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Journal Item

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Key Words: **Strategy; Internet; Marketing; Grocery sector; Retailing.**

Research Paper

Abstract

Purpose of this paper
The purpose of this study is to develop a better understanding of the expansion and development strategies used by retailers based in the UK for creating sustained competitive advantage in online grocery retailing. Research has suggested that whilst Internet technologies can create opportunities to develop competitive advantage through streamlined operational costs, the advantage is difficult to sustain due to the high threat of imitation. The key aims of this paper are to identify the strategic pathways taken by major grocery retailers to the online market; consider why some retailers might be more successful than others, and develop an understanding of the role of strategic thinking in development of online retailing operations.

Design/methodology/approach
The objectives of this research were addressed by using a qualitative research strategy consisting of two specific methods of data collection: 1) Secondary data collection - case by case analysis of company reports and statements, research findings and market research surveys in order to gain insight into retailers strategic approaches towards expansion and development of online retail services; 2) Primary data collection - web site surveys of leading grocery retailers' web sites at two year intervals from 1997 to 2007 in order to gain insight into the content, features and services being made available online The research strategy produced a wealth of primary and secondary data, which is innovatively analysed using resource-based theory, as a lens through which to evaluate the strategic pathways followed by the retailers.

Findings
The study suggests that retailers have tended to follow an incremental approach towards the development and expansion of their online service provision. This route to expansion involves the trialling of new ideas, keeping close watch on the competition whilst endeavouring to introduce innovative new services to capture consumer interest and deliver customer benefits. Moreover, it is suggested that Tesco's apparent dominance in the online grocery market is probably due to the close alignment of its web-based IT resources, with a range of complementary resources and capabilities, such as brand loyalty, marketing and logistics.

Research limitations/implications
The major limitation associated with this study is with respect to its heavy reliance on secondary sources. Consequently, assumptions have had to be made about the retailers' strategic thinking, as we were not able to secure any first hand accounts. However, in terms of the research implications, this study has both demonstrated the value of secondary data sources, and highlighted the benefits of adopting a resource-based analysis.

Practical implications
The findings highlight the importance of viewing an organisation's web-based IT resources, as being only one element of its e-commerce strategy. To enjoy success in the electronic market-place, the retail organisation must ensure that its technology is well aligned with, and supported by, a range of complementary resources and capabilities.

What is original/value of paper
This study makes a major contribution in two ways. Firstly it has mapped out the strategic pathways followed by the UK's five leading grocery retailers, in terms of their adoption of e-commerce during the first complete decade of online retailing. Secondly, the paper has demonstrated how the resource-based theory provides a very useful lens through which these pathways can be viewed and ultimately explained.

1 Introduction

Recent evidence suggests the consumers' appetite for purchasing groceries online is growing. During the Christmas period, 2005, around one million customers shopped with Tesco.com and the company's annual sales have risen to almost £1 billion generating profits of around £56.2 million (Tesco Plc, 2006). In a similar vein, Sainsbury and Waitrose have both also experienced marked increases in the use of their online stores, and both are responding by expanding their online shopping capacity. Indeed, online shopping is now estimated to be the fastest growing area of Internet usage (Forsythe and Shi, 2003). However, it's not just the customers that are getting enthusiastic about the Internet, retailers are also increasingly realising the Internet's potential. In particular, its ability to present and store information, facilitate two-way communication with customers, collect market research data, promote goods and services and ultimately to support the online ordering of merchandise, are all seen as highly valuable attributes, which in an increasingly competitive marketplace, retailers are keen to exploit. Indeed, the Internet currently provides an extremely rich and flexible new retail channel that all the major supermarkets are keen to exploit (Doherty *et al*, 2003).

Given the Internet's potential to radically re-configure the underlying processes of retailing, and because of the highly dynamic and innovative nature of the electronic marketplace, there has been an explosion of academic interest in the application of this new digital phenomenon, in the retail context. It is not, perhaps, surprising that from such a highly dynamic organizational phenomenon, an equally dynamic body of literature should emerge. For example, there have been important contributions addressing a diverse range of topics such as: the Internet's potential as a channel to market (e.g. Rowley, 1996; Mathwick *et al.*, 2001); the factors affecting the successful adoption of the Internet (e.g. O'Keefe et al; 1998; Doherty *et al.*, 1999); approaches to online service quality (e.g. Drennan and McColl-Kennedy, 2003; Wolfinbarger & Gilly, 2003), as well as a host of studies that have explored the consumers' experience of using the Internet (e.g. Szymanski & Hise, 2000; Reibstein, 2002; Harris & Goode, 2004; Jiang & Rosenbloom, 2005).

A further area that has excited the attention of many researchers, over the last ten years, is the extent to which the Internet might be able to deliver a sustainable competitive advantage (e.g., Evans & Wurster, 1997; Amit & Zott, 2001; Nicholls & Watson, 2005). Whilst there has been a broad consensus that the Internet offers a significant new weapon in any organisations' competitive armoury, there is still a significant amount of debate about how its competitive potential might best be realised. For example, early commentators tended to focus on the Internet's potential to deliver efficiencies and cut costs (Wurster & Evans, 2001; Amit & Zott, 2001). By contrast, more recent contributions (e.g., Cazier et al, 2006; Bart *et* al, 2005) have tended to support Porter's (2001) view that competitive advantage is more likely to be achieved through differentiation, than cost leadership. However, as to date most studies have adopted a theoretical rather than an empirical perspective, and few contributions have explicitly explored the strategic behaviour of online retailers, there are still some very significant gaps in this body of literature (Doherty and Ellis-Chadwick, 2006).

