Abstract

E-commerce researchers have shown that retailers are increasingly following a click and mortar strategy, whereby online and offline channels are becoming more integrated. Despite case study evidence for the benefit of this approach, an analysis of the websites of nearly 1,000 US-based retailers having both an online and offline presence reveals that a high degree of integration across channels is relatively uncommon. On the contrary, the study reported here demonstrates that retailers are more likely to pursue easy-to-accomplish, low intensity, informational integration when developing an online presence, exemplified by such features as a listing of store locations or hours. Few retail websites offer complex integration capabilities, such as the ability to search local store inventories, or to pick up and return online purchases in a local outlet. Regression analyses reveal that the retail sector and firm resources help to explain this discrepancy. With regard to sector, some product types require more physical presence (e.g. in-person inspection or interaction) than others, and a high degree of integration appears to require a level of investment and IT sophistication not always available to small retailers.

Keywords: click and mortar, click and brick, online retailing, e-commerce synergies, online offline integration

Click and Mortar Strategies Viewed from the Web: A Content Analysis of Features Illustrating Integration Between Retailers’ Online and Offline Presence

Charles Steinfield, Thomas Adelaar and Fang Liu

INTRODUCTION

As the Internet-using population has grown, so has the potential market size for businesses that develop e-commerce enabled websites. Nielsen Net Ratings, for example, estimates the August 2004 US population of Internet users to be in excess of 134 million people (Anonymous 2004a). Activities related to online commerce are becoming increasingly significant, as more Internet users shop online. For example, a PEW/Internet study estimated that 44% of Internet users bank and pay bills online, and 33% of Internet users go online to purchase everyday items such as books and groceries (Fallows 2004). The study further reported that more than one-third of all Americans, and two-thirds of the US Internet users, go online to obtain product information (Fallows 2004). The increase in e-commerce-related activities is reflected in growing online sales revenue at a rate that far outpaces total retail sales in the US. According to the US Census Bureau’s (2004) quarterly report on e-commerce activity, despite being only a small fraction (under
2%) of all retail sales, online sales increased 26.4% from 2002 to 2003, reaching over $56 billion in annual sales (US Census Bureau 2004). This trend is continuing in 2004, with a growth of 25.5% per cent for the first two quarters compared to the same period in 2003. The growth of the total retail sales for the same period was much lower – only 5.3% growth from 2002 to 2003, and 8.2% for the first two quarters of 2004 compared to 2003.

The more rapid growth of online versus offline sales suggests that established retailers can benefit from the development of an e-commerce strategy. Indeed, earlier studies have indicated that in the post dotcom crash era, established retailers have become increasingly more prominent online compared to Internet-only firms (Laudon and Traver 2003). E-commerce researchers consider the integration of offline and online channels to be a distinct e-commerce business model, which is usually referred to as a click and mortar or click and brick model (Steinfield et al. 2002b).

E-commerce researchers have begun to analyse the benefits for retailers of using a combination of online and physical sales channels (Otto and Chung 2000; Rosen and Howard 2000; Steinfield et al. 2001, 2002a, 2002b). For example, Otto and Chung (2000) proposed a framework comparing the general advantages and disadvantages of both e-commerce and traditional physical retailing, and suggested possible approaches to applying e-commerce retailing techniques to traditional retailing. Steinfield et al. (2002a, 2002b) addressed the click and mortar e-commerce model using a framework that emphasizes the potential synergies arising from the integration of e-commerce with offline channels (such as retail outlets), based upon a series of case studies of retailers in the US and the Netherlands.

Despite these efforts, many gaps remain in the knowledge about the e-commerce approaches of established retailers. In particular, we identify four main gaps:

1. Little is known about the relative prevalence of click and mortar retail strategies among the general population of retailers. Many studies of click and mortar e-commerce rely on analyses of specific cases where firms have demonstrated a channel integration strategy (Steinfield et al. 2002a, 2002b). Such cases can only reveal the universe of possibilities regarding ways of using the Web to complement physical stores and other established sales channels, not how often any of these strategies can be found in practice among the general population of retailers.

2. Most references to click and mortar business models often treat this form of retailing as an all-or-nothing attribute, with no metrics to reflect the relative intensity of channel integration (e.g., see Rappa 2005). Just because a firm develops an online presence does not mean that its website is tightly integrated with its physical channels (e.g., retail outlets). Indeed, many retailers go online with websites that are quite independent of their existing store infrastructure, instead choosing what might be called a parallel e-commerce strategy (Steinfield et al. 2001).

3. It is relatively common for e-commerce researchers to assume that product attributes can influence the viability of online channels, for example, by affecting search and evaluation efforts required for a customer to make a purchase decision, delivery costs and delivery time (Choi et al. 1997; Gupta et al. 2004). Product attributes can result, therefore, in different patterns of channel integration across different sectors within the retail industry. Automotive dealers use the Internet to complement their businesses in different ways compared to music or book retailers, for example (Klein 1998). However, while cross-sector case-based research can suggest possible differences across types of products sold by retailers, a more quantitative approach could more clearly reveal sector differences in the prevalence of a channel integration strategy (e.g., in which industries a greater degree of online and offline channel integration can be found).

4. Resources of a firm, such as its size and intensity of its physical infrastructure, often influence the nature and effectiveness of an Internet strategy. For example, studies have found that the existing information technology (IT) capabilities of a firm can enable a more effective use of the Internet (Zhu and Kraemer 2002). However, case studies by themselves are not well suited to inform us whether such factors influence the extent of channel integration across firms.

