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Equity Research

Americas | U.S. Investment Strategy | October 25, 1999

The Retailer's Dilemma

Revenge of the Nerds: How the New Value Network Challenges Incumbents

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Volume 4

- **Traditional retailers are facing a menacing challenge from a new value network, the online medium, which has emerged as a result of demonstrable improvements in economic efficiency and customer satisfaction.**
- **Many investors and incumbents view the Internet as a sustaining technology that merely adds another node of distribution to the traditional retail operation. We prefer to view online retail as a disruptive technology.**
- **Retailers underestimate the magnitude of the difficulties in assembling a credible online offering. The chief barriers revolve around culture and physical capital.**

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Executive Summary

The world of retailing is changing rapidly. Over the last four years, virtually every traditional retailer has grappled with how the Internet will affect its business, and how it should respond. Heading into another crucial season for retailers, many investors still underestimate the importance of these changes in the retail landscape, as well as the magnitude of the difficulties facing the incumbents attempting to assemble a credible online offering.

A value network is the context within which a firm identifies and responds to customer needs, solves problems, procures input, reacts to competitors, and strives for profit. The emergence of a new value network—the online medium—poses a menacing challenge to incumbents. The arrival of this new value network was no accident. It has blossomed as a result of demonstrable improvements in economic efficiency as well as increases in customer satisfaction.

Since Internet-based businesses have lower physical capital requirements, they can thrive with lower operating margins and still potentially generate very attractive returns on capital. Those companies savvy enough to take advantage of scale and its magnifying effects on asset velocity will ultimately attain returns on capital meaningfully higher than those unable to scale. At the same time, these leading firms can improve customer satisfaction along many of the key dimensions associated with the traditional retail experience.

The dilemma for traditional retailers is how to deal with this new value network. This is especially important because most retailers are highly leveraged to changes in incremental revenue. Some view the Internet as a sustaining technology that merely adds another node of distribution to the traditional retail operation. We prefer to view online retail as a disruptive technology. In addition to presenting the various strategies, we outline the two greatest challenges for traditional firms—culture and capital.

- **Culture** Companies have difficulty evolving primarily for cultural reasons. Firms require the right *focus*, where change as a source of competitive advantage is baked into the corporate DNA. The right *structure* is needed to fashion a dynamic internal market for ideas, capital, and talent. This allows ideas to be captured, incubated, and translated into shareholder wealth. And the right *incentives* are also needed, providing the proper monetary inducement to attract the best ideas, capital, and talent.
- **Capital** Many pundits assume that all a traditional retailer needs to do is flick a switch, and the infrastructure is online-ready. Nothing could be further from the truth. The transition to the online world is hardly seamless. By far the most difficult challenge for traditional retailers is dealing with pricing and assortment in the new medium. As well, the clash between the physical infrastructure required to support an online business and the retailer's existing value chain is another roadblock that few have been able to negotiate. The existence of a steep learning curve threatens to leave many traditional retailers behind.

Just as the potentially superior economics of the online retail model offer no guarantee of instant riches, established brands offer no guarantee of online success either. Brand means little if firms can't manage to clear significant structural and cultural hurdles in providing an online offering.

Introduction

Value Network "*the context within which a firm identifies and responds to customers' needs, solves problems, procures input, reacts to competitors, and strives for profit*"

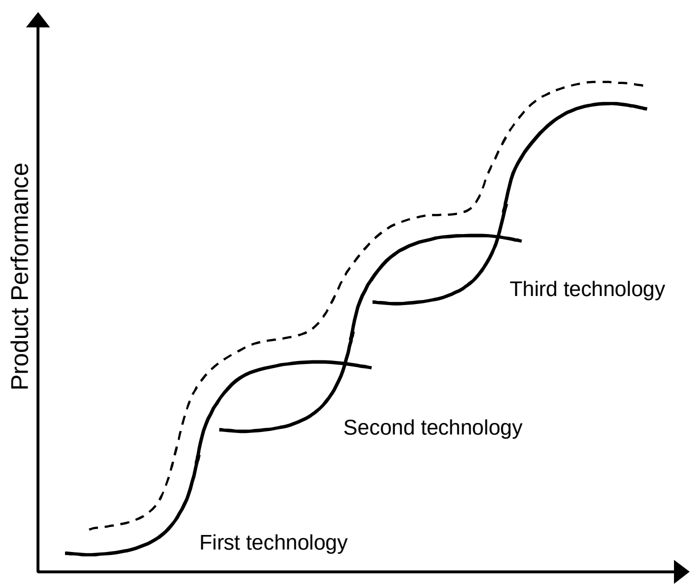
The Innovator's Dilemma, Clayton Christensen

Computer models of the evolutionary process demonstrate that mutations get their start at the geographical fringes of a population pool. After a period of isolation and refinement, the mutants swoop in, overwhelm the center with their improvements, and ultimately become the majority. The edges allow for a period of development, where a novel organism doesn't have to worry about going toe-to-toe with the more highly evolved competition.[1]

As Kevin Kelly has noted, the same is true of the economic ecosystem: "At the edges, innovations don't have to push against the inertia of an established order."[2] The network economy is rife with start-ups, which are free to assemble all the "competencies" they need without having to fundamentally rearrange the existing parts of a firm.

While avoiding the explicit use of evolutionary metaphors, Clayton Christensen nevertheless documents the effects of a very particular "mutation" in the business ecosystem known as a "disruptive technology." We feel this framework holds tremendous explanatory power for analyzing business change and is also suitable for understanding the nature of the "disruptive" change that the Internet has wrought in retailing.

Figure 1
Conventional Technology S-Curve

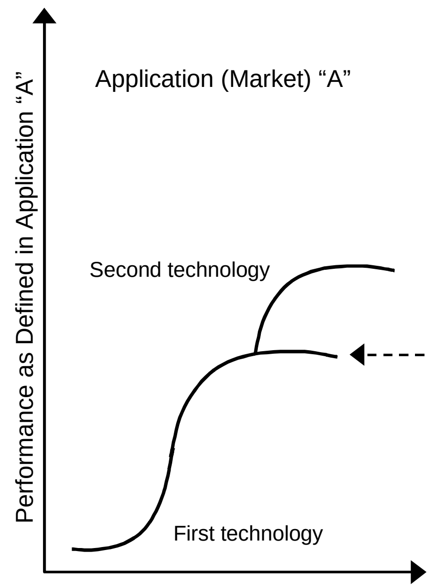


Source: *Innovator's Dilemma,* Clayton Christensen.

Generally, performance improvements for a given technological product can be charted along an "S" curve. In the early stages, development occurs rather slowly, but as the technology is better understood the pace of improvements begins to accelerate.

As the upper boundaries of performance are reached due to natural or physical limits, longer time periods or greater engineering effort are required for additional gains. The challenge to traditional business lies in the ability to identify and develop the appropriate successor technology to supplant the existing technology.

Figure 2
Disruptive Technology S-Curve



Source: *Innovator's Dilemma,* Clayton Christensen.

Here Christensen makes a strategically important distinction. Most new technologies foster improved product performance and are deemed "sustaining" technology. They may be incremental, radical, or even discontinuous in nature, but all sustaining technologies ultimately improve the performance of established products along the dimensions that mainstream customers in major markets have historically valued.[3]

Disruptive technologies, on the other hand, emerge after incubating in their own unique value network. If they progress to the point where they can satisfy the level and nature of performance demanded in another value network, the disruptive technology can invade and knock out the established technology and its practitioners—often very swiftly. Dominant firms in a particular industry can become victims of their own success in relentlessly satisfying customers through their existing value network. And what astute companies try to avoid is having the inflection point on the existing technology's S-curve passed by an upstart technology, a "death from below." This requires being mindful of what's brewing in nontraditional value networks.

Initially, disruptive technologies bring to market a very different value proposition than what had been available prior to their arrival. As well, disruptive technologies generally underperform established products in mainstream markets. As a result the leading firms often dismiss them. However, they have other features that a few fringe (and generally new) customers value. Products based on disruptive technologies are usually cheaper, simpler, smaller, or more convenient to use.[4]

The Good Book

Thanks to certain favorable product characteristics, the epicenter of the online commerce explosion can be traced to the book business. What is often overlooked when assessing the relatively poor response of traditional book retailers to the online threat is that at the time Amazon.com went public, the major "big box" booksellers were busy displacing independent booksellers. They did this by providing their customers with a superior value proposition across all measures of performance: price, convenience, assortment, service, and ambiance. The introduction of sustaining technology drove strong growth in the business.[5]

Table 1
The Book Superstore as Sustaining "Technology"

VALUE DIMENSIONS	**Superstore Chain Activity**
PRICE	Lowered 15% below comparable independent booksellers
CONVENIENCE	Expanded store hours, large parking lots, superstore saturation
ASSORTMENT	Improving breadth and depth of assortment with superstore SKU
SERVICE	Knowledgable, friendly, well-trained staff
AMBIANCE	Couches, concerts, and mocha lattes

Source: Company reports and CSFB analysis.

