The UK grocery business: towards a sustainable model for virtual markets

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Abstract

Purpose – With the emergence of enabling internet technologies and increased competition between UK supermarkets has led the "big four" – Tesco, J Sainsbury, ASDA and Safeway/Morrisons – to develop grocery operations online. The objective of this paper is to evaluate and present best practice strategies employed by major retail organisations concerning these deployments. The paper argues that Tesco's superior performance can be identified through five critical factors. However, continued success using existing models and thinking is problematic and that future advantages will rely on taking a complex adaptive systems view of the deployment of E-Grocery systems.

Design/methodology/approach – The methodology employed is a conceptual synthesis of current knowledge, based on theoretical constructs and empirical observations.

Findings – There is evidence of varying degrees of progress and lessons learnt, from adopting strategies and internet technologies, with new ways of conceptualizing and managing virtual retail operations. The research challenges existing thinking and makes sense of the plexus between this technology and the market place.

Originality/value – The essential contribution of the paper is the identification of five key elements for online retail success and the development of a proposed "online sustainability" model which is perceived to offer contemporary insights into competitive virtual environments.

Keywords Internet shopping, Supermarkets, Retailing, United Kingdom

Paper type Research paper

Introduction

Intense rivalry between UK supermarkets has led the major retail groups in the UK to expand their product categories and extend their retail formats in an effort to exploit new sales opportunities. One area that has attracted subsequent investment is online groceries. Indeed the internet is now seen as an additional channel for branding, transactions and customer relationship management (Hackney *et al.*, 2005; Hackney and Burn, 2004; Ranchhod *et al.*, 2004).

The purpose of this research is to evaluate and present best practice strategies employed by major retail organisations concerning their internet deployments. The paper argues that Tesco's superior performance in this respect may be acknowledged through identifying five critical factors. It also suggests that in order to remain successful retail groups, such as Tesco, need to move and reconfigure their current

The authors would like to thank Brian Smith and the two anonymous reviewers and the editors of the special edition for their insights, observations and constructive recommendations regarding the manuscript.

International Journal of Retail & Distribution Management
Vol. 34 No. 4/5, 2006
pp. 354-368

0959-0552
DOI 10.1108/09590550610660279

virtual grocery business models towards a more contemporary approach, i.e. the "future is present today" (Mead, 1934). Furthermore, the paper proposes that to enable the sustainability of a virtual grocery model requires a shift towards a more complex adaptive systems (CAS) view of how retail groups should re-conceptualise and engage with the processes that will enhance their current online efforts (Hackney *et al.*, 2003).

IGD (2004) reported that the UK online grocery market was worth between £900 million and £1 billion in 2003, with significant growth predicted for the future, due to retailers being able to reduce their transaction costs, increase the speed and quality of consumer interactions and the increase of their existing markets and consumer base (Turban and King, 2003). Among the largest UK grocery retailers, Tesco, ASDA/Walmart, Sainsbury and Waitrose all now operate online retail facilities. There are many challenges faced by retailers when setting up virtual retail operations. This can be illustrated by Safeway, which withdrew after an early unsuccessful experience before their takeover by Morrisons in 2004. One of the major problems encountered is deciding how to physically organise their online retail operations, specifically whether to supply customers from centrally-located warehouses or from existing stores. One common thread that runs throughout the deployments in online grocery is the reliance on internet technology to enable and sustain competitive advantage. Many see technology as the key to gaining and sustaining competitive advantage, rather than looking at the technology as a support mechanism to support and facilitate the real value adding processes that of, encouraging and supporting the interaction between consumers and the retail outlet.

Of the four leading UK supermarket operators, Tesco has proved to be the most successful in implementing its internet strategy, with Tesco.com achieving online sales of £577 million and profits of £12 million during 2003/04 (New Media Age, 2004). It is important to note of course that this profit has been achieved after sustaining high start-up costs. Tesco's online success is especially significant because it has been achieved initially using a store-based operating model, as opposed to the warehouse-based model, which was the perceived wisdom of the time.

