Online Grocery Shopping: An Analysis of Current Opportunities and Future Potential

Market analysts expect that within the next five years, 5% to 8% of all grocery sales will come from consumers bypassing the retail store to buy online (Kirsner, 1999; Lundegaard, 1997). This paper reviews how the more established online grocers are currently operating and outlines likely operating models of the future.

Brenda J. Cude, University of Georgia[1]
Michelle A. Morganosky, University of Illinois[2]

Online grocery sales totaled $150 million in 1998, which is less than 1% of the $440 billion in total supermarket sales (Beck, 1999). While the majority of online food sales have been and will likely continue to be specialty foods, market analysts expect that within the next five years, 5% to 8% of all groceries be sold online (Kirsner, 1999; Lundegaard, 1997).

What has stimulated the grocery industry's interest in online grocery shopping? A primary incentive is revenue; the founder of NetGrocer is quoted as noting that even 1% of annual grocery sales is a $1-billion a year business (Buss, 1998). There are, however, significant start-up costs for a online food retailer (Hardgrove, 1999; Pearce, 1998) and debate continues on whether online food retailing is viable for the long term. Skeptics continue to think that consumers won't accept online grocery shopping (Lardner, 1999), believing consumers prefer to "wander around the stores and touch and smell what they are going to buy" (Beck, 1999, p. C7).

Several early online food retailers (Shopper's Alternative, Home Shopping Alternatives, Groceries to Go) ran out of money and closed (Kirsner, 1999). Peapod is the most established online grocer but its net loss in 1998 was $21.6 million. Some industry experts believe that continued infusions of cash into online grocers are essential to the industry's future (Anders, 1999; Maney, 1999).

How do online grocers operate and what choices do consumers have? This paper describes the target market, reviews how the more established online grocers currently operate, and outlines likely operating models of the future.

The Target Market For Online Grocers

While each online grocer varies somewhat in describing its ideal customer, the common elements are "busy, dual-income suburban families" (Ingram, 1999, p. 41) with high incomes (often defined as $75,000 or greater) and at least one child (Kirsner, 1999; Lardner, 1998; Ransdell, 1998). However, research has suggested that online grocery shoppers may be somewhat more diverse than the industry believes. The Consumer Direct Cooperative interviewed more than 1,800 consumers nationwide and tracked the purchasing histories of 800 online shoppers (Kutz, 1998). Their research identified five major groups of potential online grocery shoppers based on respondents' attitudes toward time, shopping, and technology. "Shopping Avoiders" dislike grocery shopping while "Necessity Users" have limitations that make going to a store difficult. "New Technologists" are young and comfortable with technology while the "Time Starved" are not sensitive to price and will pay extra to free up time in their schedules. The group termed "Responsibles" has available time and gets an enhanced sense of self-worth from shopping. The research indicated that each group of potential online grocery shoppers cuts across all income and educational levels, age groups, and geographic locations.

Park, Perosio, German, and McLaughlin (1998) conducted focus group interviews with consumers who had previous experience with home shopping for groceries. The researchers categorized home grocery shoppers into two groups. Hi-tech baby boomers were interested in home shopping for the convenience or because of the novelty and typically ordered by computer. In contrast, older/physically challenged consumers had lower incomes and were more likely to live alone. They typically bought groceries via home ordering because of physical difficulty going to the store and tended to phone in orders when possible rather than order online.

In Hiser, Nayga, and Capps' (1999) survey of 390 consumers in Bryan/College Station, Texas, about one-third were familiar with online food shopping even though it was not available in the area at the time of the survey.

Logit analyses indicated that income, the number of people living in the household, the presence of children, and gender were not significant determinants of interest in using a grocery shopping service. Age and education were, however; people over age 50 were less likely to consider using the service (compared to people 18 to 29 years old) as were those with less education.

Cude and Morganosky (2000), in their online survey of 243 U.S. consumers who bought groceries online, also found some diversity among online grocery shoppers. While 32% of respondents were 34 years of age or younger, 7% were 55 years old or older. About one-half had incomes of $70,000 or above while 12% had an income below $30,000. While 73% cited convenience and/or time savings as the primary reason for using the online grocer, 15% mentioned physical constraints that made going to the store or shopping in the store difficult.

Features Of Online Grocers

Several online grocers operate in the U.S. today. The services described in Table 1 are those that are the most established and/or have received the greatest media attention. Hannaford's HomeRuns, which Food Lion recently purchased (Winters, 1999), is the only one of the online grocers described in Table 1 that is owned by an existing grocery chain. The others are stand-alone operations that are supplied by wholesalers or are partnered with retailers (Kirsner, 1999). NetGrocer is also unique in that it delivers nationwide via FedEx, offering only nonperishable items (Liebeck, 1997).

Table 1
Key Features of Online Grocers.

