

Business Models, Business Strategy and Innovation

David J. Teece

Whenever a business enterprise is established, it either explicitly or implicitly employs a particular business model that describes the design or architecture of the value creation, delivery, and capture mechanisms it employs. The essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit. It thus reflects management's hypothesis about what customers want, how they want it, and how the enterprise can organize to best meet those needs, get paid for doing so, and make a profit. The purpose of this article is to understand the significance of business models and explore their connections with business strategy, innovation management, and economic theory.

© 2009 Published by Elsevier Ltd.

Introduction

Developments in the global economy have changed the traditional balance between customer and supplier. New communications and computing technology, and the establishment of reasonably open global trading regimes, mean that customers have more choices, variegated customer needs can find expression, and supply alternatives are more transparent. Businesses therefore need to be more customer-centric, especially since technology has evolved to allow the lower cost provision of information and customer solutions. These developments in turn require businesses to re-evaluate the value propositions they present to customers — in many sectors, the supply side driven logic of the industrial era has become no longer viable.

This new environment has also amplified the need to consider not only how to address customer needs more astutely, but also how to capture value from providing new products and services. Without a well-developed business model, innovators will fail to either deliver — or to capture — value from their innovations. This is particularly true of Internet companies, where the creation of revenue streams is often most perplexing because of customer expectations that basic services should be free.

A business model articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering that value. The different elements that need to be determined in business model design are listed in Figure 1.

The issues related to good business model design are all interrelated, and lie at the core of the fundamental question asked by business strategists – how does one build a sustainable competitive advantage and turn a super normal profit? In short, a business model defines how the enterprise creates and delivers value to customers, and then converts payments received to profits.¹ To profit from innovation, business pioneers need to excel not only at product innovation but also at business model design, understanding business design options as well as customer needs and technological trajectories. Developing a successful business model is insufficient to assure competitive advantage as imitation is often easy: a differentiated (and hard to imitate) – yet effective and efficient – business model is more likely to yield profits. Business model innovation can itself be a pathway to competitive advantage if the model is sufficiently differentiated and hard to replicate for incumbents and new entrants alike.

In essence, a business model [is] a conceptual, rather than financial, model of a business.

In essence, a business model embodies nothing less than the organizational and financial ‘architecture’ of a business.² It is not a spread sheet or computer model, although a business model might well become embedded in a business plan and in income statements and cash flow projections. But, clearly, the notion refers in the first instance to a conceptual, rather than a financial, model of a business. It makes implicit assumptions about customers, the behavior of revenues and costs, the

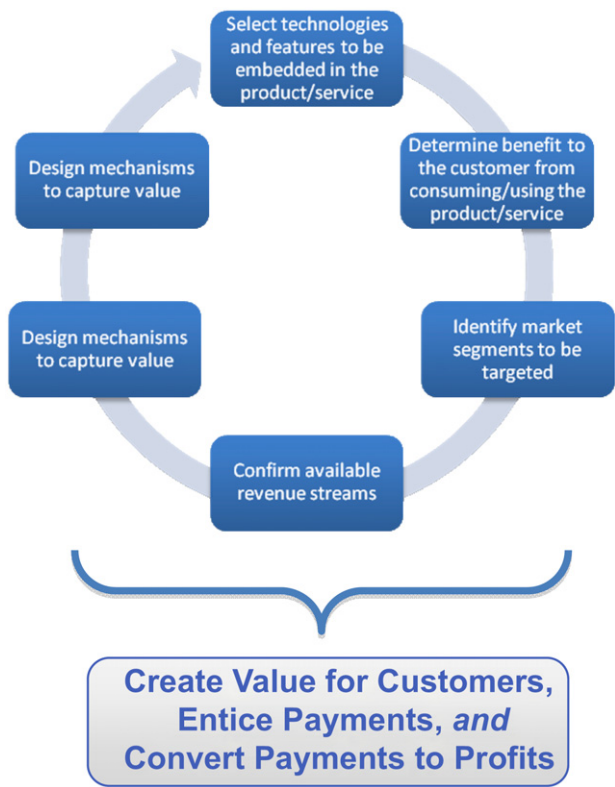


Figure 1. Elements of business model design

changing nature of user needs, and likely competitor responses. It outlines the business logic required to earn a profit (if one is available to be earned) and, once adopted, defines the way the enterprise 'goes to market'. But it is not quite the same as a strategy: the distinction and the relationship between the two will be discussed later.

Despite lineage going back to when societies began engaging in barter exchange, business models have only been explicitly catapulted into public consciousness during the last decade or so. Driving factors include the emerging knowledge economy, the growth of the Internet and e-commerce, the outsourcing and offshoring of many business activities, and the restructuring of the financial services industry around the world. In particular, the way in which companies make money nowadays is different from the industrial era, where scale was so important and the capturing value thesis was relatively simple i.e. the enterprise simply packed its technology and intellectual property into a product which it sold, either as a discreet item or as a bundled package. The existence of electronic computers that allow low cost financial statement modeling has facilitated the exploration of alternative assumptions about revenues and costs.

Additional impetus has come from the growth of the Internet, which has raised anew, and in a transparent way, fundamental questions about how businesses deliver value to the customer, and how they can capture value from delivering new information services that users often expect to receive without charge. It has allowed individuals and businesses easy access to vast amounts of data and information, and customer power has increased as comparison shopping has been made easier. In some industries, such as the recording industry, Internet enabled digital downloads compete with established channels (such as physical product sales) and, partly because of the ubiquity of illegal digital downloading, the music recording industry is being challenged to completely re-think its business models. The Internet is not just a source of easy access to digital data; it is also a new channel of distribution and for piracy which clearly makes capturing value from Internet transactions and flows difficult for recording companies, performers and songwriters alike. More generally, the Internet is causing many 'bricks and mortar' companies to rethink their distribution strategies — if not their whole business models.

Notwithstanding how the Internet has devastated the business models of industries like music recording and news, internet companies themselves have struggled to create viable business models. Indeed, during the dot.com boom and bust of 1998–2001, many new companies with zero or negative profits (and unprecedentedly low revenues) sought financial capital from the public markets, which — at least for a short while — accommodated them. Promoters managed to persuade investors that traditional revenue and profitability models no longer applied — and that the dot.com companies would (eventually) figure out (highly) profitable business models. Few have, causing one commentator to remark that '*the demise of a popular but unsustainable business model now seems inevitable*'.³

No matter what the sector, there are criteria that enable one to determine whether or not one has designed a good business model. A good business model yields value propositions that are compelling to customers, achieves advantageous cost and risk structures, and enables significant value capture by the business that generates and delivers products and services. 'Designing' a business correctly, and figuring out, then implementing — and then refining — commercially viable architectures for revenues and for costs are critical to enterprise success. It is essential when the enterprise is first created; but keeping the model viable is also likely to be a continuing task. Superior technology and products, excellent people, and good governance and leadership are unlikely to produce sustainable profitability if business model configuration is not properly adapted to the competitive environment. Some preliminary criteria for business model design are suggested throughout this article, and summarised in a later section.

The concept of a business model has no established theoretical grounding in economics or in business studies.

Business models — the theoretical foundation

The concept of a business model lacks theoretical grounding in economics or in business studies. Quite simply there is no established place in economic theory for business models; and there is not a single scientific paper in the mainstream economics journals that analyses or discusses business models in the sense they are defined here. (Possible exceptions are the literature on investment in basic research, which economists recognize as being unsupported by private business models (see below), and the literature on bundling, inasmuch as it deals — indirectly — with different revenue models.) The absence of consideration of business models in economic theory probably stems from the ubiquity of theoretical constructs that have markets solving the problems that — in the real world — business models are created to solve.

Economic theory implicitly assumes that trades take place around tangible products: intangibles are, at best, an afterthought. In standard approaches to competitive markets, the problem of capturing value is quite simply assumed away: inventions are often assumed to create value naturally and, enjoying protection of iron-clad patents, firms can capture value by simply selling output in established markets, which are assumed to exist for all products and inventions. Thus there are no puzzles about how to design a business — it is simply assumed that if value is delivered, customers will always pay for it. Putting so called ‘public goods’ and ‘free rider’ issues to one side, business models are quite simply redundant because producers/suppliers can create and capture value simply through disposing their output at competitive market prices. Such models clearly assume away the essential business design issues that are the subject of this article.

In short, figuring out business models for a new or existing product or business is an unnecessary step in textbook economics, where it is not uncommon to work with theoretical constructs which assume fully developed spot and forward markets, strong property rights, the costless transfer of information, perfect arbitrage, and no innovation.⁴ In mainstream approaches, there is simply no need to worry about the value proposition to the customer, or the architecture of revenues and costs, or about mechanisms to capture value.⁵ Customers will buy if the price is less than the utility yielded; producers will supply if price is at or above all costs including a return to capital — the price system resolves everything and business design issues simply don’t arise.

