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**(R)EVOLUTION OF THE E-GROCERY INDUSTRY:
STRATEGIC IMPLICATIONS**

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(R)evolution of the E-grocery Industry: Strategic Implications

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Abstract

The use of the Internet in grocery retailing created the need for new business models, but it did not bring radical changes to consumer behaviour. Despite adopting revolutionary business models in their early days, online grocery firms did not manage to survive or reach profitability without using existing supermarket infrastructure and knowledge. Today, with most online grocers supplying small market niches, it is important to understand the reasons that made online grocers adopt a hybrid click and mortar strategy. Historical evidence from online grocery in the UK and the US suggests that firms had to adopt contingent strategies to face the difficulty of attracting consumers, sectorial entry barriers and financial targets.

Keywords: e-grocery, contingency, mismatch, revolution and evolution.

Introduction

The impact of the Internet in several markets is still a controversial issue. Many authors still disagree on how significant was the impact of the Internet in terms of either replacing or enhancing physical retail (B2C) markets. After two decades of Internet sales, there is evidence pointing at substantial differences that tend to depend on the type of product sold (Li et al., 2001; Wrigley and Lowe, 2002; Dinlersoz, 2002) and sector complexity.

Despite high expectations, grocery seems to be one of the sectors where the impact of the online platform was residual. Initial entrants into the sector were planning to lead a business model revolution. Based on a new distribution platform, state-of-art technology, easy financial support and optimistic forecasts from consulting companies, they implemented revolutionary business models. They expected that consumers would shift most of its offline grocery expenses to the online platform. Now, after 20 years, online grocers are supplying less than 3% of national grocery markets (Butler, 2007) and the hype about the fast growth of online grocery sales has clearly subsided.

In this context, it seems important to understand the factors that led e-grocery to evolve into a niche solution. In other B2C sectors, the transfer of consumers to the online platform was quite successful. However, online grocers did not manage to attract a substantial market share. There seems to be critical issues both coming from the demand and supply side that conditioned the impact of the Internet in this sector.

Even though much has been written about the topic, few were the authors that attempted a medium to long-term in-depth view of the sector based on the comparison of two national experiences: US and UK. Most manuscripts tend to focus on the experiences of individual firms or nations in very limited time spans (Delaney-Klinger et al., 2003; Rajias and Tuunainen, 2001; Johnson et al., 2000). They also tend to cover very specific aspects: technology, product nature, home delivery (Punakivi, 2003) and other. In this context, a broader view, covering the period between 1991 and 2006 can offer a significant assessment of the main issues affecting the sector dynamics.

The manuscript includes five sections. The first section presents a literature review about the impact of the Internet in B2C markets. Section two sets the context for analysis by describing

the online and offline grocery sector in the US and UK. Section three presents a strategic analytical view of the online grocery experiences in the UK and US. Section four goes over the main conclusions of the manuscript and indicates tracks for further research.

Literature review on B2C

Uncertainty about the Internet's economic impact led to a duality in early academic perspectives. On one side, sceptic authors (Gordon, 2000; Leamer and Storper, 2001) believed that the Internet did not bring any structural improvements in productivity. According to Gordon (2000), the Internet should not be much more than a substitute for existing means of communication and distribution. On the other side, optimistic authors believed that the Internet brought together buyers and sellers in new and more efficient ways (Coppel, 2000) by reducing transaction costs (Bakos and Brynjolfsson, 1997; Garicano and Kaplan, 2001). For Magretta (1999), firms should replace offline with online dedicated business models.

The above duality also emerged in B2C with a contrast between the “death of distance” (Cairncross, 1997) and “much being promised, but little being delivered” (Dawson, 2000). Much of this controversy was supported by unequal online market development, due to the different nature of the goods being transacted (Phau and Poon, 2000; Klein, 1998). Goods that can be fully codified have had comparative advantages in sales growth against those that are eminently physical. These advantages can be seen in figures: travel, books, music, software, videos, computers and electronics are leading sectors in e-commerce sales (Bakos, 2001), distantly followed by cars and groceries.