Traditional book retailers initially marginalized the online threat. After all, it was commonly thought that book buying was a tactile, sensory-rich activity, fit only for browsing in aesthetically pleasing environments like the superstore. Indeed, this type of shopping behavior had been reinforced through hundreds of years of practice, and few book retailers could foresee a credible threat to the system. However, some customers in the nontraditional value network—ostensibly, those outside of the mainstream—were willing to forgo the conventional ambiance and service of the retail experience and began to purchase online.

The emergence of a new value network represents a potentially disruptive influence. However, the technology must satisfy the level and nature of performance demanded by users in the traditional value network to become truly disruptive.

The ability of Amazon.com to make the transition to the traditional retail value network required that it satisfy the level and nature of performance demanded in that network. One inherent advantage of the online medium is the ability to explore the logical performance limits of two key retail value drivers: price and assortment. Of course, offering customers the ability to purchase virtually any book at any time at a comparable price to the best value available at a bricks-and-mortar store is a compelling proposition.

But Amazon.com had to overcome one key stumbling block to completely fulfill the “convenience” value driver: the so-called “instant gratification problem.” The ability to shop around the clock is only a part of the convenience equation. In a traditional retail setting, fulfillment is taken care of at the point of sale—the customer walks out with the product. Consequently, fulfillment isn’t given a second thought. Fulfillment is implicit in the retail transaction and is only noticed if the experience is unsatisfactory.

When consumers place an order online and it’s not fulfilled, they definitely take notice. And it is more than likely that customers will go somewhere else the next time around, if they are not turned off to the online market entirely. Reliability is further fostered by updating customers during every stage in the order- execution process. Trust takes on heightened importance in electronic markets owing to the cyber-separation between buyers and sellers.[6]

In the online world, reliability and speed of order fulfillment are crucial value drivers that determine success or failure. This places an inordinate amount of pressure on the e-tailers’ back-end fulfillment systems, which in many cases are controlled by a third party. Bringing the fulfillment capability in-house creates a potential source of competitive advantage, since it is an essential part of controlling the customer experience online in addition to holding out the opportunity to squeeze out costs down the road. Thus, for example, while some pundits view Amazon.com’s investments in physical assets as a negative, we not only view them as a positive but believe they are vital to building competitive advantage.

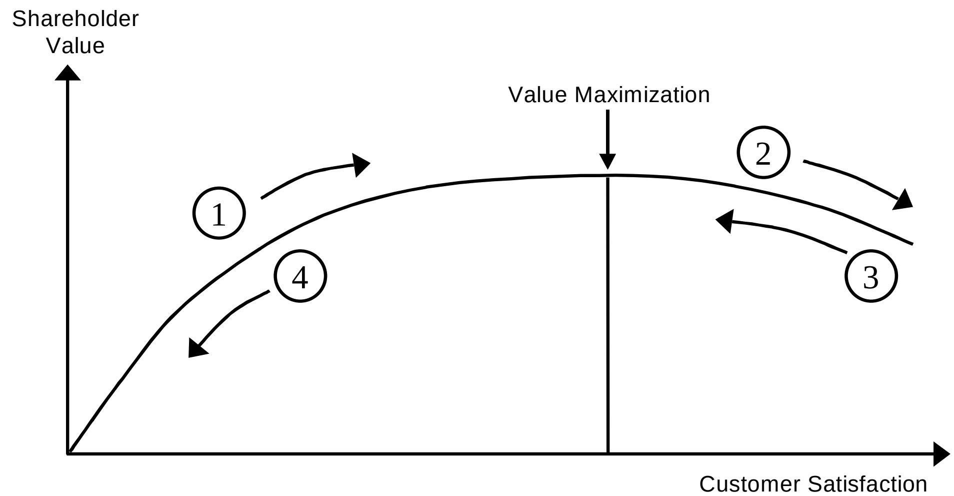
The new value network spawned by the online medium promises to unravel the link between the economics of information and the economics of physical goods. Within the context of the traditional retail store, shelf space serves two different functions simultaneously. It presents information to customers, allowing them to make an informed purchase decision, but it is also inventory that represents a position in the supply chain between the manufacturer and the consumer.

If retailers chose to favor the economics of information, they would maximize their displays to provide a rich selection for their customers. However, physical economics dictates that display must be minimized or at least optimized to control the cost of inventory. Value networks are vulnerable wherever the compromise between the two sets of economics suppresses value. For example, the informational imperative to offer a wide selection and carry high book inventories runs into strong conflict with the logistical imperative of minimizing inventory. The new value network explodes these linkages, unleashing the value that was suppressed in the act of compromise.[7]

A New Value Network

The major public book retailers were doing a fine job of providing value for customers and shareholders before the advent of online book buying. However, we believe they were flirting with physical constraints in their ability to allocate capital in a way that enhanced both customer satisfaction and shareholder value. The relationship between customer satisfaction and shareholder value is presented graphically in Figure 3.

Figure 3
Customer Satisfaction and Shareholder Value



Source: *The Value Imperative*, James M. McTaggart, Peter W. Kontes, Michael C. Mankins.

Every product or service generates a value to the customer, which is measured by its utility in relation to its price. In turn, products generate value for a company and its shareholders in terms of economic profit—or earning a return on capital that exceeds the cost of that capital. When management pursues strategies that increase both customer satisfaction and shareholder value, the two interests are favorably aligned. (See No. 1 in Figure 3.)

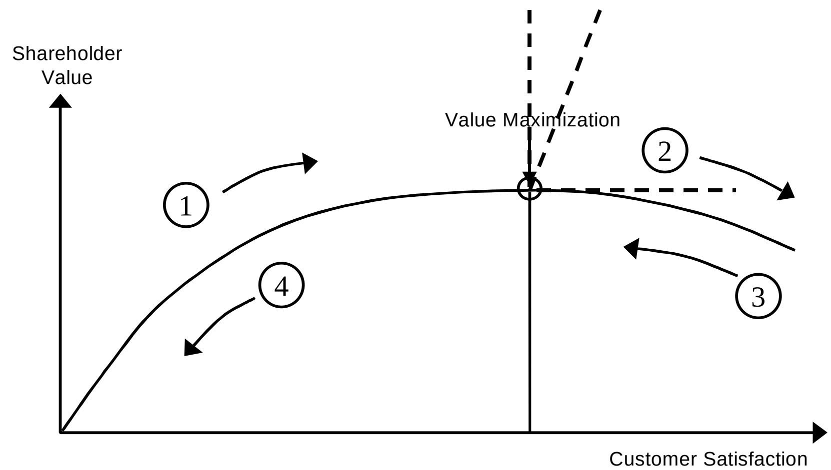
For shareholders to be enriched, there must be a financial benefit from increasing customer satisfaction. In some instances, though, companies invest in their customers to the point where the costs of increasing satisfaction exceed the economic returns. Even before the online medium began to pose a serious threat, the bricks-and-mortar superstores were bumping up against the natural limits of what they could do to improve the satisfaction of customers. The superstores couldn't get much bigger or hold much more slow-turning inventory, and prices couldn't get much lower without seriously jeopardizing the ability to enjoy economic returns down the road. They were rapidly approaching the point of value maximization depicted in No. 2 of Figure 3, and some would argue had already passed the inflection point.[8] It was simply a value-destroying proposition for the "big box" booksellers to take customer satisfaction to the next level.

Despite providing a great in-store experience, booksellers were committing to a customer satisfaction strategy that flirted with value destruction. Unlike strategies that inadvertently give operators the flexibility to reduce the costs that don't contribute to customer satisfaction, the booksellers could not move back along the curve (No. 3 in the graphic). They could not shrink their superstores, scale back their inventory and staff, or reduce their operating hours and still provide the same customer experience that was driving sales. Once a bookseller builds a store of a certain size, all the economics of the business are leveraged to a particular top-line result, and small changes in incremental revenues can radically tilt the economics of the business. The value maximization point for booksellers was actually a point of no return.

