

Decomposition, Classification, and Evaluation of Business

Models – The Case of Chinese Retailing

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Decomposition, Classification, and Evaluation of Business Models – The Case of Chinese Retailing

Guopeng Xiang¹ and Ya Ping Yin²

Abstract:

This study attempts to provide a systematic approach to the decomposition, classification, and evaluation of business models. We propose an internally consistent hierarchical classification scheme for decomposing a generic business model as a viable composite structure into a complete set of value logic, salient functional modules, and their corresponding measurable higher-level manifestations. Such operational manifestations can then be coded, selected, and configured into different operational business models. This value-function-manifestation (VFM) scheme also serves as a basis for organising strategic decisions concerning organisational design and evaluation of differentiated business models. Finally, as an empirical application we apply this classification scheme to the Chinese listed retail firms and reveal significant differences in the financial performance and overall fitness of different types of retail business models.

Key words: business model; classification and evaluation; organisational design; overall fitness; retailing

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1. Introduction

Notwithstanding a brief period of doubt over its value following the bursting of the dot-com bubble at the turn of the new millennium, the concept of the business model is increasingly capturing the attention and imagination of business researchers and practitioners. It is commonly acknowledged that the advent of the information and communications technology (ICT) revolution coupled with the favourable socio-economic conditions for globalisation has particularly spurred the rapid adoption of the concept in the business world since the mid-1990s (e.g. Morris, et al. 2013). The new technological and economic developments have not only destabilised and redrawn the boundaries of traditional business organisational structures (i.e. firms and markets) but also challenged the conventional wisdoms regarding the sources of competitive advantages and superior corporate performance. In the academic circle, Drucker (1985) has long recognised that competition among enterprises is actually not competition among products but competition among business models. More recently Chesbrough (2010) also argues that the same idea or technology taken to market through two different business models will generate different market outcomes.

Analysts and practitioners are increasingly departing from the conventional focus on the firm as the primary unit of analysis to conduct microscopic examinations of the fundamental components or structures of a business/firm, such as its strategic assets, organisational structure, operational models, product differentiation and pricing strategies, and composite higher-level firm-specific capabilities, to derive and regenerate competitive advantages. What is so distinctive about the business model concept is its potential value in providing an integrated and systematic perspective of the key components and the system synergy. In the context of the unprecedented rise in the speed, scope, intensity, and uncertainty in competition and change in global businesses, the systematic unravelling of the intrinsic logic of business models offers great potentials for business regeneration and emergence of new patterns of specialisation in global business and economy. Unsurprisingly the literature on business models is rapidly growing and there are already several extensive reviews (see, for example, Shafer, et al, 2005; Morris, et al. 2005; George and Bock, 2011; Fiet, 2011; Zott, Amit, and Masa, 2011).

Nevertheless, the lack of clear association between the business model concept and the corresponding legal entity or manifest activities has rendered academic enquiry into the concept particularly challenging. As is clear from all previous reviews, the research in this field is still in a state of flux and only a limited common ground has emerged so far. It is commonly recognised that the concept represents composite combinations of a diverse range of aspects including business resources, organisational architecture, business processes, and business logic for value creation and value appropriation. Yet opinions differ substantially over the definition, domain (or components and boundary), the ways in which the components are combined to form a complete business model, the criteria by which different business models are classified and differentiated, the mechanisms by which a business model impacts upon corporate performance, and the measures and methods for evaluating the

performance or overall fitness of a business model. This lack of common ground is not only hindering intellectual progress (Morris, et al., 2005) but also casting doubt over the practical value of the concept since different conceptualisations have led to inconsistent empirical findings concerning its effect on firm performance and organisational change (George and Bock, 2011). From an entrepreneurial perspective, the lack of a well-founded framework for guiding the organisational design of possible business model prototypes could lead to an overwhelmingly large number of possibilities for strategic identification and configuration of a potentially endless list of the business model components, leading to inefficiency at the best and incoherence and contradiction at the worst in strategic decisions.

This study attempts to contribute to both the theoretical literature concerning business model classification and the empirical literature concerning the retail business in China. Conceptually we do not treat the business model as a mechanistic combination of constituent parts but regard it as a viable, complex, and self-evolving organism that possesses intrinsic business evolution logic and manifest structures. Although detailed knowledge and understanding of the deep structure and intrinsic logic of the business model remain a daunting intellectual challenge, it is useful to consolidate the emergent common ground and start to classify and evaluate distinctive business model prototypes across different markets using a set of generally applicable classifying principles, criteria, and scheme. Existing studies have examined the business model concept and attempted at its classification at the ontological, epistemological, and methodological levels, often crossing over to different levels at will, thus leading to confusion rather than clarification. Building on an emergent common core of the business model literature, particularly concerning its fundamental value logic, we propose an internally consistent hierarchical classification scheme for decomposing a generic business model as a composite structure into a complete set of value logic, salient functional modules, and their corresponding higher-level measurable manifestations. Such operational manifestations can then be coded, selected, and configured into different operational business models to provide a complete description of the business model value logic. An added value of our scheme is that it also provides an organising basis for strategic identification, selection, configuration, and evaluation of differentiated business models. Thus, the business model concept can be rendered a practical tool in organisational design.

