

Pharmaceutical marketing on the internet: marketing techniques and customer profile

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Abstract

Purpose – Attempts to investigate the perceived advantages and risks associated with online pharmaceutical transactions, and on this basis, to propose a specific segmentation of consumers.

Design/methodology/approach – Analyses the marketing procedures applied by pharmaceutical sites to emphasise the specific advantages and to minimise the perception of transactional risks, as well as the segmentation techniques applied online.

Findings – The results of the study indicate the existence of four main consumer categories. This schematic categorisation needs further development, in order to define more precisely the decision taking process and the online shopping behaviour for each customer segment, as well as the level of post-purchase satisfaction. On the other hand, the paper demonstrated that the marketing approach of various online pharmacies is determined by the transactional model applied.

Originality/value – The empirical analysis presented in this paper should be complemented by future qualitative study, in order to facilitate a deeper understanding of the factors determining the growing success of online pharmacies.

Keywords Pharmaceuticals industry, Consumer psychology, Marketing strategy, Internet

Paper type Research paper

An executive summary for managers and executive readers can be found at the end of this issue.

Introduction

The explosive development of the internet in the last ten years has created new commercial opportunities. Despite the strict regulations enforced by national states, the commercialisation of medicines was introduced with success on the web by an increasing number of online pharmacies. The therapeutic products sold on the internet include over-the-counter (OTC) and prescription drugs, as well as alternative remedies, vitamins and nutraceutical supplements (Smith *et al.*, 2002). In most cases, the drugs sold online have lower prices than the offer on the classical market (Sweet, 2001), either because the pharmacies outsource generic drugs from developing countries, or they take advantage of price differentials introduced by health system regulations in different countries (such as the difference between the medicines' prices in the USA and in Canada). This issue has created a heated debate between national regulatory bodies, consumer groups, and the large pharmaceutical companies.

In the USA, The American Medical Association and the Food and Drug Administration (FDA) declared that doctors who issue prescriptions without personally examining the patient are engaging in substandard health care. FDA has strongly recommended consumers to not buy drugs from

online pharmacies that offer an online consultation and prescription (Rowland, 2005). However, on the other hand, the practice of prescribing without a physical examination does not violate the US federal law, as long as the sites do not dispense narcotics or other controlled substances.

Despite the strong warnings launched by governmental agencies, the online sales of medicines seem to prosper: in the last trimester of 2004, 17.4 million Americans have visited online pharmacies, an increase with 36 per cent compared with the third trimester of 2004 (Rowland, 2005). A study conducted by comScore Networks reported that the main advantage sought by online buyers is price – nearly two-thirds of respondents used online pharmacies to save money. Also, 66 per cent of respondents considered that online pharmacies provide a healthy competition to regular pharmacies (Kerner, 2005).

Customer satisfaction with online prescription drug buying is high. A study conducted by eMarketer (2004) indicated that only 10 per cent of the respondents felt less satisfied with buying their drugs online than through a traditional pharmacy, 32 per cent were more satisfied with the experience, and 56 per cent were equally satisfied.

In Germany, the trend is similar: in 2004, 1.7 million people have bought medicines over the Internet, which is almost double the figure from previous year (GfK, 2005).

Considering this situation, the present paper attempts to investigate the perceived advantages and risks associated with online pharmaceutical transactions, and on this basis, to propose a specific segmentation of consumers. On the other hand, the study analyses the marketing procedures applied by pharmaceutical sites to emphasise their specific advantages and to minimise the perception of transactional risks, as well as the segmentation techniques used online.

Online pharmaceutical marketing

The internet represents an attractive alternative channel for gathering information and purchasing healthcare products

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(Kanungo, 2004; Klein-Fedyshin, 2002). The US and European audience for online health information is substantial and growing. Web sites have become just as important as some offline sources of health information. A study published by Datamonitor in 2002 indicated that 57 per cent of those who looked for health information in the past 12 months consulted internet sources (Datamonitor, 2002).

The deficiencies of regular medical services, such as long waiting list, insufficient doctors and poor service quality, have determined people to search for more efficient ways to treat their diseases. For the elderly, ill, handicapped, or isolated consumers, online health information and drug sales with home delivery can be lifesavers. Other customers are attracted by low prices, the virtual anonymity, or the discreet delivery promised by online pharmacies (Spain *et al.*, 2001).

The old people are particularly attracted by the transactional convenience of the web. Wilson Health Information (2005) reports that only 10.7 of the people under 50 use online pharmacies as the preferred channel of medication; but for the customers between 50 and 65 years old, the percentage increases to 21.6 per cent, and for people older than 65 years to 23.9 per cent.

Pharmacychecker (2004), an organisation specialised in evaluating and validating the profile and the activity of online pharmacies, has identified the following benefits of buying medicines from the web:

- *Lower prices:* lower drug prices in some countries, and lower overhead costs compared to “brick and mortar” pharmacies often result in savings compared to local pharmacy prices. In addition, the Internet offers specialised tools that can provide a quick comparison of prices available in various online pharmacies.
- *Privacy/anonymity:* some customer feel more comfortable purchasing or asking questions online, for certain medication – as for example the so called “lifestyle drugs”, treating obesity, hair loss or male impotence.
- *Access to more generic drugs:* due to difference in patent protection, more generic drugs can be available in foreign countries, for medicines sold on the local market only under branded names.
- *Prescription not needed:* some web sites do not require any prescription for the medication sold, even when the drugs are regulated in the domestic market. Other sites offer to write a prescription based on an online consultation/questionnaire.
- *Convenience:* for people in remote rural areas, handicapped or old customers, ordering online can be more convenient than the physical visit to a pharmacy, especially when the medicines are delivered by mail at their domicile.
- *Medical information:* some pharmaceutical sites provide rich information about diseases, symptoms and medication, as well as links to other medical resources, such as universities, specialised government agencies and health organisations.