Customer Satisfaction

The customer satisfaction proposition inherent in the online value network (lowest price, virtually unlimited selection, and 24-hour shopping) picks up right where the bricks-and-mortar firm leaves off. The promise associated with the medium is an economic return that begins at the traditional point of value maximization.

Figure 4
Customer Satisfaction and Shareholder Value in the New Value Network



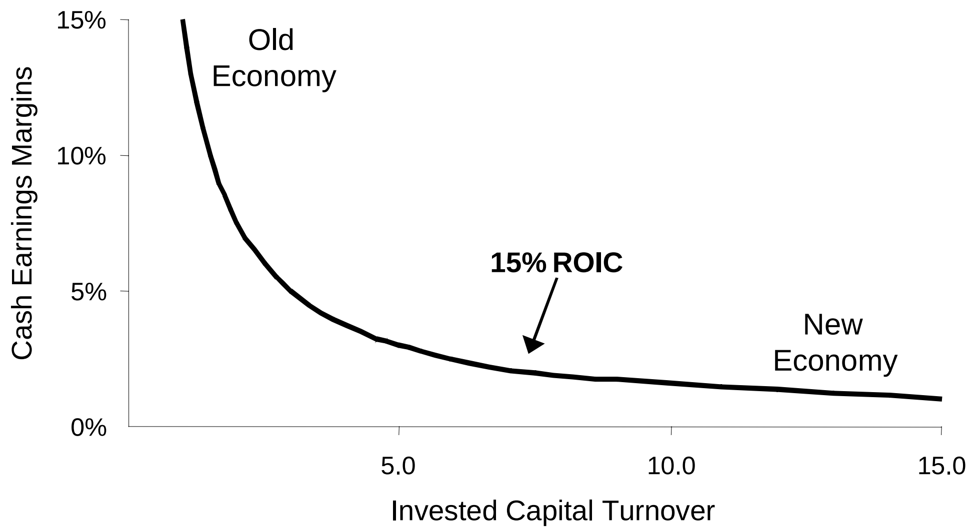
Source: *The Value Imperative* and CSFB analysis.

As the online firm aggregates customer information, it makes its site even more valuable to its customers over time. The ability to aggregate actual purchase data and "cookie" data, and combine it with demographic data and reported registration data, promises unprecedented insight into customer preferences.[9] Tailoring the subsequent online experience accordingly translates into greater customer loyalty and boosts lifetime revenue streams, defraying customer acquisition costs and improving the consistency of recurring business. Costs actually go down as satisfaction goes up.

Shareholder Value

Instead of mirroring the curve illustrated in Figure 3 though, the economic proposition in the new value network holds out the possibility of proportionately greater returns and market value in exchange for smaller incremental investments in capital. Of course, these greater returns are not solely dependent on the smaller asset base in the denominator of the capital turnover equation. Equally as crucial is the ability to achieve sufficient scale in the revenue line to overcome the lower cash margins that are also an inherent feature of the new value network's economic proposition. Before an online firm can realize the returns depicted by the slope of the broken line seen in Figure 4 (the linear relationship plotted here is purely for illustrative purposes and does not necessarily reflect the returns from an actual capital commitment), a certain critical scale must be achieved. The ability to finance a brand awareness campaign with cash flow derived from working capital as sales increase is a key element of gaining scale for the online firm.

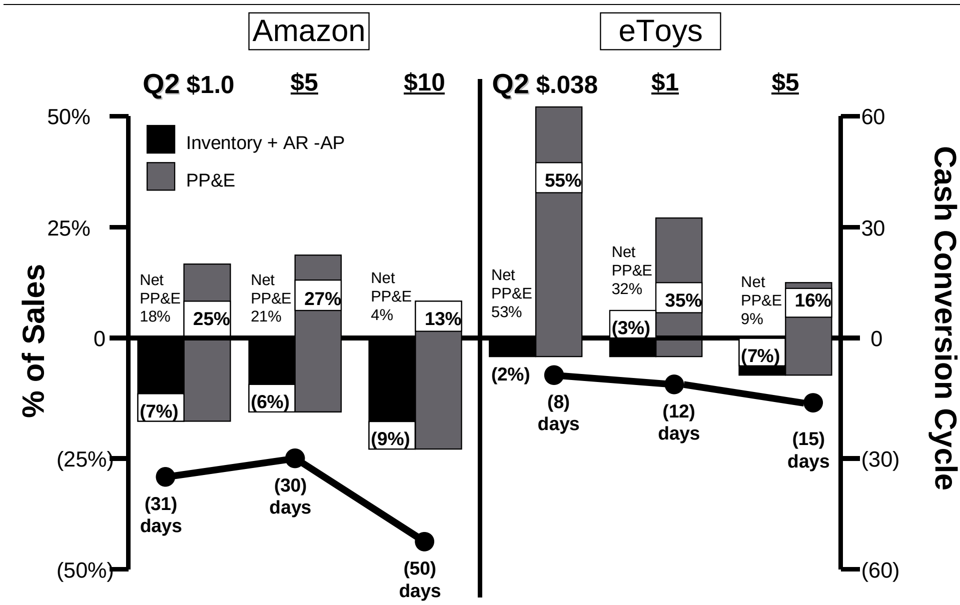
Figure 5
The Margin and Capital Turnover Tradeoff



Source: CSFB analysis.

Since Internet-based businesses have lower physical capital requirements, they can thrive with lower operating margins and still generate very attractive returns on capital. Old Economy firms, in contrast, need higher margins to support a larger capital base. Traditional retailers experience high fixed costs and low variable costs in relation to output. However, the fixed costs for online firms can be significantly lower than the fixed costs for their bricks-and-mortar brethren, leading to a structural advantage through fixed cost leverage. In addition, variable costs are subject to efficiencies not seen in traditional retailing. In the future, a select group of online firms will not just eke out the same returns as traditional retailers by balancing lower margins with higher asset turns. Those companies savvy enough to take advantage of scale and its magnifying effects on asset velocity will ultimately attain returns on capital much higher than those unable to scale.

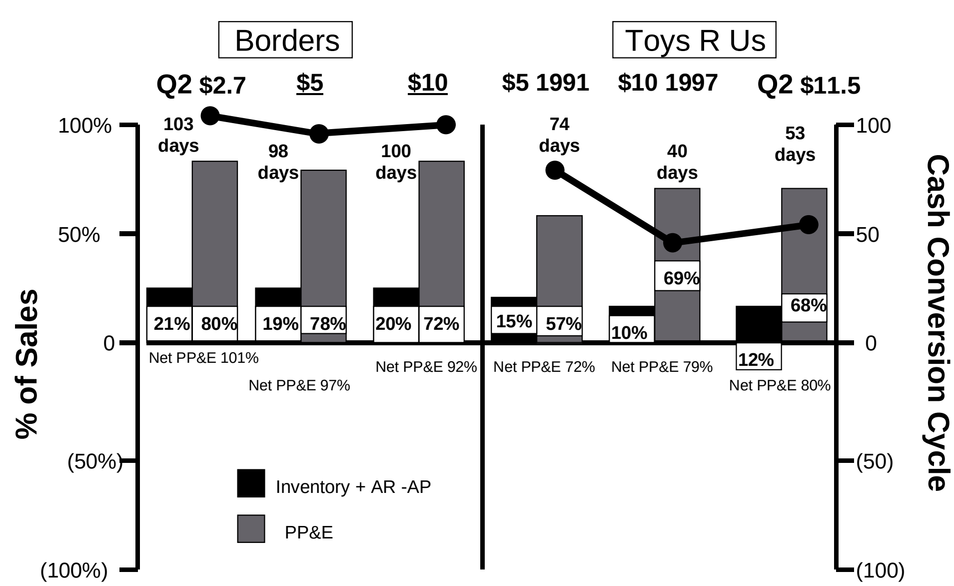
Figure 6
Scale Effects on Asset Velocity for Online Model
sales in billions



Source: AMZN, ETYS, and CSFB analysis.

Figure 6 depicts a forecast of the capital requirements for two popular online retailers as their operations get bigger.[10] Working capital efficiencies inherent in the online model bring down both firms' already low capital requirements, when compared with the steep capital requirements of the more traditional retail models seen in Figure 7. (Note: underlined sales numbers are estimates and all operating leases have been converted to capital leases in the PP&E figures.)

Figure 7
Scale Effects on Asset Velocity for Traditional Model
sales in billions



Source: CSFB analysis.

