



Unattended Delivery for Online Shopping: An Exploratory Study from Consumers Perspectives

Brett Ferrand, Mark Xu, Martyn Roberts, Portsmouth Business School, University of Portsmouth, Portsmouth, UK, PO1 3DE

ABSTRACT

Waiting for items to be delivered and the failure of scheduled delivery can offset the time-saving and convenience benefits of online shopping. This paper reports on part of a survey-based study that examines consumers' perception of current delivery options when shopping online in the UK. It found that the delivery options currently offered by eTailers were limited and the level of negative attitude towards the current delivery processes was high. UK consumers do not perceive unattended delivery as a particularly favourable choice as widely reported in US and Europe, but see online tracking and local collection points as more convenient delivery options.

INTRODUCTION

Product delivery for online shopping is considered to be an important part of order fulfilment that is becoming more salient to consumers (Cooke, 2004). One of the notable benefits of online shopping is the convenience and time saving when compared to traditional shopping (Alreck and Settle, 2002; Roberts, *et al.* 2003). However, recent studies have shown that the convenience and time saving benefits have not always materialised (Morganosky and Cude, 2002; Annon, 2004). Some online shoppers even feel online shopping takes longer than traditional shopping mainly because of delays in delivery or the problems of failed delivery. Morganosky and Cude (2002) report that although the majority of the respondents cited convenience as the most important motivational driver for using online shopping service, over 20% of respondents felt the time was the same or even more than traditional shopping. Annon (2001) reports that 42% of home shoppers had to collect missed delivered items from a post office or other depot in the year 2000. In their later study (Annon, 2004), 64% of respondents said they would buy more online if they had more delivery options, with unattended options coming out the top of their wish list.

It is apparent that the logistics infrastructure and the delivery model effects the adoption of online shopping. Frazer (2000) identifies time constraint issues, the quality of home delivery services, and the variety of delivery services on offer as some of the reasons why home delivery is the weakest link in the Internet chain. He argues that businesses are increasingly finding it difficult to find delivery options that are both affordable and satisfy consumers. This notion is reinforced by Newton (2001) who states the central challenge for B2C companies is to deliver products to the home of individual consumers in a way that is cost effective and meets customers' expectations.

Compared with a large body of literature on Internet adoption (Gary, 2003; Fillis, *et al.* 2004); online shopper profile (Kau, *et al.* 2003), effective delivery models for online shopping are under-researched. The common order-fulfilment models (*i.e.* distribution centre vs. existing store pick up) has attracted the attention of some researchers (Seybold, 2002; Punakivi and Tanskanen, 2002), and the concept of unattended delivery has emerged from US and EU based studies (Ring and Tigert, 2001; Tanskanen, *et al.* 2002; McKinnon and Tallam; 2003). However, the concept of unattended delivery has not been tested in the UK from both consumer and eTailers perspectives.

SCOPE OF THE STUDY

Delivery requests vary according to the type of products purchased online. The delivery of letter-box sized items is not a concern for both the eTailer and eShopper, as the item can be securely delivered to the consumer's property without the need for the person to present. Delivery of larger items is often linked to installation and commissioning of the product purchased, making unattended delivery difficult and consumers accept that their pre-arranged presence is necessary. This study concentrates on the delivery of small packages, parcels and groceries (except perishable items that have special delivery requirements). Delivery of these items tends to cause most inconvenience to the consumer and is an area where has potential for eTailers to improve.

A REVIEW OF DELIVERY OPTIONS

Many traditional and innovative delivery options are currently available for uses by online retailers (eTailers), but the situation today is that there is not yet a proven operations model for the home delivery service (Tinnila and Jarvela, 2000). Three main types of delivery methods/models are reviewed as follows:

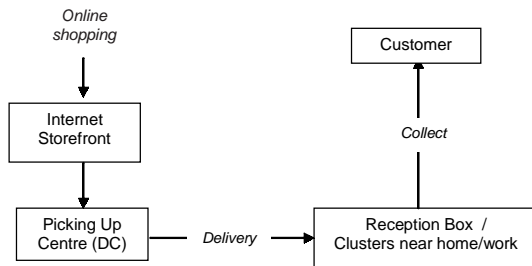
Traditional Delivery

The traditional delivery options that are currently used by parcel handlers are: same-day, next-day and multi-day delivery. Dimaria (2002) suggests that same day deliveries that ensure products magically appear on the doorstep of consumers within hours of placing the order are unlikely to ever happen. This is because companies must have a full inventory located in nearly every local market throughout the country. This tends to be expensive and will not be cost effective for the online retailer. Next day service is currently the most popular option. Some customers may associate next day delivery with first-thing-in-the-morning, which is what it typically used to be. The final option is multi-day delivery. It may be the most economic method, but delivery can take anything from two days or more.

