A Note on On-line Grocers

Selling groceries over the Internet and then delivering it to the home has become the goal of several new on-line firms such as Peapod, Streamline, HomeRuns.com, and NetGrocer. These new businesses want to recreate the "milkman" nostalgia and provide convenience to the busy, time-starved, dual-income shoppers of 21st century. The rapid growth, acceptance, and use of the Internet by businesses and consumers have made the concept of selling groceries on-line a reality. Despite the hype and excitement surrounding the growth of the Internet and e-commerce, on-line grocers are yet to find a business model that generates sufficient sales volume needed to breakeven or keep operating costs down. They are still searching for ways to ensure quality, rapid delivery, and generate high enough margins to become profitable. Admittedly none have found the right mix of ingredients to become profitable as of yet.

This note highlights and discusses the approaches used by four on-line grocers Peapod, Streamline, HomeRuns.com, and NetGrocer. It discusses the grocery industry in general and the emerging On-line Industry in detail. It illustrates the similarities and differences in the approaches used by the four firms and the various business models they have adopted to compete on-line.

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INDUSTRY BACKGROUND

The grocery industry is a mature, extremely competitive and fragmented industry, where profits have been squeezed to a minimum. Retail supermarket sales were approximately $449 billion in 1998.[1] Compared with industry sales for 1997, this constituted an increase of a little more than 10 percent. However, grocery retailing has experienced growth in real sales during only four of the last ten years and net profit margins have remained rather thin at 1.03% of sales. **Exhibit 1** provides an overview of grocery Industry, and **Exhibit 2** compares grocery store sales between 1988 and 1998).

U.S. demographics do not bode well for an increased number of consumers. The U.S. population is expected to decline with an average birthrate of 1.3 for every two people. Continued survival and growth of firms competing in the industry must therefore come from cost containment efforts, increase in economies of scale and scope, a greater penetration of existing markets, and larger than average purchases from consumers.

To address this continuing decline, grocery retailers, some quite successfully, have started to emphasize home-meal replacements. A large part of disposable income is spent on food away from home, and the grocery industry has begun to cater to that demand. In doing so, the retailers are increasingly competing with restaurants in the "battle for the stomach." Additionally, to increase revenues they have increased the breadth and depth in fresh produce, meat offerings, and organically grown products. Reliance on private-label products with higher margins has also grown.

Due to slim profit margins, retailers have proceeded to look over their own shoulder to their supply chains and have stepped up pressure on wholesalers to reduce costs and to pass some of those savings on to them. Wholesalers have responded by implementing efficiency-driven tactics such as bar coding and scanning, onboard computer systems for delivery trucks, and new delivery trucks with multiple compartments, and climate controlled trailers. Their inventory management is increasingly driven by just-in-time concepts that minimize non-value added inventory costs such as product shortages, obsolescence, and spoilage. The grocery wholesale and retail business has become deeply interwoven and interdependent. Despite streamlining activities, wholesalers and retailers still have to contend with slim operating margins.

Exhibit 3 compares the activities of leading U.S. wholesalers, the markets within which they operate and the number of customers they serve. Of the eight wholesalers shown in Exhibit 3, Richfood shows the highest operating margin of 3.1%, followed by SuperValu with 2.3 percent. Nevertheless, the industry remains highly fragmented. For instance, in 1997 wholesale industry revenues were $315 billion, of which SuperValu, the largest wholesaler, only captured a little over one half of a percent, while servicing 4,800 stores in the United States.

Starting in 1992 the wholesale industry has witnessed an average of 20 acquisitions annually. In 1997 alone forty mergers and acquisitions occurred. Following the trend set by wholesalers, retailers are also engaging in mergers and acquisitions. Fred Meyer, for example, purchased Ralph's, Hughes Family Markets, Smith's Food and Drug, and Quality Food Centers in 1998. In August of 1998, Albertson's acquired the supermarket and drugstore operator American Stores. American stores operates retail establishments under such names as Acme Markets, Jewel Food Stores, Lucky Stores, and Osco Drug.

THE EMERGING ON-LINE SEGMENT

The Internet, and specifically the World Wide Web, is enabling millions of users to obtain and share information, interact with each other and conduct business electronically. The increasing diffusion of personal computers and Internet access, coupled with increasing speed, convenience and improvements in con-

[1] Additionally, according to the National Association of Chain Drug Stores, sales of over-the- counter medication and non-medication health and beauty products were approximately $57 billion in 1998. In addition to farm products, many grocery stores offer these products.

tent, have led to rapid growth in Internet usage. According to International Data Corporation (IDC), a market research firm, the number of individuals in the U.S. using the Internet is likely to reach 177 million at the end of 2003, representing a compound annual growth rate (CAGR) of over 23% since 1998.

The Internet has also emerged as a significant channel for the electronic transaction of business or e-commerce. IDC notes that over the next five years the number of individuals in the U.S. making purchases online will increase at a CAGR of approximately 28% from 21.1 million in 1998 to 72.1 million in 2003. Forrester Research, a Cambridge, Massachuetts research firm, has estimated that this growing group of consumers, making increasing amounts of online purchases, will cause total U.S. Internet retail commerce to grow from approximately $20.3 billion in 1999 to approximately $184.5 billion in 2004, representing a CAGR of over 55 percent.

The evolution of the Internet has created opportunities to provide a much more convenient shopping experience at prices similar to those available in traditional stores. Forrester Research estimates that online grocery spending in the U.S. will grow at a CAGR of 101% over the next five years, from $513 million in 1999 to $10.8 billion by 2003. Despite its size in absolute terms, this spending is expected to represent less than 2% of the total U.S. market for grocery products in 2003.