The ability of online firms to scale is predicated on satisfying the level and nature of performance demanded by the customers in the traditional value network. The promise inherent in the online retail model is huge, but so is the hurdle of attaining scale and realizing that potential. Therefore, the current online modus operandi is to get big, and get broader, fast. The economic advantages associated with scale and scope are too enormous not to go after in a hurry. This has not been lost on the dot com community: for the first six months of 1999 e-commerce brands spent $755.2 million on traditional media advertising, significantly outpacing the $650 million that was spent in all of 1998.[11] However, word of mouth from satisfied customers continues to be one of the most powerful drivers of online traffic.

Getting a clearer picture of the potential rewards of this race is crucial when attempting to understand the current business environment. Using after-tax operating margins as a proxy for NOPAT, and net PP&E as a proxy for invested capital, Table 2 gives a guideline for what kind of returns on capital can be expected of the companies in Figures 6 and 7. Even with very conservative margin estimates, the potential for high ROIC results can be seen with the online firms. In contrast, the terrestrial firms with already high operating margins are bracing for the impact of a new environment with a lower overall price ceiling. While some traditional retailers that aggressively compete on price focus on asset efficiency, those retailers that look primarily to margin improvements as their salvation should be worried. In addition, for the online firm unable to scale its business, the promising returns may never materialize.

Table 2
Returns on Capital
sales in millions

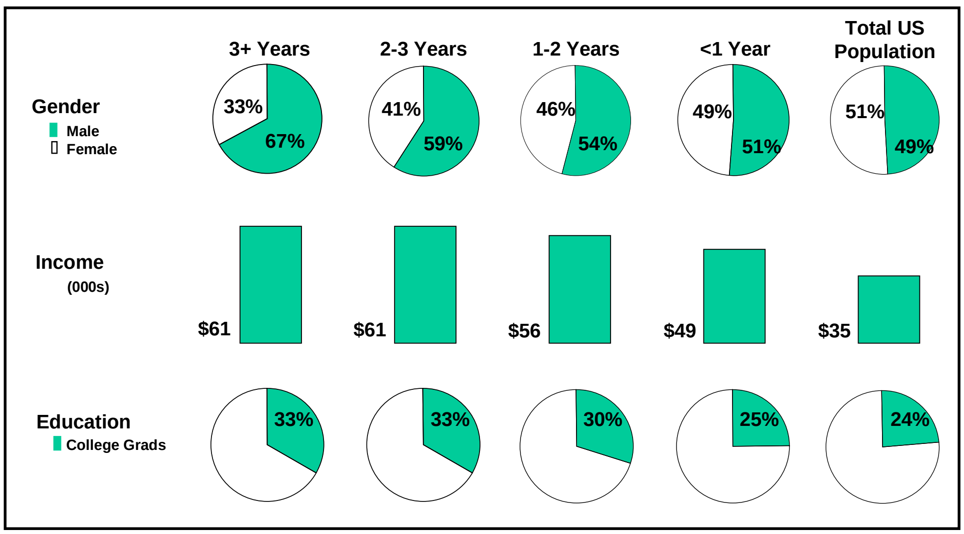
AMZN Sales	**Q2 $1,015**	**$5,000**	**$10,000**
After-tax Operating Margins	NA	4%	4%
Net PP&E as a % of Sales	18%	21%	4%
Returns on Capital	**NA**	**19%**	**100%**
ETYS Sales	**Q2 $38**	**$1,000**	**$5,000**
After-tax Operating Margins	NA	4%	4%
Net PP&E as a % of Sales	53%	32%	9%
Returns on Capital	**NA**	**13%**	**44%**
BGP Sales	**Q2 $2,754**	**$5,000**	**$10,000**
After-tax Operating Margins	6%	6%	6%
Net PP&E as a % of Sales	101%	97%	92%
Returns on Capital	**6%**	**6%**	**7%**
TOY Sales	**FY'91 $5,510**	**FY'97 $9,932**	**Q2 $11,477**
After-tax Operating Margins	8%	6%	2%
Net PP&E as a % of Sales	72%	79%	80%
Returns on Capital	**11%**	**8%**	**3%**

Source: CSFB analysis.

Act Now: Main Street Is Moving Online

Much of the demographic data collected about the early online population reinforces what has been referred to as the CLUMP scenario. Time-constrained, computer-literate upwardly mobile professionals (CLUMPs) initially helped define the online purchasing psychographic. That is, technology-centric users driven by the pursuit of new brands and activities.[12] However, the online demographics are changing as more users migrate online. The advent of new points of distribution and falling technology prices is attracting new users to the medium. The characteristics of these users are more reflective of the population as a whole.

Figure 8
America Moves Online



Source: Forrester Research.

As the Web becomes more mainstream, there are major implications for retailers.

- Traditional retailers must realize that there are three possible types of sales from a competitive standpoint: incremental sales, which are unique Internet sales that expand the industry pie and would not have otherwise been generated; shifted sales, which occur in one channel at the expense of another; and *cannibalization*, which represents the choice of one channel over another within a single company’s operation. As a more mainstream audience begins to alter the composition of the online ranks, there are indications that incremental sales will begin to slow and that more and more sales will result as a consequence of channel shift.[13] Traditional firms with large “invisible” fixed assets will be disproportionately affected by any incremental shifts. This development would certainly put pressure on retailers to build out their online operations to give themselves a fighting chance at maintaining their existing sales as opposed to losing sales to the Web outright.

- Online retailers must realize that comfortably visible offline brands, which can drown out the noise associated with a crowded online field, have an advantage. Although years of accumulated advertising and reinforcement provided by the geography of location are potentially beneficial, ultimate success will be determined by the quality of the online experience. Some studies attempting to explain price differences online have concluded that coefficients of determination on the primary retail service characteristics either “do not vary significantly across retailers or are negatively correlated with price.” This suggests that brand, trust, and awareness are potentially key elements of price dispersion online.[14] It has been demonstrated that online communities,[15] links from other trusted sites, unbiased product information,[16] and existing conventional world brand names[17] can all lead to increased trust and the ability to support higher prices online.

- Online, no one can hear you sell. As most traditional retailers can confirm, the most critical success factor is location of the physical stores. Facing certain obscurity without a visible presence, many online retailers have been aggressively courting affiliates and engaging in portal deals. Customer awareness, or share of the “neural real estate,” is just as crucial to the success of online retailers, as physical location is for conventional retailers. There is evidence that there might be “natural” limits on the amount of firms that can break free from online obscurity owing to the distribution of the number of sites and the high search costs to locate retailers online.[18]

It is important to note that just as the superior economics of the online retail model offers no guarantee of instant riches, the promise associated with an established brand offers no guarantee of online success either. Will big traditional brands wielding advertising budgets in the hundreds of millions of dollars matter online? We assert that they will, with a caveat. Brand means little if firms can’t manage to clear certain structural and cultural hurdles to provide a credible offering. Many traditional retailers are only now beginning to confront the full magnitude of the challenges facing them as they attempt to move into the online space. As we outlined in *Frontiers of Strategy,* Volume 3,[19] there are significant barriers to entry for Internet companies. In the balance of this report, we narrow our focus and explore some of the more germane barriers that face traditional hard goods retailers attempting to deal with the emergence of the online medium as a means of marketing and distributing goods. Over the last four years, virtually every “traditional” firm has grappled with how this technology is affecting its business and how it should respond.

The Dilemma

Ignoring some very real distinctions between evolving approaches, we have chosen to classify company responses to the challenge of the Web in quite a ruthless fashion (if only to highlight the fact that "straddlers" constitute the majority):

Adopt Adopters have undergone dramatic realignments in their business processes or have set up completely separate business units with no ties to the parent company. The online company directly attacks the parent without scruples, acting in its own economic self-interest.[20] Adopters hope to become "players" in the new medium and have completely jettisoned their prior value chain and infrastructure in favor of the assets and focus required to be "net centric."

Example: Egghead, Inc. saw the writing on the computer screen relatively early in the game, announcing in late January 1998 that it was going to close up shop and move to the Web. Threats from larger discount superstores, the potential for online distribution and delivery of product, as well as the need to migrate to a lower-cost model were all contributing factors in Egghead's decision to close its retail stores and change its name to Egghead.com. Even though business has not exactly flourished since the change, the company recently garnered seventh place in the National Retail Federation's ranking of the Top 100 Internet Retailers, and it is in the process of merging with online retailer Onsale, Inc.[21] A continued campaign of building retail locations most certainly would have led to deteriorating returns and bankruptcy for Egghead, as more and more customers migrated away from in-store software purchases. Comparing financial statistics from fiscal 1995, when the firm had no online sales, with fiscal 1999, when the company sold merchandise exclusively online, is instructive.

