

# What Are Business Models, and How Are They Built?

By Clayton Christensen and Mark Johnson

Business model innovations have reshaped entire industries and redistributed billions of dollars of value.<sup>1</sup> Business models that did not exist prior to 1960 now account for over 90% of the total market capitalization of the retailing industry; and business models that did not exist prior to 1980 now account for literally 100% of the computer industry. Over the most recent 10 year period, 14 of the 19 entrants into the Fortune 500 owe their success to business model innovations that either transformed existing industries or created new ones.

Despite the growth that they can create, established corporations rarely create innovative business models: Most are forged by start-ups. Why do they struggle to capture the new growth that business model innovation can bring? Part of the problem is that there is little codified understanding of the elements of business models or the process of building them. Most companies therefore don't fully understand the sources of the strengths and limitations of their existing business models; the premises behind their development; and the interdependencies amongst the elements of their models. This leaves them unable to know when they can leverage their core business, and when success requires a new business model. Indeed, the consequent clumsiness in creating new business models has led to the widespread belief that companies can only successfully innovate "close to the core."

## What is a Business Model?

As suggested in Exhibit 1, a business model consists of four interlocking, interdependent elements that, taken together, create and deliver value. It starts with a value proposition – a product or service that helps customers do more effectively, conveniently and affordably a job that they've been trying to do.<sup>2</sup> By *job* we mean a fundamental problem in the customer's situation that needs a solution. Every job has functional, emotional, and social dimensions of the result that is needed – which define the experiences in purchase and use that need to be provided to get the job done perfectly. We've chosen the words in this paragraph carefully. If a value proposition helps customers do something that they're *not* trying to do – even if they *should* be trying to do it – there is not a viable basis for a business model.

### Resources

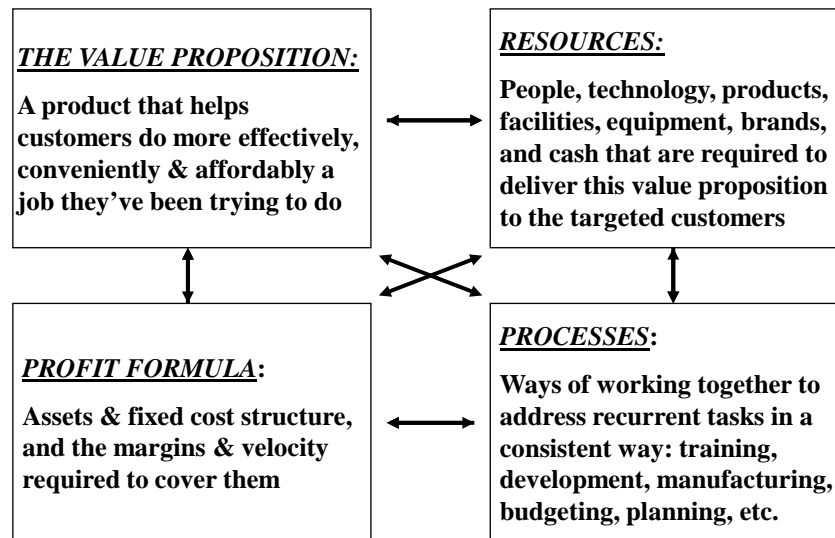
The value proposition defines the resources the business must put in place in order to deliver the value proposition. In general, resources are *things* such as people, technology, products, suppliers, distribution channels, equipment, facilities, brands and cash. Resources typically can be hired and fired, bought and sold, built or destroyed.

### Processes

As a company uses its resources to deliver the value proposition, processes coalesce. Some processes are visible, codified and consciously monitored and managed. Other processes are habitual ways of working together to get things done that have evolved over time in response

to recurrent tasks. When processes have been used successfully and repeatedly, they become followed by assumption, rather than explicit decision – “That’s just the way we do things around here” – and become part of the culture of the organization.

### Exhibit 1: What Is a Business Model?



#### Profit Formula.

The profit formula defines the gross and net margins the organization must achieve, given the structure and magnitude of the fixed and variable costs inherent in its resources. It specifies how big the organization must become in order to break even, and the pattern of profit improvement, if any, that comes from increasing scale. And the profit formula defines how fast the organization must turn over its assets, in order to achieve adequate returns.

