so on)
11	The system should produce reasonable differentiation (that is, 99% of all observations should not fall into a single category)
12	The system should be timeless (that is, there should not be a need to add or subtract categories over time).

(d) Qualitative Assessment of Porter's (1998) Typology

Generic Strategies

Although various labels of generic strategy have been conceived and may vary in terms of interpretation, most strategy experts or specialists acknowledge them as critical to understanding strategic management. For close to two decades, generic strategies were concentrated along two dimensions, namely: (a) cost leadership, and (b) differentiation as depicted in Figure 3 (Hofer and Schendel, 1978; Hall, 1980; Porter, 1985).

FIGURE 3: GENERIC STRATEGIES

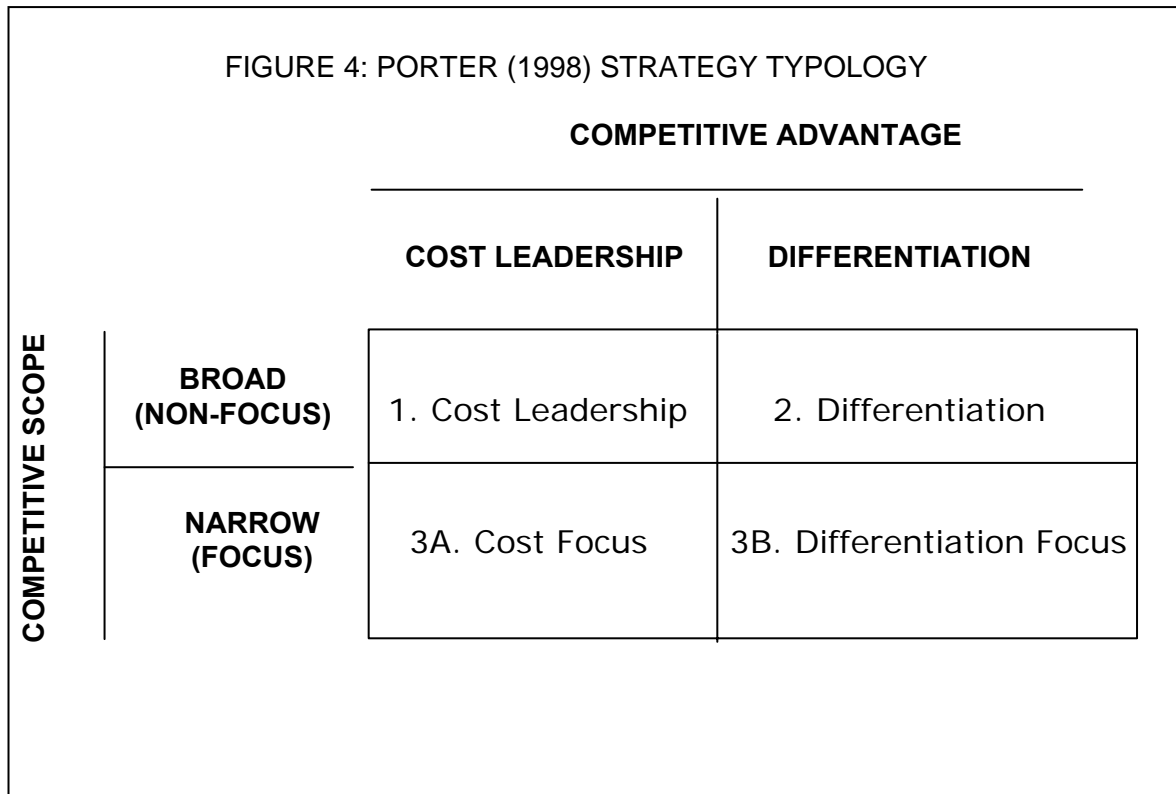
Contributor(s)	Strategy Alternatives	
Hofer and Schendel (1978)	Efficiency	Effectiveness
Hall (1980)	Low delivered cost	High Differentiation
Porter (1980, 1985)	Cost leadership	Differentiation

Porter (1998) introduces a third dimension termed (c) focus, resulting in a typology with three generic strategies. They are defined as follows: (1) A 'cost leadership' strategy establishes lower cost structure(s) relative to competitors which are usually achieved by means of economies of scale, experiential curve effects and other cost optimisation techniques. (2) A 'differentiation' strategy employs unique attributes to command a premium from customers for what may be perceived as distinctly better or more superior compared with competitors. (3) A 'focus' strategy concentrates on targeting at a specific customer group relative to competitors, which may be in terms of geographical location, socio-economic class, demography or certain preferred traits within a larger customer base. While Porter's (1998) typology presents a set of three generic strategies: cost leadership, differentiation and focus, the generic strategy 'focus' further divides the typology to 'cost focus' and 'differentiation focus', resulting in a strategy typology that contains four strategy classes as shown in Figure 4. To be consistent with strategic management parlance, 'focus' and 'non-focus' mean a 'narrow' and 'broad' competitive scope respectively (Thompson and Strickland, 1995). Nevertheless, Porter's (1998) three generic strategies, though distinctly different, are limited in terms of classificatory effectiveness. The assessment results of Hofer's (1989) criterion to the three generic strategies of Porter's (1998) typology are discussed below.