The literature surrounding online grocery development tends to focus on the notion that the internet is a powerful enabling technology (Porter, 2001). This is predominately a classical systems view of online grocery originating from a dominant technological perspective. The classical systems perspective suggests that current E-Grocery models, used to achieve commercial success, are firmly rooted in application of the technology to achieve a first mover advantage. Subsequently, constant technological innovation is required to sustain a competitive advantage. Much of the literature to date (Porter, 2001; Amit and Zott, 2001; Turban and King, 2003) has at its ideological base the concept that firms think they can function externally and independently to the system (environment) that they operate in, but in reality they are very much a part of the system. Furthermore, the literature suggests that retail firms can control the use of, and predict the value of deploying technology. In this regard, it is their perceived ability to influence and to control the technology, which is perhaps the key feature to their internet strategies. Indeed, extending this thinking, the internet and its business usage tends to be viewed as a system residing above the individuals who form it (Stacey, 2005). This view of the internet and of online grocery is flawed, when a CAS view is taken. This approach would suggest that if retailers are to continue encouraging growth in online groceries, they need to move

thinking away from the dominate technology perspective towards conceptualizing the internet as a tool that supports and encourages social interactions between agents and objects, i.e. a CAS view.

The CAS view focuses and argues for the complexity of the interactions that happen at any given point, between any given agent in the system, which cannot be controlled, predicted and managed under the classic systems perspective. Any gestures or steps the retail group makes may not be seen, heard, understood or even acted upon, given the nature of the dynamics between the retail group, the suppliers and the consumers. The CAS approach, argues for seeing technology as a social object, as well as a physical object (Stacey, 2005). Indeed, prior to thinking and applying technology as a social object, the physical object has to already operate with a degree of sophistication. Furthermore, applying technology as a social object allows the firm to concentrate on and support local interactions between consumers and themselves. Evans and Wurster (1997) note this issue with their concept of reach, richness and affiliation, and that the relationships with suppliers, brand identity, customer and employee loyalty and switching costs depends on information quality not the technology employed. They make explicit their ideological view that does allow retail groups to separate the economics of information from the economics of physical entities. The research in this paper augments this perspective that it is the interactions and interrelationships within the market, which the technology supports, between the consumer, the company and their suppliers that is the key to online sustainability.

The "Big Four" internet strategies in the UK

In 2004, the estimated value of the UK grocery market was €171 billion (IGD, 2004). The UK grocery industry is notable for its maturity and concentration, with the four biggest retailers controlling 73.4 per cent of the market (TNS, Super panel, 2004). The sales, profit and market shares of the "big four" supermarkets (Tesco, J. Sainsbury, ASDA and Morrisons/Safeway) are illustrated in Table I where Tesco have a market share considerably larger than any of its competitors.

During the past decade, the UK grocery retail industry has become increasingly competitive in tandem with the consolidation of market share into the hands of the "big four" operators. Consolidation has been a consequence not only of organic growth, but also by a flurry of corporate activity. In 1999, the American Wal-Mart group acquired ASDA, committing the UK Company to an aggressive retail strategy, while Morrisons' acquisition of Safeway in 2004 signaled the emergence of a new national player. Meanwhile, Tesco and Sainsbury have both embarked on expansion strategies, each acquiring smaller convenience store operators as they seek to dominate this growing market (IGD, 2004).

Company	Sales (£m)[a]	Profit (£m)[b]	UK Stores[c]	Market Share[d] (in percentages)
Tesco	30,814	1,831	1,878	26.6
J. Sainsbury	17,141	735	583	16.3
ASDA[2]	13,800	701	265	16.7
Morrisons	13,169	683	661	14.5

Notes: [a]Sales and Profit figures from IGD (2004); [b]ASDA Sales and Profit estimates, not quoted in Walmart Annual Reports; [c]Store numbers from IGD (2004) does not include non-food only stores; [d]Market Share information 12 weeks ending 4 January 2005 (IGD, 2004)

Table I.
UK "big four" grocery retailers – sales, profit, stores and market shares (2003-2004)