Time Slot Delivery

Grocery retailers offer different delivery time slots to their consumers. ISOTrack (2003) analysed the use of timed delivery options and identified some problems with its use. The main problem is the uneven time slots required, that is the majority of consumers who order groceries, want goods to be delivered between 6 p.m. and 8 p.m. with Thursday to Sunday being favourites. This places large demands on the delivery fleet during busy period, that is vans running at low capacity for 80% of the day then at full capacity for the rest. The uneven demand for time slots is also supported by a DTI (2001) survey of 317 Internet shoppers where 34% of them indicated that the best delivery time slots for them would be between 6 p.m. and 8 p.m. ISOTrack (2003) proposes that companies may need to offer customers on the Internet only the slots which are profitable, for example, hiding the Friday slots or, giving different charges, for example, charge more for Friday slots than that for Monday and Wednesday.

Figure 1. Cluster model for unattended delivery



Unattended Delivery

Delivery for packets and parcels is only beneficial if customers are there to receive them. Punakivi and Tanskanen (2002) suggest that the most expensive service model among the ones generally used is attended delivery on the following day in one-hour delivery windows. The least expensive service model, unattended weekly delivery on a defined weekday, will reduce home delivery costs to less than a half. Originally, unattended delivery was simply leaving an item on someone's doorstep, or in their garden shed, but this brings many security concerns and implications for those items. McKinnon and Tallam (2003) analysed secure unattended delivery options including home security access systems, fitted integrated box, fitted external box, mobile reception box, workplace collection, use of existing outlets and mechanised storage and retrieval devices. These options are believed to improve home delivery to match the busy lifestyle of consumers whilst still being profitable for the company. Unattended reception is the optimal service concept from the perspective of cost efficiency in home delivery transportation. It allows for greater operating efficiency without sacrificing the service level, but requires investment in reception solutions at the consumer end. Unattended reception of goods can be achieved with a refrigerated reception box at the consumer's location or a delivery box, or a shared reception box cluster, which is similar to garbage collection from a block of flats or an office building. The clusters can also be placed in dense residential areas to ensure sufficient households have access to the boxes. Tanskanen, *et al.* (2002) suggest a "Clusters Model" for unattended delivery, which is depicted in Figure 1.

The concept is to build a refrigerated reception box at the customer's home or located in an office building, or a shared reception box clusters for unattended delivery. Ring and Tigert (2001) suggests that the objective of delivering to a collection point could increase the number of deliveries per hour and reduce significantly the delivery time. They use GIB (Brussels) as an example to show that the number of orders "delivered" (to the collection point) would be 9 per hour, this fulfilment ratio is about 2.5 times higher than deliveries made per hour by delivering directly to the home (4-5 orders per hour).

Delivery models need not only to be convenient to customers but also financially viable for the company. Ring and Tigert (2001) argue that the two killer costs facing the pure Internet grocer are the picking costs and the delivery costs. The objective to select which delivery model is to significantly reduce the delivery time or increase the number of deliveries per hour. Another concern is whether consumers would like to pay extra for secured unattended delivery, or pay more for extra services (Cooke, 2004).

METHODOLOGY

This study uses questionnaires to gauge the current delivery processes offered by eTailers in the UK and the perceptions and attitudes towards unattended delivery from e-consumer's point of view. Questionnaires were distributed to 150 selected e-consumers electronically via email with a follow up call to non-respondents after 5 days. A sample of 125 e-consumers was framed. Consideration was taken to achieve a balance of male/female participants and to gain a balance of age distribution—

Table 1. Participant demographic profile

Age Range	Frequency	%	Male	%	Female	%	Average Shopping Frequency*
Under 15	7	5.6	4	3.2	3	2.4	4.7
15 – 29	42	33.6	25	20	17	13.6	5.0
30 – 44	34	27.2	17	13.6	17	13.6	4.2
45 – 59	38	30.4	22	17.6	16	12.8	4.2
Over 60	4	3.2	0	0.0	4	3.2	6.5
Total	125	100	67	54.4	58	45.6	4.9

*Scale 1 = Never, 7=Regularly

between 15-59 years old. This is the typical UK e-consumer group as suggested by Consumer Knowledge (2004). The questionnaires were initially piloted on 10 consumers and appropriate changes made in the light of feedback. The final response rate for the consumer questionnaire was 71%.