We apply this classification scheme to the listed retail firms in China. The choice of Chinese retailing as the defined market is made out of several reasons. First, in the current general environment of global economic conundrum and surplus productive capacity in China, innovation and growth in retail businesses hold the key to the boosting of domestic consumption as an alternative mode of sustaining economic growth to the traditional investment-led mode. Second, existing studies of business models mainly concern internet-based businesses. The study of retail business models (particularly the traditional bricks-and-mortar types) is rare and will certainly enrich the literature. Finally, as the sector is long established in China, data is generally more reliable and more easily accessible than for other sectors. Our sample contains 64

listed retail firms that are mapped into 14 non-frivolous retail business models. Our empirical analysis of the financial performance of these different business models *ex post* reveals statistically significant differences across the business models according to 11 individual performance indicators. Moreover, a novelty of this study is that the overall fitness of the business models is ranked by their composite fitness scores that are derived from the principal components analysis of the individual performance indicators. We finally provide some informed judgments on how to systematically improve retail business models through managerial interventions in key retailing business functional modules concerning the customer segment, market scope, operational model, customer contact method, and the profit model in the Chinese retail sector.

2. Literature review of the business model concept and classification

The existing literature has been predominantly concerned with the definition of the business model and categorisation of its primary components, and the efforts have generated a wide range of opinions. As documented in an earlier study of the practical use of the concept (Linder and Cantrell, 2000), the majority of the company executives interviewed by Accenture had difficulties in articulating their companies' business models. In academic research, since different researchers analyse the business model out of their specific interests or from particular angles, it is little wonder that their definitions and description of possible components diverge substantially. Moreover, studies on traditional industrial business models are much less common than that on e-business models. It is even rarer to come across studies on the relationship between the business model construct and firm performance. Typically (but certainly not exhaustively) the perspectives on the concept can be classified into the following categories.

The management system or organisational structure perspective: For example, Timmers (1998) regards business model as the *architecture* for product, service, and information flows and describes the roles and potential benefits for various business actors as well as sources of revenue. Mahadevan (2000) takes the concept to mean a specific *combination* of the value stream, revenue stream, and logistics among enterprises, business partners and the buyers. Similarly according to Zott and Amit (2008), "[T]he business model is a *structural template* that describes the organisation of a focal firm's transactions with all of its external constituents in factor and product markets". Thus, this perspective is consistent with the literatures of the resource-based view (RBV) and firm-specific core capabilities in conjunction with the structure-conduct-performance (SCP) paradigm in emphasizing enterprise resources and organisational forms as key determinants of business conduct and performance. It represents an extension to the traditional "structure" component in the SCP paradigm, but in contrast to the traditional measures of the *external* "market structure" that can be captured through the number of incumbent players in the market and their market shares, the new structural form straddles across the boundaries between the focal firm and markets. Thus, difference of opinion immediately arises over both the scope and specific aspects of the management

system or organisational structure. For example, Zott and Amit (2008) focus exclusively on the external transactive structure whilst others also include the internal organisational structures. Extant business model literature has paid scant attention to the empirical characterization and measurement of the salient features of such structures and how these may shape and be shaped by firm conduct and performance. A noticeable exception is Zott and Amit (2008) that characterises business models by two design themes (efficiency and novelty) with each theme being measured as a composite variable of a dozen different specific variables. The composite business model structures are then used as independent variables, alongside other strategic and environmental independent variables, for explaining variations in corporate financial performance.

Entrepreneurial strategy perspective: This perspective primarily regards the business model as the overall strategy concerning how a firm defines its market position, identifies its customers, differentiates its products and services, goes to market, and selects its options for growth (Katkalo 2008). Osterwalder and Pigneur (2002) regard the business model as the connection between strategy and business processes. Kim and Mauborgne (2005) regard the business model as essentially a set of managerial actions and decisions (or strategic moves) in making a major market-creating business offering. Nevertheless, this perspective has proved to be particularly contentious and significant disagreement exists on the definition of the two concepts (i.e. business model and strategy) and their relationship (Porter, 2001; Shafer, et al, 2005; Zott and Amit, 2008; George and Bock, 2011). Zott and Amit (2008) have empirically measured the two concepts and determined their effects on corporate performance separately. We further note that this perspective leaves out established business routines and self-organising, spontaneous, and emergent features of business models.

Value logic perspective: This view holds that the essence of the business model lies with its logic for creating and capturing value, although the concept of value is variably interpreted as referring to specifically customer value or broadly value for customers, partners, and other stakeholders. For example, Osterwalder et al. (2005) take the former view by stating that in defining the business model “[W]e must consider which concepts and relationships allow a simplified description and representation of what value is provided to customers, how this is done and with which financial consequences.” In a similar vein, Johnson et al. (2008) argue that the essence of business model is specifically to create value for customers. In contrast, Amit and Zott (2001) propose that the entrepreneur’s business model, as the focus of business innovation, is the decisive source of creating value for the enterprise itself, its suppliers, partners and customers. Chesbrough and Rosenbloom (2002) argue that the corporate business model should have six functions: to articulate the value proposition, identify a market segment, define the structure of value chain within the firm, estimate the cost structure and profit potential, describe the position of the firm within the value network, and formulate the competitive strategy. Besides, Chesbrough (2007) add that the enterprise business model has two main roles: value creation and value capture.