Mutual Exclusivity

In Porter's model, the three generic strategies are not mutually exclusive but are merely different (Wright, 1987; Jones and Butler, 1988). In other words, a unique strategy (e.g. a differentiated cost leadership strategy) may be classified in more than a single strategy class. Porter (1998) argued that 'competitive advantage' is a deliberate strategic choice of either pursuing 'cost leadership' or 'differentiation' but not both simultaneously. He contended that both these generic strategies are 'inconsistent' because differentiation is costly: a low cost position is likely to lead to a

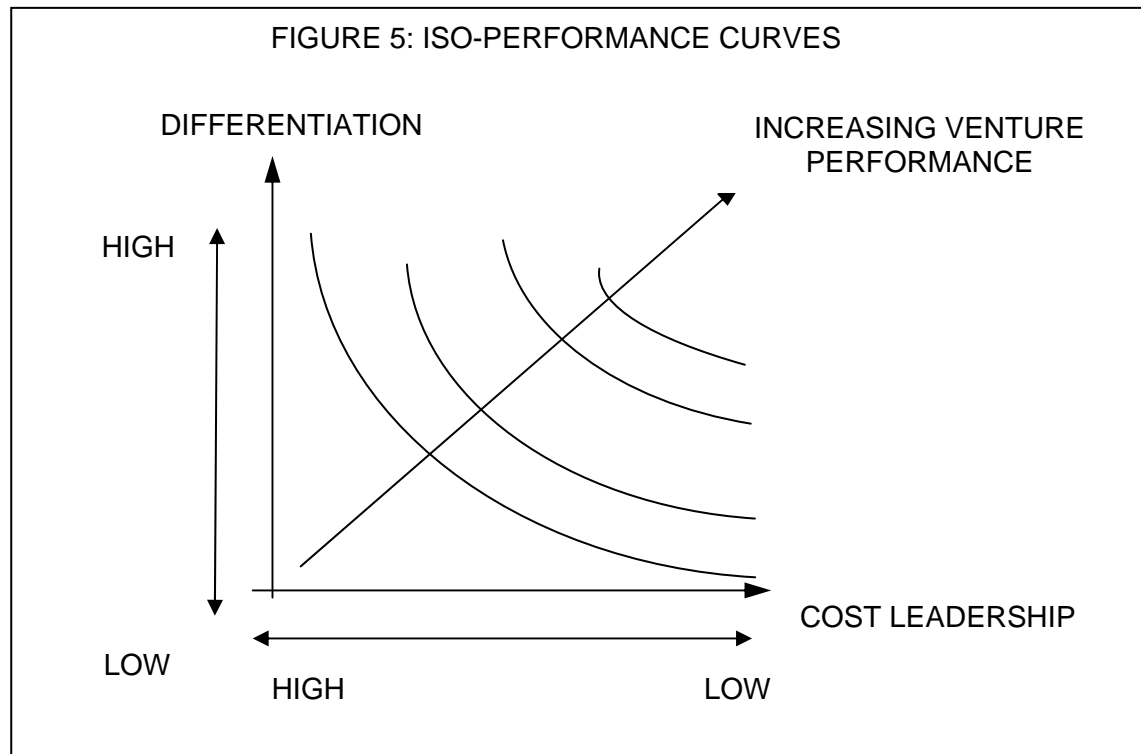
lowly differentiated position; and conversely, a highly differentiated position is likely to lead to a high cost position.



(Source: Porter, 1998)

Porter further argued that for both generic strategies to be pursued at the same time, there is a danger that neither will be achieved at all. Effective implementation of any generic strategy requires total commitment and full organisational support in terms of resources; and 'strategic effectiveness' may be diluted if both generic strategies are pursued simultaneously. Yet, there exists a positive relationship between 'differentiation' and 'cost leadership' in most situations as supported by Phillips, Chang and Buzzell (1993) based on empirical research using the Profit Impact of Market Strategy (PIMS) database. In addition, Karnani (1994) provides empirical support that an interaction effect, governed by a multiplicative relationship, exists between the two generic strategies. This positive relationship between cost leadership and differentiation can be represented by iso-performance curves as depicted in Figure 5.

Theoretical arguments abound that it is actually feasible in practice to combine both 'differentiation' and 'cost leadership' simultaneously as a strategy (Hill, 1988; Murray, 1988). Contingency theorists maintained that, at the very least, such a positive relationship between the two generic strategies may not be necessarily compatible in some situations. Although 'differentiation' requires incurring higher costs, if successful, the incremental costs can be much lesser than the incremental contribution attributable to the 'higher premium' due to the 'differentiation' (Digman, 1990). It is for this reason that a combined 'cost leadership' and 'differentiation' strategy may be attainable and thus should be permissible in a classification scheme, but because Porter's (1998) typology is not mutually exclusive, such a "composite strategy" appears in two distinct strategy classes.



Internal Homogeneity

Porter's (1998) typology lacks internal homogeneity because "identical strategy classes" may be fundamentally different. For example, if one attains a competitive advantage of 'cost leadership' and uses it simultaneously to improve on other characteristics to compete with rival firms, it is in fact using a 'differentiation' strategy as well. On the other hand, if one achieves 'cost leadership' and uses it to improve on profits alone, by offering neither a lower price nor better benefits in terms of 'differentiation' over its competitors, then it is merely competing on 'cost' alone. While Porter's (1998) typology concentrates on the notion of 'cost' and not 'price', it is silent on how one intends to approach its price-related strategic issues. Although this research does not delve with this issue, Porter's (1998) typology does not adequately address whether a strategy is based on a smaller profit margin by lowering prices for customers or whether a 'differentiation' strategy is simultaneously pursued. Hence a 'cost leadership' strategy in Porter's (1998) typology may contain a 'differentiation' strategy simultaneously unless its 'price' strategy is pre-determined. With these arguments taken together, these two generic strategies lack internal homogeneity.