Another significant gap in the strategic e-commerce literature has been highlighted by Zhuang & Lederer (2006), namely the application of the resource-based theory [RBT] of competitive advantage (Wernerfelt, 1984). RBT posits that firms compete on the basis of heterogeneously distributed resources that are valuable, rare, inimitable and non-substitutable – the so-called VRIN characteristics (Barney, 1991). Many commentators (e.g., Porter, 1985; Powell, & Dent-Micallef,1997) have argued that due to its versatility information technology, when applied innovatively, is better placed than any other resource to deliver enduring competitive advantage. However, it has also been countered that it may be difficult for organisations to gain a sustainable competitive advantage directly through the application of information technologies, because although they are generally perceived to be valuable, they are also widely available, and relatively easy to understand and ultimately copy (Carr, 2003). Yet another stream of opinion suggests that although it may be difficult to attain a sustainable competitive advantage solely through the deployment of information technology, there may be less direct ways through which an information technology might be used to leverage a sustainable advantage. More specifically, it has been suggested that sustainable advantages may either be gained through the application of unique IS capabilities (Feeny and Willcocks, 1998a; Wade and Hulland, 2004), or by using other complementary organisational resources or capabilities to exert leverage upon the information technology, in question (Powell and Dent-Micallef, 1997; Clemons and Row, 1991). Consequently, our primary objective for this study was to fill a substantial gap in the literature, by exploring the strategic thinking behind a group of key retailers' application of information technology, in the form of Internet-based sales channels. In particular, we sought to gain insights into how they might attain a sustainable competitive advantage, either directly through the functionality offered via their website, or indirectly through its interaction with complementary organizational resources or capabilities.

In terms of its structure, the paper starts by reviewing key contributions to the resource-based literature, to gauge its applicability as a lens for studying the strategic thinking of retailer organisations. Available case evidence from the UK's leading grocery retailers – Tesco, Sainsbury, ASDA, Waitrose, and Morrisons – is then used to gain insights into the strategic pathways, in terms of e-commerce adoption, followed by each retailer. The final sections are then used to consider the extent to which these strategic pathways can be explained in terms of the application of resource-based theory.

2 Conceptual Background – Resourced-Based Theory

In recent years, the growing interest in resource-based theory has propelled the concepts of resources, and capabilities to the forefront of the strategic management literature (e.g. Barney, 1991; Grant, 1991; Teece *et al.*, 1997; Helfat and Peteraf, 2003; Pfeffer and Sutton, 2004). The aim of this section is to review the meaning of resources and capabilities, before exploring how these concepts can be applied, either directly or indirectly, to the goal of attaining a sustained competitive position from an IT investment, such as a retail web-site.

2.1 Resource-based Theory: the roles of Resources and Capabilities

In the past twenty years there has been significant interest in the process by which organizations can assemble a unique portfolio of resources that will render them a competitive advantage. The resource-based view (RBV) of the firm (Wernerfelt, 1984; Barney, 1991) suggests that organizations should invest in those resources and capabilities that they believe will best assist them in successfully gaining a sustainable competitive advantage. Whilst resource-based theory offers the researcher an important lens through which to view the strategic behaviour of organizations, its effectiveness in this role is potentially undermined by the wide variety of definitions and usages that have proliferated in the past decade (Priem and Butler, 2001; Rugman and Verbeke, 2002). Consequently, an important first step in any resource-based study is to review the usage of these terms, and offer appropriate definitions:

- **Resources:** Wernerfelt (1984) originally defined resources as *'anything that could be thought of as a strength or weakness of a firm'*. In a similarly inclusive vein, Barney's (1991) definition of resources included *'all assets, capabilities, organizational processes, firm attributes, information, knowledge etc. controlled by the firm to conceive and implement strategies that improve its efficiency and effectiveness'*. An important consequence of adopting such broad definitions is that it becomes almost impossible to make any meaningful distinction between resources and capabilities. However, other commentators favour rather narrower definitions of resources that include only physical assets (Grant, 1991; Beard and Sumner, 2004). As this far narrower definition of resources allows them to be clearly distinguished from capabilities, we have decided to accept this distinction. Consequently, for the purposes of this research, we have adopted the definition of resources as offered by Amit and Shoemaker (1993), namely: *'stocks of available factors owned or controlled by the firm'*.

- **Capabilities:** By contrast to resources that are often defined in terms of their physicality, which means that they can be readily viewed, understood and traded, the defining characteristic of capabilities is their high degree of intangibility. A capability is developed from the combined and coordinated behavior and activities of an organization's employees, and it is therefore *'embedded in the organization and processes'* (Makadok, 2001). Consequently, were an organization to go out of business, then its capabilities would automatically dissolve, although its physical resources could be sold off. Makadok (2001) also emphasizes the role capabilities have to play in leveraging the value that can be realized from physical resources. To emphasize these distinctions from resources, for the purposes of this research, we have chosen to adopt Helfat and Peteraf's (2003, p. 1000) definition of a capability: an organization's ability to *'perform a set of coordinated tasks, utilizing organizational resources, for the purposes of achieving a particular end result'*.

Having defined resources and capabilities, it is important to explore how these constructs can be used to provide insights into the ways in which information technologies might deliver improved competitive positioning.

2.2 Improved Competitive Positioning Through IT-oriented Resources and Capabilities

Based upon our previous definitions, an organization's IT-oriented resources can be thought of in terms of its physical computing assets. These would include all of the organization's software and information system applications, as well as the hardware and physical computing infrastructure, upon which they run. The ability of such physical information technologies to support the attainment of competitive advantage has been recognized for many years. As Porter (1985) noted *'IT is amongst the most prominent forces that can alter the rules of competition'*. More specifically, Merrill Lynch, Otis Elevators, Boots and Ryan Air are just a few of the many companies that have gained an enduring competitive advantage directly through the development and implementation of an innovative piece of software (Ward and Peppard, 2002).

Whilst acknowledging the importance of an organisation's physical computing resources, other commentators have focused upon an organisation's *'capability'* to deliver effective information systems. For example, Feeny and Willcocks (1998a; 1998b) have explored the concept of capabilities and propose a framework of nine distinct capabilities necessary for the effective management and operation of an IS function. The Feeny and Willcocks capabilities' framework (1998a; 1998b), fits in with our definition of capabilities, in that it focuses firmly upon the skills, competences and relationships necessary to effectively manage information systems and technologies, rather than the role of the physical IT resources, in its own right. Indeed, many commentators (Christensen and Overdorf, 2000; Day, 1994) argue that any IT-enabled competitive advantage is more likely to arise indirectly from an organisation's superior deployment of IS capabilities, rather than directly from its IT assets. In a similar vein, an empirical study by Santhanam and Hartono (2003) has confirmed the strong relationship between an organisation's IS / IT capabilities, its overall performance and its ability to secure a sustained advantage.