Among these perspectives, the business model as the logic for value creation and value capture has emerged as a common and influential theme. Morris, et al. (2005) summarized various definitions of the business model and its elements and found that value offering/proposition was mentioned the most times. The value logic has also featured prominently in all afore-mentioned reviews of the concept. The literature has further dissected the value concept into three dimensions – value proposition, value creation and delivery, and value realization/capture – to completely represent the business logic of corporate firms (Zhang and Wang, 2010). Value proposition focuses on clarifying what value corporate firms provide for which stakeholders (e.g. suppliers, business and final customers, shareholders). Once a firm has clarified its value propositions, it must mobilise internal and external resources (e.g. through horizontal or vertical integration or dis-integration of the value chain) to create value and select the appropriate channels of value delivery (e.g. through establishment of multiple customer contact points or channels). Finally, upon achieving value and fulfilling its obligations to the stakeholders on the basis of the firm’s position and bargaining power in the stakeholder network, the focal firm recovers part of the value as corporate earnings, which prepares for value creation in subsequent rounds. Table 1 provides further details about these three dimensions and the corresponding specific business processes in other studies.

Table 1 Three dimensions of value creation in the business model literature

Dimension	Hamel (2000)	Linder&Cantrell (2000)	Afuah&Tucci (2001)	Weill&Vitale (2001)	Chesbrough& Rosenbloom (2002)
Value proposition	1 Product range 2 Market scope 3 Customer	1 Value claim	1 Customer Value 2 Customers range	1 Value claim 2 Strategic objectives 3 Customer segment	1 Value claim 2 Target market
Value creation and delivery	1 Supplier 2 Partner 3 Core elements 4 Strategic support 5 Dynamic relationship	1 Channel model 2 Commercial relationship	1 Ability 2 Related activities	1 Channel 2 Critical success factors 3 Core competencies	1 Value network 2 Internal value chain structure
Value realization	1 Price structure	1 Pricing model 2 Revenue model	1 Price 2 Cost structure	1 Revenue resources	1 Pricing model 2 Revenue model

Table 1 (continued)

Dimension	Johnson et al (2008)	Weng (2004)	Yuan (2006)	Peng (2009)	Li (2010)
value proposition	1Customer value proposition (CVP)	1value object	1Value claim 2Value content	1Value claim 2Value content 3Value object	1Location rule
value creation and delivery	1Critical resources 2Key processes	1Value content 2Value providing	1Value network 2Maintaining the Value 3Partnership	1Delivery channels 2Value associated 3Resource capacity 4Value structure	1Interests rule 2Resource rule
value realization/capture	1Profit model	1Value recycling	1Revenue model 2Cost management	1Value activities	1Income rule

Another major plank of the extant literature concerns the classification of business models into distinct prototypes. Careful classification of business model prototypes is important for a number of reasons. First, it adds intuitive simplicity to the complex concept through the focal lenses of its salient features (e.g. the razor-and-blade and click-and-mortar retail business models). Second, classification requires a rigorous analytical approach to the anatomy of the business model whole structure and ascertainment of its salient features. Finally, it enhances the practical value of the concept in organisational design and strategic intervention. Again many attempts have been made for this purpose and various classifying criteria/schemes have been adopted. Typical examples include segments of the value chain or value network, revenue model, value proposition, technical foundation, nature and use of assets, and financial profile (see, e.g., Afuah and Tucci, 2001; Shafer, et al., 2005; Maloan, et al. 2006; Yuan, 2008; Wang et al., 2010; Haslam, et al. 2012). Such criteria are usually deduced from contextual analysis of the affinity of business model components that are suggested by the literature or practitioners. For example, by classifying the assets that firms employ into 4 different types (physical, financial, intangible, and human) and 4 different uses (creator, distributor, landlord, or broker), Maloan et al. (2006) classified 10,970 US listed firms into 16 distinct business models and subsequently obtained the distributional characteristics of each type. Other researchers sidestep the complex content and deep structure of the business model and focus on its financial leverage characteristics to propose a deductive financial typology ranging from cash-generative to asset-trading financial business models (Haslam, et al., 2012). Similar attempts have also been made to classify business models by various design themes with each theme being associated with an array of more specific organisational structures and strategic variables (e.g. Zott and Amit, 2008; Morris, et

al., 2013). What is particularly noticeable of the study by Morris et al. (2013) is their employment of the technique of cluster analysis for identifying distinct classes of business models on the basis of 6 design themes in the Russian food market.

We make the following observations about the existing attempts. First, existing studies concern specific business models in particular areas with little theoretical justification for the classification scheme. Thus the classification scheme tends to be *ad hoc* and fragmental. Second, given the complete absence of a commonly applicable classification scheme, it is entirely possible that by applying different classification schemes the same set of firms can be mapped into different business models with completely different characteristics. Moreover, existing studies have generally pre-fixed the number of business models to be very small, so there is little scope for choice from an organisational design perspective. This goes against the intuition that when it comes to the innovation and design of potential business models, sky is the limit.

Therefore, the following points should be taken into account in classifying business models. First, a generally applicable theoretical base should be established to reduce the potentially vast possibilities and randomness in deciding the classification criteria. Second, a right balance should be struck between the need for dimension reduction and the need for organisational choice. In theory there is an infinite number of possible ways of configuring distinct business models. Whilst a completely random combination of business model elements offers no value in guiding organisational design, excessively restricting the number of possible business model types severely limits the design scope. Third, the classifying criteria should focus on the salient features and key business model properties so that each type is distinct, relatively homogeneous, and relatively stable. Distinctiveness requires the ascertainment of the defining value logic of each business model, homogeneity implies internal cohesiveness, and stability is usually associated with path-dependency of the evolution of the business model. If a business model's defining properties are constantly changing, it is beyond the lenses of academic inquiry.