The questionnaire was split into three sections: the consumer profile, the online experience with the current delivery process, and the views/perceptions on online delivery options. Both quantitative and qualitative data were collected and tabulated for data analysis. The next section reports the main findings from the questionnaire.

RESULTS AND DISCUSSION

The characteristics of participants involved in the survey are important contextual information for understanding the findings. Table 1 shows the demographic profile of the respondents.

The table shows that participants are primarily in the age group between 15-59 years old, which confirms the e-consumer category identified by Consumer Knowledge (2004). The sample consists of a good mix of male and female respondents.

Consumer Experience With Delivery Of Online Shopping

This section examines consumers' online shopping experience with regard to the delivery location and problems with the current delivery methods. Table 2 shows the frequency of participants using which delivery locations to have their online purchases delivered.

The table shows that most participants frequently have their online purchases delivered to their home. Other locations are rarely used including local collection points, safe box, and other locations. Deliver to work place is rather limited to very few consumers.

Consumers' negative experiences of home delivery process are explored through the question and the findings are presented Table 3.

The results shows that 64% people frequently collected items from distributors' depots and over half of the respondents often reorganize their day in order to wait for delivery to arrive. This shows that many purchases online resulted in inconvenience for online shoppers.

Table 2. Delivery location

Delivery Options	Mean*
Deliver to home	4.18
Deliver to work Place	2.07
Deliver to other locations	1.58
Local collection point	1.51
A safe box	1.26

* 1- Never, 5-Very Frequently

Table 3. Negative experiences with home delivery

Experience With Delivery	(Very) Frequently	Often	Rarely/ Never	Mean* n=125
Collect an item from distributor's depot	64%	26%	13%	3.5
Reorganise your day to stay at home for a delivery	27%	26%	47%	2.8
Re-arrange home or work place delivery time slots	16%	27%	57%	2.4
Wait for a delivery that did not arrive	13%	17%	70%	2.2

* 1- Never, 5-Very Frequently

The data also showed that participants rarely waited for a delivery that failed to happen. This shows a positive aspect to eTailers' current delivery processes. This is in contrast to the argument (ISOTrack, 2003) that in the early e-commerce days, delivery success rate was low with many deliveries not taking place on the day as scheduled.

Perceptions On Delivery Processes

Participant's attitudes and opinions regarding delivery options and related issues are shown in Table 4.

The results show that there is a need for online delivery tracking. Most participants prefer to have an expected delivery date before purchase. This uncovers two potential areas for improvement by eTailers regarding their delivery processes. Positive responses (mean > 3.0) generated from this question suggest that consumers are willing to collect purchased items from local convenience stores, corner shops and are willing to pay more for convenience and faster delivery. Offering more delivery choices are also needed, which can differentiate the eTailor from other e-shops for competitive advantage.

It was also shown that disagreement (mean < 2.5) was posed towards the offering of a safe box that could be left on the consumer's premises. Participants don't like the idea of having a safe box on their premises for items to be delivered to. There may be safety, cost, space and planning permission concerns with installing a safe box in the customer home in the UK. Overall, consumers don't perceive the current delivery processes are satisfactory (mean = 2.42).

Consumers' Preference On Delivery Options

Consumers' preferences on delivery were sought through two open questions. The data generated is qualitative in nature, thus, is treated as such in data analysis. The main method used is to categorise the data according to thematic topics. Table 5 shows the results of consumers' preferences on delivery choices.