Consolidation is regarded as a driver for price competition in the UK grocery market, as economies of scale and efficient distribution allow aggressive pricing strategies based on the supply of petrol in the UK (Office of Fair Trading, 1998). This is evidenced by the strategies of the major retailers, which all place "value" equations at the core of their respective competitive strategies (IGD, 2004). Complimenting their drive for market share, each of these companies have developed more sophisticated customer segmentation and communication strategies, diversified their offer beyond traditional food products and sought new retail channels such as the internet (Dales and Meagher, 2002; Chiang *et al.*, 2003; IGD, 2004). As part of this multi-channel strategy and in recognition of the opportunities presented by the internet, Tesco, Sainsbury and ASDA have all launched consumer online shopping opportunities. IGD (2004) reports that 5.6 per cent of the UK population has used an online facility for grocery shopping, with access to the medium growing as technology advances. However, with the collapse of the dot com bubble in the late-1990s, questions were raised about the added value that the internet brought to business and how these technologies could be used competitively. An examination of these failed dot com companies suggests that their failure was the result of their not understanding the medium and the market palace, rather than any inherent flaws in the technology of the internet. Many of these dot com companies attempted to be created from nothing, rather than having "bricks and mortar" business knowledge, realistic expectations and experience, to build from, i.e. knowing what was already being done. Indeed, these lessons appear to have been learnt as it is now recognized that technology does not change consumption, it changes the interaction between the organisation and the consumer (Kalyanam and McIntyre, 2002). Gratzer and Wimiwarter (2003) suggest the essential factor to achieve a competitive advantage is the ability of the firm to create or capture value.

Although the internet has became a popular retail channel during the 1990s (initially for travel and entertainment tickets), it was often surmised that consumers would be reluctant to buy fresh food products without being able to see them. UK supermarket retailers were able to overcome this obstacle by mobilizing their brand through innovative online operations (IGD, 2004), which illustrated the interactions element that is needed in obtaining and keeping business value through technology adoption. Consumer confidence in supermarkets' brands, combined with the convenience of internet retailing (Morganosky and Cude, 2000; Keh and Shieh, 2001; Delaney-Klinger *et al.*, 2003) has meant that the UK has emerged as one of the fastest growing markets for online grocery retailing globally (Dales and Meagher, 2002; Delaney-Klinger *et al.*, 2003; IGD, 2004). Ring and Tigert (2001) suggest that success in the UK has been facilitated by three significant factors. First, net margins of 5 per cent to 6 per cent in the UK are much higher than the 1 per cent to 2 per cent margins earned in the US, although, increasing competition based on price points in the UK may reduce margins. Second, the concentration of the population in the UK enables retailers to make more deliveries per hour. Ultimately, the concentration of retailers in the UK makes it easier to promote the service using alternative national media (newspapers, TV, etc.).

As noted, a few companies dominate the UK market (Gregory, 2002) – Tesco, ASDA, Sainsbury and Safeway (before its takeover by Morrisons). Of the four, only Safeway has withdrawn from its online grocery presence. It closed its "Collect and Go" service in November 2001, retaining an enhanced information-only web site.

The company claimed that this would allow it to concentrate on product ranges and customer services (Key Note, 2002). While Sainsbury's online operation took longer to roll-out and suffered significant initial losses (Goodley, 2002; IGD, 2004), it has grown by 19 per cent year on year and broke even in March 2004 (IGD, 2004). ASDA's online operations were revised in 2002, allowing much wider market coverage, while it also offered shopping via digital television, perhaps in an attempt to provide a channel to accommodate non-computer users, such as the "silver surfers" referring to the more mature consumer. Neither ASDA nor Sainsbury disclose specific financial details about their online operations, consolidating online performance within their mainstream business. Nevertheless, Tesco has so far proved to be the most successful e-grocer.