Insofar as business model evaluation and its normative value for organisational design are concerned, the literature is still at a nascent stage. The literature so far is exclusively concerned with *ex post* evaluation and we have no knowledge of any *ex ante* predicative framework. In the few available studies the classification criteria and areas of study differ substantially. Zott and Amit (2008) regard business model as a new – in relation to the traditional organisational forms (e.g. the M-form of internal organisation structure) – structural contingency factor which can affect a firm's strategic choice and function. They analyse the matching degree between business model design and product market strategy and the contingent effect on firm performance. Their empirical results show that the business model and strategy are different variables and can affect corporate performance separately, and the interaction and matching degree between them also significantly affect corporate performance. Using the asset type by asset use classification criteria as discussed earlier, Malone et al. (2006) classify the business models of all listed enterprises in the US from 1998 through 2002 into 16 types and evaluate the impact of different

business models on corporate performance as measured by 6 performance indicators. Their regression analysis suggests that some business models perform better than others, but not across all 6 performance indicators. In the context of China the significance of business model selection for corporate performance is also demonstrated in the ANOVA study by Wang, et al. (2010).

3. Decomposition and classification of business models – a value logic oriented approach

Classifying business models requires careful ascertainment of their salient features and key properties through the anatomy of the business model whole structure. We undertake this task by following Morris et al. (2005, 2013) in conceptualising the business model at three levels: abstract economics, proprietary strategy, and rule-based operations. At the abstract level and from the evolutionary and complexity perspective, a business model can be regarded as a self-evolving complex organism that possesses the property of developing ever-rising complexity endogenously and their evolutionary processes are governed by the generalized Darwinian principles of inheritance, variation, and selection (Hodgson and Knudson, 2010; Beinhocker, 2007). It is little wonder that the study of such complex systems necessarily entails a host of views at the ontological, epistemological, and methodological levels. Ontologically business models may be viewed alternatively as the intrinsic logic governing business evolution or its manifest structures. It is also natural that opinions differ over the nature of our knowledge of the business model as justified belief with a degree of uncertainty. Thus, from a positivist view business model is an objectively existent “being”, be it (codified) business logic or observable structure. In contrast, a social constructivist would view the business model as a socially constructed, fuzzy, porous, and evolving concept laden with subjective judgments. Methodologically knowledge about the business model is gained through deductive and inductive reasoning processes drawing from a variety of sources of information. Such sources of information typically embrace the more mature and related disciplines (e.g. strategy, RBV, dynamic capabilities, information systems, and transaction cost economics), practical experience of entrepreneurs and business managers (as in the studies by Linder and Cantrell, 2000; and George and Bock, 2011), and the accounting and financial data at the firm, sector, and economy levels (as in the study by Haslam et al., 2012).

Here we view the business model as a viable, complex, and self-evolving organism that possesses intrinsic business evolution logic and manifest structures. The business logic originates from the fundamental physical structures (e.g. chemical, biological, and physiological mechanisms) that generate a host of human needs and provides a complete description of how such human needs are satisfied through business processes. The complete description of the business logic can be succinctly represented by the value logic, i.e. how the business presents value propositions to its stakeholders, actually creates value, and distributes value among the primary stakeholders. Therefore, in summary we define the business model as the intrinsic business logic that completely describes value proposition, value creation, and value

capture. We do not necessarily hold an epiphenomenal view of the relationship between the value logic and the deep underlying physical structures, but instead argue that both aspects co-evolve into more complex higher-level structures or forms. Such structures are connected and organised modularly to serve distinct yet interdependent functions for the purpose of maintaining the viability of the organism. We term these modules business model functional modules. Classifying business models requires careful anatomy of its whole structure into broad functional sub-structures and ascertaining the salient traits of the sub-structures. We identify the functional modules around the three dimensions of the business value logic: proposition, creation, and capture (see Table 2).

Table 2 Business model value logic and corresponding functional modules

Value logic	Functional modules
Value proposition	(I) Stakeholder network
	(II) Market scope
Value creation and delivery	(III) Operational model
	(IV) Customer contact method
Value capture	(V) Profit model

Modules I and II serve to advance a focal firm’s value propositions to its existing and potential stakeholders (especially its customers) and itself. The in-house market research, R&D, and public relations functions are primary examples in these functional modules. The timely identification of customer needs, market segments, business opportunities, and possible solutions to existing and emerging customer needs represent a firm’s key dynamic *sensing* and *shaping* capabilities (Teece, 2007). Such capabilities are critical for enhancing the focal firm’s propositional values, especially to external rating agencies and financial market participants. Moreover, in an increasingly financialized business world (Haslam, et al., 2012) the focal firm’s propositional values also reflect the interactions of a stakeholder network that extends beyond the traditional boundaries of the firm or even boundaries of the primary markets. A typical example is that much of the propositional value of the e-business models derives from market-defining or market-augmenting joint creation by its network of stakeholders (including the Apps developers and customer-to-customer interactions, e.g. Apple stores). Furthermore, reported as accounting and financial numbers the firm’s propositional values are not “elements” that are easily traceable to specific market-based transactions but are rather “compounds” that congeal the outcome of stakeholder relations, variable regulatory demands, and institutional context (e.g. accounting and auditing standards) within which the firm is subtended (Haslam, et at., *ibid*). Thus the corporate financial reporting and disclosure functions are also important constituents of these modules.