It is important to note that whilst the perceived importance of IT capabilities may be steadily growing, the competitive role of individual information systems should not be undervalued. For example, American Airlines (AA) is often credited with having developed and deployed not just one, but two highly innovative and effective information systems that has given them an enduring competitive advantage: 1) The Sabre online reservation system allowed AA flights to gain a highly advantageous positioning, when it was deployed in all major US travel agents (Ward and Peppard, 2002), 2) The SMARTS knowledge management system allowed AA to develop an advantageous relationship with US travel agents (Christiaanse and Venkatraman, 2002). From the experience of American Airlines, it is possible to infer that both the IS resources and the IS capabilities have an important role to play in the attainment of an enduring competitive advantage: the two IS applications were the vehicle through which the competitive advantage was delivered, but it is unlikely that the business would have been able to develop and deploy such effective IS resources, without also having previously established first class IS capabilities.

2.3 Leveraging the Value of IT-oriented Resources and Capabilities

It has long been argued that whilst IS resources and capabilities are often a necessary condition for sustained competitive positioning, it is less common for them to be a sufficient condition (Clemons and Row, 1991). As Wade and Hulland (2004) observe, *'information systems exert their influence on the firm through complementary relationships with other firm assets and capabilities'*. This effect is known as resource complementarity, and has been defined as: *'the enhanced resource value that arises when one resource* [such as an information system] *produces greater returns in the presence of another resource, than it does alone'* (Powell and Dent-Micallef, 1997). For example, the introduction of an EDI link might provide marginal performance improvements when implemented under normal conditions, but may deliver sustainable advantages when combined with pre-existing supplier trust.

The above discussion of the application of resource-based theory to the attainment of competitive advantage from the introduction of information technology, suggests that there may be three ways in which a grocery retailer might attain a sustainable competitive advantage from the introduction of an Internet-based shopping channel:

1. **IT Resources:** If a retailer can develop a website that offers distinctively better functionality and services than its competitors, then it may achieve a direct competitive advantage through its IT resources.

2. **IS Capabilities:** A retailer may also be able to gain a sustainable improved competitive advantage by having superior IS capabilities that allow it to keep in front of the competition by being able to develop and enhance its website, in ways that are important to the customer, on an on-going basis.

3. **Resource Complementarity:** If a retailer's website is leveraged through the deployment of complementary resources, such as service, brand image, customer loyalty or logistics, the organisation may be able to gain a competitive advantage from its online channel, even if its website is no better than that of its competitors.

This resource-based analysis will be used as a lens – in the discussion section - through which to evaluate the strategic pathways followed by the UK's leading five retailers in their development of web-based sales channels. The next section examines the case evidence in order to determine the adopted strategic pathways.

3 Research Method

This study adopted a qualitative approach and used two methods of data collection: 1) case analysis, 2) Survey of retailer web sites. Many previous studies have used web surveys as a means of analysis of web site content and for creating a *snapshot view* of companies' online activities in various industrial activity sectors including retailing (Dixon & Quinn, 2004; Marciniak *et* al, 2004; O'keefe *et al,* 1998; Morganosky, 1997). However, this study is unique in the fact that it uses a sequence of web site surveys taken at two yearly intervals between 1997 and 2007 to provide a longitudinal view of retailers' online activities during the world's first decade of Internet retailing. The overarching aim of this study was to discover more about whether UK retailers have been developing sustained competitive advantage through the provision of online shopping services. The research strategy addressed this aim by a) analysing the strategic fortunes of leading players in online retailing in the UK, b) providing primary and historical data on retailer development of online web services. The two part research approach was used as it suggests that it should facilitate comparison of multiple sources of evidence (Yin, 1994) and assist with the issue of accuracy of case data by aiming to triangulate the various sources of information, with the caveat that *'no observations or interpretations are perfectly repeatable; triangulation serves also to clarify meaning by identifying different ways the phenomenon is being seen'* (Stake, 2000).

Five leading grocery retailers were identified as case examples for this study: ASDA/Wal-Mart, Sainsbury, Tesco, Wm Morrison as they are generally recognised to be the "big four" supermarket retailers (Hackney *et al.*, 2006). To these four we have added Waitrose, as not only is it a very significant supermarket group, but it is also recognised as a significant operator in the online grocery market (Rafiq and Fulford, 2005). Together these five retailers account for over 95 per cent of online grocery sales in the UK. Leading grocery retailers were chosen as they have been found to be the most influential in terms of application and development of use of the Internet within retailing (Ellis-Chadwick *et al,* 2002). Moreover, grocery retailing is one of the most complex and demanding forms of online retailing.

3.1 Case Analysis

The aim of this part of the data collection was to produce detailed profiles of each of the case retailers in terms of operational and strategic developments. Current literature, company reports, statements and accounts and market research data were reviewed and details of significant operational and strategic events documented and then used to build individual company profiles. This approach provided an opportunity for comparison in the final analysis of the extent and progression of the development of online shopping services for each of the leading retailers. Stake (2000) cites comparison to be a powerful conceptual mechanism for *'fixing attention on one or a few attributes'*. The broad aims of the case profiling were to understand the extent to which, and the rate at which, each of these five organisations have embraced online retailing and to find clues as to how retailers have arrived at these current levels of online service provision from both operational and strategic perspectives.

3.2 Web Surveys: A longitudinal Study

In 1997, searches were carried out using whois.com[1] to identify the registered URL's for each of the case companies. Each URL was then investigated to determine whether or not an operational web site existed[2]. The web site content, features and interactive services were then reviewed and captured. To facilitate accurate and consistent capture of the range of online service provision of each of the retailers a *pro forma* website assessment form was developed

[1] Whois.com is the leading global Doman registration service.
[2] Where necessary this process was repeated at data collection intervals throughout the survey period.

and rigorously tested (Doherty *et al,* 1999; Hart *et al,* 2000). Over time the form has been updated to reflect changes in complexity of the online services offered by leading retailers. It should be noted that the *pro forma* document has also maintained early data collection criteria to enable collection of consistent and comparable data. The key criteria used for the study were types of information provided e.g., product, company, financial, and interactive features e.g., communications, marketing, transactions, customer service (Tables 1-3 show the full list of the criteria used by the final survey). These criteria have been identified by other studies to be an important distinction between the types of features offered in a web site (Teo and Pian, 2004). The reliability and content validity of this research instrument was established through extensive testing using a wide spectrum of retailers (Doherty *et al.,* 1999). Additionally, the external validity of web surveys have often been brought into question due to only providing a one off *snapshot* of companies' online activities (Dixon & Quinn, 2004 Doherty *et al.,* 1999) however, this issue is addressed by applying the research instrument at regular two-yearly intervals since 1997 and most recently in 2007.