Online Grocer	Base Cost	Delivery Area	Type of Delivery	Other Services	Year Started
HomeGrocer.com	Free on orders of $75 or more; $7.95 if less	Seattle, Portland, Southern CA	Attended	No	1998
HomeRuns	Free on orders of $60 or more; $10 if less	Boston	Attended	No	1998
NetGrocer	Depends on location and order total but $7-$9 for order less than $60	Nationwide	FedEx	No	1996
Peapod	Varies by market but often $5/order plus $5/mo. or $20/mo.	8 US cities	Attended	No	1989
ShopLink	$39 to $49/mo	Boston	Unattended	Yes	1997
Streamline	$30/mo.	Boston, Washington, D.C.	Unattended	Yes	1993
Webvan	Free on orders of $50; $4.95 if less	San Francisco	Attended	No	1999

One observation readily apparent from reviewing Table 1 is that Boston consumers have more choices in online grocers than anywhere else in the U.S. Boston has become a mecca for online grocers, probably because of its population density, wealthy suburbs, and high Internet penetration (Kirsner, 1999). However, some of the services currently operating only in Boston have announced plans to expand to other markets (Ransdell, 1998).

Peapod is the nationally-known, established service available in the most markets outside Boston; operating in eight major markets, it serves an estimated 5% of the country (Kirsner, 1999). Webvan Group Inc. is the newest service, beginning operations in Summer 1999 in the San Francisco area. It already plans to expand into 21 other markets beginning with Atlanta (Anders, 1999; Beck, 1999).

While each of the major grocery shopping services shares common features, each also is distinctive. The following sections will review the various features of online grocers as they are currently operating.

Placing an Order

Some online grocers take orders by telephone, fax, and online although most only take orders online via the Web (Ingram, 1999). Online grocers' Web sites are typically organized by product categories. Shoppers can

often view full-color pictures of products and sometimes see product ingredients and run side-by-side comparisons of products for sugar, fat content, and/or price. On many sites, consumers can specify product preferences (green bananas or thick slicked meat, for example) and give instructions regarding substitutions if an ordered item is out of stock (Donegan, 1999; "Information technology for national expansion," 1999; Lardner, 1998; Liebeck, 1997). Most sites feature at least some sale items.

To order, consumers typically can choose specific items by name, work from previously established personal shopping lists, or browse electronic aisles (Pearce, 1998). Some consumers have found that setting up one's personal shopping list (often called a "favorites" list) is an arduous chore, taking as much as an hour or more. Streamline simplifies the process by sending a field agent to the consumer's home with a bar code scanner to record what the customer already has in the refrigerator, the pantry, and the medicine cabinet. The agent posts a first draft of the customer's personal shopping list on the Web site for the customer to edit (Ransdell, 1998).

Estimates are that in a typical household, 80% of one's online grocery purchases are the same each week (Grant, 1999). Thus, once one's personal shopping list is completed, each week the consumer need only edit quantities and add the items unique to that week. With an established personal shopping list, the online grocers estimate that it takes a typical consumer 47 minutes to assemble an average order of 75 items costing $110. With more experience, time to assemble an order can drop to as little as 20 to 25 minutes per week (Ingram, 1999; Ransdell, 1998; "A woman's place is on the Net," 1997). ShopLink's goal is to reduce online ordering time to nine minutes (Kirsner, 1999).

How often do consumers buy groceries online? The industry says its customers order online 45 to 46 times a year (Ingram, 1999; Ransdell, 1998). Industry estimates for visits to brick-and-mortar supermarkets are about 2.2 times a week (Beck, 1999).

Paying for the Order

All grocery shopping services accept payment by credit card. While some, including Webvan, accept credit cards only, others (Streamline and HomeRuns.com) accept bank debit cards, electronic funds transfers (Streamline), personal checks and money orders (HomeRuns). Peapod requires a credit card to set up an account but accepts payment by check, credit card, or debit card.

Assembling the Order

An online grocer can assemble orders using one of two models. In the warehouse model, items are "picked" from a warehouse. In the store model, groceries are picked off the shelves of a local retail store. Peapod initially used the second model. In each of the markets it served, it contracted with a local supermarket and orders were picked in those supermarkets by trained Peapod pickers.

The warehouse model is the one used today by most established online grocers. In 1999 Peapod converted to the warehouse model in all of its markets (Donegan, 1999; Ingram, 1999). However, many online grocers operated by local supermarkets (such as Schnucks in the Midwest) continue to pick merchandise within their retail stores.

The warehouse model dominates because it is more efficient, reducing overhead and making lower fees possible for consumers. It also provides for more professional service, with fewer out-of-stocks and mispicks (Donegan, 1999). Assembling an order is a highly sophisticated process. For example, in its Chicago warehouse, Peapod uses the Palm Pilot based handheld scanning system to increase accuracy and efficiency. Peapod's professional shoppers download a customer's order into the Palm Pilot and then "shop" the aisles, picking the order based on the items' location ID numbers shown on the Palm Pilot. The Palm Pilot maps orders according to the layout sequence of the warehouse with the largest, heaviest items first. Every product in the warehouse has its own location ID number and, to reduce mistakes, brands within a group are generally not shelved together. For example, different sizes of Kellogg's corn flakes would be in different aisles in the warehouse. Produce is picked by trained produce specialists (Donegan, 1999).

