

## **The Retail Sector and the Internet Economy**

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### **Abstract**

This paper explores the state of the retail sector of the U.S. economy with respect to the use and adoption of the Internet. The paper estimates that Internet-channel retail sales accounted for approximately 1% of the total retail sales in the beginning of 2000. This is approximately US\$8 billion. While Internet retailers are continuing to experience significant growth, their competitors who come from the “bricks and mortar” world of physical retailing are making significant inroads to a complementary Internet and physical channel strategy. This paper examines 15 firms that participate in varying forms of electronic commerce. I identify some of the best practices of firms using the Internet effectively in their business strategy by identifying some financial and technical measures of performance. While the future of electronic commerce is certainly rosy for some retailers, I project that it is unlikely that Internet-channel retail sales will surpass more than 10% of the total retail sales in the U.S.

*I could make a mint  
Fill my pockets with more than lint  
I'll give you a hint  
It involves the "internet"<sup>1</sup>*

## **Introduction**

The Internet has successfully moved from a “fringe technology” to the mainstream popular culture as indicated by this lyric from a recently released song. However, in such a period of excitement about a new technology, we must be careful not to forecast continued exponential growth indefinitely. At some point, the 100+% growth rates in revenue by electronic commerce (e-commerce) retailers *must* abate. A more difficult question is determining when the exponential growth is no longer.

The factors that determine how and why e-commerce slows down may be easy if this were an ex-post exercise. However, this paper is trying to assess the best practices of Internet retailers in order to determine why they are currently experiencing exponential growth while it is happening. Furthermore, the paper then tries to project the potential scale of such best practices to determine when growth will ultimately slow down and reach a relative steady state.

Fortunately, there is some indication that Internet retailers are not enjoying outrageous success as they once had. Market forces and the dwindling supply of capital have changed the “grow at any cost” mentality of some Internet retailers to be more profit driven. This shifts the advantage from companies that are still relatively new to the retail sector to the more traditional retailers who have much better revenue (and profit) prospects.

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<sup>1</sup> From “Never Do Anything,” BNL, *Maroon* (2000).

In this paper, I will try to maintain a retail industry perspective. At times the paper will explore some firm-specific strategies or performance measures but this is done in order to extrapolate to an overall characterization of the retail sector of the U.S. economy. Part of the reason why I am examining firm performance first and then zooming out to the entire retail sector is that the effect of the Internet may be large in changing Amazon.com's strategy, but it may have little or no effect on the macro statistics of the retail sector.

### **The Retail Sector**

The retail sector of the U.S. economy can also be thought of as the business to consumer ("B2C" in Internet-speak) part of the value chain. It is the point when a firm is supplying goods to consumers who actually value consuming the product (as opposed to re-selling it). This portion of the economy makes up approximately 9% of the gross domestic product (GDP) and has been fairly constant over the past 15 years as Figure 1 shows.

<<Figure 1>>

While there are many sub-categories of retailing, including department stores, clothing stores, and gas stations, this paper will focus on the larger segments of the retail sector: clothing, shoe & accessory retailing and wholesaling; department stores; and discount & variety retailing.<sup>2</sup> These segments make up the majority of the 9% of GDP, approximately US\$800 billion.

The aggregate retail statistics do not separate Internet-based transactions from physical transactions. Partially this is because of the small size of Internet retailing. The next section estimates that Internet retailing may currently account for 1% of the retailing GDP or 0.09% of the overall US GDP (approximately US\$8 million). As shown in Figure 1, there appears to be fluctuations much larger than 0.09% in the late 1980s, which is before Internet-based e-commerce. Therefore, if e-commerce has affected the macroeconomic measurements, it would be difficult to discern given its relatively small magnitude.

The other reason why the aggregate statistics may not indicate any change in the growth of overall retail sales is that Internet-based e-commerce transactions may just be substituting for the physical transactions. In other words, the growth of e-commerce retail sales can only happen at the peril of physical retail sales. It is a zero-sum game.