Forrester divides categorizes the industry into to two segments: full service retailers and specialty stores. Full service retailers are those that sell a complete range of grocery products, including perishables. They provide home, office, or pick-up delivery options. Specialty stores, in contrast offer a limited selection of gifts, hard-to-find items, or bulk replenishment products via the PC and ship directly to consumers (see Exhibit 4). **Exhibit 4A** provides a detail breakdown of total electronic grocery spending in the U.S. for the years 1999 to 2003. **Exhibit 4B** highlights the total number of households buying groceries electronically. Forrester Research estimates that households buying groceries will reach over 16 million households by 2003. On-line grocers such as Peapod, Streamline, HomeRuns.com, and NetGrocer want a slice of this growing market.

On-line-grocery services are not exactly responding to pent-up demand. The demand in this context has to be created. Because the service is novel, potential customers first need to be informed of its existence and availability. Then they need to gain enough trust to place their first order. Many questions about the transaction process need to be answered. The Web sites of the four firms discussed here answer many of them. For example, where do the products come from? How fresh are the produce, fruits, and meat? What guarantees are provided by the on-line grocer? How can coupons be used on-line?

Creating Value Online

In the grocery world, the one-stop shopping approach will in all likelihood not change, and any grocery store, physical or virtual, will have to follow the principle of large variety of small volume items at affordable prices. Nobody wants to have to visit one store to purchase a pack of gum, and another to purchase a pound of bananas. Hence it is not surprising that convenience, selection and delivery are value propositions that on-lines firms are trying to emphasize.

Convenience. The primary mission of on-line grocery services is to provide convenience. They market themselves with the promise to save the shopper time and effort. For instance, Tim DeMello, Streamline.com's founder, estimates that shopping on-line and receiving home delivery replaces weekly visits to "six to eight retail and service establishments for a customer who, on average, saves three hours a week in personal shopping time."[2]

According to the Food Marketing Institute the average customer at a traditional grocery store spent approximately 75 minutes per shopping trip in 1998. And this number does not include travel time to get to and from grocery stores to their homes. Traditional retail shoppers are also burdened with carrying shopping bags and bulky items to their cars and then again into their homes. A study conducted by the Food Marketing

[2] D. Bushnell, "Delivery Services Vie in Westwood," *City Edition*, January 25, 1998, p.19.

Department of Philadelphia's St. Joseph's University concluded that about two-thirds of U.S. consumers dislike the grocery shopping experience. Yet, according to A.C. Nielsen, the average U.S. household shops for groceries more than 100 times per year, while spending about than $4,500 per year. On the average U.S. household spends over 125 hours per year on a necessary task that most consumers dislike.

Peapod's Annual Reports depict an on-line grocery shopping spree from the comfort of one's home computer and the resulting home delivery by a smiling young man in a clean Peapod uniform. Peapod calls it: "Smart Shopping for Busy People." Peapod provides customized order forms for each shopper based on what he or she shopped for in the past. Customized order forms add to the shopping convenience because 80-85% of a typical purchase is for replenishment. Its database allows the shopper to subtotal the purchase at any time and to search for items by size, fat or sodium content. Special requests can be made, for example with respect to ripeness of fruit or thickness of sliced baloney. Peapod also allows order shortcuts, in which a customer can enter a list of items for a particular dish under a code name. When that code name is called up, all the items necessary to prepare the dish are added to the shopping list.

Streamline also offers unique services: when a shopper comes on board, it performs a one-time "customer profile" by scanning all of the home's kitchen products, including appliances and cooking tools, into the customer's personalized database. This personalized database then serves as the skeleton for the standard order form for the shopper and provides Streamline with an intimate knowledge of its members. Deliveries, however, are only made on pre-designated days each week, which requires the consumer to plan ahead and submit the grocery order on a timely basis.

Streamline claims that its meats and produce are the best. When it comes to convenience, Streamline differentiates itself from others through its effort to help the shopper install appropriate storage space. It provides and installs storage shelves and a chill container or refrigerator in the customer's garage or basement for a small fee.[3] It then delivers the groceries during the shopper's absence. Notes Mohabir Sawhney, a marketing professor at the Kellogg Business School, Northwestern University:

> [Companies like Streamline.com] face a significant upfront capital cost for the several hundred dollars it costs to build and install drop-off boxes. Further, consumers may be reluctant to give up valuable real estate in their garages of these boxes, described as the size of 'a good-sized Manhattan kitchen.' Apartment or condo dwellers are out of luck because they make the … strategy an unattractive proposition.[4]

Competitive Prices. All four on-line grocery stores promise prices at least as competitive with supermarkets. Peapod is an exception in that it charges 5% above supermarket prices, while NetGrocer promises up to a 20% discount from supermarket prices. Peapod and Streamline charge monthly service fees while HomeRuns.com and NetGrocer do not.

Delivery. All on-line firms offer home delivery, even though the details differ. HomeRuns.com delivers during a two-hour time slot the next day or a later day, if desired. It delivers on Monday through Saturday, 1:00 p.m. through 10:00 p.m. This enables it to stock up on items needed the next day and to select the most direct route. It keeps the perishables fresh in trucks equipped with coolers and freezers. But, upon delivery, the customer must be present. The company also offers HomeRuns Online Worksite Delivery Service, where packaged groceries and prepared meals are delivered at corporate parking lots at the end of the working day. Some also give the option of pick-up.

Other Services. While NetGrocer and HomeRuns.com focus exclusively on groceries, others are trying to add value by providing additional services. For Streamline, those value added services target the grocery purchaser. Streamline will not only pick up fast food, dry cleaning, and videos, but will also get film developed, mail packages, bring postage stamps, arrange for firewood, shoe repair, and other errands, and recycle glass and plastic for the busy home shopper.

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[3] A one-time fee of $39 for the shelving, the monthly membership fee is raised form $30 to $40 to receive the refrigerator instead of the chill container; Streamline's initial cost is for arrangement is about $450.
[4] M. Swahney, The Longest Mile. Business 2.0, December 1999.