But general equilibrium models, with (one-sided) markets and perfect competition are a caricature of the real world. Intangible products are in fact ubiquitous, two-sided markets are common, and customers don’t just want products; they want solutions to their perceived needs. In some cases, markets may not even exist, so entrepreneurs may have to build organizations in order to perform activities for which markets are not yet ready. Accordingly, in the real world, entrepreneurs and managers must give close consideration to the design of business models and even to building businesses to execute transactions which cannot yet be performed in the market.

Equilibrium and perfect competition are a caricature of the real world... customers don’t just want products; they want solutions to their perceived needs.

It’s also true that business models have no place within the theoretical constructs of planned economies (just as in a perfectly competitive economy). While central planners do need to understand the stages in the production system, in a supply driven system — where consumers merely get what the system produces — business models simply aren’t necessary. There is no problem associated with producers capturing value because value doesn’t even have to be captured; the state decides what and how to produce, and how to pay for it all.

While business models have no place in economic theory, they likewise lack an acceptable place in organizational and strategic studies, and in marketing science. However, there has been some limited discussion and research on new organizational forms. Williamson, for instance, recognizes

that ‘the 1840s marked the beginning of a great wave of organizational change that has brought us the modern corporation’.⁶ As discussed earlier, new organizational forms can be a component of a business model;⁷ but organizational forms are not business models. Clearly, the study of business models is an interdisciplinary topic which has been neglected — despite their obvious importance, it lacks an intellectual home in the social sciences or business studies. This article aims to help remedy this deficiency.

Examples of business models

Business models are necessary features of market economies where there is consumer choice, transaction costs, and heterogeneity amongst consumers and producers, and competition. Profit seeking firms in competitive environments will endeavor to meet variegated consumer wants through the constant invention and presentation to the consumer of new value propositions. Business models are often necessitated by technological innovation which creates both the need to bring discoveries to market and the opportunity to satisfy unrequited customer needs. At the same time, as indicated earlier, new business models can themselves represent a form of innovation. There are a plethora of business model possibilities: some will be much better adapted to customer needs and business environments than others. Selecting, adjusting and/or improving business models is a complex art. Good designs are likely to be highly situational, and the design process is likely to involve iterative processes. New business models can both facilitate and represent innovation — as history demonstrates.

Traditional industries

A striking early American example of 19th century business model innovation was Swift and Company’s ‘reengineering’ of the meat packing industry. Prior to the 1870s, cattle were shipped live by rail from the Midwestern stockyard centers like Omaha, Kansas City and Chicago to East Coast markets where the animals were slaughtered and the meat sold by local butchers. Gustavus Swift sensed that if the cattle could be slaughtered in the Midwest and shipped already dressed to distant markets in refrigerated freight cars, great economies in ‘production’/centralization and transportation could be achieved, along with an improvement in the quality of the final product.

Swift’s new business model quickly displaced business models involving a network of shippers, East Coast butchers and the railroads. His biggest challenge was the absence of refrigerated warehouses to store the beef near point of sale, which were not part of the existing distribution system. Swift set about creating a nationwide web of refrigerated facilities, often in partnerships with local jobbers. *‘Once Swift overcame the initial consumer resistance to meat slaughtered days before in distant places, his products found a booming market because they were as good as freshly butchered meats and were substantially cheaper — Swift’s success quickly attracted imitators — By the 1890s, men like Phillip Armour had followed on Swift’s heels’.*⁸

A more recent example is containerization. Malcolm McLean, owner of a large U.S. trucking company, was convinced that conventional shipping was highly inefficient because shipping companies typically broke bulk at dockside, and cargo ships spent most of their time in port being loaded or unloaded. In 1955 he hired an engineer to design a road trailer body that could be detached from its chassis and stacked on ships. McLean acquired a small steamship company, renamed it Sea-Land Industries (it eventually became absorbed into the Maersk Line). He developed steel frames to hold the containers, first on the top decks of tankers, and then on the world’s first specialized cellular containership, the *Gateway City*, launched in 1957. To promote the standardization necessary to develop the industry, McLean made Sea-Land’s patents available royalty free to the International Standards Organization (ISO). Sea-Land began service on North Atlantic routes in 1966. When R. J. Reynolds bought Sea-Land for \$530 million in 1969, McLean received \$160M for his share and retired.⁹

Another U. S. example of successful business model innovation is Southwest Airlines, where the founder surmised that most customers wanted direct flights, low costs, reliability and good

customer service, but didn't need 'frills'. To achieve these goals, Southwest eschews the hub-and-spoke model associated with alliances, nor does it allow interlining of passengers and baggage, or sell tickets through travel agencies — all sales are direct. Aircraft are standardized on the Boeing 737, allowing greater efficiency and operating flexibility. Southwest's business model — which was quite distinct from those of the major carriers — followed elements of a discount airline model first pioneered in the U.K. by Freddie Laker. Although Laker Airways eventually failed — as did other early followers in the U.S. such as People's Express — Easy Jet has implemented a similar model in Europe, so far successfully.

The 'razor-razor blade model' is another classic (and quite generic) case of a well known business revenue model (which is just one component of a business model), which involves pricing razors inexpensively, but aggressively marking-up the consumables (razor blades). Jet engines for commercial aircraft are priced the same way — manufacturers know that engines are long lived, and maintenance and parts is where Rolls Royce, GE, Pratt & Whitney and others make their money. So engines are sold relatively inexpensively — but parts (and service) involve considerable mark-ups and represent an income stream that may continue for decades.

The 'razor-razor blade model' is a classic business revenue model ... jet engines for commercial aircraft are priced the same way.

In the sports apparel business, sponsorship is a key component of today's business models. Nike, Adidas, Reebok, Canterbury, and others sponsor football and rugby clubs and teams, providing kit and sponsorship dollars as well as royalties streams from the sale of replica products. After building brand on the field, these companies endeavor to leverage their brand into off-field products, often with considerable success. On-field sponsorship is almost a *sine qua non* for brand authenticity. However, this model is readily imitated, and its viability for any particular apparel company depends on the sponsor's particular abilities to leverage on-field sponsorships into off-field sales. Relationships with clubs, teams, and with team managers and club owners become important in the mix.

Performing artists have several business models they can employ. Their revenue sources might include live productions, movies, sale of physical CDs through stores or online music sales through virtual stores such as Apple's iTunes.¹⁰ Stars might decide to use concerts as their main revenue generator, or to spend less time performing and more in the recording studio, using concerts primarily to stimulate sales of recordings. In earlier days when piracy was limited, the Beatles demonstrated that stars could quit live performances and continue to do well on royalties from the sale of recorded music. Then, in the 80s and 90s, the music video became an important source of revenue, and more recently, 'soundtracks' to video games have become a significant source of revenue for some artists. In short, multiple revenue streams are available, and the particular revenue model employed can depend on the marketplace, on a star's contextual talents and preferences, and on the quality of copyright protection afforded to recorded music.

Business models must morph over time as changing markets, technologies and legal structures dictate and/or allow. For instance, the business model that U.S. investment banks had employed for almost 20 years largely disappeared in 2008. From at least the 1950s through the 1990s, the investment banking function usually generated most of the banks' revenues. However, for Goldman Sachs (arguably the industry leader) that figure had fallen to 16% by 2007, while revenues from trading and principal investment had grown to 68%, leading it and other investment banks to morph their business models into something quite different — and more risky — than traditional investment banking. Subprime mortgages and other problematic assets became securitized and injected into the system, encouraged by Freddie and Fannie (and by Congress) with results that subsequently hit the headlines. In September 2008, Goldman Sachs and Morgan Stanley (the last two

independent investment banks left standing in the U.S. after the takeover of Bear Sterns by JP Morgan Chase, the bankruptcy of Lehman Brothers, and Merrill Lynch's absorption by Bank of America) converted themselves into federally chartered commercial banks. By accepting government regulation by the FDIC, Goldman Sachs and Morgan Stanley will need to maintain lower leverage, and accept lower risk and lower returns. In their need for a source of stable funds, both have (albeit reluctantly) made significant business model changes — in short, they have been obliged to abandon their old models entirely.

The information/internet industries

As noted earlier, the information industries have always raised challenging business model issues because information is often difficult to price, and consumers have many ways to obtain certain types without paying. Figuring out how to earn revenues (i.e. capture value) from the provision of information to users/customers is a key (but not the only) element of business model design in the information sector. The rules for strategic engagement promulgated by Shapiro and Varian are core elements of strategy in the information services sector.¹¹

As traditional information providers, newspapers have employed a revenue model for decades in which the paper is sold quite inexpensively (usually at a nominal level, insufficient to cover costs), while publishers looked to advertising revenue to cover remaining costs plus provide a profit. In recent years, this business model has been undermined by websites like eBay and Craigslist that have siphoned off advertising revenues from job and real estate listings and classified ads: many newspapers have gone out of business.