Module III concerns the architectural infrastructure of an operational system to support value creation and delivery. This typically includes various management systems, such as those designed for risk management, supply-chain management, and inventory management. Module IV then contains specific operational models for

creating and delivering value through, for example, franchising, out-sourcing, and off-shoring. In these modules the focal firm's *seizing* capabilities (Teece, 2007) are critically important and extant theories of comparative or competitive advantages in economics, business, and management (e.g., the production function, theories of absolute and comparative advantages, Dunning's OLI framework) are primarily related to this module.

Finally module V primarily concerns value appropriation through the adoption of specific profit and investment models for realizing and capturing value within the focal firm. Constellating around this module are, for example, procedures and processes of cost-cutting or margin-extending and financial investment activities (e.g. organisational restructuring, mergers and acquisition, asset-trading, internal and external financing). Thus value realisation and capture underpins the firm's *reconfiguring* capabilities (Teece, 2007).

The business model is not a simple mechanistic combination of the different functional modules. For the business model to be cohesive and effective in achieving its purpose, the constituent functional modules and the associated processes must exhibit a high level of complementarity or synergy (Morris, 2005, 2013). So, for example, an excessively self-centric and captive business model may alienate the stakeholder relationship and limit the functions for value proposition and creation. Thus at the proprietary level, the role of strategy is to differentiate combinations and moves that can enhance one or a combination of the functional modules for the ultimate purpose of improving the overall fitness of the business model.

Finally, at the operational level, any strategic move has to be implemented through rule-based operations in specific functional modules. Each functional module is associated with a range of such rule-based operations (and we term these manifestations). Moreover, these rule-based manifestations are market-specific and for the purpose of improving any particular functional module there are alternative operations to choose from. For example, for the purpose of enhancing the "customer contact method" in retail business, a retail business model can choose from an array of customer contact channels or points (e.g. online, in-store, telephone, chain stores, and self-serving kiosks).

In accordance with this multi-level perception of the business model, our classification scheme is hierarchical in that a business model is dissected first of all into the three value logic dimensions, each of which is associated with a set of broad and connected functional modules, which in turn are further deconstructed into even finer rule-based manifestations. These manifestations can then be coded, selected, and configured into different operational business models to provide a complete description of the business model value logic. Our classification scheme is consistent with, and indeed can accommodate earlier attempts in the literature, for instance the "Business Model Canvas" as a visual aid to business organisational design that is developed by Osterwalder and Pigneur (2010). Here we do not attempt to offer a predictive and prescriptive scheme for business model design and selection *ex ante*, but an organising framework for business model classification and evaluation *ex post*. How the manifestations are/or should be selected and combined is governed by

strategic decisions to enhance one or several functions of the business model, a topic that is beyond the remit of this paper. In the remainder of the paper, we apply such a classification scheme to the Chinese retail business and then evaluate the differential performance of different retail business models.

4. Empirical application

When applying the classification scheme to a specific business such as retailing, due attention is required over the special characteristics of the business and its value logic. Retailers are no longer the traditional “merchant intermediaries” that purchase goods from manufacturers and sell on to the end users to earn residual trade margins. They are increasingly engaged in a complex value network that connects a host of stakeholders (manufacturers, haulers, distributors, retailers, end users) in proposing, creating, and appropriating values by providing a trade and exchange platform (Sorescu, et al. 2011). Nevertheless, earning a trade margin still lies at the centre of the value logic and a customer-centred approach to the design of retail business models is fundamental, especially in the Chinese retail market that is rapidly developing but nonetheless less sophisticated than its counterparts in the developed economies. Table 3 below lists all the functional modules and the associated manifestations, together with their identification codes, for classifying and reconfiguring retail business models.

Table 3 Retail business model functional modules and manifestations

Functional modules	Manifestations in retailing (letter code)
Stakeholder network (customer segment)	Mass type (P), focus type (F)
Market scope	Local domination (D), regional penetration (P), regional expansion (E), national distribution (N)
Operational model	Specialist market (S), chain management (C), format integration (I)
Customer contact method	Traditional (T), modern (M)
Profit mode	Puerile (P), customer experience (E)

(1) **Stakeholder network.** Specific to the retail business, the “stakeholder network” is regarded as more or less synonymous to “customer segment”, and the specific manifestations around this functional module are all concerned with the identification of different customer bases. Specifically two types of customers are identified: the mass consumer market (labelled by P) and the focused consumer market (F). A typical retail business that serves the mass consumer market is a department store whilst examples of the focus type retail businesses include electrical goods retailers (e.g. Sunning and PC Mall).

(2) **Market scope.** Based on a detailed examination of the actual situation of China's retail businesses, this paper presents four manifestations of the market scope: Local Dominant (D), Area Penetration (P), Regional Expansion (E), and National Distribution (N). They are identified mainly according to the geographic coverage of

a firm's business and the share of business in a particular geographic location in the firm's total business. Thus, "local dominant" means that at least 80% of the firm's operating income is generated in a specific prefecture-level city (municipality). "Area penetration" refers to the presence of the firm's businesses in at least three cities of one province (autonomous regions) and the share of the operating incomes in each city does not exceed 40% of total revenue. "Regional expansion" refers to the expansion of a firm's businesses into 2-4 provinces (including municipalities directly under the central government and autonomous regions), and the operating income in a single province does not exceed 40% of the firm's total revenue. "National distribution" refers to the case where a firm's businesses are present in five or more provinces.