Table 3
Egghead Offline, Egghead Online

	4/1/95	*4/3/99*
Cash Conversion Cycle	35	(4)
Days Sales Outstanding	36	6
Days in Inventory	49	34
Days Payables Outstanding	50	44
Invested Capital	$ 146	$ 34
Net Sales	$ 863	$ 149
Market Capitalization (mil)	$ 147	$ 465
Market Cap/Sales	0.2	3.1

Source: CSFB analysis.

In evolutionary terms, there is a certain combination of possible alleles (each person inherits two alleles for each gene, one allele from each parent) in any population that would produce the optimal set of traits (the global optimum); but there are other sets of alleles that would yield a population almost as adapted (local optima). Transitioning from a local optimum to the global optimum may be hindered or forbidden because the population would have to pass through less adaptive states to make the transition.[22]

In the business world it is a rare firm indeed that is willing to "let go of something that is working and trudge downhill toward chaos."[23] Lower adaptivity places you closer to extinction. However, it also gives you the only chance to be better positioned in the future.

Companies in the traditional retail arena that have chosen to set up completely separate business units with complete freedom to operate independently from the parent are virtually nonexistent. Petsmart's alliance with Idealab to create petsmart.com comes close. However, petsmart.com still utilizes its parents' fulfillment capability. Some notable examples of cannibalization in financial services include ESchwab and Bank One's Wingspan. Cannibalization, or the tactic of relentlessly pursuing the next development that will make the current regime obsolete, is not taught in business school.

Straddle A solid majority of firms fall into this category, with most attempting to leverage their existing value chain, brand, and physical assets into the online world. Abandoning prior success, with the significant investments in both emotional and physical capital that have already occurred, is the chief cultural barrier to becoming a full-fledged adopter.

Example: Most analyses of the online retail business place companies like book retailer barnesandnoble.com and toy retailer toysrus.com squarely in the "adopt" camp. Despite "separation" from their respective parent organizations, we prefer to categorize them as straddlers because the umbilical cord has not been severed. Both are struggling with the challenge of leveraging their legacy value chain into the world of online retail.[24]

Barnes & Noble was one of the first companies of note to establish a separate online business unit. In early 1996, Steve Riggio, CEO of bn.com until December 1998 and the intellectual force behind the firm's initial online efforts, had an epiphany.[25] Realizing that it was better to gear up for channel shift than allow others to cannibalize its core business, Riggio developed an explicit "straddle" strategy that took advantage of the company's superstores, including gift certificates redeemable in superstores, in-store kiosks, and a store-based returns policy for anything ordered online. However, faced with Amazon's continued discounting, this effort was scrapped because of margin-related pressure.

The lower cost structure of the online model, unencumbered by bricks-and-mortar retail locations, supported pricing that threatened the ability of Barnes & Noble to adopt a straddle strategy and compete effectively. The implications of the margin and capital turnover tradeoff (Figure 5) are that traditional retailers cannot simultaneously compete on price—jeopardizing margin—and sustain satisfactory returns. Their value maximization strategies give them little room to compete. Taking a look at the current operating efficiency of barnesandnoble.com versus Amazon.com is revealing.

Table 4
Cash Conversion Cycle

	barnesandnoble.com BNBN	**Amazon.com AMZN**
Days In:		
Sales	17.5	2.9
Inventory	6.0	21.7
Payables	10.2	60.5
Cash Conversion Cycle:	**13**	**(36)**

Source: CSFB analysis.

Despite the fact that Barnes & Noble holds virtually all of the online firm's physical inventory—its days in inventory figure reflects this favorable relationship—bn.com's poor payable terms more than offset this benefit. Leveraging the purchasing power of Barnes & Noble proper, bn.com has engaged in a supply agreement with its parent and partner whereby Barnes & Noble charges bn.com for the cost of the merchandise plus any incremental overhead. However, a look at days in payables reveals the unfavorable terms that Barnes & Noble extracts from its online operation relative to the terms that Amazon.com gets, as well as the terms that Barnes & Noble itself receives from distributors. This is just one of the many limitations imposed by the relationship.[26]

Bn.com is not the only company working within the confines of a structure imposed by its traditional retail roots. Toysrus.com faces similar challenges. In addition to a secular shift in buying patterns in the toy industry (more software purchases, as well as kids growing out of traditional evergreens at a faster rate), Toys R Us suffered some market share erosion over the past holiday season and fell behind Wal-Mart as the leading toy seller. Having barely weathered the storm created by discounters, Toys R Us was thrown for another loop by the online threat. Toys R Us has since responded with a strategy that further reveals the true difficulties of attempting to straddle both worlds. Recent management turmoil at the company underscores some of the more important conflicts.

- Robert Moog, CEO of toysrus.com, left the firm at the beginning of July. Moog wanted the maximum freedom to search for best prices from vendors in order to roll out an aggressive pricing format that would challenge other online retailers. Toys R Us preferred to work within its traditional sourcing arrangements and not risk channel conflict by antagonizing existing store franchisees with potentially lower prices online.
- Benchmark Capital, toysrus.com's venture capital partner, pulled out of the joint venture at the end of August. The partnership dissolved because of differences over ownership of the independent company and whether or not it could be capitalized independently. These conflicts highlight the incentive-based cultural differences between the two parties.
- CEO of Toys R Us, Robert Nakasone, resigned during the week following the blow-up of the Benchmark deal. He cited a difference of opinion with Chairman Michael Goldstein as a key reason for the move.

Endure Companies that endure believe that a certain percentage of their customer base might be lost to the online medium, but that their core customers will continue to make purchases in a traditional manner. Therefore, a minimalist online strategy is pursued, if any is engaged in at all.

Example: Borders Group has been consciously pursuing a conservative Internet strategy and has conceded the space to rivals. Management has done the numbers and doesn't like the return on investment; therefore, it wants to raise awareness about the firm's buildings. Borders thinks that it can grow and continue to make money while pursuing a "build it and they will come" model.

In this way Borders is staying focused on its capital investment strategy of building superstores and thus has simultaneously been characterized as burying its head in the sand with respect to the online threat. Investors have been given the task, says management, of recognizing a bifurcation in the book market. A certain class of buyer is still going to continue purchasing in bookstores, and Borders wants to be there servicing customers in the traditional value network.[27] Table 5 summarizes the various decisions that traditional retailers can make.

Table 5
The Dilemma for Traditional Retailers

	Description	*Positive*	*Negative*
Adopt	Embrace the online culture and capital model	Structural economic advantages, high potential ROIC results	Difficult to attain scale and share of "neural real estate"
Straddle	Leverage existing value chain, brand and physical assets into the online world	Offer consumers "complete" retail experience	Execution is challenging due to online culture and capital
Endure	Core customer will continue to make purchases in the "traditional" manner	"Safe" strategy, focus on optimization, stick to the knitting	Lose customers, destroy value

Source: CSFB analysis.

Culture and Capital: The Barriers for Incumbents

"Because skill guilds constrain (and defend) an organization, it is often far easier to start a new organization than to change a successful old one."

New Rules for the New Economy, Kevin Kelly

Evolution is not progress; it is simply the process of populations adapting to their current surroundings. Individual organisms do not evolve; they retain the same genes throughout their lives. Only populations evolve. The impossibility of genetic change in individual organisms during their lifetime mirrors Christensen's own view that old-line companies that excelled before the Internet only have one possible recourse in the new environment:

"They [must] set up a completely independent organization and let that organization attack the parent. If you try to address this opportunity from inside the mainstream, the probability of success is zero. I've never seen it happen. You need to have a different business organization concentrating on building a business model appropriate to the future while the existing organization can focus on the client base that's still uncomfortable with the Internet.[28]"

In the Christensen view, no "straddle" response to the Internet will succeed, regardless of form. For traditional firms, we believe the barriers to mounting an effective response can be classified under two categories, culture and capital.

Culture Companies have difficulty evolving primarily for cultural reasons. The tremendous innovation and wealth creation in Silicon Valley stems from a business ethos that is rooted in opportunity-focused resource attraction, not efficiency-focused resource allocation.[29] The organizational "structure" of Silicon Valley allows for ideas, capital, and talent to move freely to create whatever combination enjoys the best chance of generating wealth. For companies that adopt the Silicon Valley mindset where the best ideas rule—and where structures are in place to capture and develop them—change becomes baked into the DNA of the organization.[30] *We believe that this is a vastly underestimated source of competitive advantage*.