The magnitude of Internet impact seemed to have been determined primarily by product nature. Digital products can be delivered online, with distance and geography representing no cost, comparative to physical ones (Li et al., 2001; Wrigley and Lowe, 2002). They also tend to be more standardised, generating higher purchasing confidence among consumers (Wrigley et al., 2002b). According to Dinlersoz (2002), it appears that digital “... products require little inspection by consumers to learn about their quality”¹. Consequently, they are extremely suited to online sales. In some cases (flight tickets, music), online B2C led to revolutionary changes in consumer shopping habits. In comparison to digital goods, physical

¹ Dinlersoz (2002), page 7.

goods are heavier and incorporate higher levels of tacit information. They are more difficult to describe in a “site” and online consumers cannot fully assess them before purchasing. Consequently, physical goods involve relevant distribution/transportation costs (physical delivery) and seem to offer scope for a complementary approach to B2C in consumer retailing.

Another important issue conditioning Internet impact seems to be the need to meet financial targets. The 1990’s were characterised by the massive allocation of financial funds to online ventures. Back then, most investors seemed to have a high risk profile and money was being invested in very futuristic concepts and ideas that promised to deliver very high rates of return. However, in 2000, the stock market crisis decreased the hype about Internet based firms. During these times of financial hardship, delivering positive results became critical for businesses and most could not do it. Online bankruptcies became common during this period and they were not confined to products and services with high physical contents. Businesses that retailed digital products also failed (e.g. CDNow.com).

In some cases, the existence of established business models seemed to have worked as significant barriers for new entrants. Overtime, the accumulation of economies of scale and scope gave established offline firms important advantages, namely low costs and consumer loyalty to existing brands and shopping routine. In this context, the use of the Internet as new delivery channel by independent start-ups was not a synonym of immediate market revolution (fast customer attraction and retention). Online firms struggled to simultaneously keep costs down and attract consumers’ attention.

The firm’s strategic approach was also considered an important factor in determining survival. In most cases, online ventures adopted high risk strategies that intended to create their own market in a “push” approach. These strategies were based on supply-side expectations that online technology and convenience would be enough to attract a significant number of consumers. However, as the 1990’s unfolded, a mismatch between supply and demand became clearer and the “push” strategy proved to be unsuccessful for several firms. Prudence was required in an environment where technology changed but economic laws did not (Shapiro and Varian, 1999).

At present, it seems that most surviving B2C retailing firms have adopted an evolutionary rather than a revolutionary manner of conducting business (Boschma and Weltevreden, 2004). These two authors argue that this perspective can be observed through three historical features that, even though more applicable to physical goods are still found in terms of digital goods. First, online investments have been more about complementing (evolution) than substituting (revolution) existing retail stores and chains. Second, the most successful companies in B2C have been the ones that evolved from traditional to online retailing through the adoption of hybrid business models. Third, Internet start-ups (revolution) have disappeared in most cases after an initial crisis.

According to Afuah (2001), in order to thrive in the face of technological change, firms need to have dynamic boundaries. Technological changes, such as the Internet, create uncertainty, but do not necessarily imply immediate changes in industry structure. Therefore, in such an environment, full commitment to online or offline practices and technologies should be avoided. Instead, the adoption of hybrid models and contingent strategies provide the required flexibility to determine which competences can ultimately be the source of competitive advantage. As each firm is very specific, it takes time to assess the full impact of the Internet in terms of B2B (Business to Business), supply-chains (Pandya and Dholakia, 2002) and inter-firm relationships (Jap, 2000).

The e-grocery sector in the UK and US

The online sale of groceries presents the required features for an in-depth analysis of factors conditioning the success of online business models. This was one of sectors where the combination of revolutionary business models and bankruptcies was more noticeable. Despite having a low percentage of B2C commerce (Rasch and Lintner, 2001), e-grocery fulfils a regular consumer need and presents a high level of logistic complexity (Rajias and Tuunainen, 2001). This complexity turns this into one of the most challenging businesses to be converted to e-tailing (Rosen and Howard, 2000).

In order to enhance the value of the e-grocery analysis, historical events in two representative countries (the US and the UK) are presented. US relevance stems from the fact that it was the first nation to initiate this particular type of business, witnessing the most daring and publicised attempts to revolutionise the grocery sector. In comparison to the US, UK

importance comes from being the home of the first profitable e-grocer (Tesco.com) and the country with the highest market penetration at present. These two countries also have a long home shopping history, with the use of catalogues dating back to the 19th century. Evidence can be found in the history of famous retailers: Sears, Roebuck and Montgomery Ward, in the US, and Kays in the UK (Davies, 1976; Coopey et al., 1999).