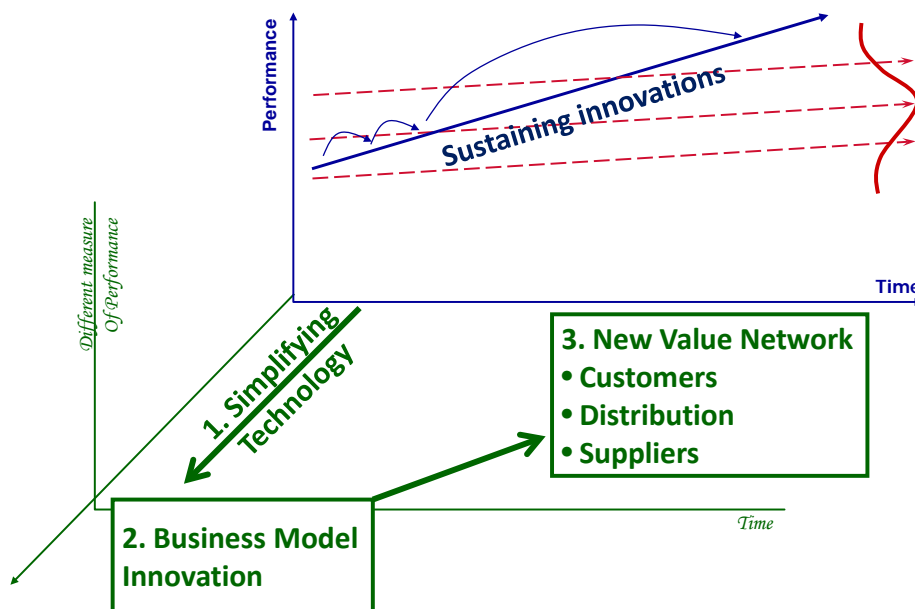
In general, the value proposition defines value for the customer and the profit formula defines value for the company and its owners. The resources and processes describe how that value will be delivered to both the customer and the company.

The arrows that link the boxes in Exhibit 1 are bidirectional because the sequence in which the four boxes of the business model are assembled typically varies by circumstance. When the value proposition relates to product functionality and reliability, the sequence typically occurs clockwise from the value proposition. The profit formula is derived from the resources and processes that are required to deliver the functionality and reliability. When cost weighs heavily in the value proposition, however, then the pieces typically are put in place in a counter-clockwise direction, with prices and margins being set first. Processes and resources then need to be devised to fit within that constraint.

## Business Models and Disruptive Innovation

Negligence or failure in business model innovation is the primary reason why the leading incumbent firms in most industries typically fail when confronted by disruptive attackers. As shown in Exhibit 2 below, there are three enabling elements to each disruption. The first is a technological innovation that transforms the fundamental technological problem in an industry from one that previously had been so complicated that only a few, highly expert people could design and provide the products or services, into something that is so simple that people with much less training can do it well. In computers, for example, the simplifying technology was the microprocessor. Whereas computer design previously had been an expensive, interdependent, intuitive and experimental process, the microprocessor so simplified the process that Steve Jobs and Steve Wozniak could piece together a computer in a garage, and Michael Dell could design and assemble them in his college dorm room. In the organic chemicals business the simplifying technology was an understanding of reaction mechanisms. In medicine the technology that enables disruption is the ability to diagnose diseases precisely by their cause, rather than by symptom; and so on.

**Exhibit 2: The Role of Business Model Innovation in the Process of Disruption**



The second enabler of disruption is a disruptive business model. The simplifying technology must be embedded in a disruptive business model, whose resources, processes and profit formula enable it to deliver the simple, affordable solution to the customer in a cost-effective way. In the history of computing, by illustration, Digital Equipment Corporation, the leading maker of minicomputers through the 1970s and 1980s, had a wide variety of microprocessors available to it – some of the best were even made in-house. But DEC's business

model could not profitably make and sell a computer for less than \$50,000 – so the company was disrupted and toppled by the desktop computer despite the fact that the enabling technology was readily available.

The third enabler of disruption is a new value network – an ecosystem within which the disruptive business model is embedded. Within a value network, suppliers and distributors and customers have similar value propositions and profit formulae, and they tend to develop products in a similar rhythm. If a firm tries to grow a disruptive business within the value network in the rear plane of Exhibit 2, that value network will force the disruptive business model to conform to its development rhythms, profit formulae, and value proposition.