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<sup>2</sup> According to Hoovers Online, retailing includes the following 11 sectors: 1) Clothing, Shoe & Accessory Retailing & Wholesaling, 2) Department Stores, 3) Discount & Variety Retailing, 4) Drug, Health & Beauty Product Retailing, 5) Grocery Retailing, 6) Convenience Stores & Gas Stations, 7) Consumer Electronics & Appliance Retailing, 8) Building Materials & Gardening Supplies Retailing & Wholesale, 9) Home Furnishings & Housewares Retailing, 10) Auto Parts Retailing & Wholesale, and 11) Non-Store Retailing.

## The “Pure” Internet Retailer

To go beyond the macroeconomic measurements, the paper will describe what impact individual firms have had on displacing some traditional retail sales with Internet sales. In particular, this paper uses a set of 15 firms that are all retailers. Four of the 15 firms have a business plan that is Internet/e-commerce specific. In other words, these are “pure” Internet retailers because they rely solely on the Internet as a distribution channel. As Table 1 shows, the largest “pure” Internet retailer, Amazon.com, is still significantly smaller than the largest physical retailer, Wal-Mart. In fact Amazon.com’s revenue is only 1% of Wal-Mart’s.

<<Table 1>>

The revenue figures may provide an adequate snapshot of firm size, but growth rates are much larger for the “pure” Internet retailers. As Table 2 shows, Buy.com and Amazon.com are far ahead of the list of other retailers in the percentage increase in revenue relative to last year. Furthermore, Amazon.com would have to reverse its current trend in growing revenue at a rate that is outpaced by its growth in expenses.

<<Table 2>>

Part of the reason why Amazon.com is incurring many more expenses is that it is building warehouses and developing a greater physical presence. While building warehouses may not seem like the best business decision for a firm trying to leverage the

benefits of the Internet, Amazon.com has realized the value of physical facilities. One benefit is that Amazon.com can now provide better customer service. For example, they can now ship a product to its customer more quickly because Amazon.com is likely to have ownership of the product without relying on another firm upstream in the supply chain for fulfillment. Furthermore, Amazon.com is now able to take advantage of volume discounts it receives from the wholesalers by buying a larger quantity at one time and warehousing the inventory that will not be immediately sold.

This is a very different strategy than Buy.com who has maintained their “pure” Internet roots. Buy.com relies on Ingram Micro for warehousing and distribution of all products that consumers buy on Buy.com. While Buy.com is able to take advantage of some volume discounts through bulk buying, they are much more susceptible to stock out and non-performance problems. However, Buy.com tries to offset these problems with a very close and mutually beneficial relationship with Ingram Micro.

While Buy.com continues to be reluctant to move towards an Internet retailer with significant physical assets, Amazon.com appears to be embracing this. As Amazon.com moves toward a hybrid Internet/physical presence in the retail market from the “pure” Internet extreme, they are converging with the set of retailers who started at the other extreme of purely physical.

### **The “Hybrid” Internet Retailer**

Traditional retailers who have relied on a physical channel are finding ways to make their existing assets fit well in their e-commerce efforts. While Amazon.com and other “pure” Internet retailers may have been in completely separate markets initially, the

diffusion of e-commerce to the mass audience coupled with the recognition that it takes more than a good web site to promote Internet sales have given physical retailers a push towards adopting the Internet.

Physical retailers are finding that Internet and physical channels are in fact complimentary. Customers can shop on the Internet to find what product they want to buy, but they still might want to try on a garment or smell the food that they would like to purchase. The fact that physical retailers have both the convenience of a web site for easy information navigation along with the possibility of immediate order fulfillment puts them in a very good position to compete with Amazon.com. As physical retailers develop an Internet channel, they become hybrid (i.e. Internet and physical channels) retailers.

Physical retailers still have some catching up to do with regard to their web site design and development. As Table 3 shows, Amazon.com still leads the way in attracting users to its web site. While it is promising some these hybrid retailers, such as The Gap, because their web traffic actually exceeds Buy.com, the news is not as good for K-Mart. This is partially because K-Mart has only started exploring the complementarities between its physical and Internet channels. Other hybrid retailers, including JC Penny, have done a better job of promoting more traffic to their site and more links to their site as well.

