

**UNDERSTANDING BUSINESS MODEL AND BUSINESS MODEL RISKS**

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## **ABSTRACT**

This paper develops a business model framework by integrating common substances and features among the various business model definitions in the literature. The model consists of four basic and interrelated elements: the exchange model, the organizational model, the resource model, and the financial model. The objective is to make business model descriptions more coherent with major perspectives on strategic management as well as more conducive to entrepreneurial practice. The paper also introduces a general structure to describe business model risks, which incorporates risks to the value of market, firm's share of that value and the competitive sustainability at the model element, relationship and system levels. We hope that the business model framework and risk structure become useful tools for business model design and evaluation.

Following the rapid rise to prominence in the mainstream business vocabulary, the term business model has garnered increased attention from academic researchers. Most studies on business models focus on what business model is, advancing a variety of definitions and typologies in Timmers [1998], Tapscott, Ticoll, & Lowy [2000], Mahadevan [2000], Linder & Cantrell [2000], Weill & Vitale [2001], Magretta [2002], Rappa [2003], Alves & Roque [2005], Osterwalder, Pigneur & Tucci [2005], and Keen & Qureshi, [2006]. Only a few, such as Chesbrough & Rosenbloom [2002], Zott & Amit [2004], Malone, Weill, Lai, D'Urso, Herman, Apel & Woerner [2006], inquire why and how business models matter to firm performance. Although the conclusions from those studies, one based on case studies and the other two on survey and archival data analyses, provide some useful insights, they offer limited help, individually or together, for making a broad set of guidelines for business model design and assessment, especially by those that are in greater need, the startup ventures.

Given the wide variety of business model definitions, from the parsimonious *method of doing business* (see Rappa [2003]) to an elaborate framework of four pillars and nine building blocks (see Osterwalder, Pigneur & Tucci [2005]), the studies that examine the effect of different business models on firm performance explicate their own definitions upon which a business model typology can be developed, and the various business models can be classified and then studied. The classifications, while fitting the empirical data structures, force

the results to be aggregated to levels that seriously limit the breadth and depth of their real-world applications.

Malone and colleagues [2006] define a business model by two dimensions: Types of assets involved in the business (physical, financial, intangible, and human) and types of rights sold by the business (creator, distributor, broker, and landlord). Based on that definition, a sixteen-archetype business model classification is produced to describe any for-profit business, or all public U.S. firms listed in COMPUSTAT from 1998 to 2002. The study found that no business model outperforms others on all dimensions of the firms' financial performance, but that some models perform better than others on one dimension or another, for instance, cash flow on assets. The findings may help a business design and evaluate what it does, in terms of its role (e.g. distributor) and responsibility (e.g. distribution of books). They are incapable of informing how a business may serve its customers or compete with its rivals. For example, how a business prices products and generates revenues is a common, important component of most business model definitions. The sixteen business model archetypes, dozens of combinations between them, and their known impact on financial performance, however, offer little advice on a firm's pricing or revenue model, or how it may influence firm performance.

Design theme is the construct used in Zott and Amit's study [2004] of a couple hundred publicly listed, young growing firms. They classify the firms into

the novelty-centered business model design type and the efficiency-centered type, and find the novelty theme in business model design has positive impact on the performance of entrepreneurial firms. When designing or assessing business models, however, one may doubt whether the two themes are mutually exclusive or collectively exhaustive.

Studying the six spin-offs from PARC, a former Xerox concern, Chesbrough and Rosenbloom [2002] suggest that the mediating role of business model between an innovation's technological core and its economic value is constrained by the established firm's (Xerox's) dominant logic, which is derived from its extant business model. Extending the idea of dominant logic to an entrepreneur's heuristic logic helps detect cognitive biases, but it does not serve business model design from scratch or comprehensive evaluation of business models.

On the other hand, Chesbrough and Rosenbloom imply what we believe to be a more productive way of designing and evaluating business models. That is through studying the risks that are associated with a business model. Firm dominant logic or entrepreneur's heuristics are but one example of business model risks. The implication is that risk evaluation occurs simultaneously with business model conception and development, instead of an ex-post activity, mandated traditionally by external financiers. Instead of delegating to their auditing firms, entrepreneurs and startup managers should conduct business

model risk assessments regularly, and use that as an effective learning mechanism to design and evaluate business models with performance objectives in mind.