Peapod, in contrast, also targets the business-to-business market. It has agreements to provide interactive marketing services by licensing its SplitPea Software to a number of national companies including Anheuser-Busch Inc., Frito-Lay, Kellogg Company, Kraft Foods, Nestle USA, Ore-Ida Foods, and several others. Its interactive marketing revenues have grown from $163,000 to over $2.2 million in 1997. However, these revenues dropped to $1.46 million in 1998. Still, that constituted less than 10% of total revenues. See **Exhibit 5** for a list of services offered by the firms.

Consumer and Geographical Focus

On-line grocers appear to be targeting the same demographic segment of the population: middle to upper class families, and many with children and/or pets. This segment of the population appears to value its time highly and is willing to pay an extra fee for on-line membership or delivery. The focus is on dual-income families with a combined income of at least $75,000. These families are generally homeowners between the ages of 35 and 55 and the majority of order-placing customers are women.[5] However, according to a report by Forrester Research:

> Eleven million urban household with children and annual incomes greater than $35,000 comprise the sweet spot of the target population. … By 2003 sub-$1000 PCs, new Net-enabled phones and televisions, and women's migration on-line will attract middle-income households without kids –bumping total target households to more than 19 million.

Andersen Consulting, a large U.S.-consulting firm, in a recent study identified six major groups of potential on-line grocery shoppers, based upon survey respondents' attitudes toward time, shopping and technology: *Shopping Avoiders*, who dislike grocery shopping; *Necessity Users*, who are limited in their ability to go to the store for some reason; *New Technologists*, who are typically young and comfortable with technology; *Time Starved*, who are insensitive to price and will pay extra to free up time on their schedules; *Responsibles*, who have available time and who get an enhanced sense of self-worth from shopping; and *Traditional Shoppers*, who are older, avoid technology and genuinely enjoy shopping in a store. Observes Vic Orler, a partner at Andersen Consulting, and the lead author of the Andersen's study,

> Consumers across the country have made it clear that they're ready for on-line grocery shopping. They see it as a way to save time and simplify their lives. … All except the 'Traditional Shoppers' group showed at least some willingness to use on-line grocery shopping services, and most of the groups showed strong interest. … It's also important to note that these groups cut across all income and educational levels, age groups and locations. In other words, the appeal of consumer direct services is broad-based and by no means limited to Gen-Xers and dual income households.[6]

Geographically these families live in densely populated areas to make delivery cost-effective. Notes a report by Forrester Research:

> Keeping perishables fresh or frozen requires local presence and fast delivery. These logistical hurdles force full-service firms into highly concentrated markets with more than 1 million people to spread fixed costs. Today, 48 U.S. markets like Boston, Chicago, and Los Angles make the cut…"[7]

It is therefore not surprising that all on-line grocers are located in urban and metropolitan areas around the United States. Peapod, for example, began operating in a Chicago suburb, and then expanded to San Francisco/San Jose, Boston, Columbus, Dallas, Austin, and Houston. By the summer of 1998 Streamline covered 49 suburban towns between Westwood (a community approximately 12 miles southwest of downtown Boston) and Boston, with populations per square mile of roughly 2,000 to 8,000. During fall of 1999 it expanded into the Washington, D.C. area by joining operations with Shopping Alternatives Inc. HomeRuns.com operates in Boston, and several of Boston's "extended" cities, namely Cambridge, Newton, Brookline, and Somerville.

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[5] *The Boston Globe*, "Let Jeeves Do It," by Globe staff, Nov. 8, 1995, page 48.
[6] Early Learnings from the Consumer Direct Cooperative, An *Andersen Consulting Report*, January 1998.
[7] On-line Grocery Exposed. *The Forrester Report*, August 1998.

NetGrocer, formerly headquartered in New York, is an exception. It ships exclusively non-perishable goods via FedEx nationwide from North Brunswick in New Jersey, and is not bound by geographic boundaries. Location, gender, age, or family size does not limit such specialty stores. According to Forrester Research, during the next three years, the number of household purchasing from specialty merchants like NetGrocer will reach about 15 million. Additionally, dry goods specialists like NetGrocer do not have to maintain multiple temperature zones – a challenge that bogs down their full-service counterparts. Also, "specialty shoppers aren't looking to replace their weekly trip to the supermarket. Rather, these convenience purchases are for either particular items like gourmet meals from Omaha Steaks or impulse buys like cookies from Mrs. Fields."[8]

OPERATING AN ON-LINE GROCERY SERVICE

The promise of shopping convenience to the end consumer almost belittles how complicated the on-line grocery business is and how many different and heterogeneous competencies are needed on the operations side. They include the ability to: store and catalogue a large number of disparate, low-ticket items; process a large number of orders on a short time frame; deliver perishable, custom-selected and hand-picked orders on a rather tight time schedule; effectively manage many partners in different geographic areas, and meet the many challenges of the new internet and other technologies. Grocery business is "retail" business. The 'old dogs' in the business know that "Retail is Details," as Wal-Mart's Sam Walton liked to say.

To begin operations, the on-line grocers have to establish an on-line catalogue of all items, including different brands and sizes and prices of each item offered by the grocery store it partners with (partnering agreements are explained later). Moreover, competent personnel are needed to identify, select, and pack the requested food items, especially fruits, vegetables, and meats that need careful handling.

One could argue such competencies are required in many businesses. But let us consider a conventional supermarket: it specializes in the distribution of groceries by obtaining them, stocking them, and collecting cash for them. It does not also pick, pack, and deliver them. Notes Mohanbir Sawhney:

> While consumers are happy to have things delivered to their doors, retailers must incur transportation and labor costs that consumers have for years been absorbing. Moreover, this is not an even exchange of costs. Consumer labor and transportation costs tend to be sunk costs, because people must go to stores anyway unless they can buy everything online. However, retailers' costs for home delivery are incremental costs, because they must pick, pack, and deliver products to the home. These inefficiencies for retailers that arise from demand disaggregation and incremental labor and transportation costs cause a serious analog last mile problem for ecommerce merchants.[9]

Delivery is critical for on-line grocery business. Notes **John Icke**, ShopLink Inc's CEO, an on-line food company based in Westwood:

> Amazon.com can use centralized warehouses and two-day shipping services to deliver books over a wide swath of geography, but on-line grocers need costly local distribution systems for quick delivery. … People are willing to wait a few days for a book. But when it comes to food, they want instant gratification. [A]ttending to such details as finding the right cooler for perishable food is as important as mastering the mysteries of Internet technology."