The first e-grocery experiments emerged in the US with start-up ventures. E-grocery history officially started in the US in 1981 with a company named Grocery Express (Mendelson, 2001; Murphy, 2003a). However, this company is normally forgotten in most manuscripts, because it had a very limited range; operated upon private networks and had local coverage. Instead, Peapod, a start-up US firm that was founded in 1989 by brothers Andrew and Thomas Parkinson (Leng, 2001), is normally referred to as the first e-grocer in the world (Johnson et al., 2000; Leng, 2001; Hays et al., 2004). Peapod started selling groceries over the phone and later went online, being considered the first company to offer groceries over the Internet. After Peapod, many new names emerged in the sector during the 1990's: Webvan, Streamline, Urbanfetch, Kozmo and so on.

Unlike the US, the UK's initial e-grocery experiments were conducted by existing players. The only start-up found in the UK was FoodFerry, a small company serving the London area. Established traditional national multiples (Tesco, Asda, Sainsbury's and Waitrose) were the main entrants in the sector. Operators approached the online sector as a basic complementary channel to promote sales, attempting to capitalise on existing brand names and market expertise.

E-grocery and home delivery tends to be better accepted in the UK than in the US due to differences in offline shopping experiences. The UK and the US present different challenges for the grocery sector (Boyer and Frohlich, 2002). The UK is a smaller and more homogeneous market, characterised by higher average population densities and a lower number of grocers competing fiercely for market share. The level of sales per square feet is more than three times the figure in the US, generating a crowded and unpleasant sales environment that can reach "trolley rage"² levels. Home delivery in the UK is also more convenient for consumers and involves lower transportation costs for grocers. In the US, the scenario is basically the opposite, with low densities (population and shoppers) leading to an

² "Customers frustrated by crowded markets", Boyer and Frohlich (2002), page 2.

enjoyable shopping experience, based on car usage and the proliferation of malls. In this context, consumers do not regard home delivery as convenient and grocers face higher costs with transportation.

Strategic issues in US and UK history

As national e-grocery markets cannot be directly compared due to local specificity (Rajias and Tuunainen, 2001), I will attempt to draw some general conclusions from the observation of historical patterns during the period 1991-2006. These will cover revolution versus evolution in business models, market mismatch, financial constraints, entry barriers and hybrid models.

Evolution versus revolution in business models

A first important historical issue is the failure of the sector revolution. Early, daring online endeavours based on futuristic technology did not succeed. Based on optimistic expectations, specific US (Webvan, Peapod and Streamline) and UK (Asda and Sainsbury's) firms made early investments in expensive, dedicated online infrastructure. These investments assumed that online technology would allow supply to start a new retail revolution. Supply's leading role in past successful grocery experiences (self service and superstores) further increased the level of managerial confidence. However, these firms failed to lead a market revolution.

In the US, several examples can be found in which strategic mistakes led to bankruptcy. One of the most publicised start-up failures was Webvan. This firm was founded in 1996 with more than \$122 million in initial funding from well-known companies including Softbank, CBS and Knight Ridder; and Silicon Valley venture capitalists, including Benchmark Capital and Sequoia Capital (Leng, 2001). Due to a combination of high levels of automation/investment³ with poor marketing skills, it filed for bankruptcy in July 2001. Another significant case-study was Streamline, a pioneer company in the use of the 'lock-

³ "Headed by George Shaheen, former head of Anderson Consulting, the company lost \$1 billion in less than two years. Rather than starting off in a large city or two, it decided to open in 26 markets within three weeks. Each distribution center was to be 18 times the size of a typical supermarket and would cost \$35 million. Five miles of conveyors belts would bring products to the packers at each site, and refrigerated vans fitted with sophisticated global satellite positioning systems would allow each warehouse to serve a 50 mile radius.", (Todd Investment Advisors 2001, page 3).

box'⁴ to promote unattended delivery (Johnson et al., 2000). Despite being an important step towards delivery cost reduction, this logistic innovation did not prove to be profitable and, in December 2000, Streamline went bankrupt due to low market penetration (Junnarkar, 2000). Along with Streamline, one can also find other start-ups, such as: Urbanfetch (Sandoval, 2000), Homeruns (Bonanos, 2001), Kozmo (Gallo, 2001), Shoplink (Boston Internet, 2000), WebHouse Club (Murphy, 2003a), that did not succeed as online start-ups in the grocery business.