In order to address these gaps in the e-commerce literature, this paper reports on a content analysis of the websites of US-based retailers. We examined a total of 979 websites of click and mortar retailers in nine different retail sectors in order to explore the way in which they followed various forms of online and offline integration strategies. We specifically addressed four primary questions:

1. How are retailers using the Web to complement offline sales outlets?
2. Do retailers differ in the extent to which they integrate on- and offline channels?
3. How does the degree of channel integration differ across retail sectors and product type?
4. How are click and mortar strategies influenced by resource-related aspects of a firm?

The paper is organized as follows: First, we review prior research related to click and mortar e-commerce in order to identify the features found on websites that reflect a click and mortar strategy. Second, we provide an
overview of the methods used to perform a content analysis of retailer’s websites, focusing on the analysis of the features that reflect a channel integration strategy. The methods section includes the development of content categories, the sampling strategy, the coding methods, and an assessment of inter-coder reliability. Third, the results of the content analysis are described, along with the results of several additional analyses examining how a firm’s use of click and mortar features present on the Web relates to other firm characteristics. A fourth section provides a discussion of our findings and the contribution of the study to theory and practice. The fifth and final section discusses the limitations of the study and our conclusions.

LITERATURE REVIEW

The literature review consists of five parts. First, we discuss the benefits of a click and mortar strategy as well as the barriers to implementing such a strategy. Then we discuss the lessons learned from a series of case studies. A summary is provided of the representative features and services of a click and mortar website. Finally, we discuss the factors influencing the use of click and mortar features.

Theoretical foundations of the competitive advantage of click and mortar business models

In the early years of Web-based commerce, much emphasis was placed on sources of competitive advantage that Internet firms had over established ones, primarily using a transaction cost logic (Bakos 1997; Choi et al. 1997). Transaction costs include the costs buyers and sellers face in such areas as information gathering and search, negotiation and settlement, and monitoring to ensure that trading partners adhere to the terms of any agreements made (Williamson 1975, 1985). The Internet helps reduce the two categories of transaction costs, namely costs to coordinate and safeguard a transaction. A reduction of transaction costs potentially enables buyers to find sellers in distant geographic markets who have lower prices, provide better service, offer higher quality, or have products that better match needs (Bakos 1997; Cairncross 1997; Choi et al. 1997; Malone et al. 1987; Wigand 1997; Wigand and Benjamin 1995; Wildman and Guerin-Calvert 1991).

From this perspective, rather than explaining the rising importance of the click and mortar approach to e-commerce, transaction cost theory is more often used to explain the emergence and expected dominance of Internet business models. It emphasizes the reasons why Internet firms may be able to compete successfully with local, physically present businesses, rather than emphasizing the reasons why physically present businesses may be more able exploit the Internet than those without any physical market presence. Additionally, numerous other analyses of Internet businesses have a similar bias towards the economic advantages that Internet-only firms enjoy over established firms with a physical presence in the marketplace. Web-based businesses are perceived to hold many operational, cost, scale and scope advantages over firms confined to physical channels, including: access to wider markets, lower inventory and building costs, flexibility in sourcing inputs, improved transaction automation and data mining capabilities, ability to bypass intermediaries, lower menu costs enabling more rapid response to market changes, ease of bundling complementary products, ease of offering 24/7 access, and no limitation on depth of information provided to potential customers (Afuah and Tucci 2001; Anonymous 2000; Bailey 1998; Choi et al. 1997; Wigand 1997; Wigand and Benjamin 1995).

These analyses, however, mainly contrast established firms with Internet firms and largely ignore the benefits arising from the potential synergies when firms have a combination of physical and e-commerce channels. A growing body of e-commerce research, however, now focuses on these potential synergies, and criticizes the early over-emphasis on Internet-only business models (Friedman and Furey 1999; Otto and Chung 2000; Rosen and Howard 2000; Steinfield et al. 2001, 2002a, 2002b; Steinfield and Klein 1999; Ward 2001). This alternative perspective is rooted in the notion that click and mortar firms benefit from the ability to exploit complementary assets, providing an advantage over newly emerging Web-based competitors. For example, established firms have existing supplier and distributor relationships, market power, experience in the market, a customer base, brand recognition and other complementary assets that can enable them to take greater advantage of an innovation like e-commerce (Afuah and Tucci 2001; Teece 1986). Advantages arise not only from the ability that a multichannel approach offers for reaching new customers and offering new services, but also because each channel can have spill-over effects that result in increased purchases and reduced costs in the other channel (Ward 2001).

In a similar fashion, classic theories of competitive strategy emphasize the importance of exploiting interrelationships among various tangible and intangible assets as important sources of synergies that can drive competitive advantage (Porter 1985). These works, along with marketing theories focusing on channel coordination further point to management strategies that can help elicit the benefits from potential sources of synergy, as well as help to avoid damaging channel conflicts (Friedman and Furey 1999; Stern and Ansary 1992). Information systems research has a long history of emphasizing how electronic networks can be used to realize competitive advantages, particularly to achieve cost, differentiation and geographic expansion benefits.
(Bakos and Treacy 1986; Johnston and Vitale 1988; Porter and Millar 1985). It is a small step to show how these classic competitive advantages can be derived from a successful exploitation of synergies between physical and virtual channels. Click and mortar firms also have an opportunity to avoid one of the most difficult problems facing Internet-only businesses – lack of trust (Iyer et al. 2004). Here, again, classic transaction cost theories, as well as research in the field of economic sociology, can be brought to bear to shed light on why integration among channels can be a more successful strategy (DiMaggio and Louch 1998; Granovetter 1985; Steinfield and Klein 1999; Steinfield et al. 1999; Steinfield and Whitten 1999).