In this paper, we aim to develop a more general structure about business model risks than what we observe from numerous startup business plans. We develop our own framework to describe a business model by integrating the common substances and features of different business model definitions in the literature, rather than relying on the extant taxonomies for business models. We then introduce a set of risks that are associated with a typical business model. These risks are derived from a number of theories on firm profit under competition. Finally, we suggest what entrepreneurs and startups can do with a better understanding of business model risks.

## **A BUSINESS MODEL FRAMEWORK**

There are three things that motivate us to develop and introduce a business model framework. First, we identify common substances and features among the various business model definitions in the literature, and consider they can be grouped and connected logically. Second, we need a more structured business model definition to identify systematically the various business model risks. Third, we believe a comprehensive and coherent business model framework would encourage venture managers to better apply learning from relevant academic research.

We approach the task with the assumption that business model is the outcome of management actions, planned, emergent or realized (see Mintzberg [1979]), in defining a firm's offerings to other economic actors, the boundaries of its activities, and the logic for making a profit from the offerings and activities. By defining we also mean management or organizational sense making (see Weick [1995]). This assumption is consistent with the principles of the various business model definitions cited above and elaborated below. It is also consistent with how a firm defines what its business is from the strategic management perspective (see Hambrick & Fredricson [2001]).

Our proposed framework of business model builds upon the above assumption to include four basic and interrelated elements or sub-models: the exchange model, the organizational model, the resource model, and the financial model. In a nutshell, the exchange model describes the added values a firm offers to the other economic actors in a market, including customers, suppliers, complementors, and competitors. The organizational model incorporates the roles and responsibilities, the activities, and the business processes, which allow the flow of product, information, and money to actualize the exchanges between the firm and its exchange partners. The resource model encompasses the firm's variety of resources required to mobilize and energize the organization. The financial model defines the firm's objective functions that collate the other three elements of the business model.

## **The Exchange Model**

The exchange model is most likely implied in a firm's value propositions to its various exchange partners. Likewise, value proposition is one of the few terms shared among academic researchers and business managers in describing business models. It is a firm's description of the potential benefits it may create for the various economic actors in its identified market (see Timmers [1998], Tapscott, Ticoll, & Lowy [2000], Chesbrough & Rosenbloom [2002]). There are three basic tenets implied in what commonly viewed as sound value propositions: The value must be embodied in a product, tangible or intangible; the value must be acceptable to an economic actor other than the focal firm; the value must be realized through an economic transaction between them. By extending these basic tenets to today's complex businesses and evolving industries, however, one may find several factors that determine how a firm's exchange model is developed.

First of all, it is the extent to which customer value is embodied in a firm's product, including components of the product sourced from the firm's suppliers. Today's products, services, and their underlying technologies and customer preferences are increasingly complex, while firms are increasingly specialized. It is therefore difficult for one firm to offer an all-encompassing product or service necessary for orchestrating total customer experience, or performing a customer task. Think about the difference between savoring a cup of coffee at home and enjoying a video clip on YouTube. The value to customers is often realized



beyond the dyadic relationship between a firm and its customers, and beyond the linear relationship involving the firm's suppliers. As for YouTube, user generated contents are an inseparable part of customer experience.

The second factor is the variety of other economic actors that co-create the customer values that the focal firm offers. Tapscott et al [2000] characterize the then emerging Internet-based businesses as systems of suppliers, distributors, commerce service providers, infrastructure providers, and customers, and find the label "b-web" more appropriate than the value chain concept (see Porter [1980]) in capturing the nature of those businesses. Brandenburger and Nalebuff [1996] introduce the concept of value net that consists stylishly four categories of other economic actors interdependently connected to the focal firm: The customers, the suppliers, the competitors, and the complementors.

The third factor is the interdependencies between these parties of exchange. There are two levels of interdependencies that need to be addressed. Within a particular value net, complementary offerings increase the customer values of the focal firm's own offerings, while competitive alternatives decrease them. The focal firm may seek to enhance the complementary offerings, in order to increase the customer values of its offerings. Competitors' strategies with similar intention are hardly competitive, since they serve the interest of the focal firm while serving themselves. Such firm actions offer values to the complementors and to the competitors too. Similar logic applies to values to the

suppliers, along with the customers, the complementors, and the competitors.