However, not only start-ups were affected by the failure of revolutionary approaches in the US. Despite taking the lead, start-ups were joined in the late 90's by established retailers. In 1999, traditional grocers also entered the e-grocery market adopting online dedicated strategies. Alberstons' launched Albertsons.com (Albertson's, 2002) and adopted a combination of store/fulfilment centre whereas K-Mart founded BlueLight.com in partnership with Softbank and Yahoo (Kmart, 2005). In 2000, these firms started facing financial difficulties and to had to redesign their operations.

In the UK, some operators also followed revolutionary risky approaches. In the early days of the sector, e-grocers were expecting fast turnover growth in the London area and decided to collect first-mover advantages via the use of revolutionary business models. On an exploratory mission, Sainsbury's, Waitrose and Asda made early attempts to invest in dedicated warehouses to assist London operations (Vaughan, 2001). However, forecasts did not materialise and divestment followed suit. Asda and Sainsbury's replaced their distribution centres with manual picking and packing in store (Murphy, 2003a; Kämäräinen, 2003). Risky strategies were non-profitable and were withdrawn, companies returning to basic hybrid models.

Market mismatch

The main reason for the failure of revolutionary e-grocery strategies in the UK and US was the mismatch between supply and demand. E-grocers hoped to rapidly accumulate turnover over the Internet, because they thought they were providing a new retailing solution that was supposedly more convenient to consumers. Their basic assumption was that enough

⁴ Refrigerated box with different compartments adapted to different food types and placed in the customer's garage or outside the house. The box was kept locked and could only be opened by the customer or the grocery

consumers would be willing to leave the in-store grocery shopping routine and pay more for the convenience of home delivery. However, that was not true.

The traditional grocery business model induced consumers into particular shopping routines with important learning effects. In supermarkets, consumers are offered low prices, but have to do their own shopping⁵, namely travelling, picking and packing, queuing and carrying. Even though, grocery shopping is regarded as a frequent and low involvement task (Broniarczyk et al., 1998), shoppers attempt to reduce risks and costs by taking advantage of earlier experiences (Hoyer, 1984) becoming loyal to particular routines. In this context, as consumers are attached to old shopping routines, they take time to perceive any added value from online grocery shopping. This situation caused a problem for companies with revolutionary strategies that were faced with either restructuring or bankruptcy.

This market (demand-supply) mismatch, despite being more visible in the grocery sector, was not unknown (Pandya and Dholakia, 2002) to other B2C sectors (E-Toys.com, Petstore.com, Boo.com (clothing)), including those selling digital goods (CDNow.com). According to Pandya and Dholakia (2002), market mismatch led essentially to failures "... of the "delusion" kind, where suppliers were enamored of the technology, but the customer thought she was buying regular products ... through a different service"⁶. This condition applied also to e-grocery where initial strategies from online firms imposed supply perceptions upon demand in a "pushing" rationale (Chaffey, 2004). This marketing myopia (Levitt, 1960) caused problems of excess expenditure and excess capacity.

In e-grocery, market mismatch became even more striking in the US than in the UK. Despite being the first nation to invest in e-grocery, the US did not manage to lead the development of new successful grocery retail solutions, as had occurred in the past with self-service or superstores. US start-ups adopted automated business models and rapid growth strategies, influenced by consulting companies (Andersen⁷, Forrester, Datamonitor). Back in the 1990's, these companies were releasing exponential sales forecasts for the sector. According to these, profitability was expected to be higher in the urban and wealthy areas of large towns: San

man. This box resulted in an extra cost for both customer and operator.

⁵ Traditional shoppers save the industry approximately 13 percent of the total cost of sales, according to Procter & Gamble (Tapscott and Ticoll, 2000).

⁶ Pandya and Dholakia (2002), page 9.

⁷ The Smart-Store, a research and development initiative at Andersen Consulting, previewed that Streamline net profit would be six times higher than in a traditional store.

Francisco, Los Angeles, Boston, Chicago, New York, New Jersey and Dallas (MyWebGrocer.com, 2001). However, that did not materialise into a significant sales volume.