<<Table 3>>

Over time, I would expect that the disparity in traffic (i.e. visits) between Amazon.com and the set of hybrid retailers to be reduced. This would imply that physical retailers are catching up with the “pure” Internet retailers in their own game. Part of the reason why this is true is that the technology is more advanced today than it was when Amazon.com and Buy.com was first developing its web site. Now there are off-the-shelf software packages that can do a very good job of creating dynamically rendered web pages. And when an incumbent retailer makes a change to their web site, it becomes immediately obvious to their competitors what they did giving the entrant plenty of time to copy the innovation.

On the other side of this argument, Internet retailers are finding it difficult to make the inroads in the physical channel. As Ramanathan (2000) notices, clothing retail sales on the Internet seems to be concentrating much more on the traditional retailers as opposed to the Internet upstarts. Furthermore, the Internet retailer may have a harder time convincing new customers that they are a trustworthy site. As Table 4 shows, the “customer confidence” value for Costco is actually higher than the value for Amazon.com.

<<Table 4>>

Channel conflict is still an issue for the hybrid retailer. Because they are trying to support an Internet and physical presence simultaneously, they might find themselves giving inconsistent information or different prices that could alienate some customers. Furthermore, geographic price discrimination may not be possible for the Internet channel of a hybrid retailer.

## **The Case for the Ubiquitous Internet**

Either directly or indirectly, retailers will be cognizant of the impact the Internet has on their business. If they choose not to develop their own Internet channel, they are likely to face some competition to lower prices or change services. And although a firm many never fully implement a B2C sales channel, they are likely to be the direct or indirect beneficiaries of using the Internet upstream in their supply chain. For example, through the use of the Internet, retailers may be able to increase their efficiency as shown in Table 5.

<<Table 5>>

Buy.com and Amazon.com do very well in extracting relatively large revenue per employee it has. There may be some cost savings in replacing some of the large sales staffs with web content and/or call centers. There area where there might not be an efficiency is the average revenue per inventory level. Amazon.com is sixth with respect to revenue per inventory behind Target and even Sears. The one who still leads here is Buy.com because they carry no inventory. This indicates the importance of order fulfillment and logistics for the retailer if they hope to be successful.

## **What Next?**

The success of the Internet in promoting retail transactions will likely continue. Although many of the web site features and functions of leaders such as Amazon.com

have been copied by other retailers, the business strategies of the hybrid Internet retailer will continue to find complementary ways of using the Internet and a physical channel.

Eventually hybrid retailers will become the dominant form of retailers. A growing proportion of the traditionally physical firms will conduct more business using the Internet and the “pure” Internet firms will develop some form of physical presence in order to achieve the economies of scale necessary to enter into price competition with other hybrid Internet retailers.

Assuming a fixed gross product of retail sales of US\$ 800 million and a starting point of US\$8 million in Internet transactions, it is very possible that, on average, 10% of the revenue from every retailer will come from their Internet channel. The result is an average of a 50% increase in Internet sales through 2005. This trend is consistent with a 4% of all retail clothing sales will be transacted using an Internet channel cited by Ramanathan (2000).

<<Figure 2>>

### **Public Policy and Conclusions**

There is one public policy question that ought to be addressed with respect to the diffusion of the ubiquitous Internet among retailers: taxation. Some retailers who have physical and Internet channels, such as Barnes & Noble, try to keep their online and physical presences separated on purpose so that they may avoid charging an Internet customer a state sales tax. If the sales tax rules become well harmonized between the Internet and physical channels, then there may be less of an aversion for a retailer to maintain both an Internet and physical presence in an integrated manner.

Other public policy issues, such as Federal Trade Commission direct marketing rules and considerations about anti-competitive behavior, do not appear to as much of a hindrance in converging the Internet and physical channels of a retailer. This is not to say that these issues are trivial or not important. Rather, it is likely that efforts to promote competition and ensure trustworthy transactions of the Internet would compel physical retailers even more to develop an Internet presence. In fact, many physical retailers have been reluctant to do more with the Internet until recently because they did not want security uncertainty or technical problems to ruin their brand name in both the Internet and physical channels. However, now that some pioneers such as Amazon.com have paved the way, the physical retailers can just follow on their coattails.