After an item has been picked, the professional shopper confirms the quantity and the next item is displayed. Once an order is complete, the Palm Pilot prompts the professional shopper to connect to the network and upload the data. The professional shopper is directed to a slot location and the customer's name is put on the order which is ready for lading and delivery (Donegan, 1999).

In ShopLink's warehouse, between midnight and 8 a.m. workers sort dry goods from items on metal shelves arranged in 28 aisles much like a grocery store (Grant, 1999). Warehouse workers use wrist-mounted computers, equipped with laser scanners fastened with Velcro to a fingertip to improve picking speed an order

References

Anders, G. (1999, April 22). Co-founder of Borders to launch online megagrocer. Wall Street Journal, pp. B1, B4.

Beck, R. (1999, May 23). Online shoppers aren't squeezing fruit or Charmin. The News Gazette, p. C7.

Buss, D. D. (1998, December 21). Food chain gets wired. Multex Investor Network. Retrieved June 14, 1999 from the World Wide Web: http://www.multexinvestor.com/magazine.asp?ref=smallcap_19981221.html

Cude, B. J., & Morganosky, M. (2000). Consumer response to online grocery shopping. International Journal of Retail and Distribution Management, 28(1), 17-26.

Donegan, P. (1999, April). The evolution of Peapod. Grocery Headquarters, 65, 79-83.

Grant, L. (1999, July 21). Grocery chore no more. USA Today, 1B, 2B.

Hardgrove, A. (1999, January). Getting up to speed on the information highway. Grocery Headquarters, 65, 55-59.

Hiser, J., Nayga, R. M., & Capps, Jr., O. (1999, March). An exploratory analysis of familiarity and willingness to use online food shopping services in a local area of Texas. Journal of Food Distribution Research, 30, 78-90.

Holsendolph, E. (1999, October 4). Amazon.com can now fit in the palm of your hand. The Atlanta Journal Constitution, p. A5.

Information technology for national expansion. (1999, September 8). Supermarket World. Retrieved September 9, 1999 from the World Wide Web: http://www.supermarketworld.com.tech.shtml

Ingram, B. (1999, March). Boston bears watching. Supermarket Business, 54, 41-45.

Internet grocery service will let shoppers name their price. (1999, September 22). CNN Interactive. Retrieved September 22, 1999 from the World Wide Web: http://www.cnn.com/Food/news

Kirsner, S. (1999, May). Express lane. Wired, 7, 112-114, 116, 118-120, 122.

Kutz, K. (1998, January 20). On-line grocery shopping on track for rapid growth. Retrieved June 3, 1998 from the World Wide Web: http:// www.ac.com/topstories/currnews/ts_98_0120.html

Lardner, J. (1998, November 9). Please don't squeeze the tomatoes online. US News & World Report, 126, 51-52.

Liebeck, L. (1997, August 18). NetGrocer now open for business. Discount Store News, 36, 3, 21.

Lundegaard, K. M. (1997, April 7). New owner to streamline Shopping Alternatives. Washington Business Journal. Retrieved June 3, 1998 from the World Wide Web: http://cgi.amcity/washington/stores/040797/story4.html

Maney, K. (1999, October 1). Net start-ups pull out of the garage. USA Today, pp. 1B, 3B.

Mathews, R. (1999, January). E-commerce breaks through. Grocery Headquarters, 65, 40-41.

Milvy, E. (1999, October 4). Foraging for food on the World Wide Web. Time Digital, 68-69.

Nasser, H. E. (1999, September 28). Worried rivals: Wait a minute, Mr. Postman. USA Today, p. 17A.

Online grocery stores: Missing ingredients. (1998, February). Kiplinger's Personal Finance Magazine, 52, 54, 55.

Park, K., Perosio, D., German, G. A., and McLaughlin, E. W. (1998). What's In Store for Home Shopping? Ithaca, NY: Cornell University Food Industry Management Program.

Pearce, M. R. (1998, Autumn). From carts to clicks. Ivey Business Quarterly, 63, 69-71.

Ransdell, E. (1998, August). Streamline delivers the goods. Fast Company, 4, 154.

Thomas, S. G. (1997), December 1). The networked family. U.S. News & World Report, 125, 66-68, 70-71, 75, 78, 80.

Wasserman, E. (1998, August 10). Le-Shop till you drop: Swiss grocer relaunches. The Industry Standard, 25.

Winters, R. (1999, October 4). Tales from the e-commerce front. Time. Retrieved November 10, 1999 from the World Wide Web: http://www.pathfinder.com/time/magazine/articles/0,3266,31514-3,00.html

A woman's place is on the Net. (1997). Chain Store Age. Retrieved February 10, 1998 from the World Wide Web: http://medusa.prod.oclc.org:3050

Endnotes

[1] Professor, Department of Housing and Consumer Economics

[2] Professor, Department of Agricultural and Consumer Economics