Collective Exhaustiveness

The strategy classes of Porter's (1998) typology are not collectively exhaustive. While Porter (1998) has conceptualised the conditions under which a 'stuck in the middle' strategy exists, it still does not improve the 'collective exhaustiveness' of all strategy classes. The notion of 'stuck in the middle', as coined by Porter (1985), does not fully address whether the dimension of 'competitive scope' can combine a 'narrow' or 'broad' generic strategy, but only distinguishes itself as a generic strategy with neither 'cost leadership' nor 'differentiation'. Porter (1998) resolves this issue by stating that the conditions under which one may pursue a combined 'cost leadership' and 'differentiation' strategy simultaneously are:

1. When all competitors are 'stuck in the middle' (that is, have no competitive advantage); and

2. when cost is strongly affected by strong interrelationships between differentiation factors and costs.

Despite the fact that the conditions for a strategy class with no competitive advantage termed as 'stuck in the middle' are explicitly stated, Porter's (1998) typology disallows its explicit categorisation in the configuration. This does not satisfy the requirement of collective exhaustiveness, based on Hofer's (1989) criterion, since not every generic strategy is classifiable as a unique strategy class in Porter's typology.

Hierarchical Structure

Porter's (1998) typology does not have a hierarchical structure. While the structure of the configuration is not an issue, it does not preclude the typology from being modified to contain more than a single level of hierarchy.

(e) Modified Typology

Modifications

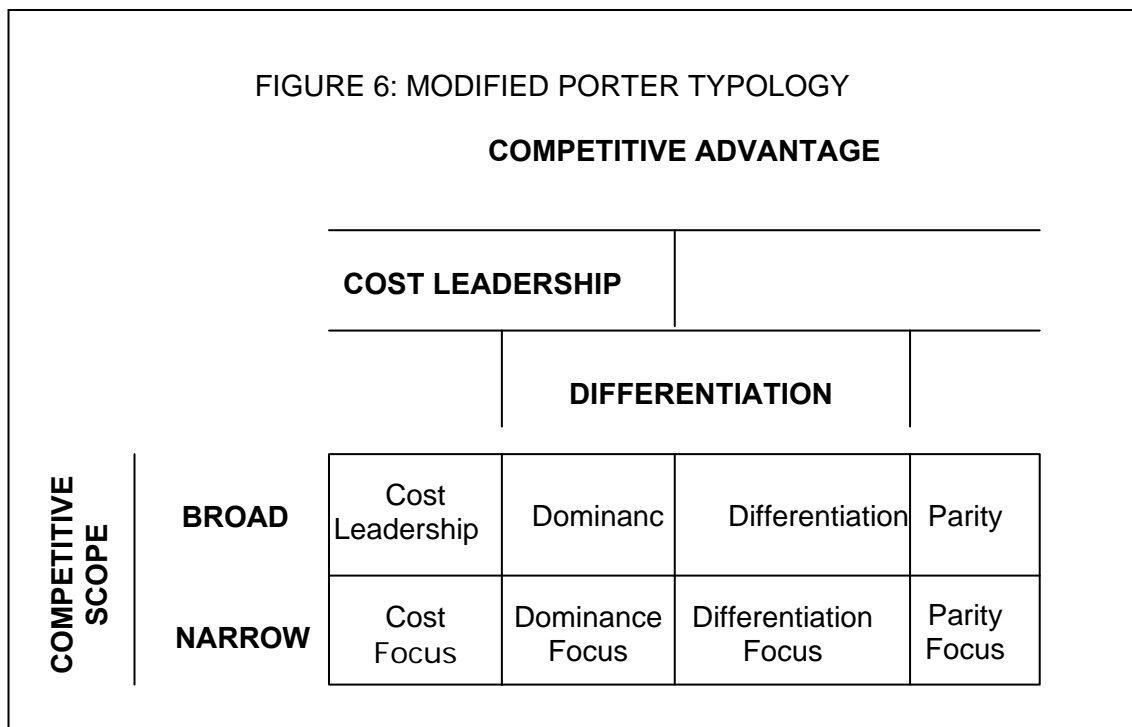
According to the assessment results of Hofer's (1989) criterion, Porter's (1998) typology lacks the following: (a) mutual exclusivity, (b) internal homogeneity, (c) collective exhaustiveness, and (d) hierarchical structure. For Porter's (1998) typology to be better in classificatory effectiveness, its configuration requires modifications; and in particular, Hofer's (1989) criteria of effective classification must be considered. The inherent weaknesses of Porter's (1980) typology and strategy classes should also be addressed accordingly.

Renaming of Generic Strategies

In order that taxa or classes of Porter's (1998) typology can satisfy conditions of being mutually exclusive, internally homogeneous and collectively exhaustive, it is proposed that two additional generic strategies, namely: 'dominance' and 'parity' be include in the modified typology. Apart from satisfying the three conditions highlighted by Hofer's (1989) criterion, it also improves the classificatory effectiveness. 'Dominance' means a combined 'differentiation' and 'cost leadership' strategy to dominate competitors (Grant, 1996; Dess, Lumpkin and Covin, 1997). In the modified typology, the concept of 'stuck in the middle' does not connote a strategy that is significantly inferior on both 'cost leadership' and 'differentiation' (anyway, this is an unlikely strategy in practice), but simply means that it is no better than competitors on both generic strategies.

Eight Strategy Classes

By contrast, the term 'parity' describes a 'composite strategy' in which a firm operates at par with competitors on both generic strategies that may actually be preferred, valued and sought after by some customers (Porter, 1985; Hamel, 1996). This means that 'parity' may not be necessarily inferior when compared with other generic strategies, but merely a "deliberately different" generic strategy. Hence, in the modified typology, it consists of four generic strategies, namely: 'cost leadership', 'differentiation', 'dominance' and 'parity'. The two latter generic strategies represent composite strategies. 'Dominance' combines 'differentiation' and 'cost leadership' to dominate competitors by offering lower prices and a relatively high level of differentiation, while 'parity' deliberately operates 'at best on par' on 'differentiation' and 'cost leadership' when compared in relation to competitors. The outcome of the modifications result in a typology with eight strategy classes as depicted in Figure 6.