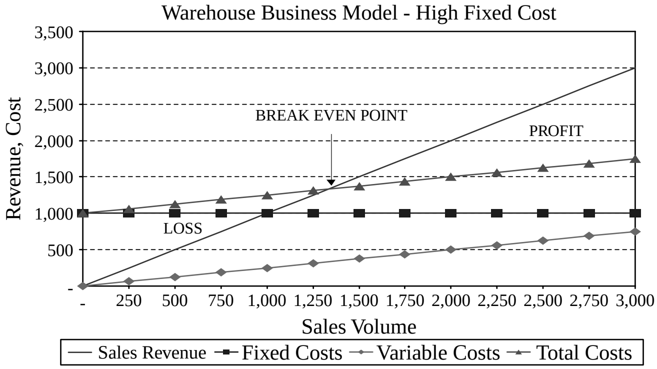
Outside of the "big four", Waitrose and Iceland also offer successful internet grocery services, but on a limited scale. The Waitrose service operates under a number of web identities. Waitrose.com offers an order and delivery service from 33 non-London stores, while the flagship Ocado.com service is gradually being rolled-out from Central London. Ocado.com is a joint venture between John Lewis Partnership (Waitrose's owner) and Goldman Sachs, and is significant for its success despite using a warehouse-based model. Ocado.com has estimated sales of £135 million, with Waitrose.com's £15 million bringing Waitrose's estimated online sales total to £150 million, a much larger share of the online market than their parent company's share of the overall market (*Financial Times*, 2004). The final significant UK online grocery service was that provided by Iceland. The frozen food specialist was a pioneer in home shopping for groceries in the UK, introducing a telephone ordering system in 1998, with a full internet service launched in 1999 using the store-based delivery model. Commercial results of the service are not specified by Iceland, however, in April 2005, Iceland, withdrew its online grocery and grocery telephone shopping systems, due to these services making a financial loss, and for not emulating the success of Tesco.com. Nonetheless, Iceland is still offering an online presence via its online shopping of household appliances to and for consumers.

Factors underlying Tesco's success

An analysis of the UK online grocery market highlights five factors that have been critical to Tesco's success – profit model focus; smart mover entry; leveraging "reach", "richness" and "affiliation" (Evans and Wurster, 1997); strategic positioning (Mintzberg and Waters, 1985; Hamel, 1997); and brand power.

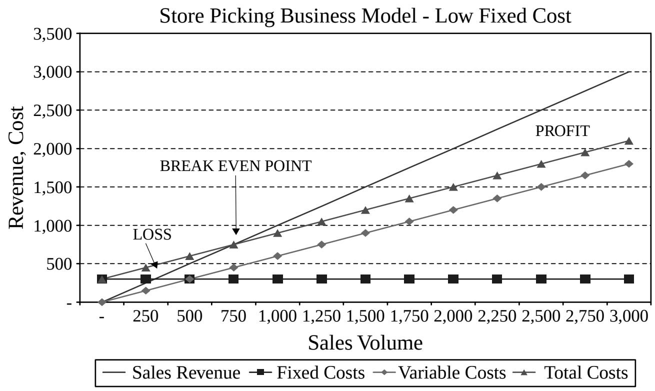
Profit model focus

Silverstein *et al.* (2001) observe that many online retailers fail to focus on the fundamentals – revenue, cost and profit. Business models that are "dead on arrival" generally suffer from two fundamental flaws. First, the business has completely misread the customer. Second, the economics of the business does not stand up to close scrutiny (Hamel, 2001). If the level of uncertainty is high it makes sense to approach the market cautiously. Courtney *et al.* (1997) believe that managers should match different strategic decision tools to different levels of environmental uncertainty. The dilemma faced by Sainsbury, ASDA and Tesco is shown in Figures 1 and 2. Relative to warehouse models, store models achieve break-even earlier, incur lower losses before break-even but are less profitable beyond this point. Store picking makes sense at



Source: Adapted from Davis (2002)

Figure 1.
Warehouse business model – meta analysis approach to the big four's corporate accounts



Source: Adapted from Davis (2002)

Figure 2.
Store picking business model – meta analysis approach to the big four's corporate accounts

lower sales volumes. Relative to store-based models, warehouse models reach break-even later, incur higher losses before break-even but are more profitable beyond this point. Warehouse models have greater advantages at high volumes. This is because warehouses require high fixed cost investment but incur lower variable costs as they are operationally more efficient. Conversely, store models require lower up-front investment but incur higher variable costs because they are less operationally efficient. Tesco recognised that demand forecasts were uncertain. Consequently, they approached the market with a low cost and low risk business model. Unfortunately, Sainsbury and ASDA made the mistake of investing in warehouse infrastructure based on sales volume forecasts that significantly overestimated the level of demand as they did not take steps to engage in valid consumer relationships.