### **Corporate Evolution and Business Model Innovation**

It is a well documented fact that never in the course of business history has a company that was the leader in the rear-most plane of competition (in terms of Exhibit 2), become the leader in the new, disruptive plane of competition as well, unless it established a completely different business unit underneath the corporate umbrella. Why? The resources, processes and profit models required to succeed in the original plane of competition simply are different than those required to succeed in the new one. The old must coexist with the new, often for years, because disruption is a process, not an event.

In biological evolution, individual organisms don't evolve. But little by little, as mutant organisms gain market share, the population evolves – even though the individuals within it do not. In a similar way, individual business units, because they comprise a unique business model, rarely evolve. The interdependencies amongst the four building blocks of the business model mean that business units can do well what they were designed to do – but they rarely can evolve to do something that is fundamentally different. But a corporation *can* evolve, through business model innovation.

To illustrate, let's review IBM's history. IBM was the only company that made mainframe computers that also became a leading maker of minicomputers. How did they do it? IBM made its mainframes in Poughkeepsie, NY. They were made by the hundreds per year; sold for more than \$2 million; and had to generate at least 60% gross margins to make money. IBM was the only mainframe maker that became a leader in the disruptive minicomputer. It did this by creating a different business unit in Rochester, MN. These minicomputers sold for \$200,000; were made by the tens of thousands; and required 45% gross margins to cover the overheads inherent in that business. IBM was also the only maker of minicomputers that became a leader in personal computers. It did this by setting up yet again a different business unit, in Boca Raton, Florida. This one made computers by the millions, and sold them at prices of \$2,000. Its profit formula required 40% gross margins in the best of years. As volumes grew the available margins quickly deteriorated to 25%.

When IBM set up its disruptive business model in Florida to build microprocessor-based computers, it also proactively constructed an entirely new value network in order to accelerate the emergence of this disruption. It made a major equity investment in Intel, so that it could build the capacity to supply the needed microprocessors. It then found a start-up software company in

Seattle called Microsoft and gave it a major purchase order; and did the same for Seagate, a small maker of 5.25-inch disk drives in Scotts Valley, CA. Because there were no retailers that could profitably and competently sell desktop computers, IBM had to set up its own network of retail stores. Had IBM not been able to establish this entire value network, its disruptive business model might not have succeeded – or at a minimum, would have taken much longer to become a major success.

Then as the original business models got disrupted, IBM sold off or shut down most of these hardware business units, as it grew its services and IT consulting business units. IBM, the corporation, has evolved significantly, even while its business units did not. Almost all other computer makers, in contrast, did not evolve – because they did not engage successfully in business model innovation.

### **When Are There Opportunities for Business Model Innovation?**

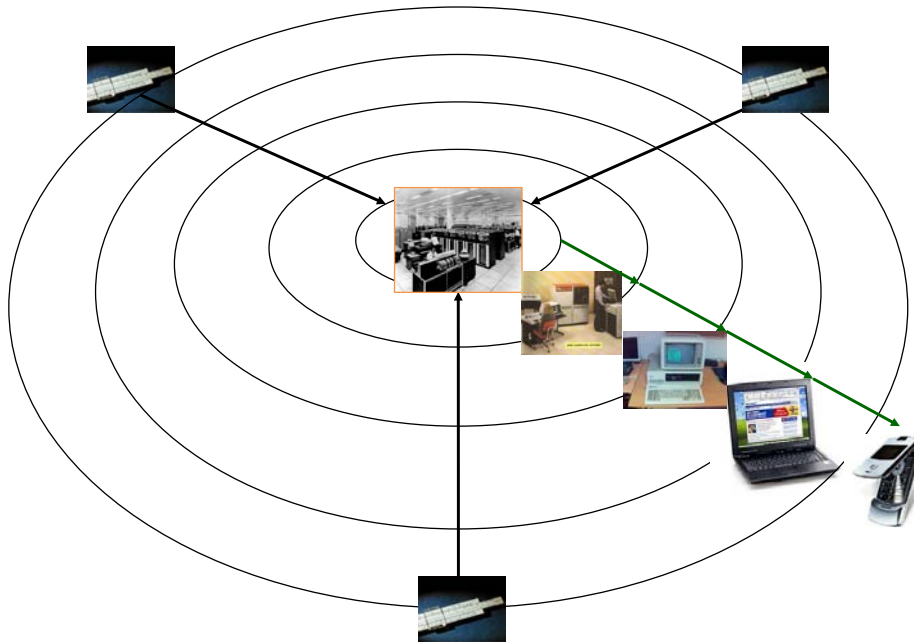
Many markets can be conceived geographically as a set of concentric circles. Before modern technology emerges in an industry, activity typically occurs in the largest circle: problems are addressed where and when they arise in people's lives. The advent of sophisticated high-performance technology, however, often drives a "centralization" of the industry. This is because the technology's earliest manifestations are so expensive and complicated that only people with a lot of money and a lot of skill can own and use the products, or offer the services. During this phase, people need to take their problems to a central location, where someone with the requisite expertise and capital can solve them. The very cost and inconvenience of this centralized structure, however, typically then spawns a reciprocal process of "decentralization," in which successive generations of disruptive innovations make the products and services so much more affordable and so much simpler, that a larger population of less-skilled and less-wealthy people can own and use them.