(3) **Operational model.** For retail businesses, its operational models can be divided into three kinds: specialist market (S), chain management (C), and format integration (I). The specialist market refers to retail businesses having a number of stores which sell a single category of products. These stores are independent operators with low correlation between the merchandises on sale. Chain management, including direct-sale, franchise chain, free chain, is the most commonly used method for retail businesses to expand operational scale (Sheng, 2007). Format integration describes the integrated operations of retail businesses for the purpose of seeking expansion and further growth and is usually associated with convenience stores, supermarkets, department stores, shopping centres and other one-stop-shop retail formats.

(4) **Customer contact method.** Modes of customer-contact are divided into two kinds: traditional (T) and modern (M). The former refers to retail businesses selling goods only through the traditional bricks-and-mortar stores with no corporate website or online shopping facility. The latter refers to retail businesses which offer online shopping platforms.

(5) **Profit model.** There are two major retail businesses profit models: the first one utilises standardization of operations, establishment of efficient business processes, optimisation of the value chain and other means to reduce their operating costs, and provides customers with quality goods at low prices (Li and Wang, 2006), so as to ensure the profitability of the enterprise by mass selling of goods. This profit model is called Puerile type (P). In general, convenience stores, chain supermarkets, and hypermarkets adopt such a profit model. The second one provides high-quality and branded goods and services, charges premium prices, promotes the brand image of retail businesses, and generates substantial profits. This profit model is labelled Customer Experience type (E). Large department stores, boutiques, and "one-stop" shopping centres mainly use such a profit model.

Our sample contains Chinese retail firms listed on Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE). According to the Wind database, these firms are listed by the industry classification of China Securities Regulatory Commission and have complete annual financial data for the period 2008-2010. A total of 64 companies are selected and all relevant performance indicators are calculated from corporate financial statements. Using our classification scheme and the criteria for deciding the actual manifestations that are discussed above, the 64 retailers are

mapped into 37 different combinations of the manifestations (see the Appendix).

We adopt the analysis of variance (ANOVA) to explore the influence of different models on enterprise performance by testing whether or not there is any statistically significant difference in corporate performance across the different types of retail business models. The business model variable is treated as an independent categorical variable, whilst corporate performance is measured as a numeric dependent variable. To provide a comprehensive measurement of corporate performance, we adopt a range of performance indicators including profitability, growth, operational efficiency, and per-share related indicators. Specifically, the profitability indexes include return on equity (X1), return on assets (X2), and return on invested capital (X3); Growth indexes include year-on-year revenue growth rate (X4), year-on-year earnings per share growth rate (X5), year-on-year net profit growth rate (X6); Operating indexes include inventory turnover (X7), fixed assets turnover (X8), total assets turnover (X9); Per-share indexes include earnings per share (X10) and net asset value per share (X11). One-Way ANOVA is a typical method to test the mean of a single factor (i.e. the different business models) to see whether there is a significant difference (Lu Wendai, 2006). The model can be expressed as: $Y_{ij} = \mu + \alpha_i + \varepsilon_{ij}$, $i = 1, 2, \dots, k$, where Y indicates particular performance indicators, i represents the groups, and $j = 1, 2, \dots, n$ represents the number of samples in a group.

In order to ensure the reliability of the analysis and to include a sufficiently large number of firms in the sample, the study only selects the retail business models that correspond to two or more retail firms (Wang et. al, 2010). As shown in Table 3, a total of 14 distinct business models (numbered 1, 2, 3, 6, 8, 13, 15, 18, 21, 23, 24, 26, 31, and 35 in the table) covering 41 retail firms are included, accounting for 63% of the total. To reduce the influence of other possible short-term factors on corporate performance arising from the use of annual data, the performance indicators are calculated as the arithmetic mean values over the whole sampling period. The ANOVA results are shown in Table 4³.

Table 4 ANOVA results of retail business model performance

Performance dimensions	Performance Variables		Sum of squares	Degree of freedom	Mean square	F value	Significance level
Profit indicators	Return on equity (X1)	Inter-group	2637.358	13	202.874	3.855	.001
		Intra-group	1420.998	27	52.630		
		Sum	4058.355	40			
	Return on assets (X2)	Inter-group	378.617	13	29.124	2.869	.010
		Intra-group	274.120	27	10.153		
		Sum	652.737	40			
	Return on invested capital (X3)	Inter-group	861.624	13	66.279	2.648	.016
		Intra-group	675.912	27	25.034		
		Sum	1537.536	40			

³ The ANOVA analyses and the Principal-Components analyses below were performed in SPSS v.16.

Growth indicators	Year-on-year Revenue growth rate (X4)	Inter-group	2840.673	13	218.513	1.423	.212
		Intra-group	4146.124	27	153.560		
		Sum	6986.796	40			
	Year-on-year earnings per share growth rate (X5)	Inter-group	1283727.692	13	98748.284	2.848	.010
		Intra-group	936307.828	27	34678.068		
		Sum	2220035.520	40			
	Year-on-year net profit growth rate (X6)	Inter-group	1178061.476	13	90620.114	2.666	.015
		Intra-group	917928.632	27	33997.357		
		Sum	2095990.108	40			
Operation indicators	Inventory turnover (X7)	Inter-group	3748.389	13	288.338	1.323	.260
		Intra-group	5882.591	27	217.874		
		Sum	9630.981	40			
	Fixed assets turnover (X8)	Inter-group	4926.225	13	378.940	2.897	.009
		Intra-group	3531.431	27	130.794		
		Sum	8457.655	40			
	Total assets turnover (X9)	Inter-group	8.003	13	.616	1.416	.215
		Intra-group	11.737	27	.435		
		Sum	19.740	40			
Per-share indicators	Earnings per share (X10)	Inter-group	1.976	13	.152	2.598	.018
		Intra-group	1.579	27	.058		
		Sum	3.555	40			
	Net asset value per share (X11)	Inter-group	50.854	13	3.912	2.758	.013
		Intra-group	38.291	27	1.418		
		Sum	89.145	40			

The ANOVA results show that corporate performance does vary across the different retail business models, although the statistical significance differs across the performance indicators. Insofar as the profitability indicators are concerned, all three indicators, i.e. return on equity, return on assets, and return on invested capital, show significant inter-group differences. There are also significant inter-group differences in the growth indicators with the exception of the growth in revenue. Similarly significant inter-group differences are also observed for the operation and per share indicators, although only 1 out of 3 of the operation indicators shows a significant effect.