Perhaps the more difficult challenges lie ahead for Amazon.com and Buy.com. For them to move from a “pure” Internet retailer to a hybrid retailer requires significant investments in warehouses, distribution facilities, and maybe even physical retail locations. This would take a significant amount of capital if they tried to develop a physical geographic scope comparable to their Internet scope. Given the fact that both Amazon.com and Buy.com are still operating in the red, it might be difficult for them to make such a move.

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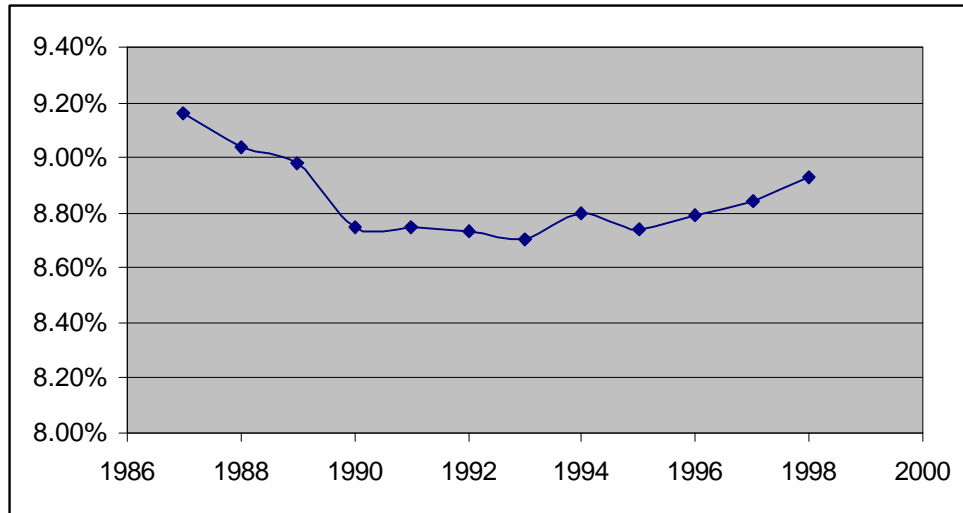
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**Figure 1. U.S. Retail Sales as a Percentage of GDP**



Source: Derived from BEA (2000)

**Table 1 List of Retailers**

<b>Firm</b>	<b>Market</b>	<b>1999 revenue (in millions of US \$)</b>	<b>1999 net income (in millions of US \$)</b>
Wal-Mart	Discount & Variety Retailing	165,013	5377
Sears	Department Stores	41,071	1453
K-Mart	Discount & Variety Retailing	35,925	1300
Target	Discount & Variety Retailing	33,702	1144
JC Penney Co., Inc.	Department Stores	32,510	336
Costco	Discount & Variety Retailing - Wholesale Club	27,456	397.3
Sam`s Club	Discount & Variety Retailing - Wholesale Club	24,801	N/A
May Dept. Stores Co.	Department Stores	13,866	927
Gap	Clothing, Shoe & Accessory Retailing & Wholesaling	11,635.4	1127.1
QVC	Discount & Variety Retailing - Television Sales	2,847.4	N/A
Amazon.com	Department Stores - Internet	1,639.8	-720
Fingerhut	Discount & Variety Retailing - Catalog	1,609.2*	75.5*
Buy.com	Department Stores - Internet	596.8	-130.2
Netmarket	Department Stores - Internet	N/A	N/A
Bluelight.com	Department Stores - Internet	N/A	N/A

Source: Derived from Hoovers (2000)

\* 1998 revenue data used for Fingerhut

**Table 2. Firm Growth Data**

<b>Firm</b>	<b>Market</b>	<b>% increase in revenue between 1998 and 1999</b>
Buy.com	Department Stores - Internet	376.30%
Amazon.com	Department Stores - Internet	168.82%
Gap	Clothing, Shoe & Accessory Retailing & Wholesaling	28.50%
Wal-Mart	Discount & Variety Retailing	19.89%
QVC	Discount & Variety Retailing - Television Sales	18.50%
Costco	Discount & Variety Retailing - Wholesale Club	13.13%
Target	Discount & Variety Retailing	8.89%
Sam`s Club	Discount & Variety Retailing - Wholesale Club	8.40%
K-Mart	Discount & Variety Retailing	6.68%
JC Penney Co., Inc.	Department Stores	5.97%
Fingerhut	Discount & Variety Retailing - Catalog	4.83%*
May Dept. Stores Co.	Department Stores	3.38%
Sears	Department Stores	-0.61%
Bluelight.com	Department Stores - Internet	N/A
Netmarket	Department Stores - Internet	N/A