The next section considers case evidence using within and cross case analyses in order to determine the similarities and differences in levels of online service provision and stages in the development process of leading supermarket retailers.

4 Results of the Research

In this section, each case is considered individually using the findings of the secondary data analysis to produce within-case analysis, prior to cross-case comparison using the primary data. The within-case analysis reports on the key stages of development, which have led to each retailer's current level of online service provision and also aims to identify any key events and or resources, which have given the company a competitive advantage either in the short or long term. The aim of the cross-case analysis is to map the pathways adopted by each retailer by comparing and contrasting detailed elements of the online service provision within the company website. The potential advantage of this approach is that adopted pathways become more transparent in terms of the point of introduction of features and services and as a result each of the retailers' progress can be studied comparatively.

4.1 Research Findings: Within-Case Analysis

The aim of this section is to review the strategic pathways followed by the UK's five leading supermarket groups, based upon an analysis of secondary research sources.

ASDA/Wal-Mart

During the 1990's ASDA was in a difficult financial position, losing market share and struggling with unsuccessful diversification into furniture and carpets and as a result stated the company would not be pursuing 'faddish' activities such as Internet retailing (Owen, 2003). However in November 2000, ASDA@home, an online shopping service, was launched selling a limited range of goods from 32 stores (ASDA Plc, 2000). Initially, picking of goods was done within the store by specially trained staff while plans were in place for the building of depots in key locations when the service would be used by a sufficient number of customers. However, in 2002, ASDA closed two of its online operations' distribution centres in Croydon and Watford after the system was dogged by technical difficulties. The online shopping service continued but used the operational model conceived by Tesco: supplying customers directly from their nearest participating store (ASDA Plc, 2002). Since 2004, ASDA has focused on increasing the coverage of its online service provision beyond 40% in order to be able to offer online shopping to more areas of the UK. The planned expansion comes in response to losing market share to Tesco.com and Sainsbury, with lack of coverage cited as a key factor. ASDA has reportedly invested over £7m in developing its online operation, as it is seen to represent an ideal way of expanding ASDA's market coverage without buying further outlets (ASDA Plc, 2005). Emphasis has been given to improving customer satisfaction by increasing the number of delivery slots, products' availability as well as improving the site's usability. David Rutley, the group's e-commerce director emphasised the importance of customer satisfaction when he commented *"..giving great customer service is our top priority – that's why we poll hundreds of customers every week. The last survey shows that 97% of our customers are happy with the service"* (ASDA Plc, 2005). Currently, the company is aiming to geographically expand online retailing, offering services from 157 of its 310 outlets. A selected range of products will be offered including: food, health and beauty, household and electrical goods, and domestic appliances. Andy Bond, the group's CEO, suggested the market expansion approach was in response to a re-evaluation of online market and admitted that the company had made mistakes with regard to Internet shopping stating "..*we were slow to understand how big a market and how big a customer demand there was for dotcom*." (IMRG, 2006a). Currently, ASDA accounts for 16% of the UK's online shopping market (ComScore Networks, 2006).

Sainsbury PLC

In 1995, Sainsbury promoted the Wine Direct mail order service in response to Tesco's announcement that they were about to launch the first online wine ordering service in the UK (J Sainsbury Plc, 1995). By 1997, online services were expanded and customers were invited to create online shopping lists and home shopping was experimented from 7 stores. By the end of 1998 the trial was expanded to over 30 stores. For Sainsbury, e-commerce was not considered as simply an additional shopping channel but as rather an integrated part of their retailing services where customers can have access to a significant amount of information enhancing in that way their shopping experience. According to Dino Adriano, the group's CEO (1999), *"Our e-business strategy supports our core businesses by building excellence and leadership in the areas where our supermarket and Homebase brands and consumer knowledge is greatest: 'food and drink' and 'home and garden'. We will launch, develop and own the best portals in these categories providing information, interaction and transactional services and offers including online ordering and delivery"* (J Sainsbury Plc, 1999a). As a result, in 2000, Sainsbury announced a series of e-commerce initiatives to improve the e-commerce activities across the group. These initiatives range from business to business solutions aiming to reduce costs, streamline systems and improve product availability, to improved business to customers solutions such as the relaunch of its website, the opening of a highly automated picking centre to serve customers living within the M25 area and their intention to create a joint venture with Carlton TV for interactive shopping (J Sainsbury Plc, 2000 a). According to the group's CEO, such innovations could create new value to the company: *"We intend that E-commerce will form an integral part of our offer to customers and we will also be looking at innovative ways of using all aspects of our business to create new value"* (J Sainsbury Plc, 2000 b). Contrary to its main rival Tesco, which adopted the store-based system to deliver the products to the customers, Sainsbury was the first to move into dedicated picking centres as it was considered to be the best solution for serving customers without jeopardising its offline service. According to Dino Adriano, the group's CEO, *"Our extensive experience over the past three-and-a-half years, combined with that of US food retailers, indicates that the feasibility of store-based home shopping services is not a sustainable long term proposition. We have learnt a lot from our R&D about the economics of home shopping and while a store-based system is operable in principle it is neither viable or capable of dealing with significant volume without affecting the quality of services being offered to shoppers in-store"* (J Sainsbury Plc, 1999b). However in 2001, expansion of the online shopping service to provide almost 50 per cent national coverage was facilitated by using a combination of warehouse and in-store picking systems (J Sainsbury Plc, 2001). By 2002, Sainsbury was established as second in the UK online shopping market with 71 per cent coverage (J Sainsbury Plc, 2002). In 2004, expansion of store-based picking helped to streamline logistical costs and reduce the cost of order fulfilment, which contributed to the online shopping service breaking even. This was an important milestone on the company's e-commerce strategy as achieving profitability was one of Sainsbury's strategic aims for the service in 2004. Further cost cutting initiatives were subsequently introduced: closing the automated picking centre (J Sainsbury Plc, 2004), but the expansion of online service was put on hold in 2005 due to the group's difficult financial situation and the introduction of a three year recovery plan aiming to improve the supermarket overall performance (J Sainsbury Plc, 2005). Currently, *"Sainsbury's Online"* operates from 97 stores, selling an extended range of food and grocery products and claims to cover 83% of the UK (IMRG, 2006b). Additionally, Sainsbury reportedly accounts for 14% of the UK's online shopping market (ComScore Networks, 2006).