The Internet has enabled traditional industries like DVD rentals to adopt a more modern on-line posture. Netflix (<http://www.netflix.com>) enables customers to order DVDs on-line and have expedited delivery by the U.S. Mail as a more convenient alternative to going to a rental facility, renting the DVD, and returning it several days later. Monthly fees are what sustain Netflix.

The emergence of the Internet, Napster and its clones has obliged music recording companies to rethink their business models, which they have been doing along several fronts. On one front, they are moving to greatly increase the royalty rate for Internet 'broadcast' of their content, while on another, they are moving to capture advertising revenues associated with that content. For instance, MySpace Music (<http://music.myspace.com>) enables users to listen to songs from Universal, Sony BMG and Warner Music, and provides free advertising-supported streaming, with easy access to Amazon.com for music purchases. Another example is the Nokia 'Comes with Music' (CWM) handset that comes with 'free', unlimited music downloads for a year, with Nokia passing on a fee to the recording companies.

A recent example of an Internet business model is Flickr (www.flickr.com), which has been described as 'a poster child for Web 2.0 [offering] users a way to share photos easily'.¹² Flickr's friendly and easy-to-use web interface and its free photo management and storage service are noted as great examples of a Web 2.0 'freemium' (free and premium) business model, characterized by Fred Wilson as:

'Give your service away for free, possibly ad supported but maybe not, acquire a lot of customers very efficiently through word of mouth, referral networks, organic search marketing, etc., then offer premium priced value added services or an enhanced version of your service to your customer base'.

The Flickr business model (which actually evolved from gaming to on-line photo sharing, harnessing user feedback generated through blogs) essentially gives away the services that amateur photographers want most: photo sharing, on-line storage, indexing and tagging. Shuen notes that low cost on-line distribution and marketing and investment are associated with 'revenue from multiple streams, including value-added premium services and customer acquisition.' Flickr's multiple revenue stream business model involves collecting subscription fees, charging advertisers for contextual advertising, and receiving sponsorship and revenue-sharing fees from partnerships with retail chains and complementary photo service companies. Yahoo bought Flickr in March 2005 for tens of millions of dollars.

companies can adopt business models [e.g. Freemium or multiple revenue stream models] pioneered in one space into another.

A business model pioneered by one company in one space may be adopted by another company in another space. The 'freemium' model has been adopted by Adobe (for its PDF reader), Skype and MySpace, while Outshouts Inc (www.outshouts.com) has applied Flickr's multiple revenue streams model to on-line Web videos, allowing users to personalize and disseminate videos for business or consumer purposes. While it is common with Internet start-ups, the multiple revenue stream approach is by no means new. Besides theatrical releases and looking to exploit an obvious extra revenue stream — the sequel — movie studios have long sought revenues from 'ancillary' licensing (toys, T-shirts, lunchboxes, backpacks), and more recently from video games and soundtracks.

Freemium business models are also deployed by a large number of software companies (such as Linux, Firefox, and Apache) who operate in the open source marketplace. The standard form (or 'kernel') of the software is licensed under an open source license and then a premium version with additional features and/or associated services is made available under commercial license terms. One theory is that 'vendors' get customers (often, and ideally with the IT organization bypassing Procurement Departments altogether — because, after all, the software is 'free') hooked on the free product, and then subsequently convert them into paying customers through the sale of complementary software and/or service. However, conversion rates to paying customers have been poor, and it's not clear the model works.

The discussion so far has focused mainly on the impact of technology on value and its delivery. However technology can have an equally transformative effect on the cost side of the business model. New 'cloud-based' computing models, for example, remove the need for small companies to invest upfront in expensive servers — instead they can buy server capacity in small slices, as needed, according to their monthly needs. The size of such slices continues to shrink — services such as Amazon's EC2, for example, even allow customers to buy virtual server capacity for a single transaction, measured in milliseconds. This kind of innovation transforms previous 'fixed plus variable' cost models into entirely variable cost models, greatly improving efficiency and reducing early-stage capital requirements.

Business models, strategy and sustainable competitive advantage

A business model articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value. In short, it's about the benefit the enterprise will deliver to customers, how it will organize to do so, and how it will capture a portion of the value that it delivers. A good business model will provide considerable value to the customer and collect (for the developer or implementor of the business model) a viable portion of this in revenues. But developing a successful business model (no matter how novel) is insufficient in and of itself to assure competitive advantage. Once implemented, the gross elements of business models are often quite transparent and (in principal) easy to imitate — indeed, it is usually just a matter of a few years — if not months — before an evidently successful new business model elicits imitative efforts. In practice, successful business models very often become, to some degree, 'shared' by multiple competitors.

A business model is more generic than a business strategy. Coupling strategy and business model analysis is needed to protect competitive advantage resulting from new business model design.

As described, a business model is more generic than a business strategy. Coupling strategy analysis with business model analysis is necessary in order to protect whatever competitive advantage results from the design and implementation of new business models. Selecting a business strategy is a more granular exercise than designing a business model. Coupling competitive strategy analysis to business model design requires segmenting the market, creating a value proposition for each segment, setting up the apparatus to deliver that value, and then figuring out various ‘isolating mechanisms’ that can be used to prevent the business model/strategy from being undermined through imitation by competitors or disintermediation by customers.¹³

Strategy analysis is thus an essential step in designing a competitively sustainable business model. Unless the business model survives the filters which strategy analysis imposes, it is unlikely to be viable, as many business model features are easily imitated. For instance, leasing vs. owning is an observable characteristic of business models that competitors can replicate. The ‘newspaper revenue model’ — i.e. low cost for the newspaper, use of advertising (including classifieds) to help cover the costs of generating content — is easy to replicate, and has been implemented with little variation in thousands of geographically separate ‘markets’ throughout the world.

Having a differentiated (and hard-to-imitate) — but at the same time effective and efficient — architecture for an enterprise’s business model is important to the establishment of competitive advantage. The various elements need to be cospecialized to each other, and work together well as a system. Both Dell Inc. and Wal-Mart have demonstrated the value associated with their business models (while Webvan and many other dotcoms demonstrated just the opposite). Dell and Wal-Mart’s business models were different, superior, and required supporting processes that were hard for competitors to replicate (at least in the U.S. — elsewhere, new entrants could adopt key elements of the model and pre-empt Wal-Mart, as Steven Tindall has demonstrated so ably in New Zealand with ‘The Warehouse’). Both Dell and Wal-Mart have also constantly adjusted and improved their processes over time. Michael Dell, founder of Dell, notes:

*This belief — that by working directly with customers we could get them technology faster, provide a better level of service, and provide better value — was the basis of the business — the fundamental business system was quite powerful and delivered lots of value to our customers — we screwed up lots of things, but the one thing we got right was this core business model, and it masked any other mistakes ...*¹⁴

Dell’s competitors were incumbents who had difficulty in replicating its strategy, as selling direct to customers would upset their existing channel partners and resellers: as a new entrant, Dell had no such constraints. Another critical element of Dell’s success, beyond the way it organized its value chain, was the choice of products it sold through its distribution system. Over time, Dell developed (dynamic) capabilities around deciding which products to build beside desktop and laptop computers, and has since added printers, digital projectors and computer-related electronics. Of course, the whole strategy depended on the availability of numerous non captive suppliers able to produce at very competitive prices.

Magretta points out that the business model of discount (big box) retailing had been around long before Wal-Mart founder Sam Walton (in his words) ‘*put good sized stores into little one-horse towns which everybody else was ignoring*’.¹⁵ Once in place, the towns Wal-Mart had selected were too small to support another similar sized store, so a difficult to replicate first mover advantage had been created. Wal-Mart promoted national brands at deep discounts, supported by innovative and lean purchasing logistics and IT systems: these were elements of its strategy that made its business model difficult to imitate.

Search engine development and the Google story is another interesting business model illustration. Early efforts in this field, including Lycos, Excite, Alta Vista, Inktomi and Yahoo, would find lots of information — perhaps too much — and present it to users in an unhelpful manner, with maybe thousands of results presented in no discernible or useful order. Alta Vista presented links, but without using them as aids to searching. Larry Page, one of the founders of Google,

surmised that counting links to a website was a way of ranking its popularity (much like higher citation counts in scientific journals point to more important contributions to the literature), and decided to use the number of links to important sites as a measure of priority. Using this link based approach, Page and his colleagues at Google devised an Internet site ranking system — the PageRank algorithm — which went on to be their core product/service offering, and one which has proved very valuable to users. The challenge was to tune the product offering and devise a business model to capture value, which was not easy in a world in which consumers expected search to be free.