The same organisation has also outlined the associated risks with the online purchase of medicines:

- some web sites are not licensed pharmacies;
- some online pharmacies do not adequately protect the privacy of customers, selling personal information to third parties; the web line for online payments might not be secured;

- some online pharmacies do not give their address and/or telephone number, which reduces the possibility to contact them directly or to send a complaint;
- additional fees are sometimes added to the drug price, such as medical fees, order fees and/or account set up fee;
- prices can change quickly – online pharmacies reserve the right to update their prices, some very frequently;
- some online pharmacies do not provide adequate protection for customers' health: the sale of drugs without a proper prescription, health history or a medical exam, can be sometimes dangerous, due to possible incompatibilities with the patient or with additional medication.

Despite the importance of this phenomenon, there are very few academic studies that analyse the marketing techniques used by online pharmacies, or the profile of customers (Maddox, 1999). Most of the publications published on this topic focus on the legal/regulatory issues (Spain *et al.*, 2001; Sweet, 2001), analyse the impact of online sales on traditional pharmacies (Schmidt and Pioch, 2003), or present isolated cases of online marketing of medicines (Sweet, 2001; Wrobel, 2002). However, the existing interest for this topic is indicated by the rich offer of professional reports, published by market research organisations (Datamonitor, 2002; Gfk, 2005; Wilson Health Information, 2005).

In order to fill this empirical gap, the present study focuses on the following research objectives:

- To identify the advantages and risks associated with the online commercialisation of medicines.
- To investigate the consumers' perceptions regarding online pharmacies and their activity.
- To identify the profile of various consumer segments that would buy medicines online.
- To analyse the marketing techniques used by online pharmacies to emphasise the advantages, reduce the perceived risk of internet sales, and segment the market.

After the presentation of the research methodology applied to collect and analyse primary and secondary data, the findings are discussed in direct relation to the formulated research objectives. The paper concludes with a summary of research findings and with propositions for future research projects.

Research methodology

To answer the research objectives presented above, both secondary and primary data were collected and analysed. In the first stage of the research process, secondary information about the pharmaceutical sector, pharmaceutical marketing, and online pharmacies were accessed using the academic and professional literature, as well as the Internet. This information facilitated the understanding of the main advantages and risks related with online pharmacies, as well as the specific application of pharmaceutical marketing techniques on the internet.

In the second stage of the research project, a semi-structured questionnaire was applied to 300 UK consumers. The respondents were contacted in the city centre of five large UK cities (60 respondents in each city), by applying a random sampling technique, during May-June 2004. The questions focused on the respondents' perception about the advantages and the risks related with online pharmacies, as well as the consumer behaviour concerning the purchase of drugs on the

internet (type and location of preferred online pharmacies, source of medicines). These data were then processed using the SPSS software for data analysis.

Finally, in the third stage of the research project, the sites on 300 online pharmacies were accessed, and the main marketing procedures used by online pharmacies were identified and analysed. The survey also collected data concerning the methods used by pharmaceutical web sites to segment the online population of customers. These data were again analysed using the SPSS package.

Analysis and interpretation of data

The socio-demographic profile of respondents

A total of 173 (57.7 per cent) of the respondents were male and 127 (42.3 per cent) female. 42 respondents were between 18 and 25 years old (14 per cent), 57 between 26 and 35 (19 per cent), 85 between 36 and 45 (28.3 per cent), 60 between 46 and 60 (20 per cent), and 56 older than 60 (18.7 per cent). 86 (28.7 per cent) respondents had a low level of revenue (less than £1000 per month), 134 (44.7 per cent) a medium level (between £1,000 and £2,000 per month), and 80 (26.7 per cent) a high level of revenue (more than £2,000 per month).

In order to understand the consumers' behaviour and attitudes towards online pharmacies, it is important to assess the particularities of the UK National Health System (NHS). In UK, the patients need to register to a medical surgery, which usually has more general practitioner (GP) doctors. These doctors provide a wide range of family health services such as: advice on health problems, vaccinations, examinations and treatment, prescriptions for medicines, and referrals to other health and social services. Most surgeries can also provide family planning/contraception services, care during pregnancy, child health checks and immunisations, health promotion/health screening services, and other minor operations and procedures. The doctors can be seen on appointment, which can be sometimes quite long (three to ten days), depending on the number of patients registered and on specific circumstances. However, there is also an emergency service for special cases.

The patients that require specialist consultation need a recommendation from the GP surgery. For cases that are not considered emergencies, the waiting list for a specialist consultation or operation can be as long as 6 to 12 months. People with high revenues can register in a private medical system - The British United Provident Association (BUPA), which has its own network of GPs, specialists, clinics and hospitals. It is also becoming more common for people to travel to Belgium, France, Germany, but also India or China, to have their operations - cataracts, hip replacements, hernias, heart by-pass surgery, gallbladder removal, etc. These operations are performed at reputable hospitals to the same high standard as in the UK, but for less money than is usually charged in the UK private system.