Innovation and growth do not emerge through rigorous planning, but through a combination of local randomness and global structure.[31] A structured process is completely predictable both locally and globally; hence it cannot grow or adapt, while a chaotic system is unstable at both levels. Complexity theory suggests that a robust structure emerges from the interaction of autonomous agents. The pace of current technological change has increasingly challenged corporations where the wealth-creating prospects lie in streamlining, reengineering, and optimizing the organization. When considering the traditional corporate pyramid, local diversity is typically squelched at the idea phase by top management. Gary Hamel has taken note of some of the management traits: a considerable amount of emotional equity invested in the past, little genetic diversity in terms of thinking about the business, and a protective complacency that stems from already "having made it." Culture represents:

- The right *focus*. Where change is baked into the corporate DNA as a consequence of efficiency-focused resource allocation.
- The right *structure*. Where the firm has a dynamic internal market for ideas, capital, and talent so that ideas can be captured, incubated, and translated into shareholder wealth.
- The right *incentives*. Providing the proper monetary incentives to attract ideas, capital, and talent. This typically entails significant equity ownership.

Capital As a new distribution channel, the Web offers firms the ability to "act locally and sell globally," giving customers the opportunity to purchase products any place and at any time. Intuitively, this proposition would seem to combine the best of all possible worlds for traditional firms that can tap the power of both the online and offline worlds. Thus far, reality has served as an unwilling partner with many offline merchants. Many pundits assume that all a traditional retailer needs to do is flick a switch and the retail infrastructure is online-ready. Nothing could be further from the truth. The transition to the online world will continue to be far from seamless.

- *Assortment*. The degree and volume of rhetoric surrounding the product assortment debate has increased noticeably over the last year. "The pure play" online merchants continue to insist that the bricks-and-mortar guys just don't get it. They state emphatically that famous brands just don't matter online and that consumers want to pick from a vast selection of offerings, not just the goods available from one company. Traditional merchants will increasingly respond with a "whom do you trust" campaign. But traditional firms face very real conflicts with their investments in physical stores. Should the Web site offer more stock-keeping-units (SKUs) or less, or merely all the products that a customer can reasonably expect in the company's stores?
- *Prices*. By far the most difficult struggle for traditional retailers is dealing with pricing in the new medium. The dilemma is that the online channel affords lower price points, which conflict directly with the company's in-store-pricing structure derived by an altogether different calculus (involving different supply chain and overhead requirements). Offering lower prices online risks cannibalization of stores, conflicts with franchisees, creates store-based return or servicing issues, as well as complicates the incentive structure for salespeople. In addition, the issue of taxes is a crucial one. For the most part, companies with physical infrastructure in a particular state must charge sales tax for buyers in their respective state.[32]
- *Infrastructure*. The clash between the physical infrastructure required in the online space and the existing logistics chain that most traditional retailers (non-catalog) support is another roadblock for traditional retailers. Sending large pallets of goods to a finite number of locations is an entirely different proposition than the one demanded by online commerce; that is, shipping small packages marked for delivery anywhere in the world. Proximity to company-owned stores rather than ground shippers like UPS is another logistical challenge that traditional retailers face. Rather than "home grow" the assets required for this type of business alignment, many traditional retailers have chosen to contract out the necessary fulfillment and distribution facilities. This option, while compelling for retailers that can ill afford to see dormant distribution capacity, is not as simple as it seems. The demands of real-time inventory (product availability and shipping status) force retailers to closely integrate distribution with Web operations, requiring personnel on both ends to seal the deal. In addition, fulfillment costs are typically 10% of each sale.[33]
- *Learning curve*. The actual technological infrastructure required to integrate the transaction origination function with fulfillment and servicing not only needs to be in place, but also must run seamlessly. Improvement and streamlining of this process require a long learning curve. Many traditional retailers familiar with the intricacies of in-store customer service are necessarily unfamiliar with the finer points of remote customer service. With the entire enterprise geared toward optimization of the in-store customer experience, it is understandable that there is also trouble with executive buy-in and staff support. The reporting, budgeting, and direction-setting elements of the online effort can easily run into conflicts with other business segments.

Invariably, the rallying cry of the traditional retailer attempting to become successful online is "leverage the brand." After all, most offline retailers have spent considerable sums to promote brand awareness for their concepts. The fact that Wal-Mart, online since 1996, has recently pushed up the date for the release of its revamped Web site—after the current holiday season—should be a signal to investors that these execution issues are extremely difficult.

Conclusion

Considering the cultural and capital hurdles associated with building a credible online offering, as well as catering to the needs of two distinct value networks, Clayton Christensen's view is that all straddlers are doomed to fail. We prefer to depart from the orthodoxy of theory, though, and take a less absolutist stance. A number of traditional retailers, notably those with "branded" products and consumer direct infrastructure (a legacy of catalog operations), have met with some online success. However, traditional retailers of unbranded general merchandise have not had any impact online. We believe this is due to the cultural and capital challenges previously outlined. Nonbranded hard goods retailers that operate solely online, like Value America, which offers enormous selection and low prices, have not seen appreciable gains in shareholder value. The lack of brand visibility, coupled with each individual manufacturer drop-shipping goods at different times with varying degrees of service, does not create a differentiated customer experience. Wal-Mart's initial online effort, begun in 1996, suffers from some of the same difficulties, even though it is one of the strongest brands in retail.

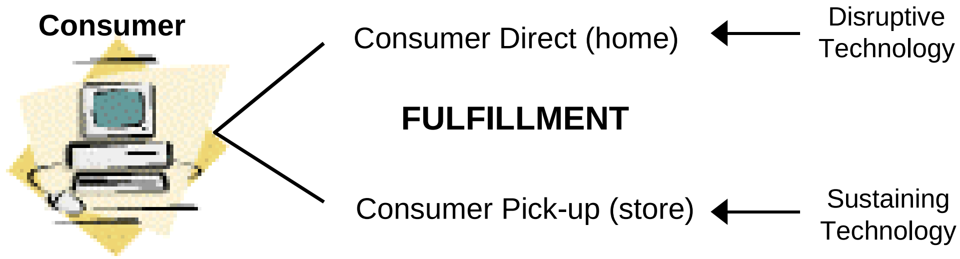
Despite the burgeoning influence of the online medium on retail, the fundamental value drivers that determine a satisfactory customer experience are still the same. Much of the debate surrounding the merits of a pure online versus pure offline focus obscures the fundamental point that retail at its root is about acquiring and retaining as many profitable customers as possible. And this requires delivering product from the manufacturer to the buyer in the most efficient manner possible.

The rhetoric surrounding "asset-free" online models and top-heavy bricks-and-mortar firms will eventually yield to a discussion about which retailers can best attract customers and assemble the value-chain capabilities necessary to deliver the product. Online operator Amazon.com, which has proven to be disruptive, has been able to satisfy the level and nature of service demanded by customers in the traditional value network. The day that Amazon.com is widely considered to be an "excellent retailer" rather than an "excellent online retailer" will signal the shift to post-Web retail. We believe that this day is fast approaching and that many traditional retailers are unprepared.

The new value network promises increases in customer satisfaction as well as operating efficiencies that will drive extraordinary economic returns for some companies. Online firms are more efficient out of the starting gate, and hence have an advantage in assembling the necessary competencies required to compete effectively. Over the last year, many traditional retailers have shifted their asset bases to reflect the impact of the new medium. Similarly, many online firms have acquired the necessary "real-world" assets to more effectively deliver their products and promote their brand. (See Appendix A.)

Many conventional retailers are attempting to cast the Internet as a sustaining technology. For example, an online purchase with consumer pick-up at the local store is commonly viewed as the best of both worlds. (See Figure 9.) And assuming a retailer can surmount the technological difficulties, in-store fulfillment may serve to be an adequate approach for the short term. In the long run though, all roads lead directly to the consumer.

Figure 9
Internet as Disruptive Technology



Source: CSFB analysis.