The business model developed around Google's product/service innovation required heavy investment in computing power as well as in software. Google writes its own software and (remarkably) builds its own computers. It takes advantage of its considerable computing power to count words and links, and to combine information about words and links. This allows the Google search engine to take more factors into account than others currently in the market. The Google revenue model eschewed funding from advertisers: directed search biased to favor advertisers was perceived by Google's founders as degrading to the integrity of the search process and to its emerging brand. Accordingly, it decided that the essence of its revenue model would be sponsored links i.e. no pop ups or other graphics interfering with the search. In short, Page and Brin found a way to accommodate advertising (thereby enabling revenue generation) without subtracting from the search experience, and arguably enhancing it.¹⁶ However, they also adopted an integrated approach (by fulfilling their own software and hardware requirements) to keep control of their product/service offering, ensuring its delivery and its quality.

*Business model choices define the architecture of the business ...
expansion paths develop from there on out.*

Business model choices define the architecture of the business, and expansion paths develop from there on out. But once established, enterprises often encounter immense difficulty in changing business models — witness the difficulties American Express and Discover Card have experienced in trying to morph to hybrid models where they issue cards themselves while simultaneously looking to persuade banks as partners to act as card issuers for them. This is clearly incongruous — their main competitors (Visa and MasterCard, who provide network services only and don't compete with banks in issuing credit cards) are not hobbled by such relationship conflicts, and are clearly likely to be the bank's preferred partners. Thus American Express and Discover are unlikely to have (and indeed have not had) much success trying to replicate the Visa/MasterCard business model while still maintaining their own internal issuing and acquiring functions.¹⁷

In short, innovating with business models will not, by itself, build enterprise-level competitive advantage. However, new business models, or refinements to existing ones, like new products themselves, often result in lower cost or increased value to the consumer; if not easily replicated by competitors, they can provide an opportunity to generate higher returns to the pioneer, at least until their novel features are copied. These issues are summarized in [Figure 2](#) and explored in more detail later.

Barriers to imitating business models

This section attempts to distil those factors that affect the ease or otherwise of imitating business models. At a superficial level all business models might seem easy to imitate — certainly the basic idea and the business logic behind a new model is unlikely itself to enjoy intellectual property protection. In particular, a new business model, being more general than a business method, is very unlikely to qualify for a patent, even if certain business methods underpinning it may be patentable. Descriptions of a business model may enjoy copyright protection, but that is unlikely to be a barrier to

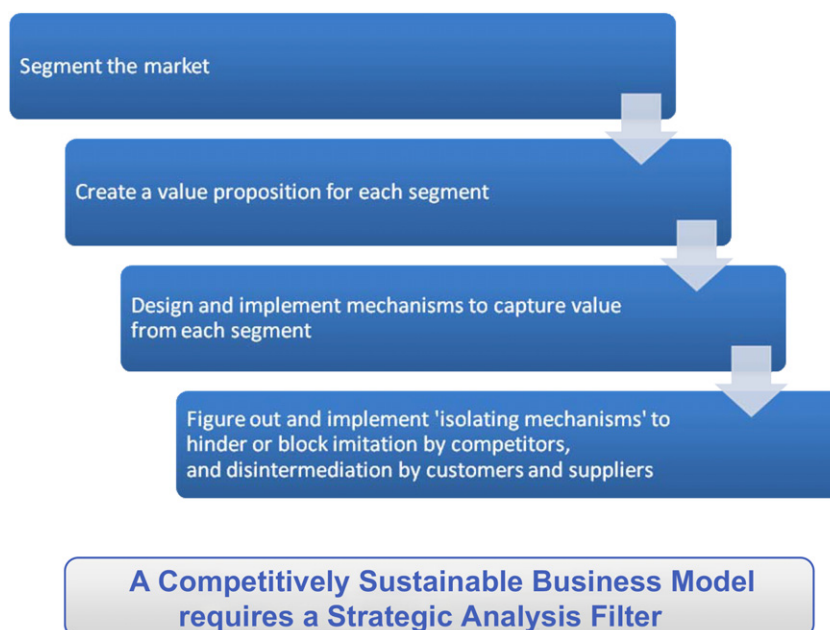


Figure 2. Steps to achieve sustainable business models

copying its basic core ‘idea’. What then is it, if anything, that is likely to impede the copycat behavior that can so quickly erode the business model pioneer’s advantage? Three factors would seem to be relevant.

First, implementing a business model may require systems, processes and assets that are hard to replicate — such was the situation with potential entrants into the towns too small to sustain a Wall-mart competitor. Similarly, while at some level Dell Computer’s direct-to-user (consumers and businesses) business model is obvious (you simply disintermediate wholesalers and retailers), when Gateway Computers tried to implement a similar model, their failure to achieve anywhere near Dell’s performance levels has been attributed to the inferior implementation of processes. Capabilities matter. Likewise, when Netflix pioneered delivery of DVDs by mail using a subscription system, Blockbuster video responded with a similar offering. But Netflix held on to its lead, both because it was not handicapped by Blockbuster’s cannibalization concerns, and because it had patents on the ‘ordered list’ (which it later accused Blockbuster of infringing) by which subscribers indicated online their movie preferences.

Second, there may be a level of opacity (Rumelt has referred to this opacity as ‘*uncertain imitability*’) that makes it difficult for outsiders to understand in sufficient detail how a business model is implemented, or which of its elements in fact constitute the source of customer acceptability.¹⁸

Third, even if it is transparently obvious how to replicate a pioneer’s business model, incumbents in the industry may be reluctant to do so if it involves cannibalizing existing sales and profits or upsetting other important business relationships. When incumbents are constrained in this way, the pioneer of a new business model may enjoy a considerable period of limited competitive response. Notwithstanding these constraints, competition is likely to be vigorous because other new entrants, similarly unconstrained by incumbency and cannibalization anxieties, will be equally free to enter.

Business model learning

The moves made by an incumbent competitor to overcome such barriers to respond to Netflix’s entry into DVD rentals provide an interesting illustration of Business Model learning and adjustment. To respond to Netflix’s competitive inroads into its DVD store-rental model, Blockbuster purchased assets from NetLearn in April 2002, including those of [DVDRentalCentral.com](http://www.DVDRentalCentral.com),

a subscriber-based online DVD rental service, which it renamed FilmCaddy and operated separately from the rest of the Blockbuster business. In August 2004, Blockbuster shut down FilmCaddy and launched Blockbuster Online, its new online rental service that allowed customers to rent unlimited DVDs (three at a time) for a monthly fee. Its initial plan included no due dates or extending viewing fees, and also gave subscribers two free in-store movie rentals each month. In November 2006, it launched Blockbuster Total Access, coupling its online business with its in-store capabilities to allow online customers the option of returning their DVDs through the mail or exchanging them for free in-store movie rentals at over 5000 Blockbuster stores.

Clearly, most elements of the Netflix business model were relatively easy to copy, and, although Blockbuster was undoubtedly constrained by the cannibalization of its in-store rentals by its online business, these moves reflected its attempts to respond (defensively) to Netflix. Netflix had figured out an approach and made the investments required to establish the online market. But Blockbuster responded by leveraging its brand equity and its network of physical stores to try to capture value from a modified version of the model Netflix had created: at minimum, it was intent on minimizing damage to its in-store franchise. Its guiding principle in responding appeared to be to offer customers all the functionality of Netflix plus several distinguishing features — associated with using its retail store footprint — which Netflix couldn't easily match. Blockbuster's stores also complemented its online strategy, by offering customers a choice of how to return their rented DVDs. While Netflix had no retail presence with which to respond to this element of Blockbuster's offering directly, it did have some limited patent protection, with two patents that provided its business model some protection — in particular, to its 'ordered list' for movie selection. While these patents did not cover online DVD rental *per se*, they did cover methods allowing users to pay a flat fee to have a maximum number of movies out at any one time, and to return a fixed number of movies within a fixed time period.

In short, Blockbuster implemented a close facsimile of the Netflix business model (even its website was very similar, featuring stars, recommendations, box shots and the 'dynamic queue') and achieved reasonable success, undoubtedly blunting Netflix's growth. While Blockbuster Online was a good defensive move, Netflix's pioneering status and its capacity to improve its business model, and enforce its patents, has helped undergird its competitive advantage.

technological innovation does not guarantee business success — new product development efforts should be coupled with a business model defining their 'go to market' and 'capturing value' strategies.

Business models to capture value from technological innovation

The profiting from innovation framework

Figuring out how to capture value from innovation is a key element of business model design. This is a topic on which this author has written extensively, although the treatment hitherto was not couched in the language of business model design. This section is more forthright in that regard.