(f) Integrative Typology

While the modified Porter typology contains eight strategy classes, it describes three basic strategic dimensions, namely: ‘competitive scope’, ‘cost leadership’ and ‘differentiation’. The first strategic dimension describes the competitive positioning in terms of endeavours to meet market needs that a firm chooses to target specifically. The second and third strategic dimensions distinguish how a firm intends to compete, in terms of relative posture of opportunities, with rival firms. Because these three dimensions are consistently cited in prevailing knowledge streams of strategic management, they still remain largely relevant today (Thompson and Strickland, 1995; Digman, 1990; Andrews, 1987; Ansoff, 1984).

Inclusion of New Strategic Dimension: Timing

However, the notion of strategic entry, as a temporal dimension, is absent in the modified typology. The dynamic nature of strategy dictates that any consideration of resource decisions should be associated with strategic entry or occurrence in time. Commonly known as ‘first mover’ strategy, a ‘timing⁶’ dimension has evolved in the strategy discipline because entry barriers are lowered as transaction costs decrease or when new and more advanced capabilities emerge over time. Thus, an entry order should be included as a strategic dimension to describe how a firm may derive distinct value from it. Besides, in emerging or incumbent industries that require new innovations for self-renewal, the inherent value of any competitive advantage may be reduced very quickly. If a firm’s intends to maintain its competitive advantage over rivals, it is necessarily to take into account its entry order. This can be represented as a strategic dimension termed ‘timing’ classifiable either as ‘pioneer’ or ‘follower’ (Eisenhardt and Tabrizi, 1995; Kessler and Chakrabarti, 1996).

Inclusion of New Generic Strategies: Pioneer and Follower

For ‘pioneers’, there are ‘first mover’ advantages (achieve technological leadership and create switching costs, for example) to be gained through competition by entry

order. However, 'pioneers' entering any market that are characterised by rapid technological changes may run the risk of committing heavy investments to gain 'first mover' advantages, which can be later superseded by new competitive advantage. On the other hand, 'followers' have the opportunity to 'wait and see' how competition with rival firms evolves over time; and what 'rules of game' in industry or the marketplace ultimately become the new standards in competition. Despite 'first mover' advantages gained by a pioneer, the ability of 'followers' to appropriate the pioneer's investment and technical uncertainty are among the disadvantages that a pioneer encounters (Mitchell, 1988; Meyer and Roberts, 1986). To represent the options between first mover and late entrant in terms of 'timing', the two generic strategies: 'pioneer' and 'follower' are thus included.

Four Strategic Dimensions

In summary, the integrative typology has four strategic dimensions: cost leadership, differentiation, competitive scope and timing, and the configuration has a hierarchical structure, forming a sixteen-class strategy typology as illustrated in Figure 7. The four strategic dimensions are summarised as follows:

1. Cost leadership – based on cost advantages over competitors;
2. Differentiation – based on distinguishing oneself from competitors;
3. Competitive scope – based on whether a firm selects a segment or a group of segments to serve;
4. Timing – based on a leading or trailing position in entry order.

Sixteen Strategy Classes

While the classification system has a total of sixteen strategy classes, the integrative typology has only eight generic strategies: cost leadership, differentiation, parity, dominance, broad, narrow, pioneer and follower. In terms of classificatory effectiveness, the integrative typology is assessed to be more effective in measuring the basic properties of strategy compared to the modified typology or the original Porter's (1998) typology. Overall, all the strategy classes of the integrative typology are now mutually exclusive, internally homogeneous and much better in terms of collective exhaustiveness. The assessment results of the original, modified and integrative typologies discussed earlier based on the Hofer's (1989) criterion for an effective classification system are summarised in Figure 8.

FIGURE 7: AN INTEGRATIVE TYPOLOGY

COMPETITIVE SCOPE		Broad		Narrow		Generic Strategy
TIMING		Pioneer	Follower		Pioneer	
COST LEADERSHIP	DIFFERENTIATION	Broad Cost Pioneer	Broad Cost Follower	Narrow Cost Follower	Narrow Cost Pioneer	Cost Leadership
		Broad Dominance Pioneer	Broad Dominance Follower	Narrow Dominance Follower	Narrow Dominance Pioneer	Dominance
		Broad Differentiated Pioneer	Broad Differentiated Follower	Narrow Differentiated Follower	Narrow Differentiated Pioneer	Differentiation
		Broad Parity Pioneer	Broad Parity Follower	Narrow Parity Follower	Narrow Parity Pioneer	Parity
STRATEGIC DIMENSION (S _i)		Strategy Class (S _[j])				

Typology S_[j] of p Strategic Dimensions

In general, if a strategy typology or classification system contains a discrete set of p strategic dimensions, any strategy class (or denoted by S_[j]) is classifiable as an element of the finite set of 2^p strategy classes or {S₁, S₂, ..., S_i, ..., S_p}, where S_i takes a value of either 0 or 1 or S_i ∈ [0, 1] and i and j can be any integral value ranging from 1 to p and 1 to 2^p respectively or i ∈ [1, p]; j ∈ [1, 2^p]. Since any strategy class, S_[j], of a typology with p strategic dimensions can be mathematically denoted, its symbolic notation is as follows:

$$S_{[j]} = \{S_1, S_2, \dots, S_i, \dots, S_p\}, \text{ where } S_i \in [0, 1]; \text{ and } i \in [1, p]; j \in [1, 2^p].$$

In the case of the 4x4 integrative typology, which is a configuration model of 4 strategic dimensions (S_i) and 8 generic strategies as illustrated in Figure 7, any unique strategy class is represented by one of the 16 (or 2⁴) classes and is denoted symbolically by S_[j] or classifiable as {S₁, S₂, S₃, S₄}, where S_i ∈ [0, 1] and i ∈ [1, 4]; j ∈ [1, 16].