Tesco PLC

Tesco's chief executive, Terry Leahy, was quoted in The Sunday Times as saying: "*We will be the world's biggest online grocery retailer and we intend to become the UK's No.1 e-commerce business*" (Lorenz and Nuki, 1999). A goal quickly achieved, as by the end of 2000 Tesco offered a wide range of products to 90 per cent of the UK population (Tesco Plc, 2001a). The online shopping service, Tesco.com was established soon afterwards and operated as an independent subsidiary to Tesco PLC (Tesco Plc, 2000). According to Tesco's CEO *"Tesco.com runs our e-commerce business which is an important part of our future strategy. We want to ensure that it has a real focus, the relevant resources and can move quickly"* (Tesco Plc, 2000). Indeed, their strategy paid off quickly with Tesco.com being the first UK grocery online shopping service to break even at the end of 2000 (Tesco Plc, 2000). In 2000, the online services diversified offering many non-food products ranges and financial services (Tesco Plc, 2000).

Tesco's online expansion was seen as a countermove against Wal-Mart's recent acquisition of ASDA, whose bigger physical presence increased Tesco's vulnerability at the time. However, the internet was seen as the ideal way to bypass space restrictions. According to Tesco's CEO, its net strategy will enable Tesco to match Wal-Mart by expanding virtually. *"On the Internet we are not constrained by space as the store can be as large as we like"* (Tesco Plc, 2000). To support logistical operations, Tesco developed a sophisticated semi-automated in-store picking service, supported by local refrigerated delivery vans using existing facilities rather than building high-tech dedicated warehouses (Delaney-Klinger e*t al.*, 2003). A strategic advantage of this approach was faster geographical expansion of the online shopping services and a distinct advantage of extended national coverage of Tesco's online shopping service provision. At this time, Tesco offered its online shopping services to 91 per cent of the UK population using 300 of its stores to support the operation as well as starting to launch its Tesco.com model outside the UK with Ireland, the first country where online services rolled out (Tesco Plc, 2001 b). Additionally, Tesco.com began to develop specialised services for niche home markets (blind and partially sighted). This venture was acknowledge as being significant by Royal National Institute for the Blind who gave Tesco their new 'See It Right' award for developing 'Tesco Access' (Tesco Press Release, 2001). By 2003, 96 per cent of the UK population could shop online with Tesco.com giving the company 65 per cent of the UK online grocery shopping market and further diversification of product ranges e.g., financial services and telecoms. In the same year Tesco expanded its online shopping services to overseas markets in the Far East: South Korea – Homeplus.co.kr (Tesco Plc, 2003). Tesco.com constantly focused on upgrading its technology in order to streamline services, provide innovative features and extend the range of points at which customers can access online shopping. Sales continued to grow strongly in the year - up by 31.9%, to reach almost £1 billion. Profit increased by 54.9% to £56.2 million (Tesco Plc, 2006a). In addition, the company is readjusting its service model to adjust for the growth of Tesco.com by opening dedicated online warehouses in areas where the online shopping thrives. These warehouses are designed to the same standards as their brick and mortar superstores eliminating in that way operational difficulties. However, it is also acknowledged that at the time the areas where dedicated warehouses are required are very few (Tesco Plc, 2006a). Diversification and expansion of the online product portfolio and customer services continues today with the addition of a series of innovations such as: DVDs to your door – a rental service, energy utilities - thousands of customers save money on their gas and electricity bills, getting healthy on–line by using the e–diets service to help customers to tailor their eating plans to what's right for them, taking into account lifestyles, food preferences and health recommendations, and Internet telephony. Additionally, the company is pursuing new strategic trust objectives through product diversification: launching Tesco Direct offering customers a wide range of non-food goods (Tesco Plc, 2006b) as well as launching a range of own-brand computer software (Tesco, Plc, 2006c). Currently, Tesco accounts for 66% of the UK's online shopping market (ComScore Networks, 2006)

Waitrose

In 1998, Waitrose began offering Waitrose@work an office-based ordering system targeting a specific niche market (Rafiq and Fulford, 2005). The success of this operation led to expansion aims and with this in mind the company began to explore ways in which to extend online services into consumer markets. An aim fulfilled by following a unique strategic pathway. Contrary to its main rivals, Waitrose did not develop its own e-commerce operating platform but instead acquired a 40 per cent share in LMS e-commerce grocery business which helped to expand online service provision and eventually created a new online brand: Ocado a warehouse-based grocery shopping (John Lewis Partnership Plc, 2001). In 2002, Waitrose Deliver was offered from 33 Waitrose stores (John Lewis Partnership Plc, 2003). According to Sir Stuart Hampson, Waitrose's chairman, *"We were able to forge a marriage with a partner who had developed a technologically advanced operating platform but which lacked the product to give its credibility"* (Hampson, 2006).The sophisticated technology behind the service differentiated Ocado and reportedly enabled it to offer the very best customer service available in home delivered grocery shopping anywhere in the UK. By 2005 Ocado, covered 40 per cent of the UK in terms of geographical coverage and continued to maintain that warehouse-based order fulfilment is more reliable than a store-based format (Rigby, 2005). In, 2005, Waitrose and Ocado continued with its policy of market expansion as its key strategic pathway by adding more areas, namely the Midlands and North West (John Lewis Partnership Plc, 2005).

Wm Morrisons

The company is reportedly the 4th largest supermarket group in the UK since its merger with Safeway (Osborne, 2003). However, Morrisons, didn't launch its website until 2003 and in doing so only offered corporate information, company history, PR information and a recruitment feature. The company continued to add information to the website but to date does not include any transactional features or email facilities. In 2006, Morrisons developed their *"festival of football website"* which is quoted as being new territory for the company. Nevertheless, the web is becoming an integral part of marketing initiatives and the company is gauging customer responses in order to determine how the company's web-based activity will be developed in the future. In the past, the chairman was adamant that Morrisons would not deliver to homes but currently the company's whole Internet strategy is under review with the web becoming an integral part of its marketing initiatives. According to Richard Burgess, Morrison's Marketing Communication Manager, *"We now look forward to gauging customer response and will use this as a benchmark for how our web-based activity will move forward in the future"* (Morrisons Plc, 2006).