Once a GP or a specialist prescribes a treatment, the patient can buy the medicines from a pharmacy, for a fixed, affordable, price per medicine. The difference between the real cost of a drug and the price paid by the patient is covered by the NHS. The GP and the specialist consultation are also covered, entirely or in a high proportion, by the NHS.

The majority of respondents were using only the National Health System (262 - 87.3 per cent), and 38 were registered with BUPA.

The use of online pharmacies services

A total of 102 respondents (34 per cent) indicated that they buy or consider buying medicines over the net; 130 answered that they do not want to use the services of online pharmacies (43.3 per cent), and 68 (22.7 per cent) said that they do not know, or "it depends" on particular circumstances. All online buyers were exclusively using the NHS.

Table I shows that the localisation of online pharmacies (country of registration) and the country-of-origin of drugs sold on the web, influences the choice of online buyers. The large majority of respondents would only buy online from pharmacies located in economically developed countries that have a clear system of drug regulation and high standards of quality (96.1 per cent of respondents). The respondents are even stricter with the country-of-origin of the medicines acquired online - 97.1 per cent want their drugs to originate from economically developed countries. However, in this case a lower proportion of respondents indicated that they will buy only drugs produced in the UK, since it is common knowledge that the pharmaceutical industry is a global sector.

The perceived advantages and risks of online pharmacies

The results presented in Tables II and III indicate that consumer decision on using or not online pharmacies represent a complex, multidimensional process. Both buyers and non-buyers are aware of the advantages and risks involved in online transactions, however, the overall perception of buyers is more positive - proportionally, more online buyers

Table I The preferences of online buyers concerning the location of the pharmacy and the country-of-origin of the drugs acquired on the internet

Possible answers	Localisation of pharmacy		Country-of-origin of drugs	
	<i>n</i>	%	<i>n</i>	%
UK only	35	34.3	14	13.7
EU countries	36	34.4	40	39.2
Economically developed countries (e.g. EU countries, US, Canada, Australia, etc.)	27	26.4	45	44.1
Any country	4	3.9	3	2.9
Total	102	100	102	100

Table II The advantages of online pharmacies perceived by various categories of respondents

Category of respondents/ perceived advantages of online pharmacies	Buy online		Do not buy online	
	<i>n</i>	%	<i>n</i>	%
Price	78	76.5	75	57.7
Convenience	76	74.5	35	26.9
Choice	39	38.2	28	21.5
Anonymity	68	66.7	44	33.8
Information	72	70.6	51	39.2
Total	102	100	130	100

Table III The risks of online pharmacies perceived by various categories of respondents

Perceived risks of online pharmacies	Buy online		Do not buy online	
	<i>n</i>	%	<i>n</i>	%
Lack of proper license	32	31.4	87	66.9
Privacy	28	27.4	86	66.1
Security of online payment	23	22.5	90	69.2
Additional charges	22	21.6	79	60.8
Quality of drugs	18	17.6	89	68.5
Superficial prescription	22	21.6	89	68.5
Total	102	100	130	100

perceive benefits and less of them perceive risks, in comparison with non-buyers. It is also interesting to note that significant percentages of non-buyers consider online drug sales attractive because of lower prices (57.7 per cent), and health information (39.2 per cent).

The respondents indicated that the decision to buy online medicines involved in most cases a detailed cost (risks)/benefits (advantages) analysis, determined by their dissatisfaction with the regular medical system. After the first experience with online pharmacies, many people continue to use their services because of the benefits provided and the high level of satisfaction.

The female online buyers seem to be more receptive to the advantages offered by online pharmacies (see Table IV), especially concerning price, choice, and information services, but on the other hand, they are also more concerned about the risks of online transactions – the differences between male and female buyers regarding online privacy, security of online payment, additional charges and the superficial prescription of drugs are statistically significant to a level of $p < 0.05$ (see Table V). These results indicate the need of market segmentation, and the application of differentiated marketing procedure to attract potential customers and maintain the existing ones.

The revenue of online buyers is significantly shaping their perceptions about web-based pharmacies (see Table VI) in the case of price advantage – the lower the revenue, the higher is the percentage of people perceiving this advantage; and for the choice offered online – the higher the revenue of respondents, the higher is the proportion of people appreciating the advantage. Although the convenience of online shopping, the virtual anonymity, and the health information published online have not indicated significant

Table IV Cross-tabulation between the perceived advantages of online pharmacies and the gender of online buyers

Gender/perceived advantages	Male		Female		Chi-square test values
	<i>n</i>	%	<i>n</i>	%	
Price	42	68.9	36	87.8	4.895 $p = 0.027$
Convenience	45	73.8	31	75.6	0.044 $p = 0.834$
Choice	16	26.2	23	56.1	9.262 $p = 0.002$
Anonymity	39	63.9	29	70.7	0.510 $p = 0.475$
Information	36	59	36	87.8	9.788 $p = 0.002$
Total	61	100	41	100	

Table V Cross-tabulation between the perceived risks of online pharmacies and the gender of online buyers

Gender/perceived risks	Male		Female		Chi-square test values
	<i>n</i>	%	<i>n</i>	%	
Lack of proper license	15	24.6	17	41.5	3.242 $p = 0.072$
Privacy	12	19.7	16	39	4.611 $p = 0.032$
Security of online payment	9	14.8	14	34.1	5.280 $p = 0.022$
Additional charges	7	11.5	15	36.6	9.139 $p = 0.003$
Quality of drugs	8	13.1	10	24.4	2.145 $p = 0.143$
Superficial prescription	8	13.1	14	34.1	6.411 $p = 0.011$
Total	61	100	41	100	