In the empirical studies so far, the same business model typically performs differently according to different single metric performance indicators. As a final step in the empirical analysis, we adopt the method of principal component analysis to assess the overall fitness of the 14 different retail business models on the basis of the 11 performance indicators. The procedure is as follows. First, some principal components are extracted from the 11 performance indicators so that the level of

performance of listed firms can be comprehensively measured. Then the principal components are weighted and summed to arrive at the overall composite fitness score of various types of business models.

Because each performance indicator reflects different aspects of corporate performance, and with different units of measurement, we need to normalise the performance indicators before principal component analysis is applied:

$$x_{ik}^* = \frac{x_{ik} - x_k^{\min}}{x_k^{\max} - x_k^{\min}}$$

Where x_{ik} , x_k^{\max} , x_k^{\min} are the k^{th} index in the value of the i^{th} type of business model and the maximum and minimum of the k^{th} index in the 14 kinds of business models. The composite scores for each year and the three-year average scores of 14 types of business models for the period of 2008-2010 is given in Table 6.

Table 5 Composite fitness scores of retail business models (2008-2010)

Abbreviation of business model	F2008	F2009	F2010	Average
PDITE	2.273 (13)	2.479 (10)	0.993 (13)	1.915 (13)
PPITE	3.303 (6)	2.874 (7)	2.821 (6)	2.999 (6)
PDIME	3.346 (5)	2.926 (6)	1.659 (9)	2.643 (7)
PDITP	3.287 (7)	2.452 (11)	1.677 (8)	2.472 (9)
PEITP	4.117 (1)	3.647 (5)	2.953 (3)	3.573 (3)
PPITP	3.112 (8)	3.781 (4)	2.840 (5)	3.244 (5)
FDCMP	3.057 (9)	2.647 (9)	1.235 (12)	2.313 (10)
PECME	3.948 (2)	3.902 (2)	2.997 (1)	3.616 (1)
PPCTP	2.831 (10)	2.867 (8)	1.910 (7)	2.536 (8)
PPCME	2.783 (11)	2.235 (13)	1.332 (11)	2.116 (11)
PDCTE	0.157 (14)	0.039 (14)	0.012 (14)	0.069 (14)
FNCMP	3.774 (4)	4.003 (1)	2.876 (4)	3.551 (4)
PNCTP	2.576 (12)	2.372 (12)	1.385 (10)	2.111 (12)
FECTP	3.911 (3)	3.884 (3)	2.957 (2)	3.584 (2)

Note: the numbers in brackets represent rankings.

The following significant results can be observed from Table 5. 1) The business model with the highest average composite fitness score is PECME, namely the business model for general public - regional expansion - chain management - modern - customer experience. In contrast, the business model with the lowest fitness is PDCTE, namely the business model of general public - local dominant - chain management - tradition - customer experience. The gap in the fitness of these two types is substantial. 2) The structure of the rankings has remained relatively stable, but the fitness scores of all business models have declined over time. 3) Both the single-year and three-year average fitness scores indicate that there is a small gap among the top six business models but a large gap between the top 6 business models

and the last eight business models. Although it is impossible to identify the absolutely dominant retail business model, it is nonetheless clear that several retail business models have consistently outperformed others in the study period.

A question naturally arises: what are the sources of such differences? Although a convincing answer necessitates further rigorous research that must control for the influence of other variables (e.g. external environment and market conditions) using longer time series data, here we postulate possible connections between corporate performance and strategic combinations of the business model sub-structures. Conceptually both the selection of specific manifestations of individual functional modules and careful combinations of manifestations across modules may enhance the overall cohesion and fitness of the whole business model. The exact causal effect and the practical significance of alternate mechanisms remain a theoretical and practical challenge. Nevertheless, further insights into the selection and combination of business model manifestations can be gained from counting the number of occurrences of each manifestation in the top-performing business models in comparison with the bottom-performing business models, as Table 6 shows.

Table 6 Count of occurrence of manifestations in the top 7 and bottom 7 retail business models

Business model classifying criteria and manifestations		Top 7 business models	Bottom 7 business models
Customer segment	Mass	5	6
	Focus	2	1
Market scope	Local	1	4
	Regional penetration	2	2
	Regional expansion	3	0
	National	1	1
Operational model	Specialist	0	0
	Chain	3	5
	Integrated	4	2
Customer contact method	Traditional	4	5
	Modern	3	2
Profit model	Puerile	4	4
	Experience	3	3

Thus, the following observations can be made concerning the comparison between the two groups of retail business models in China: 1) the choice of profit model appears to have little significance for the overall fitness of retail business models, thus the focus of organisational design should be placed in the other functional areas; 2) “market scope” is an important area for retail business model design purpose, since the unfit models are predominantly locally based whereas most of the fit ones adopt the “regional expansion” strategy; 3) insofar as “operational model” is concerned, whilst the fit ones mostly choose the “integrated” mode, the

unfit ones usually opt for the chain format; 4) the fit ones seem to have an edge over the unfit ones in adopting modern methods and technologies to reach out to and engage customers. Overall, the most common combination among the fit business models is Mass market – Regional expansion – Integrated – Traditional – Puerile, and in contrast, the most common combination for the unfit performers is Mass market – Local – Chain – Traditional – Puerile.