Profiling each of the case retailers using a within-case analysis has mapped the strategic pathways of the development of their online service provision and provided some insight into how each retailer has arrived at its current level of service provision in terms of geographical spread, strategic and operational approaches. However, this does not provide information on actual features and details of the online service provision. The second stage of the study: web surveys provides comparable information on *what* and *when* retailers have introduced new functions and features into their online service offering. This is now discussed in the following cross-case analysis.

4.2 Research Findings: Cross-Case Analysis

This section presents results from the series of web surveys which were generated by reviewing the *pro forma* documents for each of the 5 case retailers. The results of the web surveys conducted in 1997, 1999, 2001, 2003, 2005 and 2007 were analysed and the results collated (see Table 1). The web surveys classified content, features and service offerings as either information or interactive. Information features provided content which was either visual or text based and designed to be read by the end user. Interactive features allow for a two-way communication between the retailer and the consumer bypassing more traditional means of communications such as mail and telephone.

Initially, retailers seem to have developed websites to serve as an extra information channel between the company and its customer base. Popular types of information included are recruitment, financial information such as annual reports and corporate governance details, product information, recipes. Later on in website development store locators and media information features were added. It is possible that the addition of features like recipes have also an additional aim of increasing the value of the customer's shopping basket. The type of information provided can broadly be categorised as:

- **Corporate information:** e.g. company reports and investor information recruitment.
- **Shopper information:** e.g. product ranges, specifications, and technical details, recipes, store location.

Table 1: Information Provision in websites of Leading UK Retailers - **about here**

In addition to showing which types of information is provided Table 1 also shows the point in time a particular feature was introduced, which enables comparison of the progression of the strategic pathways between the case retailers. Wm Morrisons, was a late-comer to the online market as the company did not develop a website until 2003, which provided corporate, and shopper information, whereas the other four retailers had included this range of information in their websites at a much earlier stage (except Waitrose, which did not offer financial information until 2005). In 1997, Tesco, Waitrose and Sainsbury offered some form of shopper information, which ASDA did not introduce until 1999. Over time, the type of information provided has changed and in some cases moved towards being more interactive.

Generally, the majority of information features have been adopted, in some form, by all of the retailers' websites, but it is clear that Tesco, and to a lesser extent Sainsbury, lead the way with regard to website development (in terms of information content). As Tesco adds new features these are quickly adopted by their competitors. Tesco and Sainsbury appear to have attempted to counter any potential early mover advantage by offering very similar levels of service online. In 2003, Tesco, Sainsbury and ASDA noticeably expanded the information content of their websites. These initiatives could be in response to recognition of the growing significance of the Internet as a new shopping channel, improvement in Internet technologies and consumers' greater levels of access to such technologies. The overall effect has been for retailers to enrich their online presence, with Tesco's perhaps emerging as marginally more innovative than the other leading players i.e. first to introduce a personalised interface, customer service and personal finance information. The analysis of the information features in the retailers' websites has revealed similarities amongst them but this is less obvious when examining their interactive features.

Table 2: Interactive Service provision in websites of Leading UK Retailers - **about here**

With the exception of Wm Morrison each of the case retailers have offered email as an interactive method of communication since launching their websites in 1997. Tesco and Sainsbury have offered many interactive features from early in the development of their online service provision i.e. email marketing, newsletter, reward point-checker, interactive features many of which have since been adopted by Waitrose and to a much lesser extent ASDA. Other interactive features appear to have been short-lived and therefore possible more experimental in nature: interactive games (ASDA); virtual museum (Sainsbury); online customer surveys (Tesco); and research resources for schools (Waitrose). The degree of experimentation with interactive features appears to be lower in comparison with that on information features but this is not surprising given the extra resource implications. Waitrose is a late-comer to the adoption of interactive features with an extensive range of such features appearing in the website for the first time in 2005. ASDA on the contrary, has provided a constant, yet limited, interactive presence since 1999, which focuses mainly on the use of email communication and recruitment. Generally, there is a lack of differentiation amongst the case retailers with regard to the number of interactive features, as each now offers a very similar range of interactive online services. This suggests online grocery retailers are very aware of their competitor web presence and readily mimic any new to market services introduced by their competitors even in the case of selling Internet Services, where Tesco were very quickly followed by Waitrose.

As the e-commerce landscape has matured and retailers have started to realise its benefits, the competitor's website is closely monitored and the introduction of new features quickly adopted in order to eliminate the possibility of an early mover advantage. It is also interesting to point out that in an individual level features such as recruitment, marketing and customer services have been transformed, moving from one way to a two way communication between the retailer and the customer. This finding is significant since it shows that retailers view e-commerce as an essential tool in their day-to-day operations. Meanwhile, there are areas where a blend of traditional and e-commerce approach exist. For example, Tesco Customer's Services do not serve as a one way communication channel from the retailer to the customer but enable the customer's interaction improving in that way its customer service efficiency. It is also important to highlight that Tesco who has a leading role in the online presence amongst grocery retailers has completely transformed some of its features (i.e. recruitment). On the contrary, other retailers have opted for a parallel presence of both interactive and pure information based features.

A close examination of both tables shows that the year 2003 was a major turning point in the development of the retailers' websites. The reason for that is the evolution of online sales as shown in Table 3. Although, Tesco and Sainsbury were the pioneers of online grocery shopping in 1997, it was not until 2001 that a significant part of their range of products became widely available to customers. In 2003 Tesco considerably increased the delivery range of its online products making online shopping available to the majority of its customers. As a result, the website serves as an *"e-shopping assistant"* and therefore the amount of information that it provides should be increased by introducing more interactive features in order to successfully fulfil its new role.

Table 3: Evolution of range of online shopping services - **about here**

In conclusion, having examined the online presence of the UK's leading grocery retailers there is important evidence that Tesco appears to have manoeuvred itself into a position of market leadership that is not dissimilar to the one that it enjoys in the traditional grocery sector. Following a four year period of experimentation with online shopping, based upon its use of local stores for picking and delivering the products to its customers, it has been able to rapidly expand its operations so that it now covers the majority of the UK population. However, the other four leading UK grocery retailers have been far from idle, with Sainsbury always in close contention, and the other three retailers all making significant improvements to their web-based offering in recent years. Indeed, the within and cross case analyses suggest that there are some clear patterns in terms of the types and levels of service provision offered by UK grocery retailers. In essence, these retailers appear to be gradually moving through a series of well-defined stages from low levels of online activity to using the Internet as a major retail channel (Doherty *et al.*, 1999, Teo and Pian, 2003).