Smart mover entry

Evans and Wurster (1999) are also supportive of the "land-grab" mentality that influenced many internet pioneers, which is based on the notion of first mover advantage. The success of Tesco relative to Sainsbury and ASDA in the online grocery

market is less to do with being the first mover; its success can be attributed more to being the smartest mover in the market (Rangan and Adner, 2001; Hamel, 2001). Hamel (2001, p. 195) argues that the goal is not to be either a first mover or fast follower; the objective is to be "first to put together the precise combination of features, value and sound business economics that unlocks a profitable new market". The first point to consider is entry timing. If the potential new market is characterised by such factors as technical hurdles; the requirement for new infrastructure; competing standards; the requirement for customers to learn new skills; and powerful competitors, it makes sense not to invest too heavily too soon. In such an environment the market will take time to develop. In this respect, it was prudent for Tesco to develop its business incrementally.

The second point to consider is the cost of market share. It is critical to roll-out the business model and pursue market share at low cost and at the expense of competitors. This can only be achieved if, firstly, the business model offers unique and innovative features and, secondly, competitors are unable to forcibly respond. Tesco was able to roll-out its proprietary model quickly, achieve market share and reap customer loyalty of 93.9 per cent (Gregory, 2002). The warehouse approach adopted by Sainsbury and ASDA could only be rolled-out efficiently once critical mass had been achieved. The failure of their model slowed their rate of expansion and presented Tesco with the opportunity to serve Sainsbury and ASDA's UK customer base online. Indeed, analysts estimate that as much as 40 per cent of Tesco's new business has been poached from its competitors (Davis, 2002). Sainsbury and ASDA avoided head on competition with Tesco nationwide because to do so would have required enormous investment in depots fated to operate below break-even, thereby compounding losses. This provided Tesco with the opportunity to acquire market share cheaply.

Leveraging "reach", "richness" and "affiliation"

Evans and Wurster (2000) additionally note that the separation of information and physical product, which results from operating in the online grocery market, does not result in the release of significant economic value. They conclude that online grocery does not offer companies substantial advantages to exploit reach, richness and affiliation. As a consequence, they argue that this service will only be demanded by a limited percentage of the population, namely the wealthy and time poor. However, Evans and Wurster (2000) appear to have overlooked that online grocers are perhaps in an even better position than most to exploit these factors by expanding their product categories beyond the bounds of their traditional industry.

In online grocery, Tesco has exploited reach, richness and affiliation to a greater extent than its competitors. It has overcome the reservations expressed by Evans and Wurster (2000) by extending the boundaries of its product offer beyond traditional grocery. This has released greater economic value in doing so. Tesco has very skillfully extended reach. Their service offers 40,000 lines to 95 per cent of the population. In contrast, ASDA has only managed to offer 11,000 lines to 35 per cent of the population (Gregory, 2002). Sainsbury have been more successful in this regard than ASDA, currently offering 30,000 product lines to around 74 per cent of the population, based on the classical warehouse model. Willocks and Plant (2001) report that Tesco.com offers a growing range of non-food items as well as financial services through Tesco Personal Finance. Tesco have also extended their reach internationally. They are

partnering Safeway Inc. in the US through its online grocery channel Grocery Works (Griffith, 2002). In addition, Tesco has launched online shopping in Ireland and South Korea. In the long term they plan to launch even more online services internationally.

The Grocer (2001) reports that Tesco's partnership with the new women's online portal iVillage.co.uk has been a great success. The portal offers information-rich content – health and beauty, fitness and nutrition, expert advice, price comparisons and community services. It is the leading women's site in the UK with 340,000 hits each month. As well as allowing Tesco to "reach" and have a relationship with a target audience, iVillage also provides "rich" content and promotes "affiliation" with customers. In addition, Tesco has developed its loyalty Clubcard online and provides a variety of rich content on its web site. In contrast, the ASDA web site is fairly basic, with very little in the way of rich content. The Sainsbury web site is more advanced than ASDA's, offering customers wine, music, games and video as well as access to Sainsbury's Bank. Tesco has extended its reach further by venturing into the interactive digital television (iDTV) market. The new Tesco Access service allows customers without a PC to shop at the Tesco web site by renting a set-top box that plugs into their television set (Gannaway, 2001). ASDA have also entered the iDTV market with the launch of its service on Sky Active – the interactive TV service from Sky Digital, which illustrates the concept of reach.