FIGURE 8: ASSESSMENT RESULTS USING HOFER'S (1989) CRITERION

	TYOLOGY	PORTER (1998)	MODIFIED PORTER	INTEGRATIVETY POLOGY
1	Measures basic properties of the phenomena	Yes	Better	Much Better
2	Stable over time	Yes	Yes	Yes
3	Situationally generic	Yes	Yes	Yes
4	Facilitates identification and classification	Moderate	Better	Much Better
5	Mutually exclusive	No	Yes	Yes
6	Internally homogeneous	No	Yes	Yes
7	Collectively exhaustive	No	Moderate	Better
8	Relevant names	No	Yes	Yes
9	Parsimonious	Yes	Yes	Yes
10	Hierarchical	No	No	Yes
11	Produces reasonable differentiation	Moderate	Moderate	Yes
12	Timeless	Yes	Yes	Yes

Model Testing

One important aspect of this research study centres on model testing, which requires a methodology to conduct data measurement, develop testable hypotheses and apply statistical test(s) to draw conclusions about the validity of the strategy model. Hypothetically, the integrative typology is conjectured to be an effective classification system of sixteen strategy classes that impact on business performance. To validate the integrative typology, model testing is based on a measure of association between two variables (that is, strategy class and business performance) by means of pairwise comparison, calculated on the basis of the differences in rank between two ordered series. The Spearman rank-order correlation test is chosen, as it is one of the most powerful non-parametric tests (Siegel and Castella, 1988).

Strategy Class

Each strategy class in the 4x4 configuration represents a unique business strategy. To extract quantifiable data from respondents, two kinds of survey questions relating to a firm's business strategy are posed on: (a) strategy formulation; and (b) strategy implementation. Proxied by respondents' opinions to a mail survey, firms are required to reply to a series of structured questions about business strategies. From the answers, binary values (YES or NO) are assigned to each strategic dimension, namely: cost leadership (COST), differentiation (DIFF), competitive scope (SCOPE), and timing (TIMING). Since strategic dimensions constitute nominal data, the assigned binary values (either 0 for NO or 1 for YES) allow each business strategy to be classified as a strategy class in the typology. Classification of strategy classes (S1 to S16) depends on the four binary values assigned to strategic dimensions as tabulated in Figure 9.

FIGURE 9: SIXTEEN STRATEGY CLASSES

	SCOPE	TIMING	COST	DIFF	STRATEGY CLASS
S1	NO	NO	NO	NO	Narrow Parity Follower
S2	NO	NO	NO	YES	Narrow Differentiated Follower
S3	NO	NO	YES	NO	Narrow Low-Cost Follower
S4	NO	NO	YES	YES	Narrow Dominance Follower
S5	NO	YES	NO	NO	Narrow Parity Pioneer
S6	NO	YES	NO	YES	Narrow Differentiated Pioneer
S7	NO	YES	YES	NO	Narrow Low-Cost Pioneer
S8	NO	YES	YES	YES	Narrow Dominance Pioneer
S9	YES	NO	NO	NO	Broad Parity Follower
S10	YES	NO	NO	YES	Broad Differentiated Follower
S11	YES	NO	YES	NO	Broad Low-Cost Follower
S12	YES	NO	YES	YES	Broad Dominance Follower
S13	YES	YES	NO	NO	Broad Parity Pioneer
S14	YES	YES	NO	YES	Broad Differentiated Pioneer
S15	YES	YES	YES	NO	Broad Low-Cost Pioneer
S16	YES	YES	YES	YES	Broad Dominance Pioneer

Business Performance

The main objective of strategy is to influence business performance. However, what constitutes a suitable construct for business performance has been a subject of intense debate (Venkatraman and Ramanujam, 1986). Given the consensus towards a multi-variate measure, financial indicators (e.g. return on investment and sales profits) are usually employed to measure business performance (Venkatraman and Ramanujam, 1986; Hart, 1992; Bruns and McKinnon, 1994). To incorporate variables that reflect a firm's long-term goals, a broader conceptualisation is thus proposed in this study to include other indicators of organisational outcomes (Ramanujam and Venkatraman, 1987; Cooper and Gascon, 1992). While business performance measures are traditionally confined to profitability-related factors, both objective and subjective measures are used. Business performance variables are thus quantified by: (1) objective self-reported financial variable(s); and (2) subjective self-evaluated satisfaction level concerning non-financial variable(s). Selected through a purification process based on validity appearance in strategy literature, the variables are: (a) sales profitability (SALPROF); (b) company growth (COGRWTH); and (c) organisational effectiveness (ORGEFFN). Responses to survey questions on business performance are measured by both objective and subjective self-evaluated data, and reported on a 7-point Likert-type scale.

Spearman Rank-Order Correlation Test

For model testing using Spearman rank-order correlation, the null hypothesis states that if the differences between the two ordered series are small, the correlation is positive or close to one; and if the differences between the two ordered series are large, the correlation will be small or close to zero. If the correlation coefficient r_s is equal to or greater than the critical correlation coefficient for a particular level of significance (α), then the null hypothesis is accepted; otherwise, it is rejected. A high correlation is interpreted as reflecting that the strategy is activating business

performance and is indeed valid; and conversely, a low correlation implies that a given strategy, even if implemented, inhibits business performance.