5 Discussion: Can Retailers Create a Sustainable Competitive Advantage through E-commerce?

Beard and Sumner (2004) suggest that as companies become more similar in terms of key capabilities and resources, competitive rivalry tends to increase and as a result the creation of a sustainable competitive advantage may become more difficult. More specifically, Lumpkin *et al.* (2002), found the threat of substitution and imitation to be a major pitfall when trying to create competitive advantages online. In a similar vein, Porter (2001) highlighted what he termed the *'levelling effect'*, which he predicted would reduce the possibility of creating sustainable competitive advantage online. To a high degree, the case evidence supports these views, as our analysis of the online strategic pathways followed by the UK's leading supermarket groups suggests that they are playing a complex game of *'follow the leader'*, but without a consistent leader: Tesco introduces email marketing, Sainsbury and Waitrose soon follow; ASDA and Waitrose provide store locators, Sainsbury and Tesco ultimately follow suit. Does this mean it is not possible to develop sustainable competitive advantage online? Given the very similar web-based offerings of four of the five supermarkets, particularly when coupled with their very similar operational models, it might be concluded that it is potentially very difficult to achieve any sustainable advantage. However, based upon our within-case analysis – presented in section 4.1 – it is possible to argue that Tesco has managed to sustain its advantages over other service providers, as the company now accounts for over 50% of online sales, despite being imitated by other providers. The aim of the remainder of this section is to explore how this outcome may have arisen, using the three distinct avenues for achieving competitive advantage – as outlined in section 2 – as a framework for our analysis.

Advantage through Superior IT Resources

It could be argued that Tesco has achieved its perceived advantage through the deployment of superior IT resources, in the form of an innovative website that is more effective than those of any of its competitors. However, an analysis of the research data presented in Tables 1 & 2 suggests that this is unlikely to be the case. Moreover, if Barney's *'VRIN'* criteria are applied to this context, it becomes clear why it is unlikely that superior IT resources are the reason for Tesco's dominant positioning in the online grocery market. Websites provide some potential to deliver competitive advantage, as are undoubtedly valuable – they reduce operating costs and allow market and product development – and they are also non-substitutable. However, as competitors' web offerings are extremely easy to view and understand, they also become readily imitable. Moreover, it can't be claimed that Internet-based resources are rare, as although they may be fairly expensive, the hardware and software necessary to support web-based retailing are fairly homogenously distributed across the retail sector.

Advantage through Superior IS Capabilities

A more plausible argument for Tesco's apparent competitive advantage is that because they possess superior IS capabilities, they are able to stay ahead of the competition, by always being at the leading edge of innovations and enhancements to the functionality, content and style of grocery websites. Indeed, there is some evidence from our study – see Tables 1 & 2 – that Tesco have done more than their fair share of innovating with the functionality and services offered through their website. However, it can also be seen that all of the four supermarket groups, that have seriously embraced online selling, have experimented with new online services, which their rivals have been swift to follow. Moreover, many of the more important innovations – such as email, recruitment and the provision of financial services have been launched by a number of retailers almost simultaneously. Looking beyond how Tesco's IS capabilities might be manifested through the content of their website, there is some additional evidence to suggest that they might benefit from the availability of high quality IS capabilities. As Rowley (2005) notes, Tesco have a reputation for innovation in relation their use of technology, as witnessed by introduction of their IT-enabled '*Club Card Scheme*', which helped them to leverage a very significant competitive advantage. Moreover, from an operational perspective Tesco is proving to be a highly innovative and leading edge, with its application of RFID, which is being used to streamline every aspect of the company's logistical operations (Longo, 2005).

Advantage through Superior Relationships with Complementary Capabilities

It has been argued that any strategic advantage, to be derived from the introduction of new IT applications, is likely to be more sustainable in circumstances where the advantageous effects of the technology are leveraged through the presence of complementary resources or capabilities (Powell and Dent-Micallef, 1997). Indeed, in recognition of this effect, Barney (1997) has modified his original VRIN classification to VRIO, where the 'O' stands for organisation – firms need to be appropriately organised to fully exploit the introduction of a given resource. The importance of resource complementarity or *'organisation*' (Barney, 1997) has recently been underlined by Beard and Sumner's (2004) analysis of whether ERP systems could offer a sustained competitive advantage. They concluded that whilst ERP systems are clearly valuable, it is a firm's ability to develop and marshal its complementary resources and capabilities in support of the technology that are most likely to enjoy any sustained competitive advantage. Consequently, it may be concluded that if Tesco's apparent competitive advantage should prove to be real, then it may be because it has been able to leverage the effects of its website, which adopts a fairly common format, through its alignment with a range of complementary resources and capabilities.

It has long been argued that service quality is one of the most – if not the most – important determinant of e-commerce success (Santos, 2003; Semeijn *et al.*, 2005). Consequently, it may be that Tesco's current position of leadership, in the online grocery market, is more due to the customers' perceptions of the levels of quality and service that Tesco offer, rather than anything to do with the quality or functionality of its website. Indeed the effectiveness of Tesco's order fulfilment operation, upon which the quality of service is predicated, has been much discussed in the literature (Hackney *et al.*, 2006). Another potentially important complementary resource, which may have helped to leverage Tesco's web-based resources, is their strong brand image (Rowley, 2005), which may well have helped Tesco to initially attract significant numbers of on-line customers.

Another reason to suspect that any sustained competitive advantage is coming indirectly from complementary resources, rather than directly from IT resources is because of the incremental way in which the IT resources have been accumulated. Each of our five example case retailers have to a greater or lesser extent experimented with the online environment testing a variety of new functions and features, as they *incrementally* added to their online service provision. Given the highly dynamic and rapidly changing nature of our five retailers' websites, it is likely that any competitive advantage to stem directly from the technology would be highly ephemeral, and it would move from retailer to retailer, as they introduced new functions and features. By contrast the complementary resources and capabilities, particularly in the areas of brand loyalty, marketing and logistics are fairly stable, and may therefore facilitate more sustainable levels of improved competitive positioning.