Thus, customer value propositions need to be addressed together with the value propositions to all other economic actors within the value net.

At a higher level, competition between value nets often exist, such as in competing technology platforms. The total value created for all exchange parties of a value net is a function of customers' willingness to pay, the competitive alternatives, and suppliers' and complementors' opportunity costs. On the other hand, the value created in a value net is not equally shared among the exchange parties. Thus, competing value nets may cause the parties to switch membership or allegiance from one to another. That is likely to alter the focal firm's exchange model.

In summary, the exchange model is a defining element of a business model. It describes a web of values originated from a firm's core offerings, and to all other economic actors. These values keep customers, suppliers, complementors, and competitors in economic exchanges surrounding the focal firm's core offerings. The values to those economic actors are determined by the extent to which the focal firm's core offerings embody the customer values, the variety of economic actors involved in co-creating them, and the interdependencies among the economic actors and competing webs of values, or value nets.

## **The Organizational Model**

Implementation is another salient feature found across the various business model definitions. Chesbrough and Rosenbloom [2002] assign business model implementation to the structure of the value chain within a firm, which is required to create and distribute its offering. Osterwalder et al [2005] concur that view as they see business structure a concrete thing for business model implementation. Weill and Vitale [2001] expand the concept of structure to include roles and relationships among a firm's customers, allies and suppliers, and major flows of product, information, and money. The cross-level consideration is also evident in the study by Zott and Amit [2004], which brings up design issues, such as personnel ratios, degree of specialization, and hierarchy of authority to study how an entrepreneurial firm governs the transactions with suppliers, customers and partners, in order to link the factor and product markets. Timmers [1998], on the other hand, brings operating and management processes into what he calls implementation architecture.

The structure and process view of business model implementation agrees to that of strategy implementation. A complementing view on strategy is the focus on unique activities or activity sets that make strategic positioning happen (see Porter [1996]). The organizational model espouses this business model element within the scope of rendering the flow of product, information, and money to actualize the value propositions defined by the exchange model, and to emphasize that the values are delivered through a set of related entities, i.e. roles and

responsibilities, activity systems, and business processes. Given the web-like treatment of the exchange model concept, it is only natural to address the organizational model with reference to all economic actors of a value net.

### **The Resource Model**

Although firm resources and capabilities are bedrock concepts in strategic management, they escape adequate acknowledgement in most business model definitions. Osterwalder et al [2005] use the term core competency to describe what a firm needs to possess to execute a business model. Linder and Cantrell [2001], on the other hand, suggest that the operating processes, arranged as a coherent system, and on which the value propositions are delivered, both rely on and build assets, capabilities and relationships. In our framework, we separate the firm resources (see Barney [1991]) from the organizational model and make *enabling resources* a distinct element of the business model, the resource model. We suggest a number of reasons for that.

We recognize that firm resources do also enable realization of value propositions, as the organizational model does. The two elements are characteristically different in that firm resources are what a firm has, while the organizational model captures primarily how a firm does things. The demarcation may be fuzzy when, for example, some organizational routines and institutional memories, or organizational culture, are inseparable. Additionally, however, we

consider the mobilizing and energizing nature of the *resources*: Those resources provide the energy for the machinery of the organization to work. More precisely, as Linder and Cantrell [2001] suggest, *resources* as a business model element is like a car battery – an organization both consumes and replenishes the resources it operates upon. Moreover, we expect resources in practice to be most closely associated with a firm’s investments, especially capital investments.

### **The Financial Model**

Another underlying principle shared across the various business model definitions, and between those definitions and the focus of strategy is that a firm’s logic of value capture must be clear (see Chesbrough & Rosenbloom [2002], Zott & Amit [2004], Malone, Weill, Lai, D’Urso, Herman, Apel & Woerner [2006]). Almost all business model definitions that we have reviewed emphasize a firm’s values to other economic actors, but they pay equal attention to the value of the business to its shareholders. Most business model definitions require a logic that connects profit to everything else in a business model.