Every new product development effort should be coupled with the development of a business model which defines its 'go to market' and 'capturing value' strategies. Clearly technological innovation by itself does not automatically guarantee business or economic success — far from it. This was a theme in the author's earlier work on 'Profiting from Innovation',¹⁹ which outlined a contingent approach with respect to how to organize the production system/value chain, taking into account the 'appropriability regime' and the innovator's prior asset positioning. Notwithstanding that scholars have recognized that technological innovation without a commercialization strategy is as

likely to lead to the (self-) destruction of creative enterprises as it is to profitable (Schumpeterian) creative destruction, technological innovation is often assumed by some to lead inexorably to commercial success. It rarely does. When executives think of innovation, they all too often neglect the proper analysis and development of business models which can translate technical success into commercial success. Good business model design and implementation, coupled with careful strategic analysis, are necessary for technological innovation to succeed commercially: otherwise, even creative companies will flounder. Quintessential examples of firms that succeeded at technological innovation but failed to get the business model and the technology strategy right included EMI (the CAT scanner) and Xerox (the personal computer).²⁰

But there are a plethora of other examples too. Eli Whitney's 1793 invention of the cotton gin greatly increasing the ease with which cotton could be separated from the pod — but still he died a poor man. Even Thomas Edison — with his portfolio of 1000+ patents and personal fame from inventing a durable electric light bulb, electricity as a system, motion pictures and phonographs — failed commercially on many fronts. For example, he abandoned the recording business after arguably failing to get its business model right by insisting that Edison disks be designed to work only on Edison phonographs (although his early phonograph also suffered from poor sound reproduction, recordings that were too brief, and cylinders that could only survive a few playings). In short, getting the business model *and* the technology strategy right is necessary to achieve commercial viability if sustainable competitive advantage is to be built and innovators are to profit from their innovations.

Figuring out how to deliver value to the customer — and to capture value while doing so — are the key issues in designing a business model: it is not enough to do the first without the second. The imperfections in the market for knowhow make capturing value from its production and sale inherently difficult,²¹ and may often necessitate a business model where knowhow is bundled into products and complementary assets used to realize value to the innovator. This involves some of the trickiest and most frustrating issues that entrepreneurs and managers must address.

The Profiting from Innovation framework is an effort to help entrepreneurs and strategists figure out appropriate business model/designs and technology strategies by delineating important features of business model choice, and predicting the outcomes from those choices. The framework employs contracting theory,²² and recognizes two extreme modes (models) by which innovators can capture value from innovation:

- At one end of the scale stands the integrated business model, in which an innovating firm bundles innovation and product together, and assumes the responsibility for the entire value chain from A to Z including design, manufacturing, and distribution. Clearly, companies that have the right assets already in place are well equipped to do this; but the framework also indicates when the internal development and commercialization strategy is a necessity.
- The other extreme case is the outsourced (pure licensing) business approach, one that has been embraced by a number of companies, like Rambus (semiconductor memory) and Dolby (high fidelity noise reduction technology). With respect to licensing versus internal commercialisation by the innovator, the framework yields answers calibrated according to the strength of the appropriability/intellectual property regime. Thus one could license — and expect the licensing model to work — only if one had strong intellectual property rights: without them the licensee might well be the one who captures value, at the expense of the innovator.
- In between there are hybrid approaches involving a mixture of the two approaches (e.g. outsource manufacturing; provide company owned sales and support). Hybrid approaches are the most common, but they also require strong selection and orchestration skills on the part of management.²³

[a] licensing model [will only] work [with] strong intellectual property rights... [otherwise] the licensee will capture value, not the innovator.

The Profiting from Innovation framework can thus be considered as a tool to help design business models, and using it allows one to map business model selection to type of innovation, while simultaneously enabling one to figure out where intellectual property monetization through licensing is likely to be viable, and where it's not, or where some kind of vertical integration is indicated.²⁴ Although, (by construction) it is silent on many issues such as market segmentation and the choice of product features, it nevertheless can provide insights into how a value chain ought to be assembled. And it can predict winners and losers from the competitive process in the context where a customer need is being met.

'Public' goods and the bundling and unbundling of inventions and products

Inventors and innovators rarely enjoy strong intellectual property protection. One well studied (and reasonably well understood) situation where there are serious value capture problems is investment in basic research and the production of scientific knowledge. Basic research usually ends up in scientific publications, so it is hard — if not impossible — to secure strong intellectual property protection for scientific knowledge. As a result, it is very difficult to charge for discoveries, even if they have the potential to generate high value for society, so very few firms invest in basic research. Spill-overs (externalities) are simply too large; profiting from discovery is simply too difficult. There is no easy for-profit business model for capturing value from scientific discoveries in a world where science wants to be open and rapid dissemination of scientific knowledge through journals, conferences and professional contacts is almost inevitable: not surprisingly, most basic research is not funded by business firms, but by governments.

Investment in scientific research is an example of what economists call 'public goods'; a circumstance in which the economic activity in question generates positive externalities or 'spill-overs'. As there is no good (private) business model that can support value capture, government funding and/or philanthropy is required and provided. Viewed in this way, the concept of the 'business model' can be integrated into almost a century of economic thought about the design of institutions and the role of enterprise and government in civil society. Market 'failures' occur in the context of innovation when private business models for capturing value draw forth insufficient investment in R&D.

Putting basic science to one side, the most common business model to capture value from inventions is to embed them in a product, rather than simply trying to sell designs or intellectual property. This approach allows those that invest in R&D to ameliorate (to some degree) their lack of intellectual property protection. The latest cell phone, digital camera or automobile doesn't come with a price for the product and an unbundled price for knowhow and/or intellectual property: invention/technology and product are typically bundled together, although (in theory) they don't need to be.

This discussion makes it apparent that market failures (with respect to R&D investment) are partly a function of the ability (or lack thereof) of entrepreneurs to create viable business models using the mechanisms available to them. As noted, one way to try and get around market failures in the 'market for inventions' is to bundle invention(s) and complements into products. But too often, firms (and in particular small start-ups) under-employ the available mechanisms, just offering customers 'items' of technology such as devices or discrete technology components. Just by itself, this may not represent a customer solution; a business model based on simply selling an invention — or even an innovative component or 'item' — may not enable the innovator to capture a significant share of the value that might be generated by their innovative technology, unless it has ironclad patent protection and is critical to an important and already recognized application. The proper 'marketing' of new technology often requires much more.²⁵ The bundled provision of complementary products and services is often necessary, not just to help capture value, but to help create it in the first place.

The problem is quite general. When value delivery involves employing intangible (knowhow) assets, pricing and value capture are difficult because of the nonexistence of perfect property rights, which means that markets can't work well, as Coase and many others have explained.²⁶ As

illustrated above, many Internet services are simply provided for ‘free’ as a way to build brand and to indirectly promote a related value added service, and we have seen how a mixture of revenue approaches is usually required when trying to sell on the Internet.²⁷ But bundling, while a common and helpful approach, isn’t always necessary. When the innovator has a strong patent, it is sometimes possible to capture value either by naked licensing — or even outright sale — of intellectual property. Different models of value capture are available where intellectual property rights exist and can be enforced — so designing business models often requires the skill of the intellectual property lawyer as well as that of the entrepreneur.

To summarize: the traditional revenue model used by innovators to capture value from technology involves the consumer buying (and paying for) products that have intellectual property embedded within them — the method is so common that it is rarely noticed or reflected on.²⁸ This works well, particularly if an attractive bundled solution can be offered, if there is strong intellectual property, or if imitability is otherwise difficult. Many scientific discoveries and inventions are poorly protected by intellectual property rights, and require business models that feature public funding, or crafty ways to otherwise capture positive spill-overs.

business models innovation may not seem heroic [but] without it there may be no reward for pioneering individuals, enterprises and nations.

Business models as innovation

Technological innovation is lionized in most advanced societies; that is a natural and desirable reflection of the values of a technologically progressive society. However, the creation of new organizational forms (like the Skunk Works and the multidivisional organizational structure), organizational methods (like the moving assembly line), and in particular new business models are of equal — if not greater — importance to society, and to the business enterprise. While such innovation may seem less heroic to many citizens — even to many scientists and engineers — without it technological innovation may be bereft of reward for pioneering individuals, as well as for pioneering enterprises and nations.

The capacity of a firm (or nation) to capture value will be deeply compromised unless the capacity exists to create new business models. As noted, even an inventor as celebrated as Thomas Edison had a questionable track record in terms of business model innovation, abandoning the recording business and also failing to get direct (rather than alternating) current adopted as the industry standard for electricity generation and transmission. History shows that, unless they can offer compelling value propositions to consumers/users *and* set up (profitable) business systems to satisfy them with the requisite quality at acceptable price points, the innovator will fail, even if the innovation itself is remarkable, and goes on to be widely adopted by society. Of course, this makes management, entrepreneurship and business model design and implementation as important to economic growth as is technological innovation itself. Technological creativity that is not matched by business resourcefulness and creativity (in designing business models) may not yield value to the inventor or even to their society.