The potential benefits from integration of physical presence and e-commerce have been elaborated by Steinfield et al. (1999), who suggested four sources of advantage that retailers with a local presence have over pure Internet firms. These include:

1. improved trust – consumers who recognize a Web store as an extension of an existing business may perceive it to be more legitimate, and have more trust in the store;
2. reduced consumer risk – e.g., being able to return goods to a physical store can lessen risks associated with online purchases;
3. broader coverage of diverse shopping preferences – e.g., those needing an item immediately can pick it up at a local store, while those with limited free time can shop online at their convenience; and
4. natural complementarities between the two channels – e.g., items can be purchased online, while the physical store can be used as a site for servicing and advice.

Potential barriers to implementing click and mortar business models

With the increase in the population of Internet users and online retail sales, more and more firms are including the Internet (e.g., a website) in their channel strategies. However, many retailers have minimized their online efforts, continuing to sell via traditional offline channels. A variety of reasons contribute to traditional retailers’ delay in adopting a click and mortar strategy. Here we briefly outline four barriers noted in the literature:

1. The complexity in pricing and differences in channel and consumer characteristics make it difficult for the traditional retailers to reconcile their traditional operations with their online efforts (Viswanathan 2000).
2. The threat of channel conflict can inhibit e-commerce channel development. By channel conflict, we mean the difficulties that can arise when the same good or service is sold simultaneously in online and offline channels. Channel conflict is especially a challenge for click and mortar firms because of a) price competition: consumers can compare prices across online and offline channels and will ultimately extract the surplus created by lower costs and b) non-excludability: there is no reliable way for retailers to segment the market. As a result, it is fairly easy for consumers to switch channels in order to extract the greatest benefit (Chwelos and Brydon 2000). Some customers use retailers’ websites for searching for information about products and performing product comparisons, then ultimately go to physical stores to make the actual purchase (Prasarnphanich and Gillenson 2003). Forrester Research reported that 65% of online consumers in 2004 are cross-channel shoppers (consumers who research online and buy offline), making an estimated 305 million cross-channel transactions, with an average transaction size of $400 (Anonymous 2004b).

3. Firms may suffer from a lack of resources, as the integration of online and offline channels requires investments in IT resources. Also, in order to realize the potential benefits of IT resources, investments in intangible assets, such as new organizational processes and structures, worker knowledge, and redesigned monitoring, reporting, and incentive systems, may be needed, all of which may be very costly to implement (Brynjolfsson et al. 2002). From the perspective of the management of core internal business processes, Barnes et al. (2004) suggest that increased integration of e-commerce applications within existing business processes is inhibited by technological, sociological and economic barriers.

4. The use of established brands for the online operations of a firm may have a detrimental impact on a firm’s brand or may even marginalize a firm’s brand equity due to poor integration of operations (Saeed et al. 2003).

Lessons learned from previous click and mortar case studies

An important benefit of click and mortar integration is to provide flexibility to customers in the purchase process; this depends heavily on integration of information systems supporting virtual and physical channels (Saeed et al. 2003). As more retailers begin to integrate their physical and Internet channels, it is important to study the strategies they follow (Prasarnphanich and Gillenson 2003). In the following paragraphs, we identify a number of click and mortar features and services found in the literature.

Steinfield et al. (2002a, 2002b) conducted a series of nearly 30 case studies in the Netherlands and the US to
explore the practices of click and mortar firms. The cases spanned many different types of industries, and included companies selling to other businesses, as well as those selling to end-consumers. The types of products offered were wide-ranging, including both physical and information products, information services, large durables and small products, and perishable and non-perishable products. Interviews with company marketing and e-commerce managers, along with reviews of public data about the companies and the publicly accessible portions of company websites, yielded many insights about the inner workings of click and mortar firms.

Steinfeld et al. (2002a 2002b) suggest that the click and mortar cases took advantage of a number potential sources of synergy not necessarily available to dot-com or traditional offline competitors, including capitalizing on the fact that traditional and e-commerce channels can share common infrastructures, operations, marketing, and customers and other complementary assets. Several case study firms, for example, used their existing logistics infrastructure for warehousing and distribution of products for both e-commerce and traditional channels. This is especially the case when firms offered a pick-up in the store option, so that goods ordered online could be delivered to the desired store if not already in the store’s inventory. An example of IT infrastructure sharing is when existing store inventory systems are integrated with e-commerce. The US electronics retailer case, for example, highlighted the fact that online customers could check local store inventory, and request that an item be held for in-store pickup. A common order processing system shared between e-commerce and physical channels is a good example of a common operation as a source of synergy. In many of the firms, e-commerce and physical channels shared common marketing and sales assets. Some, like the US gift retailer, had a common product catalogue. Others, such as the book retailers, took advantage of the fact that their offline sales force had a strong understanding of the products, allowing them to more effectively meet online customer needs through book recommendations. Finally, with an integrated channel approach, advertisements and promotions in each channel can draw attention to the other, enhancing spill-over effects. The automobile importers and manufacturers, for example, due to regulations prohibiting direct sales to consumers, relied extensively on online promotion to drive traffic to their affiliated dealerships.