Table VI Cross-tabulation between the perceived advantages of online pharmacies and the revenue of online buyers

Revenue/perceived advantages	Low		Medium		High		Chi-square test values
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Price	24	96	29	76.3	25	64.1	8.615 $p = 0.013$
Convenience	17	68	27	71.1	32	82.1	1.965 $p = 0.374$
Choice	7	28	11	28.9	21	53.8	6.522 $p = 0.038$
Anonymity	14	56	25	65.8	29	74.4	2.332 $p = 0.312$
Information	14	56	27	71.1	31	79.5	4.054 $p = 0.132$
Total	25	100	38	100	39	100	

statistical differences between various categories of customers, it can be noted that these advantages are positively considered by a high proportion of high-revenue buyers.

Table VII shows that there are no clear trends in the perception of risks by various categories of online buyers. As it is logical, many low-revenue customers are concerned about the security of online payment. On the other hand, the high-revenue customers present the higher percentages concerning perceptions about possible lack of proper license, privacy, quality of drugs, and superficial prescriptions. These responses probably indicate a request for high quality services, for which they might be willing to pay additional charges.

The data presented in Table VIII supports the previous findings regarding the preference of various age categories to

Table VII Cross-tabulation between the perceived risks of online pharmacies and the revenue of online buyers

Revenue/perceived risks	Low		Medium		High		Chi-square test values
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Lack of proper license	5	20	13	34.2	14	35.9	2.015 $p = 0.365$
Privacy	6	24	10	26.3	12	30.8	0.390 $p = 0.823$
Security of online payment	8	32	6	15.8	9	23.1	2.279 $p = 0.320$
Additional charges	4	16	9	23.7	9	23.1	0.611 $p = 0.737$
Quality of drugs	4	16	5	13.2	9	23.1	1.365 $p = 0.505$
Superficial prescription	4	16	6	15.8	12	30.8	3.160 $p = 0.206$
Total	25	100	38	100	39	100	

Table VIII Cross-tabulation between the perceived advantages of online pharmacies and the age of online buyers

Age/perceived advantages	18-25		26-35		36-45		46-60		60 <		Chi-square test values	
	n	%	n	%	n	%	n	%	n	%		
Price	14	93.3	13	76.5	24	66.7	16	72.7	11	91.7	6.005	$p = 0.199$
Convenience	8	53.3	10	58.8	26	72.2	20	90.9	12	100	13.064	$p = 0.011$
Choice	3	20	4	23.5	15	41.7	10	45.5	7	58.3	6.386	$p = 0.172$
Anonymity	7	46.7	12	70.6	27	75	17	77.3	5	41.7	8.431	$p = 0.077$
Information	7	46.7	12	70.6	26	72.2	16	72.7	11	91.7	6.797	$p = 0.147$
Total	15	100	17	100	36	100	22	100	12	100		

shop online medicines (Wilson Health Information, 2005). The older respondents (more than 60 years old) have clearly indicated the convenience of online shopping as a significant advantage, but also the availability health information and the low price. Price is also important for the majority of young buyers (18-25 years old), while anonymity is important for a large percentage of middle-age customers (26-60 years old), probably as a result of their active social and professional life.

Table IX indicates that although the old customers can represent an important target for online pharmacies, a relatively large percentage of these buyers are concerned about the risks of online transactions. These findings outline the need for friendly customer interfaces and the dissemination of information explaining in detail the functioning of online pharmacies and the mechanism of online transactions.

The transactional models used by online pharmacies

Not all online pharmacies use the same transactional model. The analysis of secondary data Pharmacychecker (2004), combined with the information collected through the survey of 300 web sites of online pharmacies indicated four main alternatives:

(1) *Model A.* The customer is required to send an existing prescription, written by a licensed doctor, either by post, fax, or e-mail. The validity of the prescription is then verified by the pharmacist, who eventually approves the online transaction. After the customer pays using online systems, the medicines are delivered to his/her address. Usually the medicines are delivered directly to the patient, who has to provide a valid identification document and to sign for their receipt. In some cases, the customer is also required to provide the contact address of the doctor who

gave the prescription, in order to facilitate the validation process. Most of these online pharmacies are selling medicines only nationally, many of them representing online alternatives of existing regular pharmacies.

(2) *Model B.* The online pharmacies applying this transactional model ask customers to register, and then to fill in and submit an online questionnaire requiring information about the symptoms/disease of the patient, his medical history, and his/her specific level of responsibility (the patient has to acknowledge that he/she has submitted truthful information and assumes responsibility for the online order of drugs). Based on the submitted information, a doctor prescribes a treatment, and the online pharmacy sells the drugs to the patient. These pharmacies usually sell internationally, and use a system of additional delivery charges. Although remote medical consultations are legal in many countries, this model was strongly criticised in the professional literature for failing to provide the required standards of healthcare, because of the superficial nature of online consultation (Rowland, 2005; Sweet, 2001). There are also other possible risks associated with this system: it is difficult to verify if the questionnaire was really analysed by a licensed doctor, and sometimes the customers themselves might provide false information in order to obtain a specific medicine.

(3) *Model C.* This transactional model presents the highest level of risk, since the medicines are sold without prescription. These sites clearly indicate that the responsibility for the selection and the purchase of drugs is entirely assumed by the buyer. Usually these pharmacies attempt to limit the perceived risk by stating that they are not selling and delivering any illegal drugs.