Financial issues

Sector history was also highly conditioned by financial circumstances in the 1990's. Relying on an Internet stock rally and easy financial support from venture capitalists, the number of start-up companies rocketed between 1993 and 1999. Based on overestimated demand forecasts and sector hype (Ring and Tigert, 2001), firms continuously expanded their geographical coverage and invested in customised warehouses and high tech infrastructure. However, none of them delivered profitability until the year 2000. The 2000 tech bubble burst accentuated the need to reduce risks and avoid losses. According to Hays et al. (2004), "Just a few short years ago money seemed to be plentiful. Almost anyone with a good idea could obtain venture capital, start a business, and if it failed it was considered a "learning experience". Those days are gone. The rules of old business now apply to 21st century businesses, especially e-businesses."⁸ This change enhanced firms' financial problems and consequently many collapsed.

The financial problems were partly determined and aggravated by the low profit margins associated with groceries. In terms of product, groceries are a basic necessity to ensure survival (Palmer et al., 2000) and consist of normal to inferior perishable goods with plenty of substitutes (Peppers, 2001). They tend to have a high weight to value ratio and cannot be digitalized. Therefore, groceries require physical delivery. As groceries are regarded as normal to inferior goods and competition is high between grocers, prices tend to be relatively low offering slim profit margins (Palmer et al., 2000). For instance, in the US, between 1997 and 1998, profit margins averaged 1.03 percent of sales (Weir, 2000).

Entry barriers and hybrid business models

The evolution of e-grocery was also conditioned by the existence of significant entry barriers in the grocery sector. The existing business model, based on self-service superstores, has a historical cost advantage. 30 to 40 years in the market have allowed this model to capture

⁸ Hays et al. (2004), page 29.

substantial economies of scale and scope (Bucklin, 1972) as well as consumer loyalty. In most countries, the traditional grocery sector tends to be characterised by relevant levels of market concentration (oligopoly). In 2004, the grocery five firm concentration ratio in the EU-15 was approximately 50% (Office of Fair Trading, 2006), the UK being one of the leading countries. In 2005, the UK four major players (Tesco, Sainsbury's, Morrison's and Asda) concentrated 75% of national market share (Office of Fair Trading, 2006). In the US, although national concentration tends to be lower than in Europe (less than 30% for the 4 largest firms), local concentration is high (around the 75% mark) (Kaufman, 2000). Overall, this allows the traditional offline retail to deliver low prices and foster consumer loyalty with aggressive marketing campaigns. These aspects become an important barrier for new models, even when they are perceived as more cost efficient and effective.

In order to avoid entry barriers, new business models have to be nurtured by traditional ones in a hybrid and contingent approach. This pattern has been observed in the past implementation of successful business models in grocery retailing. Corner stores, large retailers, self-service and superstores coexisted with previous successful grocery business models before reaching break-even and becoming predominant (Jefferys, 1954; Jeremy, 1998). This strategy assimilated the importance of established models while helping new models to gradually increase turnover and improve logistics.

Nowadays, the same pattern may be applied to e-grocery models. Even though accepted as more cost effective than the traditional ones, these models involve high fixed costs and therefore, only become profitable with high turnover levels. Therefore, to promote their successful introduction and avoid high losses in the process, most companies are currently increasing their customer base and improving their logistics (B2B, supply-chain (Pandya and Dholakia, 2002) and inter-firm relationships (Jap, 2000)) through the adoption of a hybrid model.

The importance of hybrid models can be assessed both in the UK and in the US. Despite being the largest national market for e-groceries, the UK still does not allow for a successful implementation of an automated model. In the US, slow demand growth and the demise of revolutionary strategies forced online firms to redesign their market approach. In a context of uncertainty and slow growth, the contingent strategy emerged as a feasible solution to gradually amass sales and avoid substantial losses.

This approach was successfully followed by Tesco.com in the UK. Tesco.com uses existing infrastructure and adopted incremental initiatives in its online business. Tesco relies on manual in-store picking and packing to reduce initial investments and home delivery costs. As Tesco uses existing stores, no dedicated warehouses are needed, area coverage is increased and travelling distance to customers is reduced. Tesco's success, as number one e-grocer in the world, is probably due to the careful stepwise approach to this new market, using existing stores and other infrastructures (warehouses, transportation) to attract customers, before making high investments (Delaney-Klinger et al., 2003)

The success of Tesco.com did not go unnoticed by US firms. After the 2000 crisis, US firms also adopted a contingent approach. They took the following steps: alliances with traditional grocers, local coverage, store fulfilment and manual picking and packing. According to Gallo (2001), the best approach to e-grocery is a click and mortar (hybrid) model, which avoids cost surges and responds to a fragmented and dispersed US market that will “only support a few regional operators”⁹.