Using a computer or a comparable interface to check and see if an item is in stock at a store near you is a compelling proposition for customers. Paying online and picking up a bag of goods at a checkout window is even better.[34] However, consider that a consumer willing to use a computer to search for a product is either familiar enough with the item to want to order it locally and pick it up immediately or is already comfortable enough with the online medium to search for a product online. The reticence regarding consumer direct shipment primarily revolves around uncertainty about the payment transaction or the actual delivery of the item. We would offer the following considerations for traditional retailers that feel a sustaining approach is all that is necessary:

- Consumer uncertainty regarding delivery and payment stems more from the medium than any inherent product features. A sustaining technology response is just an intermediate solution to assuage the threat of a new medium. There is a thin line between ordering a product online and then picking it up in a store, and forgoing the trip to the store altogether and having it delivered. Internet technology is still in its infancy, and online viewing capabilities will be radically improved in coming years. Retailers need to make the necessary investments today.

- Traditional retailers offering in-store fulfillment still need to provide their customers with direct delivery, primarily because a competitor already is. Conceding consumer direct entirely is not a viable long-term proposition and amounts to an endure strategy. In addition, if the consumer direct experience is a bad experience, consumers will switch.

- Local distribution to solve the "last mile" problem will ramp up dramatically over the next couple of years, leading to faster, cheaper, and more efficient shipment of goods to online consumers. The emergence of Webvan and the success of companies like Kozmo.com indicate that profit opportunities in the delivery of goods ordered online are viable. Trustworthy delivery will become a source of competitive advantage.

- Younger generations are growing up with the online medium. Some studies conclude that Generation Y will set off another e-commerce surge around 2010, as they enter their prime earning years.[35] Teenage Research Unlimited has estimated that 70% of "teenagers" between the ages of 12-19 are online during any given week.

The focus of the retail discussion no longer revolves around the purity of the "assetless" online model in contrast with bricks and mortar. Two worlds are colliding. The online community is evolving from a user base with a specialized psychographic to a more mainstream orientation. Offline firms are on the defensive, scrambling to acquire assets and understand the competencies necessary to take advantage of the new medium at the risk of losing sales. Online companies, on the other hand, are aggressively acquiring the competencies necessary to attract as many customers as possible to compete in the traditional retail value networks. Over the short term, some traditional retailers will successfully use the Internet as a sustaining technology. Over the long term, however, we believe the Internet will prove to be a disruptive technology for all retail segments.

Table 6
New Value Network

	Traditional Value Network	New Value Network
Identify Customers	• location, location, location • marketing demographics driven • purchase history	• cookie data • purchase history • registration data • demographics
Respond to Needs	• maximize skills • minimize prices • good experience • fulfillment	• assortment • customize mass • price
Solve Problems	• about the "business" • varying merchandise tactics • organizational constraints	• about the "customer" • change inherent
Process Input	• value chain asset heavy • cash conversion cycle positive	• value chain asset light • ccc negative
Reacts to Competitors	• inflexible • risk of too much capital	• flexible • real options
Strives for Profit	• income statement/margins • higher margins, lower turns	• balance sheet/cash flow • low margins, high turns

Appendix A: Not Convergence

The online versus offline debate has gotten a little bit more complicated over the last year. Traditional retail responses are about as varied as the companies themselves. However, hard goods retailers face some unique challenges with respect to transitioning to the online medium. As noted previously, some traditional branded hard goods retailers like The Gap, REI, and The Sharper Image have met with some success online. In addition, the office supply segment has made giant strides online. With local distribution in place and geographic density in its customer base, Office Depot noted in its most recent quarter that it generated $98 million in sales online. However, no unbranded general merchandise retailer from the ranks of traditional bricks-and-mortar firms (geared primarily toward consumers and not business to business) has been able to make the transition into the online space with any success. The medium inherently lends itself to fulfilling three key dimensions of value that many "big box" general retailers have thrived on in the past—price, assortment and convenience—thus hindering meaningful differentiation online. The general trend in recent years has been toward bigger stores with bigger assortments and lower prices, resulting in the category killers.

Like a diet that is simple to understand but hard to execute, many firms will not succeed. Shedding pounds is harder than gaining weight, and it's a lot easier to start with a virtual business and add capital as appropriate than to start with lots of capital and then go virtual.

Buying E-commerce: Federated Department Stores

With the purchase of direct marketing firm Fingerhut Companies Inc. in March 1999 for $1.7 billion in cash and $200 million in debt, FDS signaled its interest in owning what it hopes will become the "largest direct to the consumer business on the Internet." Now holding partial or full interest in 12 Internet businesses, FDS gained a number of crucial competencies with the acquisition of Fingerhut, such as product fulfillment through three regional distribution centers with 4 million square feet of distribution capacity, capable of picking and packing 20,000 orders per hour and shipping over 400,000 parcels per day; order management allowing the firm to track order and credit information for up to 100 million transactions per year; direct marketing that supports 30,000 telemarketing calls per hour and 4 billion print and electronic advertising materials; information systems, which can process 80 million orders per day; and returns processing, which can process 30,000 returns per day.

The acquisition of online assets hasn't been limited to broadline retailers either. The 40-year old Columbia House record club, jointly owned by Sony and Time Warner, recently announced an agreement to purchase CDNow, the largest pure-play online music seller. In addition, venture capital-funded operations like Nordstrom's online shoe store, and Procter & Gamble's reflect.com (an exclusively online brand of beauty products), have both shown savvy in dealing with the culture and capital challenges outlined in the report.

Closing Stores: Lands End

Lands End, the catalog retailer that has emerged as one of the leading online apparel retailers, reported Internet revenue of $61 million in 1998 (which was roughly three times more revenue than in 1997). The firm has seen strong demand for discounted items and has created an online category called "On the Counter," where shoppers can peruse a selection of weekly overstocks. This channel has proven so popular with consumers, allowing the firm to liquidate inventory balances at higher recovery rates, that Lands End announced the closing of three of its 19 outlet stores owing to the success of the online and print campaign. Although relatively insignificant in overall revenue contribution (4% of sales), the impact of the medium is being felt in the physical world. The ability to eliminate overstocks "globally" versus a geographically limited area is promising.

Senior management for the mass retailers is now beginning to confront the inherent contradiction between leveraging the online sales channel and continuing to lease stores in the present fashion. Many studies currently being conducted by the real estate industry are examining the impact of online buying on retail property values and unit expansion.[36]

Synchronizing Channels: Sharper Image

Some traditional bricks-and-mortar firms have successfully made the transition to the online medium, like retail powerhouse The Gap, cooperative outdoor specialist REI International, and specialty products retailer The Sharper Image. All of these firms share two things in common: each sells branded, proprietary goods, and each had the necessary back-end fulfillment capabilities in place to deliver direct to the consumer (as a result of existing catalog operations).

In fiscal 1998 The Sharper Image generated revenue of $4.9 million from its online operations, up from $1.6 million and $0.8 million, respectively, in the previous two years. While 67% of the firm's total revenue comes from its 85 stores, The Sharper Image has decided to proceed at a moderate pace in its unit level growth (5%), partly because of a focus on moving its established customer base online. Aligning its products, pricing scheme, and promotional efforts across channels has given The Sharper Image some measure of online success.

Bits to Atoms

Buying Fulfillment: Amazon.com

Amazon's build out of 5 additional distribution centers in a time frame of less than 12 months has given many observers pause. The additions will ultimately move the company into a position of owning over 5 million square feet of distribution capacity versus 330,000 square feet in 1998. With 1998 capacity supporting roughly $1 billion in sales, the new capacity addition will ultimately support over $7 billion in sales, assuming the firm hits its sales per square foot target of $1500 (which is half the sales per square foot amount achieved on run-rate fourth quarter 1998 numbers with only books and music). Amazon understands that controlling all aspects of the online customer experience can lead to competitive advantage, and owning fulfillment assets contributes to this goal while simultaneously offering the possibility of squeezing efficiencies out of the distribution system.

Even with the extra capacity build, fixed costs and working capital requirements as a percentage of sales are both a fraction of what is traditionally seen in the bricks-and-mortar retail universe. Traditional retailers pay to have product shipped to aesthetically pleasing stores (costing millions) that are within driving distance of their customers. Traditional retailers finance the storage of these products until customers decide to buy them, and all to generate roughly the same amount of money per product that online retailers receive. Online firms adding distribution capacity in no way begin to approximate the capital costs of traditional retail. Despite having the opportunity to continue leveraging the mature fulfillment capacity of their parent organizations, both barnesandnoble.com and toysrus.com have decided to acquire or have already acquired their own internal fulfillment assets.