As illustrated in Exhibit 3, for centuries in the computing industry we used slide rules (or pens) to compute wherever the problems arose. The advent of digital computing, however, drove a centralization of the industry. Mainframe computers cost millions of dollars and could only be run by highly trained operators. The typical campus or corporation had one mainframe, at most; and we had to take our problems, in the form of stacks of punched cards, to that central location to have them solved by experts. The cost and inconvenience of this arrangement, however, then drove a sequence of disruptive innovations that decentralized the industry again, step by step. The minicomputer brought computing to corporations' engineering departments. The desktop computer brought it to our offices and homes; the notebook put it in our briefcases; and the hand-held brought computing to our pockets and purses.

Because each step was achieved by making the product simpler and more affordable, it was generally disruptive relative to the business models of the prior generation of competitors in the inner circles. Those competitors aggressively pursued sustaining innovations, competing against direct competitors within their circle – a circle that was characterized by the value proposition, resources, processes and profit formulae that comprised their business model. Unless they created new business models that were attuned to competition in the next wave of "decentralization," competitors in the inner circles ultimately found that their customers were

drawn away to the more convenient outer circles, application by application, as the performance of products in those larger circles became good enough.

### Exhibit 3: Cycles of Centralization and Decentralization in an Industry's Structure



Numerous industries – including telecommunications, higher education, retailing, automobiles, software and steel making – have gone through or are now going through similar cycles of centralization and decentralization.<sup>3</sup> Others, such as health care and electricity generation, are poised to begin the process of decentralization.

Many economists hold to a simplistic view that competition always drives prices down. However, head-on competition amongst competitors with similar business models in a given circle, in terms of Exhibit 3, typically drives prices *up*, as competitors vie to make better and better products that can be sold for more attractive margins. For example, competition amongst hospitals drives prices up. As soon as one is licensed to perform transplant surgery, others press for licenses to perform the same surgery. As soon as one has a PET scanner, everyone needs a PET scanner. When one hospital invests in a multi-million-dollar surgical robot, all need a robot; and so on. Similar competitive races between Sony's Playstation and Microsoft's X-Box up the sustaining trajectory; and competition amongst elite universities, mainframe computer makers, hotels, and urban real estate developers typically drives competitors up the trajectory of sustaining innovation – all in the pursuit of higher margins. Typically this leads to higher rather than lower prices. The type of competition that leads to lower prices is disruption that enables decentralization.

There typically are two types of opportunities for business model innovation. The first is when there is another, broader circle beyond the one being served at present – a population of

people who are trying to do a particular job, but have to put up with inconvenient, cobbled-together solutions because nobody has created a product that is simple, affordable and convenient enough. These are called new-market disruptions. There also opportunities for low-end disruption – fundamentally lower-cost business models within a given ring if the competitors within that ring, in the pursuit of higher margins, have overshot what customers can use.

### **When a New Business Model Is Not Needed**

Disruptiveness can only be expressed relative to your own business model or to that of a competitor. This means that an innovation can be disruptive relative to competitors but *not* disruptive relative to your own business model – and vice versa. For example, within the past decade Procter & Gamble has launched a series of innovations that were consistent with its own business model but disruptive to others. These included its Crest White Strips, which enabled consumers to whiten their own teeth instead of requiring the service of a dental professional. And it has launched Dryel and Swash-branded products that enable consumers to perform dry cleaning at home. These disruptive products did not require a business model innovation at P&G, because the development, marketing and sales processes and the profit formulae were compatible with the company's established businesses. If P&G were to formulate a low-cost response to the disruption of its products by store brands, on the other hand, it would require a new business model.