For certain start-ups, alliances with local or foreign traditional grocers were important. For instance, when financial difficulties struck Groceryworks in 2000, Safeway came to the rescue. Later, in 2001, Safeway established a partnership with Tesco.com. Groceryworks closed its DCs and adopted a store picking strategy that had already been proven successful in the UK (Hoyt, 2001). Another example comes from US number one, Peapod. This operator was close to bankruptcy in the early 2000s, being saved at the last minute by Royal Ahold (Johnson et al., 2000). Today, by becoming more of a “brick” and less of a “click”, and by capitalising on Ahold's brand name, market share and expertise, Peapod appears to be growing steadily.

The alliance strategy was not new to the sector in the US and had been in place with companies such as WhyRunOut and Netgrocer. WhyRunOut did not own any store or warehouse and used Stater Bros Markets to prepare shopping baskets (Bellantonio, 2001). Netgrocer only sold non-perishables and always used Fedex to deliver to customers (Johnson et al., 2000). These companies outsourced part of their operations to established firms,

⁹ Gallo (2001), page 5.

concentrating on their core business and reducing risks. This is probably one of the reasons they still prevail.

At the operational level, there were also significant changes. As high-tech dedicated warehouses and technology were not profitable, both companies in the UK and in the US decided to revert to hybrid strategies, namely the fulfilment of online orders in store and via manual picking and packing. In the US, Albertson's, K-Mart, Peapod and GroceryWorks redesigned their infrastructure to insert these changes. In the UK, Asda and Sainsbury's also replaced their distribution centres with manual picking and packing in store (Murphy, 2003a; Kämäräinen, 2003).

In terms of market coverage, local approaches and cautionary market expansion became important strategies. Both in the US and the UK, rapid growth strategies were replaced with specific local market targeting. In the US, SimonDelivers kept a local coverage (Twin Cities – Minneapolis/St. Paul) and relied on a dedicated warehouse that used manual picking and packing.

The success of hybrid models?

At present, the success of hybrid models can be assessed in both countries. These models were the first to lead to profitability in the sector.

The first evidence of profitability emerged in the UK with Tesco.com. Tesco followed the basic hybrid model. This company entered the market as Tesco Direct, operating its online service in an exploratory style and under the same brand name as its supermarket operations for two years (1996-1998). Only in 1998 was Tesco.com created to individualise and promote this particular type of business.

Even though Tesco had announced operational profit in its online business as early as 1999, it was in 2001 that Tesco.com¹⁰ made its first public and credible announcement of break-even, reporting a profit of £400,000 (Lake, 2003). Since then, profit and sales have been rising consistently. In 2002, profit reached £12.2 million (Lake, 2003), increasing to £28 million in

2003 (not including US and Korean losses), £36 million in 2004 and £56.2 million in 2005 (Tesco PLC, 2006). In April 2006, Tesco PLC (2006) reported 750,000 regular customers and 200,000 orders a week.

After 2004, profitability and growth have also characterised the performance of most US companies. At the national level, Peapod and Albertsons' have been increasing geographical coverage. Based on the first signs of operational profitability¹¹, Peapod introduced its service in five new areas during 2004. Also in 2004, Albertson's expanded its coverage to 12 major metropolitan areas. At the local level, start-up players that rely on manual picking and packing from dedicated warehouses are announcing profitability. In 2004, FreshDirect announced profitability (Supermarketnews, 2006) and in 2005 expanded to New Jersey. SimonDelivers also announced profitability in the second quarter of 2005 (Minneapolis/St. Paul Business Journal, 2005).

Despite the announced success of hybrid models, there are suspicions of cannibalisation between online and offline businesses. For instance, Tesco's performance is still rather unique and seems to raise suspicions about its true nature. Despite positive future prospects for Sainsbury's To You (Lake, 2003) and Ocado (ThisIsMoney.co.uk, 2005), no other UK operators have yet reached break-even. In this context, there are some pessimistic views regarding the success of the main UK operator. "Tesco claims they make money online" comments Booz, Allen & Hamilton partner Tim Laseter (Patsuris, 2001), "but what they won't say is how much online business is cannibalising its stores. My gut tells me they are not incrementally profitable. My gut tells me online profit margins are smaller than that of the traditional business."¹²

On the positive side, there are reasons to believe in sector potential to increase revenue ahead of costs (create value). There seems to be more than a simple transfer of customers from a traditional into an electronic network within the same brand. Based on UK offline data (Ferreira, 2004), online grocery customers spend more on average (35% on a monthly basis) and the cannibalisation rate of e-grocers is approximately 56.1%, increasing to 63.9% for

¹⁰ Quoting from Hoyt (2001), page5, "by early 2001, Tesco.com had 1 million registered customers, and it reached 90 percent of the UK population through 300 stores. The company made 70,000 deliveries per week, at an average order size of £85 (\$119)."