Table IX Cross-tabulation between the perceived risks of online pharmacies and the age of online buyers

Age/perceived risks	18-25		26-35		36-45		46-60		60 <		Chi-square test values	
	n	%	n	%	n	%	n	%	n	%		
Lack of proper license	2	13.3	3	17.6	13	36.1	9	40.9	5	41.7	5.650	$p = 0.227$
Privacy	1	6.7	3	17.6	12	33.3	7	31.8	5	41.7	6.128	$p = 0.19$
Security of online payment	2	13.3	2	11.8	10	27.8	4	18.2	5	41.7	5.177	$p = 0.27$
Additional charges	0	0	1	5.9	9	25	5	22.7	7	58.3	16.454	$p = 0.002$
Quality of drugs	0	0	1	5.9	7	19.4	3	13.6	7	58.3	18.826	$p = 0.001$
Superficial prescription	2	13.3	3	17.6	6	16.7	4	18.2	7	58.3	11.005	$p = 0.027$
Total	15	100	17	100	36	100	22	100	12	100		

They are selling internationally, and their headquarters are located in developing countries.

- (4) *Model D*. These pharmacies sell only non-prescription drugs, including vitamins, dietary supplements and homeopathic remedies. The online customers can freely select and order the remedies, although the quantity of drugs that can be purchased in one transaction is limited. Despite the lower risks presented by these medicines, there can still have secondary negative effects, which are usually presented in detail by most of these web sites, in order to offer the customer an informed choice. Many of these outlets sell internationally, although there are cases of sites that distribute only nationally or regionally, to avoid possible incompatibilities between different national regulations regarding OTC drugs.

Table X presents the preference of male and female customers for various transactional models (the respondents were required to indicate all the models that they use or would use to buy drugs online). The male customers prefer in a slightly higher proportion the first transactional model (and the less risky one) than the female respondents. On the other hand, a very high percentage of women are inclined to buy drugs from non-prescription outlets (85.4 per cent), which can be explained by their high consumption of dietary and natural remedies.

The higher percentages of online buyers in all transactional models are the low-revenue customers, while the high-revenue buyers clearly prefer less the web sites selling medicines without prescription (only 17.9 per cent of this category of respondents indicated that they would buy from this type of outlets) (see Table XI).

The older customers prefer in large numbers the online pharmacies using models A, B and D, but they show a clear avoidance of the “no prescription required” model. Overall, the OTC pharmacies seem to be preferred by many

respondents, maybe because of their clear conformity with safety standards and regulations. Among all categories of respondents, the younger customers (18-25 years old) have shown the stronger willingness to buy from Model C pharmacies (53.3 per cent) (see Table XII).

Marketing procedures applied by online pharmacies

The mix of perceived advantages and risks associated with online medical transactions indicates the necessity of an active marketing strategy. The online pharmacies can increase the acceptance of their offer and transactional model by providing on their web sites information that, on one hand, explain the selling process and provide guarantees – reducing the perceived risks, and, on the other hand, that emphasise the advantages of an online transaction. These organisations can also increase the effectiveness of their communication strategy, by creating procedures for an effective segmentation of the online market.

Table XIII presents the information categories identified on the surveyed web sites, that can reduce the perceived risk of online transactions. All types of online pharmacies provide contact information, although the level of detail differs: in some cases only a brief postal address and/or an email address is published online, while the majority of sites include also the telephone and the fax number. A large percentage of Model A pharmacies publish a privacy policy, information about the security of payment, and about their licence. At the other extreme, many “no prescription needed” sites attempt to reduce the perception of risk by providing information about the source of their drugs. Many Model B sites are also characterised by a high level of transparency and details, that try to reassure customers about the feasibility of remote medical consultations.

In order to enhance the perceived advantages of online transactions, the sites publish information concerning price, convenience, choice, and discreetness of service (see Table XIV). In addition, many sites using the transactional models B, C and D, that have the highest level of potential risks, provide testimonials of existing customers to reinforce their positive messages.

The advantage of price is not particularly emphasised by Model A pharmacies since in some case the range of prices proposed is quite similar with the regular system; however, they try to outline the convenience of shopping online. Price, convenience and discreetness of service are used as main arguments by Model B and C pharmacies, some of them being specialised in “lifestyle pharmaceuticals”, such as Viagra for erectile dysfunction, Propecia for hair loss or Xenical for obesity (Sweet, 2001). The influence of the transactional model is statistically significant for all categories of information presented online.

The segmentation techniques applied by online pharmacies are strictly determined by the specific characteristics of the internet (see Table XV). Since the customer has the control over the information that he/she accesses online, the procedures applied are self-segmentation mechanisms, such as lists of diseases or drugs, that can be selected by the internet user, or mini-search engines.