If the selecting, picking, and packing are not done quickly and without errors, and if the delivery is not carried out in time, having a sophisticated "customer interface" is likely to be of little help in attracting new customers and retaining existing customers. HomeRuns.com's first delivery trucks, for example, were standard issue. However, notes Tom Furber, president of HomeRuns.coms:

> [We] quickly learned [that standard trucks] were not nimble enough to navigate narrow city streets. Newer vans now come from a firm that customizes ambulances. … To reduce the number of errors in customer orders, paper checklists were replaced, and food pickers were issued portable scanners. Unfortunately not all technology is suit-

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[8] On-line Grocery Exposed. *The Forrester Report*, August 1998.
[9] M. Swahney, The Longest Mile. *Business 2.0*, December 1999.

> able for all Fahrenheits. One lesson learned the hard way [was] that some portable scanners freeze in chilly meat lockers. Food pickers now use a new generation of weatherproof finger scanners. … Designing the right Web site [is] equally challenging. … HomeRuns.com has upgraded its Web site 30 times. One early goal: ensuring that an item was removed from the Web site's order form if it was out of stock in the warehouse. Building a system with real-time inventory took two years.

The back-office databases need to: collect customer demographic and purchase data; provide billing information to grocery stores; and schedule delivery. The computing technology deployed has to be sophisticated enough to accommodate such functions. Moreover, when Peapod partners with Jewel Food Stores in Chicago and Safeway in San Francisco, for instance, it is likely to create two different databases because the mix and pricing of products are different. After this initial setup, the databases need to be constantly updated to reflect changed item prices, specials, promotions and discount coupons offered at various locations, and changes in and availability of inventory. This is the front-end -- the "real time interface"-- part of the business.

All in all then expertise is needed on many fronts: on-line communications, order processing, fulfillment and delivery systems. Additionally, the firms need a good understanding of the US grocery business and the regional variations that exist in the United States. They also need expertise in maintaining good working relationships with grocery-store partners, direct marketing concepts, and the logistics of selecting, packing, and delivery of numerous perishable items.

The four on-line grocery stores discussed here have recognized the need for the above mentioned competencies. The founding members of the on-line stores discussed here often have started their business because they themselves have certain specialized competencies. Additionally, they have availed themselves of technical and business acumen by hiring executives with suitable qualifications, or by adding certain individuals to their Board of Directors (see **Exhibit 6**). They have also entered into alliances and partnerships with others knowledgeable about the grocery business.

EMERGING ON-LINE BUSINESS MODELS

The Partnership or Store-based Model

All on-line grocery and delivery services have entered into some business alliances or partnerships. Peapod, for example, partners with prevalent grocery stores in the respective geographic areas. The grocery stores serve as purveyors and suppliers of perishable and non-perishable food and non-food items, and, as will be described later, often other ancillary services. Peapod solicits and receives the orders, processes and sorts the order data, typically hires and trains the needed personnel, performs the picking, packing, and delivery, collects the payment, and pays the grocery store. The brick-and-mortar stores typically have not acquired the expertise to build a Web site with catalogue capability or take orders and gather the related data. In that sense a Peapod or HomeRuns.com's approach dovetails nicely with the physical grocery stores' core competency of providing the necessary low quantity, high variety physical goods.

Peapod's grocery store partners are: Jewel Food Stores in Chicago, Ill; Kroger in Columbus, Ohio; Randall's in Austin and Houston, Texas; Tom Thumb in Dallas, Texas; Safeway in San Francisco/San Jose, California; and Stop & Shop in Boston, Massachusetts. (The eighth location, Long Island, N.Y., is exclusively serviced from a company owned distribution center.)

Streamline partnered with Star Market in Boston, but is now buying products wholesale from SuperValu in an attempt to reduce costs. In 1996 Streamline also entered into a partnership with Andersen Consulting to receive access to survey data Andersen Consulting was engaged to collect about consumer-direct marketing of packaged goods. It is called the Consumer Direct Cooperative and is sponsored by such companies as Proctor and Gamble, Ocean Spray, Coca-Cola, and Sara Lee. Streamline, in exchange, provides internal information about its business to Andersen consulting, and how it views the importance and usefulness of the new Internet channel for direct marketing.

In 1997, Streamline.com received $2 million from Intel, GE Capital Services, SAP America Inc., Paine Webber Capital, and Reliance Insurance Co. of New York, for a total capital contribution of $10 million.[10] In October 1998, Nordstrom entered into a partnership with Streamline with an investment of $22.8 million. This is because "Nordstrom might provide merchandise through Streamline in the future [and] that the investment reflects its interest in exploring and learning about electronic Commerce."[11]

The Warehouse Model

While Peapod is still torn between severing and nurturing its existing retail grocery operations ties, NetGrocer has never embraced the concept of partnering with and buying from local grocery stores. It is circumventing the need for multiple locations all together by shipping only non-perishables via FedEx. It charges one nationwide rate for all orders over $50 and services all its orders through one warehouse in New Brunswick, NJ. It offers grocery prices of up to 20% less than supermarkets, according to its site. It has made the choice that it cannot do both, sell perishables and deliver cost-effectively from multiple locations. Daniel Nissan, founder of NetGrocer, "contends that in the end, supermarkets will only be used to sell perishables and ready-to-eat food."[12]

When comparing the warehouse model to the store-based model the warehouse model offers certain advantages because it is owner-operated and provides a centralized location. It facilitates purchases from wholesalers rather than retailers, and, when laid out and organized efficiently, provides time saving and higher accuracy during picking and packing. On the downside, it adds capital cost. When it comes to land-based supermarkets it is estimated that retail operations consume up to 18% to 20% of every dollar of purchases.[13] These costs are imbedded in the retail price. Operating a warehouse on the other hand costs about 7 percent of every of dollar of purchases.[14]