The financial model defines a firm’s objective functions that collate the other three elements, the exchange model, the organizational model and the resource model. For for-profit businesses, we perceive business model as the blueprint of a profit engine, which generates positive cash flow, with clearly identified pricing models, revenue sources, cost drivers, and capital expenditures

over time. Disaggregated revenue streams illustrate the key factors that influence the revenues, which may be used to justify value propositions and the exchange model. Likewise, cost drivers and investments should be connected to primarily the organizational model and the resource model. All these should be justified by sustainable profit streams.

Technically, there are items in the financial model, such as pricing, that may belong to the exchange or organizational part of a business. However, those items co-exist in different parts of the business model with distinctive rationales. For example, a pricing model in an exchange model is part of how values are realized for customers or other economic actors, while in the related financial model it presents a unique profit logic – think the so-called razor-razor blade pricing model.

In summary, we believe we are the first to propose a business model framework that offers a comprehensive look at how a firm creates market values for its stakeholders, while distinguishes itself from various depictions of a firm's business, such as firm strategy, enterprise model, business process model, revenue model or financial model. As shown in Figure 1, our business model framework addresses the interests of the key stakeholders of a business. It describes how the business works internally and externally with the key stakeholders. It depicts what resource base the business has that enables it to work. And it defines the

business's objectives in a set of functions that tie together the stakeholders' interests, the interest realization systems, and their enabling resource base.

### **A GENERAL STRUCTURE OF BUSINESS MODEL RISKS**

Magretta [2002] argues that the strength of a business model is that it tells a story about the business by focusing attention on not only what the key pieces of the business are but also how they fit together. Beyond the story-telling function, Osterwalder et al [2005] argue that business models can potentially be analyzed, compared, prospected, designed, and patented. We believe that understanding risks associated with a business model would greatly improve the use of business models, especially during their formative or experimenting phase, since decision making for an established business is more or less embedded in its strategies, operations, and organizational routines.

A focus on business model risks may be also a more profitable use of the business model concept in entrepreneurial practice. Entrepreneurial endeavors are inherently risky, so much as many entrepreneurs or investors elude elaborate risk assessment or risk management – the attitude that no one wins car racing by sitting in the pit often prevails. Even professional investors sometimes resort to more heuristic methods, such as “looking into the (an entrepreneur's) eyes” to see if their investment in a venture is worthwhile. This is not to say risk assessment

of startups lacking disciplines. In fact, risk assessments for startups are compartmentalized in separate due diligence processes in the technical, market, and financial areas, initiated invariably by investors and often outsourced to specialists. It is a much rare instance when entrepreneurs or startup managers initiate a comprehensive risk assessment on their own. That is where we see the potential for the business model framework and the structure of business model risks.

### **The Business Model Risk Matrix**

We consider that the business model risks at three levels: The business model element level, the between-element relationship level, and the whole system level. The elementary risks address sources of dangers or uncertainties to each of the four parts of a business model. For example, the price-performance ratio of a firm's offering may not be competitive; the outsourcing vendor that a firm's key business process relies on is likely to go bankrupt; or, there is a chance that the patent application for a key technology will not be granted. The relationship risks are compatibility risks that indicate potential misfit between parts of a business model. For example, customer value based on a series of new, innovative offerings may be inherently incompatible with rigid organizational decision processes, or limited access to talents; a profit model based on customer lock-in may be risky when the control over the lock-in platform is shared among



more than a handful of other economic actors; or, it may be risky when the underlying technology of the lock-in platform is faced with increasing threat of a substitute. The system risks consider sources of danger or uncertainties that have direct and model-wide impact, for example, a public sentiment that tends to influence policy formation in favor of a competing business model. More importantly, the system risks capture those risks that may be left out at the levels of business model elements and their linkages.

On the other hand, we assume every business model has an intrinsic value, thus business model risks may affect that value. For any for-profit business model, we think that its value is determined by and embedded in the strategic logics of the various parts of the model (see Figure 1). The exchange model implies not only the size of a potential market but also the share of the market value that belongs to the focal firm through its competitive differentiation and control over the value network. The organizational model with roles and responsibilities, activity systems and business processes determine how firm resources are leveraged, whether governance is efficient, and how adaptable the organization is in a dynamic environment. The resource model defines the resources upon which a firm exploits its market and organizational advantages. It also determines how much value the firm may appropriate and for how long. The financial model demonstrates one or more of the profit logics for the entire business model: premium pricing, low operational costs, and efficient asset utilization.