## **Types of Business Models**

There are, generically, three types of business models: solution shops, value-adding process businesses, and facilitated network businesses. Business model innovation can occur within each of these types, but the most profound transformation of industries occurs when a business model innovator substitutes one type for another in an industry.

### **Solution Shops**

Solution shops are institutions whose resources and processes are structured to diagnose and recommend solutions for complicated problems. Consulting firms, advertising agencies, research & development organizations certain law firms and certain highly custom manufacturing firms are value shops. The diagnostic activities in general hospitals and some of the work done in specialist physicians' practices are solution shop activities, in which experts draw upon their deepest experience and intuition to diagnose the causes of patients' symptoms and then to recommend solutions. The work solution shops do for each customer tends to be unique. Because diagnosing the cause of complex problems and devising workable solutions has such high subsequent leverage, customers typically are quite willing to pay very high prices for the services of solution shops.

Solution shops typically get paid through a fee-for-service revenue model. Occasionally a consulting firm might agree to take some of its compensation based upon the ultimate outcomes from its recommendations, but this rarely works because the outcomes depend upon so many other factors than the quality of their diagnoses and recommendations.

## **Value-Adding Process Businesses**

Value-adding process business models typically bring things in that are incomplete or broken, add value to them, and then ship them out, repaired or more complete. Retailing, restaurants, automobile manufacturing, petroleum refining, and the work of many educational institutions are examples of value-adding process businesses. Many medical procedures that are performed after a definitive diagnosis has been made – ranging from a nurse who uses a rules-based test to verify that a patient has strep throat and then writes a prescription to cure it, to procedures to repair hernias and angioplastically insert stents into occluded coronary arteries – are value-adding process activities.

Value-adding process businesses typically have a fee-for-outcome revenue model. Because the ability to deliver the result is resident in equipment and practiced processes, prices can be quoted in advance; and outcomes guaranteed.<sup>4</sup> Most concepts of strategy were derived from the study of value chain businesses.<sup>5</sup>

## **Facilitated Networks**

Facilitated network businesses are institutions in which the same people buy and sell, and deliver and receive things from each other. Mutual insurance companies are facilitated network businesses: Customers put premiums into a pool, and take their claims out of it. Telecommunications companies facilitate networks in which customers send and receive calls and data amongst each other. Facilitated networks can often be effective business models for the care of chronic illnesses. Organizations like D-Life, which facilitates networking amongst patients with diabetes (and their families), enable patients to teach each other how to live with their diseases. The companies that make money in these industries are those that facilitate the effective operation of the network.

## **Disruption Within and Across Business Model Types**

As a general rule, when an enabling technology makes it so much more affordable and simple for a new population of people to own and use a product, the disruption occurs *within* a type of business model. The Boston Consulting Group, for example, disrupted McKinsey within the solution shop class of business models.<sup>6</sup> Within the class of value-adding process business models Toyota has disrupted General Motors, and Medco is disrupting retail pharmacies. Traditional wire-line telephone companies, which are network facilitators, are being disrupted by other network facilitators – the wireless carriers, which in turn are being disrupted by Skype, whose network uses voice over Internet protocol (VoIP).

When the enabling technology makes it affordable and simple for a new population of people to *produce* or *provide* a product or service, then the disruption shifts the industry *across* the category boundary, to a different type of business model. For example, Geek Squad is changing the IT services business from a solution shop business model to a value-adding process model. E-Bay is disrupting certain retail and distribution channels that historically were configured as value-adding process businesses, transforming those retailing sectors into facilitated network businesses. Software platforms that enable students to create tutorial tools to



teach each other (peer-to-peer teaching) are disruptively shifting the instructional materials industry from a value-adding process business (textbooks and on-line courses) into a facilitated network business.<sup>7</sup> YouTube is transforming video entertainment from a value-adding process business to a facilitated network business; and so on.