FIGURE 10: SPEARMAN RANK ORDER CORRELATION TABLE

Level	Rank		$d_i = X_i - Y_i$
	X_i	Y_i	
1	X_1	Y_1	D_1
2	X_2	Y_2	D_2
3	X_3	Y_3	D_3
.	.	.	
.	.	.	
N	X_N	Y_N	d_N
			Σd_i^2

Spearman Rank Order Correlation Coefficient	$r_s = 1 - \frac{6 \Sigma d_i^2}{N^3 - N}$
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However, if there are tied observations in the ranks, then r_s is expressed as:

$r_s = \frac{(N^3 - N) - 6\Sigma d^2 - (T_x + T_y)/2}{\sqrt{(N^3 - N)^2 - (T_x + T_y)(N^3 - N) + T_x T_y}}$ <p>where $T_x = \Sigma t_i^3 - t_i$ and $T_y = \Sigma t_i^3 - t_i$ and t_i is the number of tied ranks in the i^{th} grouping</p>
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Research Methodology

To avoid being beleaguered by data problems that may produce less reliable results, trade-offs were made to strike a balance amongst factors relating to speed, cost and control. A four-stage research design is used, which suits the approach of validation via tests of empirical correlation. The first stage involves a randomised selection of firms as a representation of the population; and the second stage constitutes data collection from selected firms. The third stage consists of hypothesis development, while the four stage reports the test results. A longitudinal study was not undertaken since it would involve data gathering from a few respondents and waiting for sufficient data to be accumulated over an extended period of time, which may take many months and even years to complete. Instead, a cross-sectional study is specially devised to: (a) strengthen the reliability of empirical data; (b) improve the homogeneity of sample firms; (c) enhance the availability of data measures; and (d) enable respondents who are likely to possess the most relevant knowledge to

provide answers to the survey. With all firms resident in Singapore as the population and sampling techniques, the research methodology includes the following: (a) Random Sampling, (b) Data Collection, (c) Hypothesis Development, and (d) Reporting of Test Results.

(a) Random Sampling

Ideally, representative data should be sampled exclusively from those firms with actual experience of business strategy: formulation and implementation. However, firm selection efforts were hindered by the difficulties associated with selecting such firms, and therefore, random sampling was used as it allows the survey to be conducted at a single point of time so that respondents' opinions are comparable. All sample firms are located in Singapore and hence the contextual elements are principally similar since all are subject to the same legal, political, social, cultural, economic and demographic environment within a single national economy. For the sample data to be non-biased, stratified random sampling is implemented. First, the population firms were compiled from business directories, electronic company guides, industry contacts and networking referrals. They are then short-listed and separated into non-overlapping sampling frames of equal size. Second, units are then randomly selected from these sampling frames; and randomisation was implemented by the use of a random number generator. Such a method is considered adequate because the chances of being selected are equal for each sampling unit; and it also ensures that the differences in sampling probabilities from beginning to the end of sampling process are negligible.

(b) Data Collection

For data collection, a self-administered survey instrument is used to explicate *ex post facto* information. Extra attention was paid to balance the need for reliable empirical measures and the potential complications that may arise due to managers' sensitivities when releasing firms' information. A pre-test on 'dummy respondents' was conducted to check the survey's content validity. Inputs from these respondents were incorporated to further improve the quality of questions. Designed as a structured questionnaire, the survey instrument is cost-effective and provides better control and consistency across measurement situations since each respondent answer identical questions. A cover letter accompanying the questionnaire was addressed personally to the head of firms as they typically possess the most comprehensive knowledge about their firms and hence could furnish more reliable information. A self-addressed, postage-paid, return envelope was also provided to all respondents. The protocol for mail implementation involved three mailings, including thank-you notes and replacement surveys to a total of 300 firms. Of the 128 returned questionnaires, 104 were usable as the written answers provided the required data for statistical analysis, yielding an overall response rate of 34.7%.

(c) Hypothesis Development

Since ordinal data is used for non-parametric hypothesis testing, measures for both strategy class and business performance employ rank statistics to satisfy the mathematical requirements of ordinal scaling. Ordinal data scores are converted to ranks via frequency counts for each strategy class, and the ranks associated to each business performance variables are similarly determined. Based on the Spearman rank-order correlation test, it evaluates the extent of correlation between strategy class and business performance (SALPROF, COGRWTH, ORGEFFN) and the hypotheses are rejected or accepted on the basis of comparing empirical correlation

coefficients with critical Spearman correlation values. By assessing the degree of statistical significance based on the correlations between all combinations of strategic dimensions (SCOPE, TIMING, COST, DIFF) and business performance variables (SALPROF, COGRWTH, ORGEFFN), the empirical validity of the strategy model is then demonstrated. By convention, the results of hypothesis testing are reported at 5% level of statistical significance unless otherwise stated. Higher empirical correlation coefficients are also reported if more stringent levels of statistical significance are satisfied. The sixteen hypotheses (H1 to H16) are listed in Figure 11.