Storefront: Gateway

Along with Dell, Gateway is best known for its build-to-order, direct to the consumer PC business. In addition to doing brisk business online, Gateway has built out 168 freestanding brick-and-mortar storefronts that essentially carry no inventory. All order fulfillment is handled through the company's existing distribution channels and shipped directly to the customer's home. Costing $500-700,000 per store, and amortized over a period of 3-5 years, Gateway has to only sell 100 units per week for the stores to break even. Beating forecasts, these stores have managed to achieve average selling prices 10% higher than the stores in the firm's existing channels. Acquiring bricks-and-mortar storefronts and leveraging Gateway's existing distribution system has allowed the company to satisfy a rich market segment uncomfortable with online purchases (the first-time buyer) while making its brand more visible in the eyes of the consumer.

Other companies associated with online retailing have contemplated the integration of physical retail assets with their existing online offerings. Tandy, the parent company that owns the ubiquitous RadioShack stores, has stated that it has been approached by several Internet retailers interested in setting up kiosks in RadioShack locations for deliveries and returns. Pooling deliveries to a central location, such as a RadioShack store, would help solve some of the "last mile" delivery cost problems, and possibly bring down the costs associated with traditional shipment. Cyberian Outpost, an online computer and electronics retailer, recently formed an alliance with Tweeter Home Entertainment Group to take advantage of Tweeter's supply relationships and physical infrastructure.

Partnerships: Drugstore.com

Rite Aid Corporation, General Nutrition Centers, and online pharmacy drugstore.com recently announced a long-term strategic partnership. The terms of the agreement give traditional pharmacy retailer Rite Aid a 25.3% stake in drugstore.com (and a seat on the board). This is in exchange for a $7.6 million cash investment, as well as allowing drugstore.com access to the 50 million individuals covered by Rite Aid's pharmacy benefit manager subsidiary, PCS Health Systems. For drugstore.com, the deal reflects the urgent need to scale its operations quickly in the face of stiff competition. Although the company could have eventually assembled the necessary insurance relationships on its own, the realities of customer acquisition costs forced the firm's hand and highlighted the significant value of the PBM. Nevertheless, the relationship holds out the possibility of generating considerably more traffic for drugstore.com by leveraging the customer base and marketing ability of both Rite Aid and GNC, as well as gaining the benefit of Rite-Aid purchasing power and the ability to offer customers a multiple channel offering.

In addition to partnerships, some online companies are buying traditional firms in related industries. Online content vertical iVillage purchased Lamaze publishing, a producer of magazines and videos for expectant mothers, while online auctioneer eBay recently purchased bricks-and-mortar auction house Butterfield & Butterfield.

[1] For a discussion of numerous computer models of evolution see: http://www.panspermia.org/computrs.htm.
[2] *New Rules for the New Economy*, Kevin Kelly, (Viking, New York, 1998). In substantially the same form outlined here, Kelly introduces the computer simulation work conducted by Bellcore researcher and author David Ackely.
[3] "Disruptive Technologies: Catching the Wave," Joseph L. Bower and Clayton Christensen in *Harvard Business Review on Managing Uncertainty*. (Harvard Business Review, Boston, 1999).
[4] "Why Great Companies Lose Their Way" Clayton Christensen, *ASAP*, 1999 No. 9 Vol.35; Pg. 36.
[5] Although Christensen's analytical framework was largely based on studying the dynamics of the disk drive industry, the product performance characteristics (the vertical axis in Figure 1) in the value network can be easily substituted with traditional retail value drivers.
[6] "Understanding Digital Markets: Review and Assessment," Smith, M.D., Bailey, J. and Brynjolfsson, E., Working Paper, August 2, 1999, available at http://ccs.mit.edu/erik/.
[7] *Blown to Bits: How the New Economics of Information Transforms Strategy*, Philip Evans and Thomas S. Wurster (Harvard Business School Press, Boston, 1999). All traditional "big box" retailers that have thrived in recent years face the challenge posed by the new value network.
[8] Neither Barnes & Noble nor Borders Group were meeting their cost of capital at the time Amazon.com went public, although they were both in a heavy build-out phase and economic returns were promised at maturity, assuming a static book selling environment.
[9] John Levinson, founder of Westway Capital LLC, assessed the impact of these customer data acquisition strategies on the retail environment in a series of presentations in early 1999.
[10] Amazon provided helpful guidance in projecting the sales capacity of its existing fixed asset buildout, as well as its expected future working capital requirements. All margin calculations in Table 2 were adjusted for implied interest expense.
[11] Source: Competitive Media Reporting.
[12] "InfoBeads Technology User Profile, Ziff Davis, Aaron Goldberg.
[13] "Channel Shift: Integrating Assets to Manage Sales Migration," *Jupiter Communications Online Intelligence*, June 1999.
[14] "Frictionless Commerce? A Comparison of Internet and Conventional Retailers," Brynjolfsson, Erik and Smith, Michael, Working Paper, August 1999.
[15] "The Production of Trust in Online Markets," Peter Kollock, Advances in Group Processes, (Vol. 16) 1999.
[16] "Trust-based Marketing on the Internet," Urban, Glen L., MIT Sloan School of Management Working Paper,1998.
[17] "The Impact of Internet Marketing on Price Sensitivity and Price Competition," Shankar, Venkatesh, Rangaswamy, Arvind. Pusateri, Michael, presented at Marketing Science and the Internet, Cambridge, 1998.
[18] "The Nature of Markets on the World Wide Web," Bernardo Huberman and Lada Adamic, from the proceedings of *Computing in Economics and Finance*, June 1999.
[19] "Value Explosion," *Frontiers of Strategy*, Michael Mauboussin and Bob Hiler, Credit Suisse First Boston Equity Research, March 11, 1999.
[20] "Cannibalize Yourself" by Jerry Useem, *Fortune*, September 6, 1999.
[21] Egghead.com came in ahead of the following online retailers: BarnesandNoble.com, Cdnow.com, and AOL.com, with 3.3% of the survey respondents purchasing from the site.
[22] http://www.talkorigins.org/faqs/faq-intro-to-biology.htm.
[23] *New Rules for the New Economy*, Kevin Kelly, (Viking, New York, 1998), p. 84.

[24] An interesting twist on the straddle is offered up by ourhouse.com, a separate company formed with the express purpose of managing Ace Hardware's online business. It was formed by outsiders that pitched the idea to Ace Management, strategically integrating both operations from the outset.
[25] *Wired Magazine* interview with Steve Riggio, June 1999, by Warren St. John.
[26] The company cannot sell non-English language books except through links with Bertelsmann, nor can it engage in the Internet book club business or sell textbooks using the Barnes & Noble name.
[27] Borders has begun an effort to include online kiosks in its stores that allow for delivery direct to the consumer. Although this may seem like a straddle strategy, the company's future growth is not seen as being vitally linked to the online medium.
[28] *Business Week* interview with Clayton Christensen June 28, 1999.
[29] "Bringing Silicon Valley Inside," Gary Hamel, *Harvard Business Review*, September-October 1999. Just like communism and capitalism were competing economic regimes, resource allocation and resource attraction are competing innovation regimes. One focuses on optimization and the other focuses on opportunity.
[30] Jeff Bezos, CEO of Amazon.com, has noted on numerous occasions, that change is baked into the company's corporate DNA.
[31] *Patterns in the Dark*, Edgar E. Peters, (John Wiley & Sons, 1999).
[32] "In a World Without Borders: The Impact of Taxes on Internet Commerce," Goolsbee, Austin, Revised Working Paper, July 1999, National Bureau of Economic Research. In general Internet sales are treated as mail order sales: no sales tax is collected from companies that do not have a presence (no nexus) in the state. The transactions are not legally free, however. Every state requires consumers to pay a use tax (at the sales tax rate) for any out of state catalog or Internet purchases. A Supreme Court ruling has effectively forced government to rely on self-reporting. Noncompliance is rampant, so most transactions are effectively tax-free.
[33] The benefits of internal fulfillment have been recognized by a number of prominent online retailers with sufficient scale in their operations. The most developed group of online retailers, with traditional roots, has also come around to the virtues of internal fulfillment capability, namely: Barnes&Noble.com and toysrus.com. The ability of online firms to increase scope easily and segue into other product categories necessitates rapidly scalable distribution.
[34] The cost of online returns is significant for retailers, and some studies have demonstrated customer willingness to purchase through traditional retailers with an online offering, assuming an in-store return policy is in place.
[35] "Post-Web Retail," Seema Williams, *The Forrester Report*, September 1999.
[36] "Nowhere Yet Everywhere: Investigating Online Buying's Impact on Retail Property Values," Mark Borsuk, American Real Estate Society, April 1999.

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