## **The Relationship between Business Models, Integration and Competition**

Integration is defined by the way that processes link resources together within a business model. Centering the value proposition of a business model on a job-to-be-done typically makes clear the type and extent of integration that is required to do the job well. Because most organizations are structured in ways that mirror product or customer categories, they typically find it difficult to respond to a competitor whose mode of integration is defined by a job to be done. For example, FedEx organized itself around a job-to-be-done, which is, “I need to get this from here to there with minimal effort and perfect certainty, as quickly as possible.” Doing this job well entailed integrating ground transportation, billing systems, and aircraft whose routes were knit together in a Memphis trans-shipment hub. For nearly a decade the established freight companies such as Emery and United Parcel Service were left flat-footed as FedEx grew its business – because they were organized around product and service categories. In a similar way, Ikea has been rolling out across North America for over 30 years in a deliberate, open way – and yet *nobody* has copied Ikea. A plausible explanation is that other furniture stores are organized around product categories like “low-priced furniture,” “colonial furniture,” and so on – whereas Ikea is integrated uniquely to do a specific job: “I need to furnish this apartment or room *today*. Ikea’s resources and processes are integrated together in very unique ways that make it as easy as possible to get this job done.

When firms integrate around customer categories rather than jobs to be done, expensive failure often is the result. A long series of financial services companies, for example – ranging from Sears, Roebuck in the 1970s to American Express in the 1990s and to Citigroup most recently – conceived that because their customers needed checking accounts, life insurance, home mortgages, credit cards, stock brokerage and investment advisory services, they would become “financial supermarkets” – a one-stop shopping destination for all financial services that their customers would use. It has never worked. The reason is that the job for which life insurance needs to be “hired” arises at a different point in time and space than the job for which checking accounts need to be hired; and so on. We would term such integration *destructive* integration because the overhead and inefficiency resulting from attempts to force-fit or cross-sell multiple services that are unrelated to jobs that customers are trying to do when they are trying to do them, typically destroys much value.

There are two types of *productive* integration. The first arises when two different products compete to be hired to do the same job, When this occurs we would expect the two products ultimately to be combined when it is technologically possible. For instance, we wrote in 2000 that because the mobile telephone and personal digital assistants such as the RIM Blackberry are hired to do the same job (which is “Help me to be productive in this snippet of idle time) the two products would become integrated into a single product. This has occurred.

The second type of productive integration occurs when the need to do two different jobs arises at the same point in time and space in the customer's life. In such instances we would expect the services or products that might be hired to do these jobs to be integrated. By illustration, stand-alone gasoline stations and convenience food stores are giving way to integrated facilities that sell both. Why? The jobs for which junk food and gasoline are hired arise at the same point in time and space. Similarly, the auto companies' creation of companies that finance auto purchases is productive integration.

### **A Case Study of Business Model Innovation: Dow Corning**

We close this note with a brief description of the process of business model innovation that was executed in an industry not often associated with such events: commodity chemicals. Dow Corning (DC), a maker of inorganic polymer products called *silicones* that are used in an extraordinary variety of applications – ranging from protective coatings to adhesives to shampoos and conditioners. In about 2000 a strategic review revealed that many experienced DC customers no longer needed the technical services and sales engineering that DC had been offering all customers at no cost. Customers that did not need this service increasingly were sourcing their silicones from Asian manufactures at prices that often were 15-20% below DC's. In a business whose profitability was sensitive to capacity utilization and scale, losing this volume had begun to hurt the company's over-all bottom line.

In 2002, Dow Corning CEO Gary Anderson asked Don Sheets to form a team to start a new business which was named Xiameter. Sheets' charter: Without compromising on profitability, figure out a business model that can sell high-quality silicones at 15% lower prices. This was the value proposition. To reach a 15% lower price point (in a commoditizing material, a huge reduction), overheads had to be absolutely minimal. Sheets' team decided that meant customers had to order from the company's catalogue of existing, standard products: There could be no custom-engineering. Only orders of full tank-cars would be accepted. And customers could not talk to a Xiameter salesperson by phone: All orders had to be placed online. Because high turns of inventory and assets were critical to achieving comparable profitability with the mainstream business, Xiameter orders could not be serviced from inventory, customers had to wait until their orders could be shipped from scheduled production. To minimize overhead Sheets knew he needed confident, knowledgeable employees who could make fast decisions without hierarchical support. He therefore sought DC employees who, though team players, didn't quite fit in the DC culture. When he interviewed candidates with the needed skills, he asked them to decide before they left the room whether they would accept the job. The new venture would be low-touch, service averse, and standardized.