Hamermesh, Marshall & Pirmohamed [2002] point out that conventional business or business model valuation methods rely on revenues, costs, and investments over time to calculate cash flows, adjusted by a firm's mastery of its critical success factors. Without specifying those adjustments, this implies the three basic types of business model risks that affect the value of market, firm's share of that value, and the sustainability of the value of market and firm's share due to competition. The strategic logics underlying the various parts of a business model provide the necessary ties between those risks and the critical success factors, so that business risks may be better understood using a more structured approach.

By intersecting the three levels of business model risks, derived from our business model framework, and the three types of business model risks, informed by the basic components of conventional business valuation methods, we present a matrix for viewing business model risks (see Figure 2). This framework is different from the widely accepted business risk or strategy risk models. The popular models (e.g. PricewaterhouseCoopers' Business Risk Model) classify business risks into two general categories, the environment risks and the organization risks. From a strategic management perspective, such a structure helps examine whether a strategy fits the environmental conditions and whether the organization is aligned to implement the strategy. In venture financing, due diligences are conducted in three areas: market, technology, and execution, the

last item being more organizational than anything else. Our framework is not inconsistent with those risk categorizations. However, it provides a higher level of granularity and also more conducive to identifying and describing risks regarding business models. It enables business model risks to be linked to the extant business risk models, such as the one introduced by PwC, or deduce from a number of strategic management perspectives.

We use the business model risk matrix to describe the various risks associated with a business model. It also serves as a prototypical classification for the business model risks.

### **Value of Market Risks**

At the value net level, the total value created for all economic actors is a function of customers' willingness to pay, the competitive alternatives, and the suppliers', complementors' and competitors' opportunity costs. A decrease in customer value or value for supplier, complementor, or competitor may increase or decrease the value of the entire market. The risks lie in their interdependencies. Customer value may decrease due to changing customer needs and wants, which may be linked to a number of social and economic demographic factors. It may also do so due to decreasing benefit of a firm's core offerings or of the other offerings that are complementary to the firm's core offerings. On the other hand, an increase in competitive offerings may decrease the customers' willingness to

pay. For the other economic actors, in general, an increase in opportunity costs for participating in the value net reduces the value of the network to them. What the focal firm needs to pay attention to is if any of these changes in values is likely to cause a system-level collapse in which exit by one economic actor will lead to an exodus from the value network. A case in point, the billion-dollar home video game market that Atari had created and dominated disappeared within just a couple of years, because intense competition among independent software vendors left little on the table for those vendors. Their exit from the market led the way out for the consumers. Atari, although with a superior game console and virtually no competitor, went bankrupt in the deserted market. Another contributing factor was the rise of games on personal computers, a competing platform that offered better values to almost all the players (game players, game developers, and hardware component makers), except for Atari.

The example demonstrates that business model risks associated with the value of market happen at the level of business model elements, such as specific value propositions, or at the level of the value net, such as the interdependencies among the value propositions for the different players. Those risks can also happen simply because the working mechanisms of a business model do not function. Incompatible organizational model may prevent a firm from providing its customers with promised core offerings, from attracting and keeping quality suppliers or complementary offerings, or from maintaining a healthy level of

competition to ensure customer value. One reason for an inadequate organizational model may be deficiencies in key enabling resources.

### **Firm Share Risks**

A firm's focus on preserving the value of its market, for itself as well as for the others, is one of the fundamental characteristics of a business model, and also a departure from strategy, which concentrates on firm profit. Nevertheless, firm share of the value of market is another core component in describing business model risks. Strategic management literature offers a number of perspectives that help understand those risks.