Saeed et al. (2003) suggest that click and mortar integration at the operational level could be presented in terms of value added services such as (1) informational integration, which allows customers to locate the nearest store, check inventory, order and make payment, set up and manage an online account; and (2) logistical integration, which means that the underlying information infrastructure caters to the flexibility demands of the distribution system. Logistical integration allows customers to order online and pick up their order from the nearest store and to return products purchased from the Web at the local outlet.

Summarizing representative click and mortar features and services

Based on the above review and case studies, a number of features and services are suggested that a retailer can use to link their website to their physical outlets. These website features collectively provide information about how and when to access the physical retail outlet, as well as support transactions that take place in or otherwise involve some aspect of the physical retail outlet. They include such features as the following: a map and/or driving directions to retail outlets, information about the history or background of the company, the hours of operation of retail outlets, information on retail outlet events or special sales, coupons or gift certificates redeemable in retail outlets, the ability to search the inventory of a retail outlet, the ability to make an appointment or reservation for a service in the retail outlet, allowing customers to return items purchased online to retail outlets, providing links to other businesses in the same community where retail outlets are located, and allowing online orders to be picked up at retail outlet.

Factors influencing use of click and mortar features

Below we discuss the influence of product type, firm structure and firm resources on the use of click and mortar features by retailers.

Product type

Firms’ click and mortar integration can be predicted by a variety of factors. The first set of factors stems from the specific types of products and services that a retailer sells. The characteristics of products and services can influence the way an online channel might be used, due to variations in such factors as the physical properties of the product, the value of the product, and the frequency with which the product is purchased. The Web enables consumers to become aware of and transact with Internet retailers who may be located anywhere. However, there is a spatial dimension for products that influences their location of production and consumption – some products and services must be both produced and consumed locally, while others such as larger appliances may be more costly to transport. However, many other types of products and services can be produced anywhere and either electronically or physically delivered to consumers (Steinfeld et al. 1999). Physical interaction with certain types of products may be an important aspect in a purchase decision. Internet
channels may not be appropriate if customers perceive
the product as requiring touch or feel to judge quality,
or if it is otherwise difficult to acquire due to logistical
considerations (Klein 1998; Saeed et al. 2003). In
addition, certain firms derive value from providing an
experience within a physical retail outlet (Pine and
Gilmore 1999). As a result, some firms’ websites only
serve as a storefront presence for the firms, while others
support online orders and transactions.

Firm structure

Retail chains and sole proprietorships may adopt
different click and mortar strategies, since they may
manage a different number of firm locations. Adding a
virtual channel can help extend the reach of a firm
beyond its traditional physical outlets, addressing new
geographic markets. However, a retailer with a single
location (often a sole proprietorship) is limited in
exploiting its physical presence (e.g., to permit physical
inspection of products) for customers living outside of
its traditional local market. In contrast, a firm with
multiple locations (e.g., a retail chain) can leverage its
presence in a number of local markets. For example,
retail chain firms are more likely to have established
distribution centres, and are more likely to have
experience in coordinating multiple-location operations.
These centres and gained experience can be used to
handle Internet orders efficiently and effectively by
capitalizing on scale economies.

Firm resources

Another set of factors is related to a firm’s resources that
can be used to pursue a click and mortar integration.
Earlier research has emphasized the importance of a
firm’s resources in predicting the ability to capitalize on
IT innovations (Tornatzky and Klein 1982). More
recently, researchers have argued that existing IT
resources such as the number of PCs in the firm, the
to extent to which these PCs are networked, and other
indicators of IT stocks are important enablers for e-
commerce (Zhu and Kraemer 2002). Other resources
include a firms’ brand name, quality of existing supplier
relationships, and possession of a range of other
complementary assets, as well as capital and human
resources that can be utilized to facilitate its e-commerce
(Steinfield et al. 2002a). In addition, companies that
already engage in catalogue sales have an established
infrastructure and business model that can be applied
and enhanced with relative ease to handle Internet
orders. Firms with such resources, as indicated by such
proxies as firm age (suggesting such resources as existing
supplier relationships and brand name), sales volumes
and number of employees, are more likely to invest in
e-commerce and pursue a click and mortar integration
strategy, due to a higher return on investment in
comparison to firms without these resources.

RESEARCH METHODS

The content analysis method has been a widely
recognized research tool used in a variety of research
disciplines. Berelson (1952: 18) defined content analysis
as ‘a research technique for the objective, systematic and
quantitative description of the manifest content of
communication’. McMillan (2000) identified four pri-
mary advantages of content analysis: (1) it is unobtrus-
ive; (2) it accepts unstructured material; (3) it is context
sensitive and thereby able to process symbolic forms; and
(4) and it can cope with large volumes of data. These
attributes make content analysis a particularly appro-
priate tool for analysing Web content.

In recent years, the content analysis research method
has been applied to a variety of e-commerce research.
Dou et al. (2002) used a content analysis procedure to
explore how firms utilize different elements of their
corporate websites to reach and sell to potential
customers, and to achieve their communication and
transaction objectives. Zhu and Kraemer (2002) per-
formed a content analysis of 260 manufacturers’
websites to identify firms’ e-commerce capabilities.

One of the purposes of our study is to identify
retailers’ channel integration approaches, and in parti-
cular, those that are reflected by the click and mortar
features on their websites. Therefore, content analysis
is an appropriate research method for our study. In this
study, we carefully followed the content analysis
procedures recommended by McMillan (2000),
including: (1) selecting the sample; (2) defining the
unit of analysis categories; (3) training judges; and (4)
gathering data.