As discussed and illustrated in many earlier examples, technological innovation often needs to be matched with business model innovation if the innovator is to capture value. There are of course exceptions — for example, small improvements in the manufacturing process (even if cumulatively large) will usually not require business model innovation, and value can be captured by lowering price and expanding the market and market share. But the more radical the innovation, and the more challenging the revenue architecture, the greater the changes likely to be required to traditional business models. And, as indicated by some of the earlier examples, business model innovation may help to establish a differentiable competitive advantage. Dell didn’t bring any improvements to the technology of the Personal Computer — but it did combine both suppliers’ and its own organizational/distribution system innovations to deliver compelling value to end

users: as have Southwest Airlines, Virgin, Virgin Blue, and JetBlue in the air passenger transport sector.

Sometimes the creation of new business models leads to the creation of new industries. Consider the payment card industry (the core of which is credit and debit cards). The card companies provide network services, associate with banks who issue the cards, and associate with acquirers who sign up merchants to accept credit cards. Early on in the life of the industry, merchants were unwilling to accept a payment card that few consumers carried, just as card holders didn't want cards that merchants did not accept. As Evans and Schmalensee note, inventing a new business model for credit — the credit card — '*required the industry's founders to invest enormous amounts of capital and ingenuity*'.²⁹

Companies should be seeking and considering improvements to business models — particularly difficult to imitate improvements that add value for customers — at all times. Changing the firm's business model literally involves changing the paradigm by which it goes to market, and inertia is likely to be considerable. Nevertheless, it is preferable for the firm to initiate such a change itself, rather than have it dictated by external events, as several investment banks in the U.S. and elsewhere have experienced recently.

The role of discovery, learning and adaptation

Designing a new business model requires creativity, insight, and a good deal of customer, competitor and supplier information and intelligence. There may be a significant tacit component. An entrepreneur may be able to intuit a new model but not be able to rationalize and articulate it fully; so experimentation and learning is likely to be required. As mentioned earlier, the evolving reality impacting customers, society, and the cost structure of the business must be understood. It is often the case that the right business model may not be apparent up front, and learning and adjustments will be necessary: new business models represent provisional solutions to user/customer needs proposed by represent entrepreneurs/managers. As Shirky recognizes, a business model is provisional in the sense that it is likely over time to be replaced by an improved model that takes advantage of further technological or organizational innovations. The right business model is rarely apparent early on in emerging industries: entrepreneurs/managers who are well positioned, who have a good but not perfect business model template but who can learn and adjust, are those more likely to succeed.³⁰

The right business model is rarely apparent early on... entrepreneurs/managers who are well positioned and can learn and adjust are more likely to succeed

Technological change often provides the impetus for new and better ways to satisfy customer needs. The horse, then the railroad, the auto and the airplane have all been technological solutions to society's basic transport needs that successively complemented and displaced each other, and formed the basis of competing business models for carrying people from one place to another. The Internet and the communication and computer revolution have empowered customers, and both allowed and required more differentiation in product service offerings. Social networking is also trumping the age-old ability of using advertising to get to an audience. As Peter Sealey has noted with respect to new movies releases, '*the star-power opening is fading in importance and the marketing and releasing of movies is going into new territory where the masses are molding the opinion of a movie*',³¹ and studio executives are having to recognize these new realities and adjust their business models accordingly.

In short, one needs to distil fundamental truths about customer desires, customer assessments, the nature and likely future behavior of costs, and the capabilities of competitors when designing a commercially viable business model. Traditional market research will not often be enough to

identify as yet unarticulated needs and/or emerging trends. Changes with respect to the relative merits of particular organizational and technological solutions to customer needs must also be considered.

Consider again the question of how society will gather and distribute the news of the day. First it was the town crier; later the newspaper; today the Internet has become increasingly important. Communication costs have dropped dramatically; but now advertising revenues are shrinking too. Generally, when the underlying technology changes, and an established logic for satisfying consumer needs — e.g. newspapers for providing news — is overturned, the business model must change too. But technological change is not always a trigger — or always necessary — to reshaping the business model.

Not surprisingly, the invention of new business models can originate from many potential sources. What business models pioneers often possess — or develop — is an understanding of some ‘deep truth’ about the fundamental needs of consumers and how competitors are or are not satisfying those needs, and of the technological and organizational possibilities (and trajectories) for improvement — some of them, though, just stumble into such understandings. In almost every case, however, a new business model is successfully pioneered only after considerable trial and error.

Those entrepreneurs who understand ‘deep truths’ and can figure out what customers want and design a better way to satisfy them (and build sustainable organizations to address these customer needs) are business pioneers. They may or may not use new technology, but they must understand customer needs, technological possibilities, and the logic of organization. Put differently, a business model articulates the underlying business or ‘industrial logic’ of a firm’s go-to-market strategy. Once articulated, it is likely that the logic will have to be tested and retested, adjusted and tuned as the evidence with respect to provisional assumptions becomes clarified.

Netflix (discussed above), the largest online DVD rental service in the U.S., offers a flat-fee DVD movie rental service that, by 2007, was serving over 6 million subscribers from its collection of 75,000 titles.³² Subscribers can use the website’s browse function to search for movies by genre, and use an extensive movie recommendation system based on other users’ ratings to add to their ordered list for delivery via mail. At its initial launch, the Netflix business model was based on a pay-per-rental service, but this initial pricing model did not succeed, and the company almost failed. It was clear to management Netflix had to rejig its business model and, between September and October 1999, it reinvented itself with a subscription model (the ‘Marque Program’). It ended its pay-per-rental model entirely, and evolved the monthly fee program to allow subscribers to rent any number of DVDs per month (although only a limited number at any one time). The model was supported by a system of regional distribution centers which ensured next day delivery to over 90% of subscribers. Clearly, it took a while to be able to ascertain the right price points and the manner of pricing that was most acceptable to the customer base for its new service; but as Netflix management figured out viewer convenience, wants and willingness to pay, it adjusted its business model accordingly. This ability to perceive and adapt saved Netflix and laid the foundation for its growth and development: by 2006 it had reached almost \$1 billion in revenues.

Selecting the right ‘architecture’ and pricing model for a business requires not just understanding the choices available, but also assembling the evidence needed to validate conjectures and hunches about costs, customers, competitors, complementors, distributors and suppliers takes detailed fact-specific inquiry, and a keen understanding of customer needs and customer willingness to pay, as well as of competitor positioning and likely competitive responses. Entrepreneurs and executives must make many informed guesses about the future behavior of customer and competitor, as well as of costs. As the evidence with respect to initial conjectures becomes available, they need to adjust accordingly. Being fast in learning and making the requisite adjustments to the model is important.

A helpful analytic approach for management is likely to involve systematic deconstruction/unpacking of existing business models, and an evaluation of each element with an idea toward refinement or replacement. The elements of a business model must be designed with reference to each other, and to the business/customer environment and the trajectory of technological development

in the industry. While the questions are not as crisp as one would like, and the answers are likely to be ambiguous, endeavoring to answer them will impose some discipline and at least help one sort business propositions that are likely to be viable from those that are not. For instance, business propositions that are no more than good ideas fall short; likewise propositions that involve capturing 1% of huge markets show a lack of understanding of differences amongst (potential) customers, market segments and competition. And wonderfully novel (gimmicky) product concept that meets the needs of but a handful of potential customers is unlikely to yield much value. Periodic review can increase the chances of avoiding blind spots: long-lived structural elements — choices made perhaps decades ago in different environments — need to be scrutinized especially thoroughly.

A provisional business model must be evaluated against the current state of the business ecosystem, and against how it might evolve

A provisional business model must be evaluated against the current state of the business ecosystem, and also against how it might evolve. Questions to consider (which are summarized in Figure 3) include:

- How does the product or service bring utility to the consumer? How is it likely to be used? Inasmuch as innovation requires the provision of complements, are the necessary complements already available to the consumer with the convenience and price that is desirable (or possible)?;
- What is the ‘deep truth’ about what customers *really* value and how will the firm’s service/product offering satisfy those needs? What might the customer ‘pay’ for receiving this value?;
- How large is the market? Is the product/service honed to support a mass market?;
- Are there alternative offerings already in the market? How is the offering superior to them?;
- Where is the industry in its evolution? Has a ‘dominant design’ emerged? Strategic requirements are likely to be different in the pre- and post-paradigmatic periods;³³
- What are the (contractual) structures needed to combine the activities that must be performed to deliver value to the consumer? Both lateral and vertical integration and outsourcing issues need to be considered. (Contract theory/transaction cost economics is a useful lens through which to view many of these issues. So is capability theory);
- What will it cost to provide the product/service? How will those costs behave as volume and other factors change?; and
- What is the nature of the appropriability regime? How can imitators be held at bay, and how should value be delivered, priced, and appropriated?