¹¹ Currently rated as the second e-grocer in the world, Peapod operations are profitable in 4 out of 5 markets and the company has achieved an annual growth rate of 35 per cent, according to Van Gelder – President and CEO of Peapod (Punakivi, 2003).

regular e-grocery shoppers. The latter complies with Tesco's claim that one third of its online shoppers had never shopped in their physical stores (Hoyt, 2001).

Furthermore, these figures can still be considered as an underestimate of the potential of the online business. The online presence of e-grocers can also support offline sales by improving the promotion, visibility and image of brand. If the grocer has a quality online service, this can bring positive externalities to the brand name either online and offline. This means that e-grocers can create value by increasing average consumer expenditure (online and offline) and by taking market share from competitors.

Finally, the success of hybrid models does not imply that the revolutionary approach has completely subsided. In the UK, there seems to be evidence that revolutionary strategies have not been entirely abandoned and may come true in a near future. In 2002, Ocado, in partnership with Waitrose, decided to launch an e-grocery service using a model of home delivery based on automated, dedicated distribution centres. Additionally, Tesco seems to be taking the first step towards the adoption of a dedicated automated model. Tesco has opened a new concept store dedicated only to online customers: the Croydon superstore. According to Whitehead (2006), it is a "...response to exceptional demand for online shopping in the South East of London"¹³.

Conclusions

Evolution seems to be the best word to describe the dynamics of the e-grocery sector in the past 10 years in the US and UK. Therefore, Boschma and Weltevreden (2004) views are confirmed by the history of the sector. The main evidence can be summarised in three aspects. First, E-grocery start-ups (Webvan, Streamline) that adopted revolutionary strategies have disappeared in most cases after an initial crisis. Second, the most successful firms in e-grocery have been the ones that evolved from traditional to online retailing through the use of hybrid business models (Tesco.com). Third, most investments aimed at complementing existing stores and chains, e-grocery representing approximately 1% of grocery sales in the UK (@Your Home, 2001; Finch, 2001).

¹² Quoted by Patsuris (2001), page 2.

¹³ Whitehead (2006), page 1.

Uncertainty in online demand behaviour, financial constraints, product nature and barriers to entry were responsible for the adoption of contingent strategies. B2C firms are facing a new retail environment where consumer perceptions are different from initial expectations. This creates a complex challenge for managers. In order to face this challenge, E-grocery history has shown that contingent exploratory strategies (Siggelkow and Levinthal, 2003) that focus on demand and use existing infrastructure are more adapted to the actual market conditions. High-risk investments, revolutionary approaches and traditional managerial techniques did not succeed. Instead, firms with dynamic boundaries that promoted the incremental integration (alliances, local coverage) of new technologies with existing competences (Afuah, 2001; Afuah and Tucci, 2002) proved to be more successful.

A main topic for further research will be to assess whether the automated model will ever break-even and in what circumstances. On one side, the evidence from e-grocery history is that only the hybrid model reached profitability. The effects of the Internet on many industries seemed to have entered into a growth/transitional stage in its life-cycle (Afuah and Tucci, 2002). Therefore, there is still high uncertainty on whether the e-grocery market will grow enough to justify the introduction of automation.

On another side, some authors have no doubts that the fully automated model will break-even, the question is just how long it will take to do it. The nurturing strategy may produce positive results in 20 to 30 years after business model introduction (5 to 10 years from now). An encouraging sign is that dedicated warehouse strategies are already profitable at the local level (US) or in small countries (Switzerland). Tesco is also making its first investments on online dedicated stores. As the retail system tends to be a product of the level of development of a society (Bucklin, 1972), Yrjola (2003) believes that the generational change underway (offline to online consumers) will be an important factor to help the automated model break-even.

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