Beside the operational concerns, such as inefficient organization or high costs of supplies, the value eventually appropriated by the focal firm hinges on the bargaining power of the firm relative to the other economic actors (see Porter [1980], Kogut [2000]). There are other structural risks that may affect a firm's profit from innovation. Innovation gives rise to entrepreneurial rents, but they accrue to all stakeholders in the business model. The strength of a firm's profit regime depends on its control over the other economic actors, or the competitive strength of its core technologies and the architecture of the value net (see Teece [1986], Tapscott, Ticoll, & Lowy [2000], Jacobides, Knudsen & Augier [2006]). Microsoft and Intel both have enjoyed a superior profit. Their respective segments of the PC value net have high complementarity but little competition. Microsoft

has relied on network externalities and Intel on huge commitment in building assets and capabilities to achieve near competitive exclusion. The other players in the PC industry are not nearly as profitable, because their segments of the industry, although complementary to both Microsoft and Intel, are highly competitive.

The transaction costs theories indicate efficiency and Shumpeterian theories indicate innovation as source of firm profit (see Amit & Zott [2001]). A firm's organizational model or resource model may fail to realize intended benefits, the danger of which is business model risk at the element level. There are also risks of failure to balance between delivering innovation and delivering efficiency (see Tushman & O'Reilly [1997]). Those are incompatibility risks between business model elements.

At the system level, converging value nets may cause a reduction of the focal firm's profit. For example, the potential convergence between a highly capable home video game console and a PC has prompted Microsoft to invest billions of dollars to enter the home video game industry, in order to avert the risks of dissipating profit due to a platform switch.

### **Competitive Sustainability Risks**

The Windows operating system as a de facto industry standard and yet proprietary for Microsoft is a key resource for its sustained profits. Linux, as an alternative platform, is weakening the stronghold of the Windows franchise, but it

is far from clear whether the Linux value net offers comparable values to all stakeholders in the Windows value net other than, of course, Microsoft. This is an example of business model risks at the firm and system levels in terms of competitive sustainability.

We apply Barney's [1997] framework of value, rareness, inimitability, and organization to identify competitive sustainability risks in a business model. For a firm resource, the risks are its irrelevance to firm value, the loss of its rarity, its competitive imitation, and its lack of organizational appropriability. Under the business model risk structure, a resource's irrelevance to firm value is further dissected as an increase in the other economic actors' control over the resource or a detachment of the resource from the firm's profit logic. Also, organizational appropriability is operationalized as either an enabling resource failing to energize the organizational model or a change in the organizational model making exploiting the resource more difficult.

For example, Microsoft's new software-as-a-service initiative, Windows Live, mandates a very different set of development, product and marketing activities from those of the traditional shrink-wrap packaged software business model. The Windows operating systems, while still a key source for cash, pale in enabling the new activities, since Windows Live uses the web platform, and supposedly agnostic to different operating systems. On the other hand, it is

doubtful that the new activities will be able to exploit fully the prowess of Windows operation systems, including the network externalities.

## **IMPLICATIONS**

A Google search today under the term business model yields about 20 million entries, almost twice as many as the entries under strategic planning. And yet when searching under Google Scholar, the results are the opposite, entries under strategic planning are about five times as many as those under business model. Chesbrough and Rosenbloom [2002] argue that academic researchers pay less attention to the concept of business model, because the concept draws from and integrates a variety of academic and functional disciplines but gains prominence in none. Nevertheless, we think the practical implications of a better understanding of the business model framework and risk structure are not obscure or deficient.

The business model framework in this paper speaks the language of business managers and covers the major areas of business design and planning, the exchanges, the organization, the resources and financial models. It is applicable at not only the business level but also the functional level. Key business and management functions may find their place in the framework, and see how they are interrelated to one another and serve enterprise objectives. The business model framework may be used for an overview of the strategic



challenges a new business is faced with. It may also be used to integrate functional, business and corporate strategies, relate strategies with organization and resources, and apply performance disciplines to business and organization design.

The business model risk structure contains environmental risks, inter-organizational and organizational risks, and relates them closely to firm profit. The structure serves to classify those risks based on key strategic management theories on firm performance, including industry competition, value net, appropriability regime, organizational congruence, and sustainable competitive advantage. A better understanding of business model risks helps business design and performance assessment. It is also helpful to use it to counter-balance managerial heuristics. Moreover, business model captures a firm's commitment in various strategic areas, choice of market, product and its associated benefits to customers, relationships with others, organizational structure and process, resources, and dominant profit logic. Strategic commitment is made to mitigate competitive risks, or risks due to lack of preemptive market entry, product introduction, relationship formation, and investment in resources. On the other hand, strategic commitment also entails risks of inflexibility, when there are circumstances that favor strategic flexibility. The business model framework and risk structure, when used to examine a portfolio of business models, help weigh the risk of strategic commitment versus the risk of strategic flexibility.