The large majority of sites are using a combined segmentation, applying sometimes two or three different criteria, such as gender, age (by presenting gender-specific or age-specific treatments), and diseases. Overall, the system applied on most sites includes a first list of diseases, and then,

Table X Cross-tabulation between the transactional models of online pharmacies and the gender of online buyers

Gender/online model	Male		Female	
	n	%	n	%
Send prescription	41	67.2	25	61
Online consultation and prescription	27	44.3	23	56.1
No prescription required	18	29.5	14	34.1
OTC medicines	41	67.2	35	85.4
Total	61	100	41	100

Table XI Cross-tabulation between the transactional models of online pharmacies and the revenue of online buyers

Revenue/online model	Low		Medium		High	
	n	%	n	%	n	%
Send prescription	18	72	24	63.2	24	61.5
Online consultation and prescription	14	56	18	47.4	18	46.2
No prescription required	11	44	14	36.8	7	17.9
OTC medicines	22	88	27	71.7	27	69.2
Total	25	100	38	100	39	100

Table XII Cross-tabulation between the transactional models of online pharmacies and the age of online buyers

Age/online model	18-25		26-35		36-45		46-60		60 <	
	n	%	n	%	n	%	n	%	n	%
Send prescription	12	80	9	52.9	20	55.6	16	72.7	9	75
Online consultation and prescription	5	33.3	11	64.7	16	44.4	10	45.5	8	66.7
No prescription required	8	53.3	7	41.2	11	30.6	5	22.7	1	8.3
OTC medicines	14	93.3	13	76.5	24	66.7	15	68.2	10	83.3
Total	15	100	17	100	36	100	22	100	12	100

Table XIII Cross-tabulation between the transactional models of online pharmacies and the information categories presented online to reduce the perceived risk

Online model/information	Model A		Model B		Model C		Model D		Chi-square test values	
	n	%	n	%	n	%	n	%		
Contact information	86	100	147	100	18	100	49	100		N/A
Privacy policy	84	97.7	127	86.4	10	55.6	27	55.1	50.16	$p < 0.0001$
Payment security	81	94.2	139	94.6	9	50	38	77.6	41.527	$p < 0.0001$
Licence pharmacy	75	87.2	114	77.6	8	44.4	32	65.3	19.182	$p < 0.0001$
Licence doctor		N/A	84	57.1	3	16.7		N/A	10.54	$p = 0.001$
Source of drugs	35	40.7	104	70.7	14	77.8	26	53.1	23.701	$p < 0.0001$
Professional certification	6	7	5	3.4	0	0	11	22.4	21.26	$p < 0.0001$
Total	86	100	147	100	18	100	49	100		

Table XIV Cross-tabulation between the transactional models of online pharmacies and the information categories presented online to enhance the perceived advantages

Online model/advantages	Model A		Model B		Model C		Model D		Chi-square test values	
	n	%	n	%	n	%	n	%		
Price	43	50	136	92.5	18	100	34	69.4	62.366	$p < 0.0001$
Convenience	64	74.4	121	82.3	15	83.3	16	32.7	46.781	$p < 0.0001$
Choice	23	26.7	78	53.1	15	83.3	36	73.5	37.905	$p < 0.0001$
Testimonials	26	30.2	115	78.2	16	88.9	36	73.5	62.471	$p < 0.0001$
Discreetness	12	14	124	84.4	17	94.4	25	51	122.137	$p < 0.0001$
Total	86	100	147	100	18	100	49	100		

Table XV Cross-tabulation between the transactional models of online pharmacies and the criteria used for market segmentation

Online model/segmentation	Model A		Model B		Model C		Model D	
	n	%	n	%	n	%	n	%
Gender	14	16.3	38	25.8	3	16.7	21	42.8
Age	2	2.3	17	11.6	0	0	8	16.3
Disease	67	77.9	123	83.7	7	38.9	34	69.4
Medicine	12	13.9	6	4.1	11	61.1	15	30.6
Total	86	100	147	100	18	100	49	100

for each disease, a range of specific drugs. A large majority of “no prescription needed” sites offer only a list of drugs or a mini-search engine, since the customer is supposed to select him/herself the medication.

On the other hand, almost all sites require customer registration, a procedure that collects general socio-demographic and medical information about buyers, which can be eventually used for database analysis and segmentation.

Concluding remarks

The popularity of online pharmacies represents an intriguing phenomenon. On one hand, most people acknowledge the risks of online transactions, but on the other hand a high proportion of customers that buy drugs online declare a high level of satisfaction. As any commercial activity, the success of online pharmacies is directly related to their capacity to segment the market, understand the customers and satisfy their needs. The popularity of professional market reports that analyse consumer preferences and profiles prove the importance of this marketing approach.

This paper attempted to investigate and present the perceptions of UK customers about the advantages and the risks of online health transactions, and the marketing procedures applied by online pharmacies to modify and/or reinforce these perceptions. The information presented permits the definition of specific consumer profiles:

- *Consumer A*: young, with low revenues, less interested in online service quality and less sensitive to online risks, but concerned about price and online payment security.

- *Consumer B*: middle-aged, with good purchasing power, requiring privacy and discreetness of delivery.
- *Consumer C*: middle-aged, high-revenue customer that requires a high service quality, anonymity, rich online information and choice.
- *Customer D*: old-aged, with low or medium purchasing power, attracted by the convenience of online shopping and home delivery, but highly concerned about online transaction risks.

This schematic categorisation needs further development, in order to define more precisely the decision taking process and the online shopping behaviour for each customer segment, as well as the level of post-purchase satisfaction.

On the other hand, the paper demonstrated that the marketing approach of various online pharmacies is determined by the transactional model applied. Model A pharmacies emphasise their compliance with national health regulation standards, and propose an alternative channel of drug distribution, that for specific categories of customers might be more convenient than the regular pharmaceutical system. Considering that often these pharmacies have also a physical presence in the pharmaceutical distribution, their strategy can be considered as a diversification/development of classical retail channels, to a "bricks and clicks" model.

On the other hand, the pharmacies that offer remote consultations, or that do not require any medical prescription, attempt to create an image of transparency and honesty by providing detailed information about the online transaction system, security of payment, and origin of drugs.