As the author has noted in previous work, beyond specifying a realistic revenue architecture, designing a business model also involves determining the set of lateral (complementary) and vertical activities that must be performed and assessing whether and how they can be performed sufficiently cheaply to enable a profit to be earned, and who is to perform them. It involves figuring out the market entry strategy — while entry timing is a strategic, rather than a business model issue, it may depend in part on the business model employed, particularly the complements already in place.³⁴

When establishing a new business there is likely to be uncertainty with respect to all of the above. Disappointments are certain to arise as a new business is built, but success rates can be improved if the architects of the business model learn quickly, and are able to adjust within a range that still yields a satisfactory profit.

Of course, once a business model is successfully established, changing technology and enhanced competition will require more than defenses against imitation. It is also likely that even successful business models will at some point need to be revamped, and possibly even abandoned. For example, as the value proposition associated with the traditional personal computer software licensing

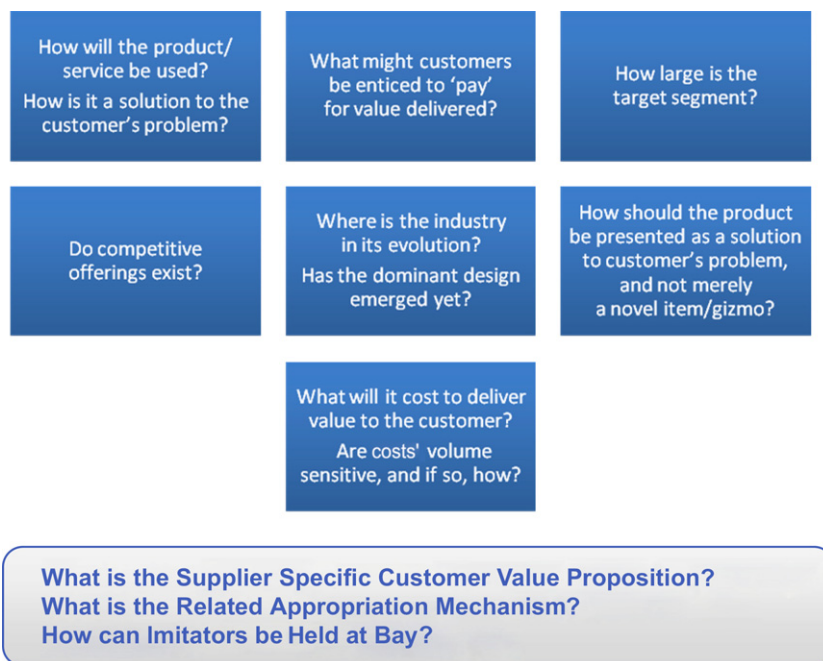


Figure 3. Questions to ask about a (provisional) business model

model (whereby periodic updates would require the purchase of new software licenses and additional maintenance costs) has weakened for some customers, Microsoft has changed elements of its business model to allow renting so as to compete with cheap or free Web alternatives. According to one source, Microsoft is 'overhauling not only what it makes but how to deliver and charge for it'.³⁵ Microsoft has apparently begun to offer its Exchange email server program for a monthly fee, as well as a 'barebones' version of Office for free, supported in part by online advertising (in fact, it appears now to be offering some products under the 'freemium' philosophy described earlier). The evidence is not yet in as to whether it will work well for both Microsoft and its customers.

designing good business models is an 'art' the chances are greater if entrepreneurs and managers have a deep understanding of user needs and are good listeners and fast learners.

Clearly, designing good business models is in part an 'art'. The chances of good design are greater if entrepreneurs and managers have a deep understanding of user needs, consider multiple alternatives, analyze the value chain thoroughly so as to understand just how to deliver what the customer wants in a cost-effective and timely fashion, adopt a neutrality or relative efficiency perspective to outsourcing decisions, and are good listeners and fast learners. Useful tools include the various types of market research that lead to a deep understanding of the user, along with elements of the Profiting from Innovation framework such as the innovation cycle, appropriability regimes, complementary assets and intellectual property systems.

The selection/design of business models is a key microfoundation of dynamic capabilities — the sensing, seizing, and reconfiguring skills that the business enterprise needs if it is to stay in synch with changing markets,³⁶ and which enable it not just to stay alive, but to adapt to and itself shape the (changing) business environment. Dynamic capabilities help govern evolutionary fitness, and

help shape the business environment itself. Get the business model wrong, and there is almost no chance of business success — get it right, and customize it for a market segment and build in non-imitable dimensions, and it will contribute to the firm's competitive advantage.

Magretta claims that business models are '*variations on the generic value chain underlying all businesses*'. This view would seem to overlook that a business model is only partly about how to organize the value chain — it is also about figuring out the value proposition to the customer as well as the value capture mechanism. A sustainable business model is as much (as the current author has noted) about where to position within the value chain i.e. what are the key bottleneck assets to own/control in order to capture value. Clearly, the industry must perform various activities in the value chain — but which one(s) the firm chooses to undertake is very much a business model choice.

Recognized (but not fully developed here) is the notion that a business model cannot be assessed in the abstract; its suitability can only be determined against a particular business environment or context. Neither business strategies, business structures nor business models can be properly calibrated absent assessment of the business environment; and of course the business environment itself is, in part, a choice variable; i.e. firms can both select a business environment, and be selected by it: and they can also shape their environment.

...the business environment itself is a choice variable: firms can select a business environment or be selected by it: they can also shape it

Zott and Amit bravely endeavor to hypothesize as to the appropriate mapping of business models to two product market choices: cost leadership and differentiation.³⁷ However, our state of understanding as to the precise relationship between business model choice and enterprise performance is both highly context dependent and rather primitive. In certain contexts (e.g. market entry strategies for innovators) testable propositions have been advanced (including by the current author), but strategic studies will have to advance further as a field before mapping can be anything other than suggestive.

Of course, it may very well take time to get a business model right. Pioneers, in particular, are often forced to make only educated guesses as to what customers want, what they will pay for, and the cost structures associated with various ways to organize. As the author's 'Profiting from Innovation' paper discusses, especially in the pre-paradigmatic industry evolution phase, it is necessary to stay flexible, experiment with the product and the business model and learn, both from one's own and one's competitors' activities, and to keep sufficient financial resources on hand to remain an industry participant — and hopefully the market leader — by the time the 'dominant design' emerges in the market. Indeed, one hopes to be the promoter/owner of this dominant design — and to have the capacity to capitalize on the situation.

Conclusion

All businesses, either explicitly or implicitly employ a particular business model. A business model describes the design or architecture of the value creation, delivery and capture mechanisms employed. The essence of a business model is that it crystallizes customer needs and ability to pay, defines the manner by which the business enterprise responds to and delivers value to customers, entices customers to pay for value, and converts those payments to profit through the proper design and operation of the various elements of the value chain. Put differently, a business model reflects management's hypothesis about what customers want, how they want it and what they will pay, and how an enterprise can organize to best meet customer needs, and get paid well for doing so. The goal of this article has been to advance understanding of the considerable significance of business models and to explore their connections to business strategy, innovation management and economic theory.

One key conclusion of the analysis is that, to be a source of competitive advantage, a business model must be something more than just a good logical way of doing business. A model must be honed to meet particular customer needs. It must also be non-imitable in certain respects, either by virtue of being hard to replicate, or by being unpalatable for competitors to replicate because it would disturb relationships with existing customers, suppliers, or important alliance partners. A business model may be difficult for competitors to replicate for other reasons too. There may be complicated process steps or strong intellectual property protection, or organizational structures and arrangements may exist that will stand in the way of implementing a new business model. Good business model design and implementation involves assessing such internal factors as well as external factors concerned with customers, suppliers, and the broader business environment.

to be a source of competitive advantage, a business model must be more than just a good logical way of doing business It must be honed to meet particular customer needs ...

The paucity of literature (both theoretical and practical) on the topic is remarkable, given the importance of business design, particularly in the context of innovation. The economics literature has failed to even flag the importance of the phenomenon, in part because of an implicit assumption that markets are perfect or very nearly so. The strategy and organizations literature has done little better. Like other interdisciplinary topics, business models are frequently mentioned but rarely analyzed: therefore, they are often poorly understood. Not surprisingly, it is common to see great technological achievements fail commercially because little, if any, attention has been given to designing a business model to take them to market properly.