Strategic positioning

Porter (2001) recognises that in most sectors the introduction of the internet has had the effect of reducing industry attractiveness. He argues that the pursuit of operational effectiveness can provide only temporary respite from competitive pressures. The combined effect of best practice competition and the openness of internet technologies lead firms towards competitive convergence. In this environment, sustainable competitive advantage will only be achieved through a process view of activities. The evidence from Tesco suggests that they developed their strategy after several years of experimentation, in line with Mintzberg and Waters' (1985) concept of an "emergent strategy", due to the unpredictable nature of the internet and the market place. Consequently, mechanistic theories, described above, clearly do not resolve the problem (Hackney *et al.*, 2004). CAS, suggest that the internet and the market place are unstable, that turbulence is normal and paradox become the norm. Tesco's store-pick operation developed slowly in the first two years of operation and was only rolled-out after the company had developed a working model that it could operate at an acceptable cost.

Gannaway (2000) observes that Tesco enjoys a competitive advantage because it has developed proprietary knowledge and systems that are unavailable anywhere else. Browett, Tesco's CEO, believes that Tesco.com have achieved sustainable performance by developing a unique and highly integrated value chain of activities (Reinhardt, 2001). In contrast, ASDA's online service has been plagued by technical and cost control problems. The high fixed costs of operating depots combined with low sales volumes have, according to Lyons (2002) generated massive losses and set back the company's expansion plans. Like ASDA, Sainsbury have yet to deliver a profitable operating model. The company reported operating losses of £50 million in the year ended 31 March 2002 and does not expect to reach profitability for a number of years.

Brand power

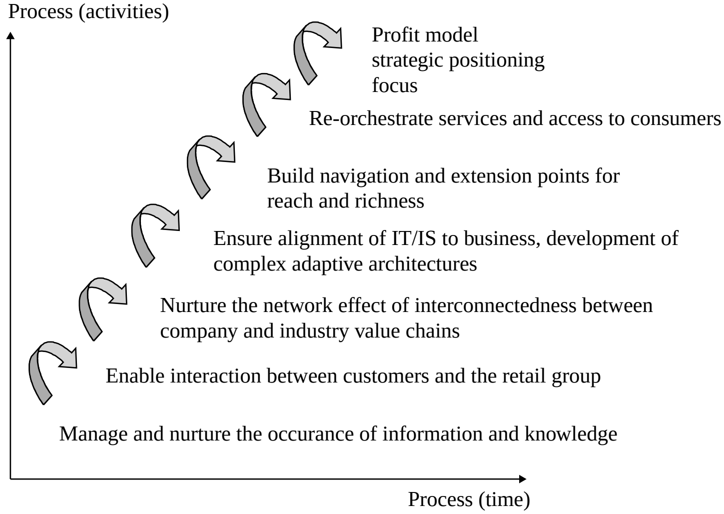
Tesco already represented a well known and trusted brand, with a diversity of loyal customers (Evans, 1999; Rowley, 2003). Its successful diversification of its brand into foreign markets, non-food retailing and financial services and its multiplicity of store formats and own-brand product ranges indicate that its reputation would be equally transferable to the internet (Fernie and Pierrel, 1996; Rowley, 2003; White and Daniel, 2004). As well as lending consumer confidence to Tesco.com, the parent company's financial health meant that considerable start-up costs and initial loses could be covered without resorting to external finance as the US companies were obliged to pursue (Tesco, 2004).