5.1 Contribution, Managerial Implications & Limitations

Whilst the rapid uptake of e-commerce, in general, and the significant expansion of the online grocery sector, in particular, have been much documented in the literature, relatively little attention has been focussed upon the strategic pathways followed by retailers, or the factors that have influenced these strategies. Moreover, despite its frequent usage in the strategic management literature, there is still a significant gap within the e-commerce literature, with respect to the application of the resource-based theory of the firm. Consequently, this study makes a major contribution in two ways. Firstly it has mapped out the strategic pathways followed by the UK's five leading grocery retailers, in terms of their adoption of e-commerce. In particular, it has been interesting to find that the retailers' web offerings seem to have grown organically through a process of experimentation, learning and where necessary imitation. Secondly, the paper has demonstrated how the resource-based theory provides a highly effective lens through which these pathways can be viewed and ultimately explained. More specifically, it suggests that sustained competitive advantage is more likely to arise indirectly from the effective alignment of web-based IT resources with a variety of complementary resources and capabilities, than it is directly from the technology itself. Indeed, to be successful in any online market-place, it is likely that a retailer will have to develop a whole range of complementary resources and capabilities, in areas such as technology, brand, marketing, logistics and customer service.

In terms of the implications of this research, retailers globally can learn from the adoption pathways taken by the UK grocery retailers in so far as the study highlights the successes, which have been derived from taking an incremental approach towards online development. However, the primary message for retailers to take on board is the need to view the web-site as an important part of a complex network of resources and capabilities that all need to be carefully aligned and integrated if their web initiatives are to realise significant benefits. Consequently, retailers need to critically appraise the totality of their web operations, to determine whether there are any key resources or capabilities that need to be acquired or internally developed. Moreover, given the highly dynamic nature of retailers' web offerings, as demonstrated through this study, it is critical that all retailers stay vigilant, to ensure they are aware of, and can respond to, any new on-line initiatives introduced by their key rivals. Finally, whilst our study has been firmly located in the UK Grocery sector, its findings should be of interest to all retail managers who are contemplating developing or expanding their web presence, irrespective of location or sector, as it provides many important insights into the issues that should be addressed when formulating an e-commerce strategy. More specifically, the UK's grocery retailers, led by Tesco, are setting an important example as to how other retailers can best exploit the opportunities created by the Internet, whilst simultaneously managing the highly demanding complexities of grocery retailing and meeting their customer's ever increasing, service expectations.

As with any research exercise, this study has a number of limitations. Firstly, the data collection has focussed wholly upon materials that are available in the public domain, and has not, therefore gained access to any original insights from the retailers, themselves. Consequently, much of the analysis, in this section, is rather speculative in nature, as it is based upon an interpretative analysis of this public-domain data. However, given the extreme commercial sensitivity of information relating to the strategic thinking of some of the UK's largest retailers, it is highly unlikely that such information would have been readily forthcoming from the retailers, themselves. A further area in which the research results may have limitations is with regard to our recording of the times at which new services or features were introduced to websites: due to the fairly large gaps between our reviews it may be that a new function may appear to have been introduced later than it actually was. Despite these possible limitations, we believe that this research makes an important contribution and we are committed to continuing our mapping of the strategic pathways followed by the major UK online grocery retailers for many years to come.

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Table 1: Information Provision in Websites of Leading UK Retailers

Website Content	***1997***	***1999***	***2001***	***2003***	***2005***	***2007***
Recruitment	A – S – T – W	A – S – T – W	A – S	A – M – W	A – M – W	A – M – T – W
Financial Company	S – T	S – T	S – T	M – S – T	M – S – T – W	M – S – T – W
Product	S – T	A – S – T – W	A – S – T – W	A – M – S – T – W	A – M – S – T – W	A – M – S – T – W
Recipes	T – W	A – S – T – W	A – S – T – W	S – W	S – W	S – T – W
Store Locator	A – W	A – W	A – W	A – S – W	A – M – S – T – W	A – M – S – T – W
Direct Mail Marketing	W	W	W	W		
Environmental Information	S	S	S	S – T	S – W	A – T
Media Information		A – W	A – S – T – W	A – S – T – W	A – M – S – T – W	A – M – S – T – W
Personal Finance		T	T	T	S – T – W	A – S – T – W
Customer Service		T	T	T	M – T	A – W
Special Offers				A – M – S – T	A – M – S – T	A – M – S
Company History				A – M	A – M	A – M – W
Healthy Living				T	T	A – T
Kids Club				S	S	S*
Personalised Interface				T	T	T
Buying Guide					S – T	S – T – W
Lifestyle					W	W
Security – Privacy		T	T-S-W	A-S-T-W	A-S-T-W	A – M – S – T – W
FAQs		T	T	A-S-T	A-S-T	A – S – T
Forums						S
Events						T – W

Key: **A**: ASDA **M**: Morrisons **S**: Sainsbury's **T**: Tesco **W**: Waitrose

* **Name has changed but basic function remains the same**

Table 2: Interactive Service Provision in Websites of Leading UK Retailers

Website Content	***1997***	***1999***	***2001***	***2003***	***2005***	***2007***
Email	A – S – T – W	A – S – T – W	A – S – T – W	A – S – T – W	A – S – T – W	A – S – T – W
Recruitment	S – T	A – S – T	A – S – T	A – S – T	A – S – T – W	A – S – T – W
Email Marketing	T	S – T	S – T	S – T	S – T – W	S – T – W
Newsletter		S – T	S – T	S – T	S – T – W	S – T – W
Reward Point Checker		S – T	S – T	S – T	S – T – W	S – T – W
Selling ISP Services		T	T	T	T – W	T – W – S
Resources for Schools		W	W	W		
Customer Surveys		T	T			
Customer Service				A – T	A – T	A – S– T
Non-Food Ranges				T	A – S – T	A – S – T – W
Financial Services					S – T – W	A – S – T – W
RSS					T	T
Games	A					
Virtual Museum		S				
Key: **A**: ASDA **M**: Morrisons **S**: Sainsbury **T**: Tesco **W**: Waitrose						

Table 3: Evolution of Range of Online Shopping Services Provided by Leading UK Retailers

Online Sales	***1997***	***1999***	***2001***	***2003***	***2005***	***2007***
Limited Range of Products, Limited Locations	S – T	S	W			
Extended Range of Products, Limited Locations		T	A – S – T	A – S – W	A	A
Extended Range of Products, Geographic Limitations					S – W	W
Extended Range of Products, Extended Locations				T	T	S – T
Key: **A**: ASDA **M**: Morrisons **S**: Sainsbury **T**: Tesco **W**: Waitrose						