Finally, the pharmacies specialised in OTC remedies emphasise the low prices and the rich choice offered by their sites.

The present study has a number of limitations, determined by its exploratory nature. The number of people and online pharmacies included in the study were relatively small, although the representativity of the sample permits the generalisation of findings. The profiles of online customers presented in this paper is valid only for the UK market, since national and cultural conditions can determine specific customer behaviour and preferences. From this perspective, the findings can be used as a starting basis for future research on this topic. A replication of this research methodology in other countries can provide an opportunity for comparison studies at international and transnational level.

On the other hand, the quantitative analysis presented in this paper should be complemented by qualitative information, in order to facilitate a deeper understanding of the factors determining the growing success of online pharmacies. Despite the risks created by some illegal web-based organisations, it would be a mistake to demonise the entire phenomenon. In fact, their very existence and development proves that online pharmacies answer to a real and present need expressed by customers. The online sales of drugs should be surely improved, and the best way forward

might be a stricter regulation of medicines sales at transnational level, combined with better customer education.

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doctor dealing with the symptoms presented by the patient and making an appropriate diagnosis and prescription, the doctor is faced by an “informed” patient demanding a specific, branded solution they have seen advertised on TV. The doctor runs the risk of falling out with the patient by refusing to prescribe (at which they may well take their business elsewhere) or else goes with the flow and prescribes the desired drug.

Singh and Smith, Baca *et al.* and Shin and Moon appear to concur in their assessment of this situation. While the concerns about DTC advertising remain, most of the evidence suggests that such advertising is, on balance, benefiting consumers. This chimes with the FDA’s review (reported by Baca *et al.*) describing the benefits of DTC as “...creating increased levels of awareness, involvement, compliance, reach and doctor-patient interaction.”

The advent of DTC advertising has resulted in rather better informed patients rather than misled consumers demanding inappropriate prescriptions of potentially dangerous drugs. As Singh and Smith argue, where consumers “...once felt entrapped in their relationships with their physicians, the acquisition of information regarding branded drugs has given consumers more power than ever before”. The system is not perfect and does run some risk of abuse but it is an improvement over the third party moderated system that prevailed before 1997.

Perhaps the main concern that remains and is hard to set aside stretches beyond the issue of advertising and into the much wider debate about health care. This is the ethics of taking profit from making and selling drugs and from providing health care. To some (and you only have to peep at the health debate in the UK or Canada to appreciate this) any involvement of the private sector in health is a matter for at best regret and often anger. And the big, bad drug companies are a favourite target of many looking for reasons behind failures or problems in the health system.

Why is profit such a rude word in health care?

Holdford’s article looking at applying a social marketing framework to health campaigns (of which more later) shows us why there are so many criticisms of the perceived profiteering of drugs companies. Not only do these companies make enormous profits on the back of the USA’s strict patent laws but they work actively and assiduously to prevent any move towards more affordable drugs.

We read that (taken in aggregate) consumers have little or no trust or confidence in drug companies or their executives. These businesses protect a system that allows little or no consumer interaction with the market. As Holdford points out many take the view that “...the pharmaceutical industry makes excessive profits by taking advantage of perverse incentives in a market where consumers rely on third parties ... to choose drugs for them and prescription drug insurance coverage ... that shields consumers from the full cost of paying for those drugs”.

The result of this perverse system (and despite the debate around DTC advertising 80 per cent of drugs marketing spend is still directed to the medical profession) could be inappropriate prescribing, incorrect drug use, unreasonable consumer expectations and wasteful expenditure. Unlike most

markets in the USA, the drugs market acts ineffectively resulting in far higher prices than we find elsewhere. And while Holdford does not propose specific strategies or policies to correct this dysfunction, it is clear that market reform is one way in which US healthcare might improve (or at least become more efficient).

The problem with the system is not that drugs companies are making profits but that the industry is acting to sustain an inefficient system that acts to the benefit of producers rather than to the advantage of consumers. And any market that acts in this way is perverse since the operation of free markets usually results in direct benefits to the consumer (e.g. lower prices or higher quality). In order to reform the system we have to get over our occasional distaste at the “profiteering” of drugs companies and set about getting greater consumer control over the system and hence a downward pressure on costs.

One factor that will begin to drive down drug costs is the Internet and the emergence of online pharmacies. Holdford refers to the use of Canadian online pharmacies by consumers in several US states and notes that some states have actively encouraged such use in order to apply pressure to the drugs companies. The challenge online is dealing with the need for input from a medical practitioner in many drug choices.

Gurău explores the growth of online pharmacies noting that they can be seen as a way “round national regulation” and (as we have seen above) a means of reducing the cost of drugs to the consumer. Indeed this grey market for prescription drugs is significant as it takes advantage of the long-term price differentiation practiced by most multinational drug companies. The result is that, for important and widely prescribed drugs, there is a significant downward pressure on the price.

However, lower prices are not the sole perceived benefit of online pharmacies and we need to understand that, as with other areas of business, the internet represents a massive challenge. Indeed, many of the peculiarities of general practice and primary care across national boundaries may be undermined by the role of the internet.

Online healthcare – the way of the future?

In looking at the growth in online pharmacy, Gurău refers to the deficiencies of regular medical services arguing that “... long waiting lists, insufficient doctors and poor service quality ...” are leading people to seek out more efficient ways to obtain good medical care. We have little confidence that the everyday health care systems (and this is especially the case where socialized medicine predominates) will go the extra mile in improving service or support.