Sustainability of the Tesco model

The analysis so far has demonstrated that Tesco have been the most successful operator in the UK online grocery sector to date. The strategic decision by both Sainsbury and ASDA to develop a warehouse operation, unlike Tesco, was influenced by the perceived wisdom at the time, which looked at the internet as a substantive "entity" and stressed that distribution hubs were the key to success for online grocery operations. This substantive systems' view was portrayed as being more efficient and a superior alternative to a store-based operations adopted by Tesco. Both Sainsbury and ASDA could only match Tesco's roll-out if they were prepared to invest millions on warehouses around the UK. As neither company's existing operations are making a significant profit, it would have been highly problematic to justify the financial investment by following Tesco nationwide. As a consequence, Tesco was able to increase market share cheaply since they did not face any significant competition during roll-out. It could be readily assumed that this initiative was made possible exclusively as a consequence of Tesco's unique and considerable size which clearly generates scale economy advantages. However, once the advantage had been secured attention needs to be focused on sustaining the advantage in terms of the relationships and communication channels that have emerged between Tesco, their customers and other stakeholders. Tesco's success can be explained as being unpredictable which is an element of non linear interaction.

The theory of CAS helps to explore thinking about the social situation and local interactions of consumers and the firm, rather than focusing solely on applications, especially technology-based business solutions (Johannessen and Stacey, 2005). Indeed, CAS suggest, in this case, Tesco's utilization of a store-based delivery model for online groceries is possible, once a sufficient level of sophistication has been achieved. However, in the longer term, the technological solutions are not enough, and greater attention is needed for the social aspects of technology and consumer interactions. Indeed, for future business success, retail outlets, such as Tesco, should not seek to adapt to the environment (as prescribed by the existing literature), but they should proactively help to create and sustain their own environment (Stacey, 1996).

Figure 3 shows a contemporary approach to re-conceptualise how grocery firms can view their online operations. It suggests that they move away from the existing dominate systems view of online grocery operations towards a more process, CAS perspective. This focuses on the interactions at a local level of consumers and the online presence, which can be seen as being the key to sustainable advantage. This success stems from encouraging interactions, interrelationships, dialogue, paradoxes



Source: Adapted from Davis (2002)

Figure 3.
Online sustainability model

and inconsistencies, rather than from developing an explicit command and control vision or strategic plan.

The thinking underpinning a CAS model reveals that we can never know everything about a system, in this case, how successful or not online grocery ventures will be in the future. What is clear is that trying to control what happens is an illusion (Stacey, 2005) and any attempts to assess the impact of CAS (such as organisations and markets) have is complex as they continually adapt and evolve to create the environment. This suggests that the key to understanding and developing future online presence is not at the macro, control and planning level but more at the messo and micro levels of consumer interactions and motivations.

Any CAS has three parts; the set of considerations, the network defining the linkages between all elements (in this case, the firm and the consumer) and the set of outcomes or consequences of the process. Taking a process view allows retailers such as Tesco, to pay particular attention to local communications and patterns of behaviour, and to focus on the present, rather than "just" the future (Mead, 1934). Therefore, Figure 3 attempts to show a conceptual foundation with the Y axis representing the processes needed to achieve local (consumer) interactions and communications with the retail firm, in order to help establish patterns of behaviour, with differing levels of interaction developing as one moves along the axis. The X axis represents a time line to developing interactions between and with local objects and agents, such as consumers, etc. The process activities should be seen as being cyclical and evolutionary in nature, thinking and action, but interconnected spiralling upwards.

The elements of the Figure 3 are described below.

Manage and nurture the occurrence of information and knowledge

This involves thinking and actively separating information about how to make the process work, from information about the actual retail product line. Having them

separated allows for deeper thinking as to develop idea, systems, procedures, activities connected with allowing "richness" (meaning a large amount of product and personal information being sharable between local consumers and the local retail shop) to emerge, i.e. more local consumers (agents) interacting with each other and with the retail company using the technology as a transportation system to allow the interaction of sharing and dialogue to occur between the agents and objects.

Enable interaction between customers and the retail group

This is concerned with creating processes that allow these objects and agents to collide and interact. The actual interactions cannot be forced or be manufactured but retail outlets need to develop courses of action to allow for interactions to occur, such as in E-Grocery chat rooms, virtual E-Grocery shopping arcades, online interactive intelligent agents and avatars, stories of and on shopping from stakeholders and online shopping clubs, etc.