5. Discussion and conclusion

On the basis of the emerging common perception of the fundamental value logic of the business model, we have attempted to provide an internally consistent and hierarchical classification scheme for decomposing, classifying, and reconfiguring business models. We organise the classification scheme around the business model value logic – functional modules – operational manifestations (VFM) framework. Although we have not attempted at developing a predictive and prescriptive scheme for guiding business model design and configuration, we believe that our scheme has some general appeals. First, our scheme can be readily adapted to any market for decomposing, classifying, reconfiguring, and evaluating business models in that market. Second, our scheme has provided a consistent basis for further work to develop the analytical framework governing the relationship between business model operational manifestations, functional modules, and overall business model performance/fitness. We envisage that such a framework needs to go beyond the conventional production function based approach or the SCP paradigm by paying particular attention to composite measures, rather than single metrics, of business model structures and overall fitness as well as their relationship.

Our empirical work on the Chinese listed retail firms suggest that retail business models do exhibit differential corporate performance across a wide range of indicators. It appears that the different retail business models matter most significantly for profitability and stock related performance, reasonably significantly for growth indicators, but hardly significantly for operational efficiency. A novelty of our approach is that we go beyond the conventional single-metric performance indicators to construct a composite overall fitness score for a business model. In terms of this overall fitness measure, there are discernible differences in the compositional details between the fit and unfit retail business models. Thus we have operationalised the idea that the business model can be a useful unit of analysis and the reform and innovation of business models can proceed at the component level (Johnson, et al., 2008).

In terms of the implications for the retail business in China, our empirical results suggest that under the current market conditions in China the fit retail business models share some common characteristics: these usually target the mass consumer market; their operational models focus on expansion into other regions, mainly those in the west interior parts of China; the good performers tend to adopt the integrated format that provides a wide range of assortments and sophisticated and varied consumption experience; the fit performers are also willing to embrace new methods and technologies to reach out to and engage customers. In innovating retail business

models, such characteristics are worth taking into account, but more importantly, a retail business model also needs to achieve complementarities between the business model components and system synergy, making it harder for others to replicate the business model.

A final observation is that the overall fitness of all the retail business models has deteriorated over the three-year period. This suggests that the fitness of retail business models is perhaps also contingent on the larger ecosystem within which the firm is located. This evidence reinforces our earlier point that comprehensive examinations of how business model impacts corporate performance must also take into account the potential effects of other external environmental variables.

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Appendix Mapping of Chinese retail firms to retail business models

Number	Combinations of manifestation codes (retail BMs)	Representative firms
1	PDITE	Nanjing Central Emporium、Nanjing Cenbest、Minsheng Investment、Zhongxing Commercial、Hanshang Group
2	PPITE	Chengshang Group、Nanning Baihuo、Friendship&Apollo、st Qiulin、Kaiyuan Holding Group
3	PDIME	New World、Hangzhou Jiebai Group、Baida Group、DaLian Friendship
4	PDIMP	BaiLian Group
5	FDSTE	Yuyuan Tourist Market
6	PDITP	DongBai Group、Lanzhou MinBai Share Holding Group
7	PNCMP	Dashang Group
8	PEITP	Eurasia Group、New Hua Du、BBK
9	FPSTP	ST Bai Hua
10	PEIMP	XiDan Market
11	PDCTP	ChongQing Department Store
12	PPIME	Friendship Group
13	PPITP	XinHua Department Store、TongCheng Group、WuHan Department Store Group
14	FDCTP	YiMing Group

15	FDCMP	XinHua Media、 The First Medicine
16	PECMP	ShangHai Friendship Group
17	PECTP	ShangHai Join Buy
18	PECME	Silver Plaze Group、 GuangZhou Friendship Group
19	PNIME	Wang Fu Jing
20	PDCMP	BeiJing Urban-Rural Trade Center
21	PPCTP	HeFei Department Store、 KunMing Department Store
22	PPCTE	ST ZhuXin
23	PPCME	XiAn Minsheng Group、 WuHan ZhongNan Commercial Group
24	PDCTE	TianJin QuanYe Change Group、 BoHai Physical Distribution 、 ChangBai Computer Group、 ShenYang Commercial City
25	PPIMP	Wu Hang ZhongBai Holdings Group
26	FNCMP	Telling Telecommunication Holding、 Sunning Appliance
27	PPCMP	Guangzhou Grandbuy
28	PNITP	Ren Ren Le
29	PEIME	Rainbow Department Store
30	FNCTE	Dong Guan Souyute Fashion
31	PNCTP	Beijing HuaLian Hyper Market、 HuaLian Group
32	FDSTP	Yin Group
33	FNCME	Shen Zhen Fiyta Holdings
34	FNCTP	Gifore
35	FECTP	Agricultural Products、 YongHui Supermarket、 Anhui Hui Long Agricultural
36	FPCMP	San Jiang Shopping Club
37	FECMP	Jiangsu Hongtu High Technology