At the same time as one section of the medical and pharmacy professions is using the Internet to deliver real improvements in service quality, others continue to resist the use of online advice, support and service. In many ways this mirrors the debate over direct-to-consumer advertising where some consumer advocates and some medical practitioners are enthusiasts for the extension of advertising whereas others see only problems, risks and dangers in such an extension.

It is clear that the online supply of drugs presents some risks to the consumer and there has to be some reassurance. But the general public experience of online pharmacy (as reported

by Gurău) suggests high levels of consumer satisfaction. In Gurău's UK sample around one-third of respondents had used online pharmacies – a significant percentage in a country that is not especially adventurous when it comes to healthcare markets. It seems to be that case that other factors are as significant as the price – protection of privacy and convenience are especially important. Gurău reports that online pharmacy is especially popular with older people who value the convenience it affords.

This last point is significant – we do not have the information to hand as to the proportion of prescriptions that are straightforward repeats but for many older people there will be the regular bother of renewing supplies of drugs taken to manage chronic conditions such as arthritis and heart conditions. The ability to get this service from the convenience of the home computer represents a significant step forward. And, if the medical profession stop and think for a moment, such a system frees up doctors time currently spent writing out repeat prescriptions.

The other aspect of online activity takes us back to the discussion about direct-to-consumer advertising and the extent to which it provides real consumer benefits. It seems likely that those seeking to preserve the doctor's gatekeeper role will win the short-term battle and secure tighter regulation (or as is possible in New Zealand a ban of DTC advertising). But in the long-term consumers will – via the medium of the internet – get the detailed information about drugs, medical conditions and treatments.

Consumer awareness – the main objective of DTC advertising

Given that most of the information – and much more – currently given to consumers via DTC advertisements is available online in an almost entirely unregulated environment, it seems rather foolish to spend so much time worrying about such advertising. The 1997 FDA guidance on DTC advertising opened up the use of such advertising as a gateway to far greater information supplied on web sites. This is not to say that drug companies are wholly honourable in their advertising – the detailed assessment of the US legal environment presented by Cunningham and Iyer shows some of the problems and Finlayson and Mullner's brief review of the current state of play reveals some real worries about the approaches adopted by some drugs advertisers.

If we set aside the online diagnosis and prescription offered by some internet pharmacies, most drugs advertising is aimed at driving consumers to visit their physician to discuss a given condition and drugs associated with its treatment. The positive side of this activity is that, as Finlayson and Mullner point out, consumers may be "...seeing physicians earlier, receiving treatment earlier and potentially avoiding future medical complications". The contra-argument that this promotion of public health is a specific public sector function not only gets drugs companies off the hook (the Government takes responsibility) but the costs would be considerable.

If drugs companies are spending over \$3 billion per year promoting drugs directly to US consumers, it represents an enormous opportunity to develop substantial public health promotion budgets outside the limited scope of public investment. Rather than trying to regulate the advertising to

the stage where it becomes pointless, public authorities charged with promoting health messages should seek partnerships with pharmaceutical advertisers intended to embed core public health messages into such advertising. Taking such a proactive approach would be a considerable shift away from the traditional command and control approach beloved of bureaucracies.

However, this does not exonerate marketers involved with drugs promotion from the job of acting ethically and responsibly. Cunningham and Iyer's checklist is an ideal start for anyone looking at developing strong strategies to DTC advertising in the USA. And the list is underscored by the real risk that one or more drug company will find itself in court as a result of claims made in DTC advertisements. However, the most important observation that Cunningham and Iyer make is that the drugs industry in the USA has done nothing to sort out its own house. Aided and abetted by the advertising business (who have to take some responsibility here), drug companies have created a rod for their own back through weak strategies predicated on shifting boxes rather than developing long-term engagement with consumers.

Drug brands and DTC advertising

The pharmaceuticals industry is unusually placed in respect of brands since its most profitable products exist behind a strong patent protection. This protection is necessary because of the significant costs associated with research and development in the drugs business. Getting a drug from the lab, through trial, tests and approvals to the point where it can be sold represents a huge commitment. The patent allows the firm to get a satisfactory return on that investment in R&D. Without this return future investment in the development of new drugs is jeopardized. As with the health promotion situation, the argument that governments can pick up this strain does not hold up since the industry invests over \$30 billion each year in research (and that is just in the USA).

So drug companies enjoy greater protection for the brand than is the case in many other markets. And the opportunity to promote directly to the consumer gives a brand building opportunity too good to miss. However, because drug businesses are concerned with driving consumers into seeing their doctors – with short term sales – brand development is overlooked. And this oversight is exacerbated by a sales-oriented marketing culture. It is ironic that the skills and expertise many drug companies have developed in the promotion of branded over-the-counter drugs have not transferred to the development of prescription drug brands.

It is reasonable to assume however, that most drugs marketing strategies assume a huge change at the point when the patent expires. Given the current approach in respect of patents where the high margins are sustained behind the protective barrier of the patent, it is not surprising that any long-term strategy depends on existing patented drugs being replaced by a new generation of patented drugs. Once a drug is out of patent, it becomes a mere formulation that any manufacturer can produce. The result is that generic drugs are treated as commodities – sold unbranded.

Perhaps this need not be the case (and we should note that some manufacturers have begun to appreciate that there is a far wider issue that extends beyond price). In some cases drug promotions have been assisted by the development of OTC