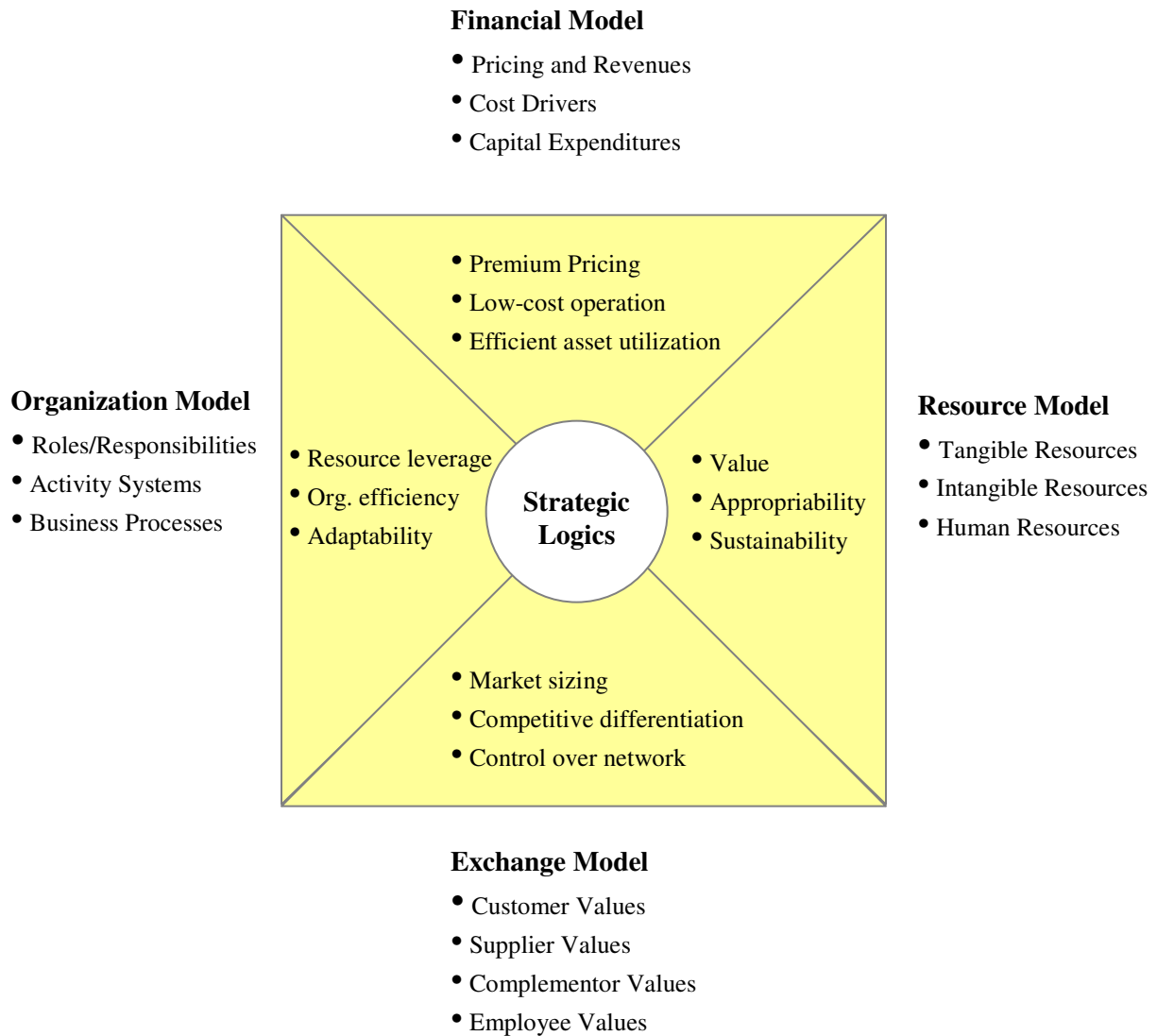
Enterprise engineering and operation have relied on the use of computer business modeling and design tools, such as User Requirements Notation and Goal-Oriented Requirement Language. These tools support the modeling of the strategic interdependencies between actors and the internal goals of individual actors. They produce rationale diagrams that can be used to compare architectural alternatives and help managers see the impact of each alternative on high-level business or system goals (see Weiss & Amyot [2005]). The business model framework and risk structure, with clearly defined roles, objectives, and interdependencies, are conducive to leveraging those tools. Use of those tools is perhaps the first step toward garnering more benefits from the ever increasing power of information technology for business model design and strategic planning.