The results show that a variety of issues were generated from the participants of the study. 37 respondents expressed the strong desire for delivery tracking, and the need to be informed prior to the delivery arrival. This supports Dimaria's (2002) argument that many consumers don't necessarily mind the wait, provided that they are properly

Table 5. Preferred delivery methods

Category of preferred method	Percent % (n = 117)
Delivery Tracking	31.6 %
Cost of delivery	29 %
Work place delivery	18 %
Collection point delivery	16 %
Non Office Hour Deliveries	16%
Convenient delivery options	13.6 %
Neighbour	10 %
Speedy delivery	7.7 %
Standard delivery	6.8 %
Safe box	1.7 %

N = 117

Table 4. Consumers' attitudes towards delivery process

Items	Mean
I believe there is the need for online delivery tracking, with hourly accurate delivery information.	4.20
I prefer to have an expected delivery date before I purchase.	4.10
I would be willing to collect the item from a local convenient collection point within a reasonable distance of my house.	3.57
I am more likely to buy a product from a store that offers more delivery options than that of just one standard delivery.	3.54
I would pay more for a delivery that was more convenient	3.29
Offering different delivery options makes me think that a store is different from others	3.16
I would pay more for a faster delivery	2.92
I would like the item to be delivered for the lowest charge regardless of how long it took or when it would be delivered.	2.70
The speed of a delivery is more important than convenience.	2.43
Current delivery processes are satisfactory to me	2.42
I would like to be offered the chance to leave a safe box on my premises that the goods could be delivered to.	2.34

N= 125, Scale, 1- Strongly Disagree, 2- Disagree, 3-Undecided, 4-Agree, 5-Strongly Agree

informed about how much they're saving and given an accurate and reliable delivery window. This identifies a potential area for future eTailor to improve their delivery services. 34 respondents referred cost of delivery as an influential factor that affects their choice of delivery and e-shopping. Although no general consensus was achieved, consumers who are willing to pay extra want a faster speedy delivery service, whilst most consumers prefer no or low delivery charges. It suggests that delivery costs are a sensitive matter for consumers, and also a challenge confronted by eTailors. The result reinforces Charton's (2001) finding that 52% of participants were dissatisfied with delivery cost issues of home shopping. Using collection points appears an attractive option, but the concern is with the distance between the collection point and the customer's home, and the time available for the collection. Petrol station and 24 hours convenience stores were suggested as the possible collection points. To enable effective and efficient home delivery, delivery outside office hours are strongly suggested by some respondents, presumably they have a busy lifestyle. The benefit is obvious, i.e. it can increase the delivery quantity per hour, due to reduced road traffic and delivery is more likely to be attended by the customer.

The result reaffirm our earlier suggestion that UK consumers are not inclined to using safety boxes, or reception boxes at customer's homes for better delivery. Only two respondents agree with this unattended delivery method. Instead, UK consumers are used to and prefer to have items delivered to neighbouring houses. Not all eTailors currently adopt this method, but it can be considered as an option for unattended delivery.

CONCLUSION

The findings reveal that most UK consumers want a flexible delivery window prior to e-shopping and want to be able to track the delivery process and to be informed instantly. Although most UK consumers prefer no or low delivery charges, paying extra for better service (more convenient or faster) is not seen as a financial burden for those consumers. The preferred main delivery location is the consumer's home. Most consumers are against unattended safe boxes; instead, they are in favour of using a neighbouring house or collection points like petrol stations or corner shops, so long as these collection points are within short distance and is time convenient. Most busy working families welcome weekend delivery and off-office hour delivery, but this poses challenges to eTailors because of uneven demand for delivery.

The implication of the findings is as follows: firstly, eTailors need to be aware that delivery is becoming a significant factor affecting e-shopping

expansion. The convenience, time saving benefits of online shopping can be offset by increased time in waiting for delivery. Delivery problems could become a bottleneck for the further adoption of e-shopping. Secondly, an appropriate delivery model (or a mix of various delivery methods) needs to be developed to satisfy consumers' different needs. Thirdly, factors that affect eTailers to choose which delivery options need to be considered in conjunction with increasing consumer convenience, for example, delivery cost, cost of device for unattended delivery.

LIMITATIONS

A further paper will report on the second part of the study, which examined 15 eTailers on the views and concerns of the aforementioned delivery options and the challenges for implementing new delivery methods. Due to space limitations, the results are not reported. The reasons of consumers' preference of a particular delivery method should have been explored. Both of the results would help interpret, for example, why UK consumers are not inclined to unattended delivery (delivery box) that appears to be widely accepted in US and Europe.

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