Sample selection

The sample was comprised of companies drawn from
nine different retail sectors according to the North
American Industrial Classification System (NAICS) (see
Table 1). The nine sectors were chosen based on prior
research comparing the relative use of e-commerce
across a wide range of product categories, with sectors
that historically have experienced greater e-commerce
sales selected for inclusion in our study (Laudon and
Traver 2003).

The sample was drawn from a national database
provided by Dun and Bradstreet, Inc. in March 2002. In
each of the nine selected NAICS retail sectors, at least
the top 350 firms by revenue size were selected, giving
us a list of 3,100 firms in total. We searched for the
URLs of all the firms in our sample using several
different public search engines such as google.com. Ten
students from a large Midwestern university were
employed to look up the URLs of the firms. We found
that 1,689 firms had some sort of Internet presence. We
cleaned our database by setting websites apart from
listings on business referral websites, city guides, and
others. Also, double accounting was deleted, since a
number of franchised firms that did not manage their
own websites were included in the original list. Further,
websites which were not operational, under construc-
tion, or not accessible were also removed from the list.
After these filters, 978 firms were finally selected. Table 2
provides a summary of the companies that were included
in the content analysis.

Units of judgements

In content analysis studies, coding units and context
units are the two most widely used measurement tools
(Budd et al. 1967: 33–6). Coding units are the smallest
segment of content counted and scored, whereas the
context unit is the body of material surrounding the
coding unit. In this study, the context unit for coding is
defined as all pages found at each given website.

In spring 2002, the websites of the 978 US-based
retail firms were content analysed. The framework for
analysing the websites is based on a coding schema
including 16 categories based on the features found at
firms’ websites that indicated the extent to which firms
were pursuing an online-offline integration strategy (see
Table 3). The categories are derived from Steinfield
et al.’s (2002a, 2002b) case studies, as well as other
literature cited above.

Judge training

Through a series of training sessions, student coders
were trained to code the selected firms’ websites
according to the schema developed for this study.
They conducted a content analysis on the websites on
our list, and filled out a standard Excel data form. Each
category was coded using a binary variable, representing
whether or not a website had the particular feature. If a
website had the feature, it was coded ‘1’; if not, it was
coded ‘0’; and undefined variables were coded as missing
data.

Inter-judge reliability

The Holsti value, which indicates the proportion of total
pairwise agreements between judges, is the simplest and
most widely used measure to test inter-judge reliability.
In the inter-judge reliability test, 9 judges coded 9 firms
that were randomly chosen from the 978 coded firms.
The average Holsti value of the 9 judges was .87.
Further, we used a new judgement-based, qualitative
research reliability measure designed specifically for
testing reliability of multiple coders that was developed
by Rust and Cooil (1994), called the proportional
reduction in loss (PRL). The PRL measure is a
standardized measure of the loss expected to result from
the errors caused by using the scale score for decision-
making purposes (Rust and Cooil 1994).

One of the advantages of the PRL measure is that it
can generalize across both quantitative and qualitative
scenarios. As a result, it is useful for analysing the
quality of the coded judgements that are collected as

Table 2. Summary of firms included in the website content analysis

<table>
<thead>
<tr>
<th>Retail sector</th>
<th>NAICS code</th>
<th>Number of firms</th>
<th>Mean annual revenue (in millions)</th>
<th>Mean number of employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Vehicle and Parts Dealers</td>
<td>441</td>
<td>200</td>
<td>362.7</td>
<td>594</td>
</tr>
<tr>
<td>Furniture and Home Furnishings Stores</td>
<td>442</td>
<td>138</td>
<td>64.2</td>
<td>495</td>
</tr>
<tr>
<td>Electronics and Appliance Stores</td>
<td>443</td>
<td>144</td>
<td>359.2</td>
<td>1,715</td>
</tr>
<tr>
<td>Building Material, Garden Equipment, and Supplies Dealers</td>
<td>444</td>
<td>121</td>
<td>737.0</td>
<td>4,186</td>
</tr>
<tr>
<td>Health and Personal Care Stores</td>
<td>446</td>
<td>58</td>
<td>1,114.5</td>
<td>5,937</td>
</tr>
<tr>
<td>Clothing and Clothing Accessories Stores</td>
<td>448</td>
<td>97</td>
<td>833.2</td>
<td>8,465</td>
</tr>
<tr>
<td>Sporting Goods, Hobby, Book and Music Stores</td>
<td>451</td>
<td>140</td>
<td>120.9</td>
<td>1,143</td>
</tr>
<tr>
<td>General Merchandise Stores</td>
<td>452</td>
<td>51</td>
<td>7,108.0</td>
<td>51,157</td>
</tr>
<tr>
<td>Miscellaneous Store Retailers</td>
<td>453</td>
<td>29</td>
<td>674.1</td>
<td>4,196</td>
</tr>
</tbody>
</table>
'quantitative' data, but as a matter of fact are qualitative in nature, such as the case of the content analysis data collected in our study. The proportional agreement for this test was .87. Based on ‘The PRL Reliability for Two Categories Given Number of Judges and Proportion of Interjudge Agreement Measure Table’ (Rust and Cooil 1994: 7), the PRL reliability measure for this reliability test is 1.00. Because the 1.00 level for PRL is directly comparable to a Cronbach’s alpha of 1.00 in terms of expected loss, it indicates a very high level of agreement among all the judges.