This can and should be remedied. Increased understanding of the essence of business models and their place in the corpus of the social and organizational sciences should help our understanding of a variety of subjects including market behavior, competition, innovation, strategy and competitive advantage. Our understanding of the nature of the firm itself, together with the role of entrepreneurs and managers in the economy and in society, should also benefit from a better appreciation of business models and their role in entrepreneurship, innovation and business performance.

great technological achievements commonly fail commercially because little attention has been given to designing a business model to take them to market properly. This can and should be remedied.

Acknowledgement

I would like to thank Charles Baden-Fuller and Ian MacMillan for their invitation to contribute to this Special Issue, and Michael Akemann, Sebastien Belanger, John Blair, Hank Chesbrough, Michael Katz, Doug Kidder, David Mitchell, Charles O'Reilly, Richard Rumelt, Alexander Stern, Leigh Teece and Steve Lewis as well as the principals of Living PlanIT SA for helpful insights into the issues discussed here. The skilful assistance of Patricia Lonergan in preparing the manuscript is gratefully acknowledged.

References

1. There are other (related) definitions of a business model. Amit and Zott see R. Amit and C. Zott, Value creation in e-business, *Strategic Management Journal* **22**, 493–520 (2001); and C. Zott and R. Amit, The fit

- between product market strategy and business model: implications for firm performance, *Strategic Management Journal* **29**, 1–26 (2008) define a business model as ‘the structure, content, and governance of transaction’ between the focal firm and its exchange partners (e.g. customers, vendors, complementors). For yet another alternate definition see Chesbrough and Rosenbloom (see following).
2. H. Chesbrough and R. S. Rosenbloom, The role of the business model in capturing value from innovation: evidence from xerox corporation’s technology, *Industrial and Corporate Change* **11**(3), 529–555 (2002).
 3. The end of the free lunch — again, *The Economist* **390**(8623) (March 21st 2009).
 4. See K. Arrow, *The Limits of Organization*, Norton, New York, (1974). The Arrow–Debreu model of competitive equilibrium has everything priced; but, as Arrow himself notes elsewhere, ‘in a strictly technical and objective sense, the price system does not work. You simply cannot price certain things (p. 22) and ‘trust and similar values, loyalty and truth telling — are not commodities for which trade in the open market is technically possible or even meaningful... (p. 23). ‘A firm... provides another major area within which price relations are held in partial abeyance... (p. 25).
 5. The structure-conduct-performance paradigm in the field of industrial organization is possibly an exception. It stressed that concentrated markets were more profitable. If translated into management/strategy nostrums, as Michael Porter, *Competitive Strategy*, Free Press, (1982) did, it suggest the benefits of either scale or differentiation as profit drivers. While scale and differentiation may still assist as profit drivers, the situation in the modern economy is that in many circumstances, these nostrums can be quite misleading.
 6. O. E. Williamson, *Organizational innovation: the transaction-cost approach* (1983), in J. Ronen (ed.), Lexington Books, Lexington, MA (1983).
 7. R Miles, G. Miles, C. Snow, K. Blomquist and H. Rocha, Business Models, Organizational Forms, and Managerial Values, Working paper, UC Berkeley, Haas School of Business (2009). The authors note how new business models, new organizational forms, new management approaches, and entrepreneurship are the foci of different groups of scholars who rarely meet.
 8. G. Porter, *The Rise of Big Business, 1860–1910*, Harland Davidson, Arlington Heights, Illinois, (1973) p. 49.
 9. C. W. Ebeling, Evolution of a box: the invention of the intermodal shipping container revolutionized the international transportation of goods, *Invention and Technology* 8–9 (2009).
 10. Apple’s iTunes music store is an example of a business model innovation, and was the first legal pay-as-you-go method for downloading music. Time Magazine hailed it as ‘the coolest invention for 2003’.
 11. See C. Shapiro and H. Varian, *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press, Boston, MA, (1999) The rules for strategic engagement that they promulgate are core elements of strategy in the information services sector, and here — as elsewhere — the design of business models to support sustainable competitive advantage must be informed by strategy analysis.
 12. A. Shuen, *Web 2.0: A Strategy Guide*, O’Reilly, Sebastopol, (2008) p. 2.
 13. See also J. B. Harreld, C. A. O’Reilly and M. L. Tushman, Dynamic capabilities at IBM: driving strategy into action, *California Management Review* **49**(4) (2007).
 14. M. Dell, *The Early Entrepreneurial Years in Starting a Business*, Harvard Business School Press, (2008) Indeed, a critical element of Dell’s success is not just the way it has organized the value chain, but also the products that it decides to sell through its distribution system. The initial products were personal computers, but now include printers, digital projectors, and computer-related electronics.
 15. Quoted in J. Magretta, Why business models matter, *Harvard Business Review* **6** (2002).
 16. For an insightful treatment of the Google story, see D. A. Vise, *The Google Story*, Bantam Dell, New York (2008).
 17. See J. M. de Figueiredo and D. J. Teece, Mitigating Procurement hazards in the context of innovation, *Industrial and Corporate Change* **5**(2), (1996) for an analysis of some ways to mitigate the hazards of competing with one’s suppliers.
 18. S. Lippman and R. Rumelt, Uncertain imitability: an analysis of interfirm differences in efficiency under competition, *Bell Journal of Economics* **13**, 413–438 (1982).
 19. D. J. Teece, Profiting from technological innovation: implications for integration, collaboration, licensing and public policy, *Research Policy* **15**(6), 285–305 (1986); D. J. Teece, Reflections on profiting from technological innovation, *Research Policy* **35**(8), 1131–1146 (2006).
 20. See D. J. Teece (1986) *ibid.*; and G. Pisano and D. J. Teece, How to capture value from innovation: shaping intellectual property and industry architecture, *California Management Review* **50**(1), 278–296 (2007).
 21. D. J. Teece, The multinational enterprise: market failure and market power considerations, *Sloan Management Review* **22**(3), 3–17 (1981).

22. S. Winter, The logic of appropriability: from Schumpeter to Arrow to Teece, *Research Policy* **35**, 1100–1106 (2006).
23. D. J. Teece, Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance, *Strategic Management Journal* **28**(13), 1319–1350 (2007).
24. An application of the framework in the biotech industry context is discussed in G. Pisano, *Science Business: The Promise, the Reality, and the Future of Biotech*, Harvard Business School Press, (2006) which includes a carefully analysis of the sources of failure in the market for know how.
25. For further development of this idea, see W. Davidow, *High Technology Marketing*, Free Press (1986).
26. R. Coase, The problem of social cost, *Journal of Law and Economics* **3**, 1–44 (1960).
27. The proliferation of illegal digital downloads of recorded music has led recording companies to try to insist on (and sometimes achieve) so called ‘360 contracts’, so they can participate in all sources of revenue from their artistes’ activities – branded clothing, performances, and other public appearances – as well as just recorded music.
28. D. J. Teece (1986) op. cit. at Ref 19; D. Somaya and D. J. Teece, Patents, licensing and entrepreneurship: effectuating innovation in multi-invention contexts in Sheshinki, Baumol and Strom (eds.), *Entrepreneurship, Innovation, and the Growth of Free-Market Economies*, Princeton University Press (2007).
29. D. Evans and R. Schmalensee, *Paying with Plastic*, MIT Press, Cambridge, (1999) p. 3.
30. C. Shirky, *Here Comes Everybody: The Power of Organizing Without Organizations*, Penguin, New York (2008).
31. See Claudia Eller ‘Little Love this Summer for A-List Movie Actors’, Los Angeles Times, 29 June, 2009.
32. <http://ir.netflix.com> (visited April 2007).
33. See D. J. Teece (1986) op. cit. at Ref 19.
34. W. Mitchell and Dual Clocks, Entry order influences on industry incumbents and newcomer market share and survival when specialized assets retain their value, *Strategic Management Journal* **12**(2), 85–100 (1991).
35. Peter Burrows, Microsoft defends its empire, *Business Week* p. 28 (6 July 2009).
36. D. J. Teece, G. Pisano and A. Shuen, Dynamic capabilities and strategic management, *Strategic Management Journal* **18**(7), 509–533 (1997); D. J. Teece (2007), op. cit. at Ref 23; D. J. Teece, *Dynamic Capabilities and Strategic Management: Organizing for Innovation and Growth*, Oxford University Press (2009).
37. C. Zott and R. Amit (2008), op. cit. at Ref 1.

Biography

David J. Teece has a Ph.D. in economics from the University of Pennsylvania. His research interests span industrial organization, business strategy, organizational economics, and public policy. He is the author of over 200 published articles and books. His most recent book is *Dynamic Capabilities and Strategic Management: Organizing for Innovation and Growth* (Oxford University Press, 2009). He has four honorary doctorates and was the co-founder and Vice Chairman of LECG Corporation. *Institute for Business Haas School of Business University of California, Berkeley Berkeley, California 94720. Tel: 510-642-1075; Fax: 510-642-2826; E-mail: davidjteee@teece.net*