The Hybrid Model

Peapod has announced that it is rethinking its alliances with local physical grocery stores. Peapod's Parkinson has the following to say: "The more efficiency we can add to the model, the more cost we can eliminate and provide a better price to the customer. If costs go down, we can improve volume of orders as well as quality of service."[15]

However, Peapod's model remains a hybrid between the pure warehouse model and the partnership model. Apparently it has convinced some of its grocery partners that they need to participate with Peapod in the effort to reduce cost. As a result, the Stop&Shop store in Watertown, Massachusetts opened a fulfillment area on its second floor in July 1997. Peapod helps retailers set up fulfillment areas if the space is available to pick faster and more accurately. In its most recent market entry Peapod has begun to service the New York area in cooperation with Giant Food Stores and Edward's Food stores, where both chains "will provide warehouse facilities and certain product procurement and inventory management services."[16] It appears that Peapod values its store-based grocery alliances and will continue to purchase groceries retail, but it is also shifting some of the burden on its partners. As of December 1998, Peapod had also opened two of its own warehouses in Niles, IL and Union City, CA and is ordering directly from wholesalers to continue the shift to a pure electronic grocery store.

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[10] *The Boston Globe*, December 7, 1997.
[11] *WWD*, Oct. 9, 1998, page 2(1).
[12] Freedman, David H., "Food fighter," *Forbes*, February 23, 1998, v161 n4, page S37(3).
[13] www.shoplink.com/comapny
[14] In 1997 Peapod paid its retailers approximately $7.8 million to cover the cost of the supermarket space, about 18% of its overall revenues. With approximately 7 markets in 1997 it could have rented warehouse space for perhaps close to $3 million (about 7% of its overall revenues). In other words, it could have saved about $4.8 million, almost one third of its 1997 operating loss of close to $15 million.
[15] *Supermarket News*, "Peapod Partnering for Dedicated Warehouse Pick Facility," April 6, 1998, page 57.
[16] *Dow Jones Newswire*, "Peapod Inc. to Begin N.Y. Internet Supermarket Service in 4Q," July 22, 1998.

HomeRuns.com is also pursuing a hybrid model. Since it is an extension of Hannaford Brothers' retail grocery stores it has access to all its parent company's bricks-and-mortar locations and grocery wholesalers. In other words, it uses another variation of the hybrid model.

FINANCIAL RESOURCES AND PERFORMANCE

The Hannaford Bros. enterprise has so far backed HomeRuns.com with its strong financial position. It too has admitted, however, that continued support from external sources is imperative. HomeRuns.com incurred an $11million loss for its parent company in 1998.[17] Streamline has raised $10 million during 1997, $2 million each from Intel, GE Capital Services, SAP America Inc., Paine Webber Capital, and Reliance Ins. Co. of NewYork.[18] After the October 1998 $22.8 million investment from Nordstrom, Streamline filed its S-1 in April 1999 to go public and raised another $45 million by October. It too has sizable losses.

Financial data for Streamline is available since its public offering but not for an entire year yet. But DeMello, Streamline's CEO, is quoted as saying that he "expects to break even once he has 1,300 customers, earning profits on lower wholesale food costs, volume and monthly fees."[19] He revised that estimate to 1,800 customers shortly thereafter.[20] DeMello also indicated that a typical customer spends an "average of $6,000 a year with Streamline." By comparison Peapod had 95,000 members by the end of 1998, and was not even close to breaking even. During 1998, Peapod's typical customer spent $116, on the average, and used the service five times a year. The resulting $580 stands in stark contrast with Streamline's $6,000 claim. HomeRuns.com estimates that its break-even point can be reached with 8,000 orders per week.

Among the four firms examined, Peapod and Streamline have gone public, but only Peapod can offer several years' worth of information. Even though little of the other two companies' specific finances are officially known, much can be deduced from Peapod's data.

Examining Peapod's Financial Data

Peapod closed its public offering on June 16, 1997 at $16 per share and raised $58.1 million. Since then the share price has moved to as low as $2 and as high as $13. As of March 31, 1998 it still had $43 million in marketable securities over and above cash and cash equivalents. By September 30, 1998 and 1999 that amount had declined to $15.8 million and $9.2 million, respectively. Peapod is under pressure to show improved financial performance very soon.

Peapod's key operational and financial data are shown in **Exhibits 7** and **8**. Between 1993 and 1998, the firm's operations grew from two markets to eight. The number of customers grew from 3,000 members to 95,000, and the orders grew from 28,600 to 494,700. It had over 1,300 part and full-time employees in 1998. The average order size has grown from its low of $96 to its high of $116 in 1998. Even though Peapod's ancillary services have grown from $812,000 to a combined $16 million between 1993 and 1997 with a decline to roughly $11.1million in 1998, other costs and expenses have outpaced that growth by far. Other cost and expenses encompasses all expenses outside of "Groceries sold," and partially reflects the increase in advertising expenses.

Peapod's marketing and selling expenses for the years of 1995 to 1998 are highlighted in **Exhibit 7A**. The firm spent $1.5 million, $4.0 million, $6.5 million, and $7.5 million in 1995, 1996, 1997, and 1998 on marketing and selling, respectively. The increased spending is easily explained by Peapod's expansion into new areas. In 1996 it expanded into three cities, Columbus, Boston, and San Jose. In 1997, it added Houston, Dallas, and Austin, and in 1998 it serviced the New York area for the first full year. This suggests that each additional market required an initial advertising and selling investment of at least $1 million each.