RESULTS

Below we discuss the result of the content and regression analysis.

Table 3. Content analysis categories and coding scheme

<table>
<thead>
<tr>
<th>Features</th>
<th>Coding scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Phone number of retail outlets</td>
<td>Whether the website offers the phone number of a specific physical store in a particular location or a specific person at a particular location.</td>
</tr>
<tr>
<td>2. Mail address of retail outlets</td>
<td>Whether the website offers the physical mail address of a specific physical store in a particular location.</td>
</tr>
<tr>
<td>3. Map to retail outlets or driving directions</td>
<td>Whether the website provides any sort of map showing how to travel to any physical store.</td>
</tr>
<tr>
<td>4. Hours of operation of retail outlets</td>
<td>Whether the website indicates the hours during which any physical store is open for business.</td>
</tr>
<tr>
<td>5. Company background or history</td>
<td>Whether there is any historical or other background information that is specific to the business operating in a particular physical location.</td>
</tr>
<tr>
<td>6. Links to other businesses in the community where retail outlets are located</td>
<td>Whether there are links to other businesses or organizations in the specific city or town of the physical store.</td>
</tr>
<tr>
<td>7. Information on retail outlet events or specials</td>
<td>Whether it is possible to find out what type of sales or special events are happening in specific physical stores.</td>
</tr>
<tr>
<td>8. Coupons or gift certificates redeemable in retail outlets</td>
<td>Whether it is possible to obtain a coupon or buy a gift certificate that can be used in a physical store.</td>
</tr>
<tr>
<td>9. Ability to make an appointment or reservation for a service in the retail outlet</td>
<td>Whether there is any way to make an appointment with someone, or reserve some sort of service at a physical store.</td>
</tr>
<tr>
<td>10. Ability to complete a full transaction online</td>
<td>Whether it is possible to make a complete purchase, including ordering and payment, entirely online.</td>
</tr>
<tr>
<td>11. Ability to search the inventory of a retail outlet</td>
<td>Whether it is possible to look to see if a particular product is available (in stock) at a particular store location. Otherwise, code 0.</td>
</tr>
<tr>
<td>12. Allow online orders to be picked up at retail outlet</td>
<td>Whether it is possible to order a product online, but pick it up at a specific physical store.</td>
</tr>
<tr>
<td>13. Allow checking on the status of an online order</td>
<td>Whether it is possible to check on the status of a particular order.</td>
</tr>
<tr>
<td>14. Allow customers to set up and manage accounts</td>
<td>Whether it is possible to create and manage a personal account on the website.</td>
</tr>
<tr>
<td>15. Allow customers to place items in a gift registry</td>
<td>Whether it is possible to create a gift registry or a wishlist of products.</td>
</tr>
<tr>
<td>16. Allow customers to return items purchased online to retail outlets</td>
<td>Whether it is possible to return products purchased online to a physical store.</td>
</tr>
</tbody>
</table>

Content analysis

Trained coders content analysed all of the selected company websites for the presence or absence of 16 different features that reflected the degree to which the online site was integrated with physical retail outlets. In Table 4, we group these features into three categories: 1) simple information – i.e. basic references to stores found in nearly all firms’ websites; 2) complex online/offline integration (i.e. explicitly involves a retail outlet in the transaction in some way); and 3) other features that reflect some degree of online expertise, but do not necessarily imply a click and mortar orientation. As shown in Table 4, nearly all firms included the telephone number and address of retail outlets, and more than two thirds also provided a map or directions for finding retail outlets. Other common click and mortar features
included the provision of historical background on the company, the hours of operation of physical retail outlets, and information about in-store events or special sales. These all reflect informational strategies rather than transaction-oriented click and mortar services or services illustrating interoperability between stores and websites. Somewhat less common were such features as the provision of coupons or gift certificates redeemable in stores, the ability to search in-store inventory, the ability to make appointments, and allowing customers who bought goods online to return them to physical stores. In only about a third of the sampled firms could customers complete a full transaction online.

In order to create a single score that represented each firm’s degree of click and mortar use, we generated an index by taking the sum of the total number of click and mortar features found on each firm’s website. The click and mortar features included both the informational features (items 1 to 6 in Table 4) and the more complex online/offline integration features (items 7 to 12 in Table 4). In order to increase the discriminatory power of this index, however, we dropped the first two items – having a phone number and a mail address of retail outlets – since just about every firm’s site included these features. Each item present on the site counted as one, so that the maximum possible score was 10, and the minimum was 0. The resulting click and mortar intensity index ranged from 0 to 8, with a mean of 3.06 and standard deviation of 1.67. The mean scores on this index by industry sector are provided in Table 5. An analysis of variance reveals that motor vehicle and parts dealers (M=4.34, S.D.=1.61) and general merchandise stores (M=4.00, S.D.=1.23) exhibit a significantly higher degree of channel integration approach than firms in other retail sectors (Overall ANOVA, F=33.81, p<.0001). A post hoc comparison showed that these two sectors scored significantly higher than all others at the p<.05 level.