Source: Derived from Hoovers (2000)

\* 1997 to 1998 change

**Table 3. Web Statistic Data**

<b>Firm</b>	<b>Market</b>	<b>Web Traffic</b>	<b>Web Links</b>	<b>Web Pages</b>
Amazon.com	Department Stores - Internet	2,404,080	10,183,456	12,587,950
Gap	Clothing, Shoe & Accessory Retailing & Wholesaling	186,421	14,132	13,755
JC Penney Co., Inc.	Department Stores	181,115	9,494	14,895
QVC	Discount & Variety Retailing - Television Sales	124,579	13,953	13,597
Wal-Mart	Discount & Variety Retailing	112,758	8,368	45
Buy.com	Department Stores - Internet	104,204	36,399	N/A
Sears	Department Stores	95,383	8,950	5,555
Costco	Discount & Variety Retailing - Wholesale Club	66,561	2,185	227
Target	Discount & Variety Retailing	66,399	3,850	2,231
Bluelight.com	Department Stores - Internet	62,713	6,452	36
Netmarket	Department Stores - Internet	50,494	14,881	29,354
Fingerhut	Discount & Variety Retailing - Catalog	21,119	1,775	260
Sam`s Club	Discount & Variety Retailing - Wholesale Club	9,645	981	14
K-Mart	Discount & Variety Retailing	8,227	6,086	608
May Dept. Stores Co.	Department Stores	4,435	2,273	204

Source: Derived from Alexa (2000)

**Table 4. Web Performance Data**

<b>Firm</b>	<b>Relationship Services</b>	<b>On-Site Resources</b>	<b>Customer Confidence</b>	<b>Ease of Use</b>	<b>Overall</b>
Amazon.com	6.66	7.57	7.7	7.74	<b>7.46</b>
iQVC.com	3.27	6.73	6.43	6.27	<b>5.78</b>
Netmarket.com	3.62	6.87	4.98	6.08	<b>5.48</b>
Wal-Mart.com	2.85	3.62	6.66	6.99	<b>5.18</b>
JC Penney Co., Inc.	3.17	6.19	6.86	4.17	<b>5.13</b>
Target	3.06	3.97	5.96	6.94	<b>5.12</b>
Fingerhut.com	3.25	4.39	6.51	5.46	<b>4.98</b>
Costco	1.74	2.26	7.95	6.28	<b>4.72</b>
Sam`s Club	2.79	2.64	5.6	6.79	<b>4.6</b>
Bluelight.com	1.54	3.07	4.86	6.96	<b>4.3</b>

Source: Derived from Gomez (2000)

**Table 5. Firm Efficiency Data**

<b>Firm</b>	<b>Market</b>	<b>1999 Revenue per employee</b>	<b>1999 Revenue for every US\$ of inventory</b>
Buy.com	Department Stores - Internet	2.59	∞
Costco	Discount & Variety Retailing - Wholesale Club	0.39	12.42
QVC	Discount & Variety Retailing - Television Sales	0.30	N/A
Amazon.com	Department Stores - Internet	0.22	7.43
Fingerhut	Discount & Variety Retailing - Catalog	0.17*	12.94*
Target	Discount & Variety Retailing	0.16	8.87
Wal-Mart	Discount & Variety Retailing	0.14	8.34
K-Mart	Discount & Variety Retailing	0.13	5.06
Sears	Department Stores	0.13	8.10
JC Penney Co., Inc.	Department Stores	0.11	5.47
May Dept. Stores Co.	Department Stores	0.10	4.92
Gap	Clothing, Shoe & Accessory Retailing & Wholesaling	0.08	7.96
Bluelight.com	Department Stores - Internet	N/A	N/A
Netmarket	Department Stores - Internet	N/A	N/A
Sam`s Club	Discount & Variety Retailing - Wholesale Club	N/A	N/A

Source: Derived from Hoovers (2000)

\* 1998 Data

**Figure 2. Growth in Internet-Mediated Retail Sales**