Nurture the network effect of interconnectness between company and industry value chain

These are the process needed to help bring about emergent properties of a strong consumer orientated and enacted value chains, where participation, collaboration, openness, trust and a genuine desire to see all agents/objects gain from a mutual understanding and involvement together, rather than the traditional business doctrine of them and us.

Ensure alignment of IT/IS to business, with the development of complex adaptive architectures

The emergent property of the technology alignment within the business is to ensure the right balance between standardisation and innovation. This balance cannot be maintained by explicit directives but will have to be enacted by means of balancing and sense making. The level can only be determined as a dynamic equilibrium of counteracting forces, as paradox and having anxiety will be the norm (Rescher, 2001). Strategic internet technological development within a business requires attention be given to organisational deviants, eccentrics and subversives (Rescher, 2001).

Build navigation and extension points for reach and richness

Reach refers to the number of people who share particular information, with *Richness* ("Rich") being a more complex concept combining: bandwidth, customisation, interactivity, reliability, security and currency. However, in this setting *richness*, may end up creating and supporting a sea of information, the consumer does not know is there, nor do they know how to get there and why they need to go there. It is difficult to get interaction on products, consumer needs, etc. when one party is lost at sea. Therefore, navigation aids are essential, as the consumer needs help finding what they are looking for before they can fully engage with others and the retail firm. Navigators can be software, or extension points such as consumer reports, or search engines such as (Tesco's TIE, Google, etc.). However, Navigators can also be people. Indeed, Evans and Wurster (2000) report private-sector information businesses acting as Navigators are driving fundamental power shifts among the other players which will help consumer to find and travel their way through the sea of information and data.

Re-orchestrate services and access to consumers

This is concerned with conceptualising the phenomenon of online grocery as a verb rather than as a noun (as often portrayed in the literature). Viewing the interaction as a process rather than an entity will encourage the reconceptualisation of the relationship between the consumer and the retail group. This verb/action/process view allows agents/objects to engage in an active and transient process of relating (Stacey, 2001) to and with one another. This suggests that online retailers need to redevelop web sites, the communicational channels and the way of thinking about agent/objects, as the active process. This clearly lies at the heart of the sustainable growth model. This is due to the fact that the focus needs to shift from the entity, i.e. the technology or the consumer, but towards capitalising on the plexus between them.

Profit model, strategic position focus

This is concerned with iteration as once you think you are there you need to start the whole process all over again and find new ways of encouraging and supporting interactions and interrelationships surrounding online grocery facilities.

Overall, grocers need to challenge traditional attitudes towards economics and management theory, to concentrate on the "patterns of activity" via wave functions, events and interactions, that CAS offers as an opportunity to sustain a competitive advantage. Grocers should encourage local objects/consumers to interact supported by the technology, their unique needs, cultural expressions, tastes and fashions, rather than trying to develop prescriptive national/global sets of systems.

Conclusion

Intense rivalry in traditional markets has led three of the "big four" UK supermarket groups – Tesco, ASDA and Sainsbury – to develop online grocery operations. It is argued that the era of the internet has created a "new economy" that disrupts traditional thinking and renders conventional strategy less effective. Internet pioneers are encouraged to seek first mover advantage, creating barriers to entry through establishing network effects and consumer lock-in to the service.

There is clearly a need to move away from the orthodox understanding of the internet as a means of predominantly "locking in suppliers and customers" to more creative aspects of online transacting. The paper argues in this respect for a change in perceived wisdom by not only recognising the internet as an extension to existing information technologies but also as a process where change in one part of the online environment will impact upon changes elsewhere. The objective is to enable sustainability through managing the occurrences of interactions, interconnections and interrelationships between all retail stakeholders.

The contribution of the paper has been in the identification and evaluation of the factors that underlie Tesco's success and to establish to what extent it has been supported by theory. This research has highlighted five factors that have been critical in this respect, namely – a profit model focus for online activities; learn from what is currently being done and start small; exploit reach, richness and affiliation more than rivals; develop proprietary processes that allow people to connect and as a final point, using brand power and knowledge of retail to help people get connected.

The conceptual model presented (Figure 3) will enable managers to think of the technology and their organizations as processes not substantive entities as any involvement with an online grocery can be best explained as a CAS, as the internet is a process made of many substantive systems.

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