Factors influencing the intensity of click and mortar integration

In our earlier discussion, we proposed a number of factors that might influence a firm’s click and mortar intensity, including industry sector, whether a firm is a single or multiple location retailer, firm resources, firm age, and evidence of an existing IT infrastructure. The Dun and Bradstreet database included measures for each of these factors that we used in a regression analysis. Firm resources were measured by a size index created out of a firm’s annual sales and total number of employees. An indicator of existing IT infrastructure was measured by a count of the total number of PCs in the firm. We used these factors as independent variables, predicting a firm’s score on the click and mortar intensity index. As shown in Table 6, collectively these five factors have a positive influence on the click and mortar intensity of the firms’ websites (R²=.23,
Industry sector and firm size both have a significant positive influence on click and mortar intensity at the .05 level or better. A dummy variable reflecting a multilocation (e.g., retail chain) retail outlet structure did not achieve significance, but had a marginal association at the $p < .10$ level. If we had data on the actual number of locations, this variable may have fared better. Within industry sector, and as suggested by the earlier ANOVA results, motor vehicle and parts dealers ($p < .0001$), and general merchandise stores ($p < .0001$) tend to be positively associated with click and mortar intensity whereas electronics and appliance stores ($p < .0001$), building material, garden equipment, and supplies dealers ($p < .05$), health and personal care stores ($p < .001$), and miscellaneous store retailers ($p < .05$) tend to be negatively associated with click and mortar intensity. Age of a firm and the number of PCs did not relate to the use of click and mortar e-commerce features.

**DISCUSSION**

The content analysis of websites illustrates that, despite prior research suggesting the value of channel integration, highly integrated click and mortar approaches are not altogether common, and mainly focus on easier to implement informational strategies. Most firms are simply featuring information, such as a phone number or mail address of retail outlets, a map to retail outlets or driving directions, company background or history, hours of operation, and information on retail outlet events or special sales. Relatively few firms have adopted a complex click and mortar approach based on the proportion of sites containing these features.

Table 5. Variation in click and mortar oriented web features across different retail sectors

<table>
<thead>
<tr>
<th>Retail sector</th>
<th>NAICS code</th>
<th>Number of firms</th>
<th>Click and mortar index score Mean (Std. Dev.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Vehicle and Parts Dealers</td>
<td>441</td>
<td>200</td>
<td>4.34 (1.61)</td>
</tr>
<tr>
<td>General Merchandise Stores</td>
<td>452</td>
<td>51</td>
<td>4.00 (1.23)</td>
</tr>
<tr>
<td>Sporting Goods, Hobby, Book and Music Stores</td>
<td>451</td>
<td>140</td>
<td>3.10 (1.58)</td>
</tr>
<tr>
<td>Clothing and Clothing Accessories Stores</td>
<td>448</td>
<td>97</td>
<td>2.85 (1.49)</td>
</tr>
<tr>
<td>Furniture and Home Furnishings Stores</td>
<td>442</td>
<td>138</td>
<td>2.79 (1.33)</td>
</tr>
<tr>
<td>Building Material, Garden Equipment, and Supplies Dealers</td>
<td>444</td>
<td>121</td>
<td>2.69 (1.39)</td>
</tr>
<tr>
<td>Miscellaneous Store Retailers</td>
<td>453</td>
<td>29</td>
<td>2.41 (1.30)</td>
</tr>
<tr>
<td>Health and Personal Care Stores</td>
<td>446</td>
<td>58</td>
<td>2.34 (1.50)</td>
</tr>
<tr>
<td>Electronics and Appliance Stores</td>
<td>443</td>
<td>144</td>
<td>2.07 (1.45)</td>
</tr>
</tbody>
</table>

Table 6. Regression results on click and mortar intensity

<table>
<thead>
<tr>
<th>Overall model:</th>
<th>$R^2$</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.23</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>NAICS</th>
<th>Standardized beta coefficient</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Vehicle and Parts Dealers</td>
<td>441</td>
<td>1.47</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Furniture and Home Furnishings Stores</td>
<td>442</td>
<td>-0.14</td>
<td>0.2788</td>
</tr>
<tr>
<td>Electronics and Appliance Stores</td>
<td>443</td>
<td>-0.80</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Building Material, Garden Equipment, and Supplies Dealers</td>
<td>444</td>
<td>-0.26</td>
<td>0.0477</td>
</tr>
<tr>
<td>Health and Personal Care Stores</td>
<td>446</td>
<td>-0.68</td>
<td>0.0003</td>
</tr>
<tr>
<td>Clothing and Clothing Accessories Stores</td>
<td>448</td>
<td>-0.10</td>
<td>0.5139</td>
</tr>
<tr>
<td>Sporting Goods, Hobby, Book and Music Stores</td>
<td>451</td>
<td>0.15</td>
<td>0.2518</td>
</tr>
<tr>
<td>General Merchandise Stores</td>
<td>452</td>
<td>0.96</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Miscellaneous Store Retailers</td>
<td>453</td>
<td>-0.60</td>
<td>0.0179</td>
</tr>
<tr>
<td>Sales Volume and Number of Employees</td>
<td>1.62</td>
<td>0.0209</td>
<td></td>
</tr>
<tr>
<td>Firm Age</td>
<td>0.58</td>
<td>0.4084</td>
<td></td>
</tr>
<tr>
<td>Multiple/Single Location</td>
<td>0.11</td>
<td>0.0712</td>
<td></td>
</tr>
<tr>
<td>PC EST</td>
<td>0.01</td>
<td>0.9851</td>
<td></td>
</tr>
</tbody>
</table>
We also observed that only one-third of the firms in our sample had a website where consumers could complete a full transaction online. This is an indication that firms rely greatly on their physical retail outlets to complete transactions. However, firms show only minimal effort towards a click and mortar integration that could facilitate the completion of transactions offline. For example, less than one in five allowed consumers to check a store’s inventory online prior to visiting the store, and only 6% allowed online shoppers to pick up and pay for goods at the physical store. This mismatch of strategies potentially reduces the benefits derived from Internet-related investments.