Sheets next needed to determine whether this new venture, with its new rules, norms and metrics, could succeed within the confines of DC's core enterprise. He set up an experimental war game to test how existing DC staff and systems would react to the needs of Xiameter's customer value proposition. Xiameter was crushed in the simulation, as entrenched habits and existing processes thwarted attempts to change the game. It was clear that while Xiameter could leverage DC's manufacturing capacity, the administrative systems and rules that Xiameter required were so foreign to DC thinking that, even with the best intentions, attempting to

leverage any other DC resources or processes would destroy that which was required to succeed. The way ahead was clear: Xiameter required a separate business model, in its own business unit.

A rule that emerged from this simulation was that the only “leveraging” of the resources and processes of the core DC business that would be allowed was when Xiameter “pulled” them into Xiameter. DC could not “push” any of its resources or processes onto Xiameter, because the motivation for conferring such corporate “gifts” onto Xiameter typically would be to spread overhead costs.

In a similar vein, when electronics retailer Best Buy acquired Geek Squad (an in-home computer services and support company) CEO Brad Anderson announced, “Geek Squad bought Best Buy, not the other way around.” He knew that certain synergies would produce growth for the company, but sensed that the low margin, high volume, retail mentality of Best Buy could easily suffocate the high-touch, higher-margin service orientation of Geek Squad. Anderson let Geek Squad pull from Best Buy only those resources and processes that would help them grow and thrive. No pushing was allowed.

Finally, Anderson and Sheets agreed that they would keep Xiameter’s initial scale small. New businesses that achieve success typically must make several revisions in the details within the four-box diagram of their business models before they strive for scale. Careful business model design can shorten these iterations. But business model innovators must initially focus on learning as much as on executing. This requires being *patient for growth* (to allow for learning as the market opportunity unfolds) but *impatient for profit* (to be focused on validating as early as possible a working business model). A profitable business is the best early indication of a viable model.

Xiameter paid back DC’s investment in three months and became a major, transformative success. Corporate revenues increased nearly 40%, because most of Xiameter’s customers were new to the company. Far from cannibalizing existing customers, Xiameter has actually supported DC’s core business, allowing its salespeople to more easily enforce premium pricing for their core offerings while providing a viable alternative for the price conscious.

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<sup>1</sup> This note draws extensively upon an article that the authors published in the *Harvard Business Review* in December, 2008: “\_\_\_\_\_.”

<sup>2</sup> We have written elsewhere about the importance of understanding the job that customers are trying to do. See, for example, Christensen *et.al.*, “Finding the Right Job for your Product,” *MIT Sloan Management Review* (Date), and Christensen *et.al.*, “Marketing Malpractice,” *Harvard Business Review*, (date).

<sup>3</sup> Sometimes decentralization at one stage in the value-adding chain is achieved by centralization in an adjacent stage in the chain. In software, for example, software-as-a-service (SaaS) providers such as Salesforce.com house their software in central locations, enabling them to “serve” it at lower prices to a larger population of smaller companies, in distributed locations – companies and locations that previously could not afford licenses to Oracle software. In on-line higher education, as another example, lectures are delivered from a central location to students at the outer-most circle, instead of requiring the students to come to universities in the inner circles. In retailing, the advent of the department store brought people to the merchandise, housed in a major downtown location. On-line retailing brings the merchandise to the people. At the next level in the value-adding chain, however, Internet retailers typically fulfill orders from a central location. This phenomenon invites investigation by a doctoral student.

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<sup>4</sup> Christensen, Grossman and Hwang note in *The Innovator's Prescription* (New York: McGraw Hill, 2009) that a core reason why the care provided in hospitals is so costly is that they are confluences of solution shop and value-adding process activities, which are fundamentally incompatible.

<sup>5</sup> See, for example, Porter, Michael (1985), *Competitive Advantage*. New York: the Free Press.

<sup>6</sup> The reason why BCG was disruptive relative to McKinsey was that the vertical axis of the disruption diagram in the consulting business is the size of the client project. Moving “up-market” in consulting entails migrating towards larger and larger projects. The strategy projects that BCG originally engaged in were such small-ticket projects relative to the larger organizational effectiveness, organizational design, and post-merger integration projects that constituted McKinsey's bread and butter, that McKinsey's partners simply weren't financially motivated to pursue the strategy consulting business.

<sup>7</sup> See Christensen, Horn and Johnson, *Disrupting Class*, New York: McGraw Hill, 2008, for a more complete explanation of this phenomenon.