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**Figure 1 – A Business Model Framework**



**Figure 2 – The Business Model Risks**

	<i>Value of Market</i>	<i>Firm Share</i>	<i>Competitive Sustainability</i>
<i>Elementary</i>	<p><b>Decreasing customer value due to</b></p> <ul style="list-style-type: none"> <li>- changing customer needs and wants</li> <li>- decreasing benefits of core offerings</li> <li>- decreasing value of complementary offerings</li> <li>- increasing competition in core offerings</li> </ul> <p><b>Decreasing values for supplier, complementor or competitor due to</b></p> <ul style="list-style-type: none"> <li>- increasing opportunity costs in the value net</li> </ul>	<p><b>High operating costs due to</b></p> <ul style="list-style-type: none"> <li>- inefficient organizational model</li> <li>- high costs of supplies</li> </ul> <p><b>Weak profit regime due to</b></p> <ul style="list-style-type: none"> <li>- lack of competitive core technologies</li> <li>- lack of control over complementors or suppliers</li> <li>- lack of competition among complementors or suppliers</li> </ul> <p><b>Weak positive cash flows due to</b></p> <ul style="list-style-type: none"> <li>- weak revenue streams</li> <li>- high operating costs</li> <li>- low returns on investments</li> </ul>	<p><b>Deteriorating value of firm resources due to</b></p> <ul style="list-style-type: none"> <li>- loss of rarity</li> <li>- competitive imitation</li> </ul>
<i>Compatibility</i>	<p><b>Organizational failure in delivering a system that</b></p> <ul style="list-style-type: none"> <li>- provides core offerings</li> <li>- attracts quality suppliers</li> <li>- attracts complementary offerings</li> <li>- maintains healthy competition to ensure customer values</li> </ul> <p><b>Lack of adequate resources for organizational model to realize designed benefits, such as</b></p> <ul style="list-style-type: none"> <li>- deficiency in key enabling resources and capabilities</li> <li>- inability to acquire, develop and keep key enabling resources and capabilities</li> </ul>	<p><b>Failure of organizational model in</b></p> <ul style="list-style-type: none"> <li>- balancing between delivering innovation and delivering efficiency</li> </ul> <p><b>Failure of exchange model in</b></p> <ul style="list-style-type: none"> <li>- keeping complementors and suppliers under control</li> <li>- keeping competition under control</li> </ul> <p><b>Failure to resource model due to</b></p> <ul style="list-style-type: none"> <li>- deficiency in key enabling resources and capabilities</li> <li>- inability to acquire, develop and keep key enabling</li> </ul> <p><b>Failure to make adequate investments on enabling resources and organizational systems</b></p>	<p><b>Incompatible exchange relations caused by increasing control of focal firm's resources by competitors, complementors, or suppliers</b></p> <p><b>Resources irrelevant to profit logic</b></p> <p><b>Firm resources are less effective in energizing the organizational model</b></p> <p><b>Changes in organizational models that are less capable of exploiting the full potential of the firm resources</b></p>
<i>System</i>	<p><b>Decreasing customer value due to increasing competition from other value nets (e.g. alternative technology platforms)</b></p> <p><b>Collapse of value net induced by deteriorating value to certain economic actors</b></p>	<p><b>Merger or dissolution of value net causing a reduction of the focal firm's profit</b></p>	<p><b>Deteriorating resources based on which the entire value net thrives among alternatives</b></p>