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[17] Reidy, Chris, "Somerville, Mass.-Based Grocery Delivery Service Learning On-Line Tricks, *Knight-Ridder/Tribune Business News*, June 10, 1999, page D6.
[18] *The Boston Globe*, "Delivery Services Vie in Westwood," January 25, 1998, page 19.
[19] *The Boston Globe*, "Tim DeMello Wants to Be Your Butler," November 8, 1995, page 49.
[20] *The Boston Globe*, "Deliveries; Streamline Gets $5 Million to Create Warehouse," October 13, 1996, page F4.

Knowing that Peapod's markets are fairly homogenous, the annual data for 1995-1998 are simply divided by the number of markets to arrive at average costs per market. With growth and economies of scale one could expect that the average cost per market to decline over time. These figures are computed in **Exhibit 8B**. The numbers suggest that the more markets Peapod enters, the lower the average operating loss or higher the average operating margin per market except for in 1998.

Peapod has recognized that its future growth depends in part on increasing sales in areas other than grocery, including its interactive marketing services and new additional services. Peapod, along with others, has also recognized that it needs to keep grocery operation costs associated with picking, packing, and delivering to a minimum. Peapod (and NetGrocer) have also succeeded in expanding their net presence and exposure to 'eyeballs' by entering into exclusive agreements. Peapod is the only provider of groceries on Excite's portal and NetGrocer is the exclusive link to convenience grocery shopping on AOL and iQVC.

CONCLUSION

Some industry experts are skeptical about on-line grocers and maintain that on-line grocery shopping will never replace the physical grocery stores. They point out that consumers will continue to prefer the physical world where they can smell, see, and touch the items they buy. They will continue to prefer the face-to-face interactions with the deli manager and chance meetings with a neighbor or friend while shopping. However, they agree that a few may flock to their computers to order through a virtual store while only occasionally visiting a supermarket in person.

Research has shown that "contrary to what some people believe, the Web is not a mass medium. It's a niche medium, a personal medium, and an interactive medium."[21] The items most suitable to be sold through such an interactive medium are items with information content such as cars or books. Groceries by themselves do not fall into that category. Notes Evan I. Schwartz, author of *Webonomics*:

> People are looking for more than just information when they go on-line. They treat the Web as a place in which they can interact with other people. The most effective Web sites are not just billboards on the side of the road. They are more like a place where everybody knows your name – even if it's not your real name. The information, or content, can become the centerpiece of their conversations. But it's the total experience that compels people to return to that place again and again.[22]

To encourage that growth, many experts foresee that the monthly or annual membership fees will have to disappear. Notes David Friedman, a partner at Andersen Consulting:

> Service fees are a barrier [to acquire customers] … and today all services charge some sort of fee. This doesn't play well because consumers recognize they are not charged to enter their favorite grocery store, and they do not understand why they should be charged to shop on-line. We expect these fees to go away. As the number of users increase, service providers will have the opportunity to reduce fees.[23]

The four on-line grocery stores analyzed here are yet to utilize the Internet as a powerful marketing tool, and so far they have failed to invest in mechanisms that create a community that attracts customers. Notes Mohanbir Swahney:

> The growth in online consumer commerce is creating the need for innovative direct-to-home fulfillment models for products and services. However, these models cannot be profitable until the analog last-mile problem is addressed, and cost-effective fulfillment designs can be created. As the contours of the battle for the analog last mile become clearer over time, there will be interesting opportunities for large firms as well as for startups. Whoever wins or loses, we look forward to the reinvention of the milkman, who will make our busy lives a little bit easier by bringing the fruits of ecommerce home to us.[24]

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[21] Ibid, page 27.
[22] Ibid.
[23] *Supermarket News*, "Service Fees for On-line Shopping to Vanish," May 11, 1998, page 25.
[24] M. Swahney, The Longest Mile. *Business 2.0*, December 1999.

Exhibit 1

Grocery Industry Overview, 1999

Number of employees	3.5 million
Number of grocery stores	126,000
Total grocery store sales	$449 billions
Total supermarket sales	$346.1 billions
Number of supermarkets ($2 million or more in annual sales)	30,700
Net profit after taxes, 4/98-3/99	1.03%
Typical supermarket size	40,483 sq. ft.
Number of items in a supermarket	40,333
Labor as a % of operating expense	57.5%
Average effective income tax rate (fed, state, local) 4/96-3/97	39%
Percentage of disposable income spend on food	
• food-at-home	6.6%
• food away-from-home	4.2%
Weekly sales per supermarket	$331,411
Weekly sales per square foot of selling area	$9.45
Sales per customer transaction	$10.16
Sales per labor hour	$113.21
Average # of trips per week consumers make to the supermarket, 1/98	2.2
Food basket costs, % of weekly income spent on food	
• Unites States	8.8%
• Canada	10.3%
• Japan	17.6%

Sources: U.S. Department of Labor, U.S. Department of Agriculture, *Progressive Grocer* magazine and U.S. Census Bureau

Exhibit 2

Grocery Store Sales 1988 and 1999

	1988				1998			
	$ Sales Billions	%	Number of Stores	%	$ Sales Billions	%	Number of Stores	%
All Stores	329.0	100.0	148,000	100.0	449.0	100.0	126,000	100.0
Supermarkets ($2,000,000 +)	240.4	73.0	30,400	20.5	346.1	77.0	30,700	24.4
Chain Supermarkets	164.3	49.9	16,850	11.4	274.5	61.1	19,530	15.5
Independent Supermarkets	76.1	23.1	13,550	9.1	71.6	15.9	11,170	8.9
Other Stores (Under $2,000,000)	63.1	19.2	62,600	42.3	53.4	11.9	37,550	29.8
Convenience Stores	25.5*	7.8	55,000	37.2	28.0**	6.3	57,000	45.2
Wholesale Club Stores	n/a	n/a	n/a	n/a	21.5**	4.8	750	0.6

Grocery Store — Any retail store selling a line of dry grocery, canned goods or nonfood items plus some perishable items.
Supermarket — Any full-line, self-service grocery store with an annual sales of $2 million or more
Convenience Store — Compact, drive-to store offering a limited line of high-convenience items. Over half sell gasoline and some sort of fast food. Long hours and easy access.
Independent Supermarkets — An operator of up to 10 retail stores.
Chain Supermarkets — An operator of 11 or more retail stores.