FIGURE 11: HYPOTHESES ON THE INTEGRATIVE TYPOLOGY

	HYPOTHESISED RELATIONSHIP
Hypothesis 1 (H1)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow parity follower" strategy (SCOPE=0, TIMING=0, COST=0, DIFF=0).
Hypothesis 2 (H2)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow differentiated follower" strategy (SCOPE=0, TIMING=0, COST=0, DIFF=1).
Hypothesis 3 (H3)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow low-cost follower" strategy (SCOPE=0, TIMING=0, COST=1, DIFF=0).
Hypothesis 4 (H4)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow dominance follower" strategy (SCOPE=0, TIMING=0, COST=1, DIFF=1).
Hypothesis 5 (H5)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow parity pioneer" strategy (SCOPE=0, TIMING=1, COST=0, DIFF=0).
Hypothesis 6 (H6)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow differentiated pioneer" strategy (SCOPE=0, TIMING=1, COST=0, DIFF=1).
Hypothesis 7 (H7)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow low-cost pioneer" strategy (SCOPE=0, TIMING=1, COST=1, DIFF=0).
Hypothesis 8 (H8)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "narrow dominance pioneer" strategy (SCOPE=0, TIMING=1, COST=1, DIFF=1).
Hypothesis 9 (H9)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad parity follower" strategy (SCOPE=1, TIMING=0, COST=0, DIFF=0).
Hypothesis 10 (H10)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad differentiated follower" strategy (SCOPE=1, TIMING=0, COST=0, DIFF=1).
Hypothesis 11 (H11)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad low-cost follower" strategy (SCOPE=1, TIMING=0, COST=1, DIFF=0).
Hypothesis 12 (H12)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad dominance follower" strategy (SCOPE=1, TIMING=0, COST=1, DIFF=1).
Hypothesis 13 (H13)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad parity pioneer" strategy (SCOPE=1, TIMING=1, COST=0, DIFF=0).
Hypothesis 14 (H14)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad differentiated pioneer" strategy (SCOPE=1, TIMING=1, COST=0, DIFF=1).
Hypothesis 15 (H15)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad low-cost pioneer" strategy (SCOPE=1, TIMING=1, COST=1, DIFF=0).
Hypothesis 16 (H16)	Business performance (SALPROF, COGRWTH, ORGEFFN) is positively correlated to a "broad dominance pioneer" strategy (SCOPE=1, TIMING=1, COST=1, DIFF=1).

(d) Reporting of Test Results

All the sixteen hypotheses under test are concerned with the configuration and strategy classes of the integrative typology in terms of classificatory effectiveness, which are proxied by the impact of business strategy on business performance. The correlational analysis thus establishes the statistical significance of the hypothesised relationships for H1 to H16 to manifest the validity of the integrative typology as an effective strategy model.

FIGURE 12: SPEARMAN RANK-ORDER CORRELATION COEFFICIENTS (r_s) BETWEEN STRATEGY CLASS AND BUSINESS PERFORMANCE

SPEARMAN RANK-ORDER CORRELATION COEFFICIENT (r_s)		VENTURE PERFORMANCE		
		SALPROF	COGRWTH	ORGEFFN
STRATEGY CLASS	Narrow Parity Follower	0.7768*	0.7500*	0.7143*
	Narrow Differentiated Follower	0.8125	0.7768*	0.7946
	Narrow Low-Cost Follower	0.7946	0.8125	0.8214
	Narrow Dominance Follower	0.8304	0.8839	0.8214
	Narrow Parity Pioneer	0.7768*	0.7946	0.7500*
	Narrow Differentiated Pioneer	0.7946	0.8125	0.8214
	Narrow Low-Cost Pioneer	0.8304	0.8125	0.8214
	Narrow Dominance Pioneer	0.8839	0.8929#	0.8304
	Broad Parity Follower	0.8304	0.8125	0.8214
	Broad Differentiated Follower	0.8304	0.8839	0.8929#
	Broad Low-Cost Follower	0.8839	0.8929#	0.9375#
	Broad Dominance Follower	0.9554#	0.9643#	0.9375#
	Broad Parity Pioneer	0.8839	0.8214	0.8304
	Broad Differentiated Pioneer	0.8929#	0.9375#	0.8839
	Broad Low-Cost Pioneer	0.8929#	0.9375#	0.9554#
	Broad Dominance Pioneer	0.9732#	0.9643#	0.9554#

Note:

All empirical Spearman rank-order correlation coefficients are statistically significant at both $\alpha=5.0\%$ and $\alpha=2.5\%$ except those marked * (they are statistically significant only at $\alpha=5.0\%$). Empirical correlation coefficients marked # are also statistically significant at $\alpha=1.0\%$.

The empirical Spearman rank-order correlation coefficients between the sixteen strategy classes and business performance are found to be statistically significant at $\alpha=5.0\%$, with values ranging from 0.7143 to 0.9732. In comparison with the Spearman critical correlation coefficient ($r_{s(critical)}=0.714$ at $\alpha=5.0\%$ for $N=7$), the test results revealed that all the strategy classes in the configuration impact on business performance, affirming the validity of the integrative typology.

In addition, the empirical Spearman rank-order correlation coefficients of all strategy classes except Narrow Parity Follower, Narrow Parity Pioneer and Narrow Differentiated Follower (all fell short by less than 10% of $r_{s(critical)}$) are also statistically significant at $\alpha=2.5\%$ ($r_{s(critical)}=0.786$ for $N=7$), lending further credence that thirteen out of sixteen (or more than 80%) strategy classes are highly influential in terms of impact on business performance.

Furthermore, it was noted that three strategy classes: Broad Dominance Pioneer, Broad Dominance Follower and Broad Low-Cost Pioneer have empirical Spearman

rank-order coefficients that are statistically significant even at $\alpha=1.0\%$ ($r_{s(critical)}=0.893$ for $N=7$), showing that these three strategy classes are the most influential on business performance. Of the three business performance variables, no noticeable trends are detected amongst the correlations with SALPROF, COGRWTH and ORGEFFN. Consistent with theoretical expectations, the findings revealed that all the strategy classes ($S[j]$ where $j \in [1, 2^4]$) of the integrative typology are positively correlated to business performance; and the extent of correlation was relatively high, thereby validating the classificatory effectiveness of the 4-strategic dimension, 16-strategy class, 4x4 typology as depicted in Figure 7.

Conclusion

Since the late seventies, much attention on the field of strategic management has been devoted to conceptualising strategy models or developing classification schemes. Despite their conceptual appeal, many of these models and schemes, through experience of managerial practice, were found to be either partly flawed or contain inherent weaknesses in terms of classificatory effectiveness. Theory development of strategy models thus becomes necessary due to the evidence arising from strategic management practice. Nevertheless, in any field of study including strategic management, theory should ideally be developed ahead of practical prescriptions. Yet, in strategy modelling, it has often worked the other way round as problems beget solutions, or put simply, managerial practice gives rise to better theory. It is under such a situation that this research study was conceived.