Our analyses shed light on possible explanations for the relative lack of retailers’ online and physical integration. Among the explanations we were able to explore are whether retailer sector, firm resources, having multiple locations, firm age, and IT infrastructure related to the use of a click and mortar strategy. Our results suggest that researchers need to explore more fully the costs and benefits of integration in order to understand retailer strategies.

The degree of channel integration differs significantly across the retailing industry sectors. The finding that auto dealers and department stores are more likely to integrate online and physical retail channels is easily explained. Cars are a type of product that demands a physical outlet to supplement online selling, both for product testing and the critical after-sales service relationship (Molesworth and Suortti 2002). The automotive retail sector deals with a high-value, high-involvement product category. Molesworth and Suortti (2002) suggest consumers only value and use the auto dealer websites at the very early, information seeking stages to improve the balance of power between themselves and car salespeople. During later stages in the buying process people may resist the use of a new innovation like the Internet to finalize their purchase, resulting from the consumer’s need for personal experience with the product prior to purchase (i.e., test driving), the uncertainty regarding after-sales support, the reluctance to give up the social aspects of car buying, and a perceived inability to negotiate through a website (Molesworth and Suortti 2002). Therefore, it makes sense for auto dealers to adopt a hybrid strategy integrating online and offline channels in order to meet consumers’ needs at different stages of the purchasing process.

Another reason that auto dealers have pursued a click and mortar strategy stems from the competitive pressures arising from popular automotive websites that assist consumers in buying and selling cars. Examples include autobytel.com and cars.com. Dealers often list their cars on these websites themselves. The listing usually includes a hyperlink back to their company homepages. A click and mortar approach is a way to turn this additional web traffic into customer visits to the dealer’s physical outlets.

Department stores have invested heavily in their physical infrastructure, and would not want to undermine these investments with a pure online strategy. Rather, they depend on attracting customers into the store where sales people can engage in cross-selling and up-selling. They are also larger (in terms of size, and number of locations for example), and more likely to have an existing IT infrastructure and backend systems upon which an e-commerce capability can be built. In addition, many department stores are heavily engaged in traditional catalogue sales. E-commerce can be regarded as a natural extension of catalogue sales thus requiring lower costs to integrate online and offline channels. Further, department stores face increased competition from Internet firms such as Amazon.com, which rival these stores in terms of the depth and breadth of available products in the physical retail outlets. A click and mortar integration provides a way for department stores to match the offers of Internet-only competitors and to distinguish themselves from Internet stores by offering face-to-face services available in their stores.

Interestingly, the electronic and appliances stores have the lowest degree of click and mortar integration, especially since this industry segment is reported to be among the highest in terms of annual e-commerce retail sales levels (Laudon and Traver 2003). The low integration indicates that these firms have adopted a more parallel strategy towards e-commerce. A parallel strategy can be explained by taking into consideration the great competition from Internet firms, such as Dell.com. Intensive competition may create the need to compete head to head with the Internet firms. Local stores may prefer to replicate the marketing strategies of Internet firms, such as creating a national appeal online. Therefore, there are fewer incentives for electronic and appliances stores to promote the local store character on their websites, since that might hurt their business and competitive edge.

Finally, firm size significantly predicted click and mortar intensity. This measure may broadly subsume the many kinds of resource advantages available to larger firms, including the likelihood that larger firms have more IT skills, inventory depth, marketing and promotion capability, and so forth. The firm size relationship thus suggests that achieving real synergy between online and offline operations requires significant investments that may not be available to small and medium-sized enterprises. Firm size is also likely to be related to the IT budget in absolute numbers, which can be partly used for click and mortar investments. More importantly, larger firms are more likely to have an established IT/e-commerce strategy. An existing IT/e-commerce strategy would contribute to the perceived relevance and
importance of a click and mortar strategy among firm managers.

CONCLUSIONS

This content analysis study lends support to the theoretical basis behind the click and mortar conceptual framework emerging in the e-commerce literature – click and mortar firms use online website features that capitalize on the complementary assets from the traditional arm of the company. Our results demonstrate that highly integrated strategies are not common in practice, due to both product characteristics and availability of resources. However, a content analysis alone does not allow an empirical test of another very important relationship hypothesized in the early e-commerce literature – that online and offline channel integration leads to superior firm performance. We suggest further studies look into the benefits of online and physical channel integration. Further, there are indications that competition from Internet-only firms influence the pattern of click and mortar strategies. Some industries, such as the electronic and appliances stores, appear to favour a parallel strategy towards e-commerce. Others, such as automotive retailers and department stores appear to prefer tightly integrated click and mortar strategies. Future research should try to assess how competitive pressures interact with such factors as product characteristics and firm resources in explaining the pattern of click and mortar e-commerce strategies.

ACKNOWLEDGEMENT

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Notes
1. Note that the US Census Bureau potentially underestimates total consumer-oriented e-commerce activity, since the Census does not include online travel, financial services, and ticket agencies in their retail sample. However, the Census data includes transactions where the order took place online, but not necessarily the payment.
2. Some industries had less than 350 firms in each NAICS code.

References