Source *Key Industry Facts – Prepared by FMI Information Service,* April 1999.
Notes:
* Excludes sales of gasoline
** Supermarket items only

Exhibit 3
Top 8 U.S. 1997 Food Wholesalers

Company	Rank	HQ	1997 Sales (Millions)	% of Ind. Sales	Stores Served	Gross Margins	Operating Margins	ROA	ROE	# of Employees
SuperValu	1	Eden Prairie, MN	17,201	0.55%	4,800	10.1%	2.3%	6.7%	13.9%	48,000
Fleming Companies	2	Oklahoma City, OK	15,373	0.49%	3,100	9.3%	1.5%	1.0%	3.6%	39,700
NashFinch	3	Minneapolis, MN	4,392	0.14%	2,350	12.9%	1.5%	2.7%	8.7%	12,200
Wakefern Food Corp.	4	Elizabeth, NJ	4,300	0.14%	185	*	*	*	*	3,200
Richfood Holdings	5	Mechanicsville, VA	3,412	0.11%	> 1,400	10.5%	3.1%	10.7%	26.8%	5,151
C&S Wholesale Grocers	6	Brattleboro, VT	3,400	0.11%	1,250	*	*	*	*	3,000
Assoc. Wholesales Grocers	7	Kansas City, KS	3,200	0.10%	950	*	*	*	*	**
Roundy's	8	Pewaukee, WI	2,590	0.08%	1,000	*	0.4%***	*	9.7%	5,071

* The corporation is a cooperative and owned by its members. This information is not made available to the public.
** Indicated as none or not applicable in Hoover's Co. Profile.
*** Only net margin is available because corporation is a cooperative and not publicly traded.
Source: Combination of Company Reports, the Private Label Magazine of the Food Institute Report as reproduced by Wheat First Union's Food Distribution Industry Update, April 8, 1998, pages 7 and 33, and Hoover's Co. Profile Database

Company	# of Customers	# of Dist. Centers	Product Breadth	Retail Stores Owned	Retail Stores Presence
Fleming	3,100	35	14,000	277	42 states
Fresh America	2,000	22	500	0	32 states
Nash-Finch	2,250	21	14,500	97	30 states
Richfood	>1,400	2	37,000	61	9 states
Smart&Final	n/a	3	11,000	174	4 states
SuperValu	4,800	47	60,000	328	48 states
Tree of Life	>10,000	11	25,000	0	50 states
United Natural Foods	>6,000	8	25,000	9	48 states

Source: Combination of Company Reports, the Private Label Magazine of the Food Institute Report as reproduced by Wheat First Union's Food Distribution Industry Update, April 8, 1998, pages 7 and 33, and Hoover's Co.Profile Database

Exhibit 4

A. Total Electronic Grocery Spending (millions)

	1999	2000	2001	2002	2003
Specialty	$248	$659	$1,548	$3,058	$6,291
Full Service	$265	$473	$911	$1,951	$4,545
Total Revenues	$513	$1,132	$2,459	$5,009	$10,836
Percentage of Industry Total	0.11%	0.23%	0.49%	0.98%	2.05%

Source: Forrester Research, Inc.

B. Total Number of Households Buying Groceries Electronically (000s)

		1999	2000	2001	2002	2003
Specialty	PC-Based	920	1,839	3,678	6,252	10,628
	Other Net Devices	35	106	318	1,114	4,454
	Total Specialty	**955**	**1,945**	**3,996**	**7,366**	**15,082**
Full-Service	PC-Based	187	327	621	1,242	2,546
	Other Net Devices	6	12	35	124	495
	Phone/Fax	42	42	38	34	31
	Total Full Service	**235**	**381**	**694**	**1,400**	**3,072**
Total	Household doing both	59	115	243	630	1,536
	Total participating household	**1,131**	**2,211**	**4,447**	**8,136**	**16,618**

Source: Forrester Research, Inc

Exhibit 5

Membership Fee and Services

Peapod	Monthly membership fee of $35, flat $4.95 per order, plus 5% of grocery bill • Specially marked, company-owned delivery trucks, bonded and ID carrying personnel • Next day delivery • Someone needs to be home to receive and put away groceries
Streamline	One-time installation fee of $39, monthly membership fee of $30 with chill container, or $40 with refrigerator, fee per delivery dependent on size • Weekly deliveries on pre-designated days • Delivery into Streamline provided chill container or refrigerator and storage shelves in garage or basement • Home owner attendance not required
HomeRuns.com	No membership fees, and free delivery on orders of at least $60, minimum orders of $30, $10 delivery charge for orders between $30 and $60 • Specially marked, company-owned vehicles, bonded and ID carrying personnel • Next day delivery Monday – Saturday, 1 p.m. – 10 p.m. (as long as order placed by midnight the previous day) • During a chosen two-hour delivery window (when ordering the customer receives feedback from the database which time slots are still available) • Home owner attendance is not required • Customer may choose to pick up instead
NetGrocer	No membership fees, but $2.99 shipping charge per order, graduated up to flat charge of $4.99 for orders over $50 (shipment via FedEx) • FedEx, within 4 business days • Non-perishable items only • Home owner attendance is not required

Exhibit 6

Management and Directors of Peapod, Streamline, and HomeRuns.com

Peapod

Peapod has nearly 100 years in combined experience in the food industry with its founder and President Andrew B. Parkinson, Chief Executive Officer John C. Walden, Vice President of Technology Thomas L. Parkinson, Vice President of Marketing Timothy M. Dorgan, Chief Financial Officer John P. Miller, Vice President of Field Support and Retail Services John A. Furton, and Vice President of Fulfillment Operations Carl E. Alguire. The composition of this group of executives seems to have remained relatively stable and appears to provide much needed leadership balance for this challenging business.