In this study, a deliberate attempt is made to take the step toward improving the classificatory effectiveness of strategy models. The systematic development is centred on the influential Porter's (1998) model as the reference typology to maintain its knowledge links to conventional strategy literature. The conceptual flow relies on Hofer's (1989) criterion as a qualitative assessment tool to improve the overall classificatory effectiveness. Three developmental steps are undertaken: (1) A qualitative assessment of Porter's (1998) typology based on Hofer's (1989) criterion to determine appropriate modifications or refinements required to improve the classification scheme. (2) Renaming of two generic strategies: 'dominance' and 'parity', and the resolution of inherent weaknesses associated with mutual exclusivity, internal homogeneity and collective exhaustiveness. (3) Inclusion of a new strategic dimension: 'timing' as either 'pioneer' or 'follower' in the configuration. Four strategic dimensions: cost leadership, differentiation, competitive scope and timing, constitute the basic attributes for classifying any strategy class in the integrative typology – which contains sixteen strategy classes with eight generic strategies compared to the reference typology of four strategy classes with three generic strategies.

Like all strategy research, it is extremely difficult to reach a unanimous consensus about what really constitutes a "perfect strategy model". Obviously, the ideal solution is complex and probably impossible to reach conclusively. That explains why so many academic researchers have dedicated enormous amounts of energy to developing strategy models with seemingly dissimilar theoretical bases, and hence attaining differing degree of success. This research study, by challenging the status quo of orthodoxy and standing apart from extant literature due to its focus on a systematic development of an integrative typology, provided fresh perspectives to the already diverse ways in which conventional strategy models have been conceived previously. Given that the knowledge gap between current theories about strategy modelling and the effectiveness of classification schemes is still wide, as is the case for this research, future works should channel new thinking along the lines of

integrating or unifying existing strategy models rather than developing new ones. When that is accomplished, strategy models will then become far more useful in strategic management practice than currently envisaged.

No research is exempt from limitations, and this study is subject to the same caveat of any research associated with strategy models whose discernment and hence conceptual development depends on the limits of human perception. As a result of this constraint, this study accorded greater emphasis on selecting constructs within the current strategy literature so that the potential of conceptual originality and theoretical mileage is better fulfilled and maximised. Nevertheless, if one considers the need to identify, understand and classify all prospective strategies made available by the staggering opportunities in today's business (the advent of the Internet, for example), the value of this study cannot be overstated. It has sowed the seeds for a new stream of "unified strategy models", but as to how long it can endure the test of time relies entirely on future theory development, which falls outside the scope of this study. Undoubtedly, it seems clear that an exclusive preoccupation with developing new divergent strategy models may result in a one-sided and hence potentially misleading appreciation of strategy classification. It is thus more compelling to undertake an explicit search for more unified classification systems until proven incorrect. Anyway, this research study may not stand the test of time in the not-too-distant future. In any case, the prophetic assertion of 'a good theory is one that holds together long enough to get a better theory' places the true value of this study in the right perspective. Last but not least, this article has opened up promising areas of strategy research along modelling themes (e.g. development of unified strategy models) and has also simultaneously heightened the need to revitalise strategy research on typologies and generic strategies to further advance the discipline.

Three areas of future research are recommended. Firstly, novel approaches of construct identification (e.g. isolating "strategy clusters" via expert opinions), data capture and analytical tools may be designed to contribute towards the goal of building more robust strategy models. Secondly, the study may be replicated in different contexts (e.g. in other countries or selected industry sectors) to broaden the range of generalisability of the strategy model. Thirdly, longitudinal analyses of hypotheses may also be conducted by a personal, face-to-face, open-ended, interview methodology, to further consolidate the interpretation of the integrative typology.

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Endnotes

¹ Strategic management is seen as a continuing process consisting of a sequence of activities: strategy formulation; implementation; review and updating.

² A conceptual model 'removes' an entity from its environment so that it can be examined or simulated under certain conditions without 'noises' of other influences. Hence a conceptual model needs only to be representative in 'key concepts' to investigate a particular phenomenon occurring in a system or process.

³ A typology is a theoretically devised classification system that contains packages of attributes to describe real-world occurrence. Besides representing broad categories of constructs, a typology provides a structure to configure a classification system for modelling the complexity of strategy content (Bailey, 1994). Typologies offer three advantages. One, a typology provides a holistic conceptual view of strategy content applicable across situations. Two, all strategy classes and generic strategies are classifiable within a typology according to some commonalities. Three, a typology captures the strategy classes for representing all theoretically 'logical combinations' of strategic dimensions or generic strategies.

⁴ It seems impossible to "comb" all the ever-burgeoning publications covering a whole spectrum of strategy models. The three basic tests applied are the following questions: (1) Is the work widely quoted by other strategy writers? (2) Does it offer potential of providing stimulating insights into the strategy discipline? (3) Does it enjoy sufficient attention as a strategy typology for theory building and managerial practice?

⁵ Aside from the individual risks attached to each generic strategy, there is what might be termed a generic strategy error: *stuck in the middle*. This occurs when a firm does not elect realistically for just one of the three generic strategies. For the poor stuck-in-the-middle firm, Porter promises the direct consequences, with almost inevitably low profitability.

⁶ While most forms of competition are seen as evolutionary, incremental and low-risk, "strategic competition" as induced by strategy, on the other hand, is revolutionary: that is, where there may well be radical change in a relatively short time or what terms as "time compression" (Henderson, 1984).