Streamline

Streamline's Chief Executive Officer Timothy DeMello is an ex-stockbroker who brings financial knowledge and contacts with him. He gained experience with business start-ups when he created Dedham-based Wall Street Games, a marketer of national stock-market competitions and sports fantasy challenges that was later renamed Replica and sold. (Replica went into bankruptcy in October 1995.)

In April 1997 several senior management appointments were announced in *The Boston Herald* including Kevin M. Sheehan of Shopping Alternatives, Inc., a Bethesda, Maryland based on-line supermarket that pioneered phone and internet orders and home delivery of groceries in Portland, Maine, East Bridgewater, Massachusetts, and Edina (near Minneapolis), Minnesota.

Streamline has also built important alliances through several members on its Board. It includes Saul Steinberg, the Chairman of Reliance Group Holdings, parent of Reliance Group Insurance Company, and Faith Popcorn, founder of Brain Reserve, a New York-based consumer trend-forecasting firm.

HomeRuns.com

HomeRuns.com is a subsidiary of the Maine-based and privately owned supermarket chain Hannaford Bros. Co. The Hannaford family has been in the grocery business with its Shop 'n Save, Wilson's and Hannaford stores since 1883, and has grown it to 1997 revenues of nearly $3 billion. It includes over 142 supermarkets in Maryland, New Hampshire, New York, Vermont, Massachusetts, South and North Carolina, and Virginia. The Hannaford name, experience, history and capital backing give HomeRuns.com a solid operating basis that none of the other on-line grocery services have.

Exhibit 7

Peapod's Operations 1993-1998

	1993	1994	1995	1996	1997	1998	1999Q3	1999E**
Markets	2	2	2	4	8	8		8
Fulfillment Centers	na	na	14	27	52	34		22
Members	3,000	8,400	13,300	35,400	100,400	95,000		na
Orders	28,600	70,300	124,100	201,100	396,600	494,700		na
Households in service area	1,083,400	1,917,000	2,204,200	3,581,000	6,488,000	6,628,500		na
Penetration*	2.6%	3.7%	5.6%	5.6%	6.1%	7.5%		na
Full-time employees	na	na	na	na	285	240		na
Part-time employees	na	na	na	na	1,135	1,125		na
Size of average order*	$ 101	$ 96	$ 103	$ 109	$ 110	$ 116		na
Orders per year*	10	8	9	6	4	5		na
Grocery sales, net of returns	$ 2,893	$ 6,745	$ 12,731	$ 22,015	$ 43,487	57,305	51,574	68,765
Interactive marketing services	-	-	163	1,069	2,222	1,460		na
Member and retailer services	812	1,601	3,049	6,088	13,898	9,650		na
Licensing						850		na
Total revenues	$ 3,705	$ 8,346	$ 15,943	$ 29,172	$ 59,607	$ 69,265	$ 51,574	$ 68,765
Groceries sold, net of returns	(2,893)	(6,745)	(12,731)	(22,015)	(43,487)	(53,903)	(39,509)	(52,679)
Other costs and expenses	(2,463)	(5,918)	(9,796)	(17,187)	(31,069)	(39,420)	(32,557)	(43,409)
Total expenses	$ (5,356)	$ (12,663)	$ (22,527)	$ (39,202)	$ (74,556)	$ (93,323)	$ (72,066)	$ (96,088)
Operating losses	$ (1,651)	$ (4,317)	$ (6,584)	$ (10,030)	$ (14,949)	$ (24,058)	$ (20,492)	$ (27,323)
Operating cost per order	(187)	(180)	(182)	(195)	(188)	(189)		na
Break-even oper.cost/order before non-operating exp.	(130)	(119)	(128)	(145)	(150)	(140)		na

*Computed

** 1999E is the annualized estimate of 1999 figures based on the first three quarters

Exhibit 8A

Financial Details of Peapod's Operations

	1995	1996	1997	1998
Revenues				
Grocery sales, net of returns	12,731	22,015	43,487	57,305
Interactive marketing services	163	1,069	2,222	1,460
Member and retail services	3,049	6,088	13,898	9,650
Licensing services				850
Total non-grocery services	3,212	7,157	16,120	11,960
Total revenues	15,943	29,172	59,607	69,265
Cost and expenses				
Groceries sold, net of returns	12,731	22,015	43,487	53,903
Grocery operations	5,168	8,141	17,496	17,196
General and administrative	1,762	2,920	4,129	8,029
Marketing and selling	1,533	3,984	6,514	7,545
System development and maintenance	964	1,492	1,696	3,386
Depreciation and amortization	369	651	1,234	3,264
Total exp other than groc	9,796	17,188	31,069	39,420
Total expenses	22,527	39,203	74,556	93,323
Operating loss	(6,584)	(10,031)	(14,949)	(24,058)
Markets*	2	4	7	8

*In 1997 Peapod technically operated in 8 markets, but had opened the last one very late in the year.

Source: SEC Forms 10-K and 10-Q

Exhibit 8B

Estimated Averages Per market for Peapod

	1995	1996	1997	1998
Revenues				
Grocery sales, net of returns	6,366	5,504	6,212	7,163
Interactive marketing services	82	267	317	183
Member and retail services	1,525	1,522	1,985	1,206
Total non-grocery services	1,607	1,789	2,302	1,389
Total revenues	7,973	7,293	8,514	8,552
Cost and expenses				
Groceries sold, net of returns	6,366	5,504	6,212	6,738
Grocery operations	2,584	2,035	2,499	2,150
General and administrative	881	730	590	1,004
Marketing and selling	767	996	931	943
System development and	482	373	242	423
maintenance	-	-	-	-
Depreciation and amortization	185	163	176	408
Total exp other than groc	4,899	4,297	4,438	4,928
Total expenses	11,265	9,801	10,650	11,666
Operating loss	(3,292)	(2,508)	(2,136)	(3,114)

Source: Computed using SEC data from Forms 10-K and 10-Q