Understanding the Online E-cigarette market

Report on research findings
prepared for **HMRC** by **IFF Research**

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1 Glossary

Atomiser	A component of an e-cigarette. Atomisers cause e-liquid to become a vapour. A coil within the atomiser heats e-liquid. The e-liquid is then forced through a small hole, causing the e-liquid to atomise.
Coil	A component of an e-cigarette. Coils are located within atomisers and act as a heating element.
E-cigarette/Electronic Cigarette/E-Cig	E-cigarettes are battery operated devices that are designed to simulate traditional cigarettes. They do not contain tobacco but use a heating element that vaporises a liquid solution, often containing nicotine and other chemicals, which is inhaled by the user.
E-liquid	A liquid which is used in e-cigarettes devices to create vapour. E-liquid is available in a wide variety of flavours and nicotine strengths (including nicotine free).
Tank	A component of an e-cigarette. Tanks act as a reservoir for e-liquid.
Terrestrial market	The part of the e-cigarette market which exists in physical retail outlets.
TPD	The European Union's Tobacco Products Directive (2014/40/EU). This Directive came into force in May 2016 and made revisions to regulations on the tobacco market.
Vaping	The act of using an e-cigarette.

2 Executive Summary

Overview of the research

2.1 HM Revenue & Customs (HMRC) commissioned this research to build a base of evidence surrounding the online e-cigarette market, given there is currently relatively little information available on this segment of the market. This research increases this knowledge, and will help to inform any future policy or operational developments in this area.

2.2 To ensure the objectives were fully met a mixed methodology approach was undertaken, comprising:

- A scoping and development phase (including a literature review of existing evidence and a discussion with a representative from a trade body);
- 25 qualitative in-depth interviews with businesses involved in the online e-cigarette market;
- 562 online survey responses with e-cigarette users (or ex users); and
- 176 face to face omnibus survey interviews with e-cigarette users (or ex users).

2.3 The omnibus survey is the only strand of this research which is representative of the general population of e-cigarette users, as it was conducted through a random probability approach. The online survey and qualitative interviews are not representative of all e-cigarette users or businesses and the findings should be interpreted as indicative[1].

2.4 Throughout the report, when *businesses* and *users* are mentioned this is in reference to those who were interviewed for this research, not all businesses involved in the e-cigarette market or the general population of e-cigarette users.

Key findings

What is the scale of the online market?

2.5 Nearly all businesses reported that their business had grown rapidly in recent years. One online retailer disclosed that their turnover had increased by 500% between their first and second year of trading, while a manufacturer of e-liquid mentioned that in the three years since the business started the number of employees had increased from five to 28. These anecdotal accounts of business growth indicated that the overall e-cigarette industry, including both the online market and terrestrial market, had grown rapidly over the past few years.

2.6 However, businesses' estimates of the scale of the online market in comparison with the terrestrial market varied considerably. Businesses had little robust evidence on which to make a judgement and therefore estimated based both on their own sales data and the number of online/offline retailers they were aware of. To illustrate the range of estimates given, one manufacturer estimated the market (by sales volume) was split 70/30 in favour of online sales while one wholesaler estimated an 80/20 split in favour of the terrestrial market (also by sales volume).

2.7 Where the online market was perceived to be bigger, online channels were often felt to be best placed to meet consumer demands. Businesses believed there were relatively few barriers to setting up a new online business and this, in part, also accounted for the perception that the online market was bigger than the terrestrial market.

[1] See section 3 for more information on the methodology.

2.8 Where the terrestrial market was perceived to be bigger, businesses believed that the online market had reached 'saturation point' and that it was dominated by a few larger businesses, allowing the terrestrial market to 'outgrow' it.

2.9 The omnibus survey showed the majority of consumers had made purchases through terrestrial channels. Over a third (37%) of consumers who used or had ever used / tried e-cigarettes had made a purchase online at some point in the past, while one-quarter (25%) had made an online purchase in the last 12 months.

2.10 Both the online and omnibus survey responses showed, where consumers made purchases online, e-cigarette hardware[2] was more likely to have been purchased online in the past 12 months, compared to e-liquids. Online spend on e-cigarette hardware was also higher than terrestrial spend. On average, online spend on hardware was c.£55-£60 compared with c.£40-£45 among consumers purchasing these products through terrestrial channels in the past three months[3].

2.11 There were expectations among businesses that *both* the online and terrestrial markets will continue to grow in the near future. Further, the online survey showed 34% of current e-cigarette users reported that the frequency of their purchases of e-cigarettes and associated products had increased in the past 12 months. This was particularly the case among consumers buying e-cigarette hardware (46% buying e-cigarette hardware online reported that the frequency of their purchases had increased and 40% buying e-cigarette hardware through terrestrial channels reported that the frequency of their purchases had increased).

How does the supply chain function?

2.12 The depth interviews suggested that e-cigarette hardware tended to be manufactured in China and imported through wholesalers and forwarding agents to UK businesses. The main drivers for this were the quality of the products and the relative cost advantages of importing the hardware. This was true of all types of devices, from 'cig-a-like' pens to "top of the range" tank modules (as the full range of devices were usually manufactured by the same companies).

2.13 There were believed to be only a small number of businesses in the UK that manufactured e-cigarette hardware. These businesses typically produced small batches of high-end and bespoke device components (such as atomisers).

2.14 By contrast, e-liquids consumed in the UK were often manufactured in large quantities in the UK. Businesses estimated that there were "hundreds" of e-liquid manufacturers in the UK, with a handful of larger manufacturers leading the field. This was thought to be because of the relatively limited barriers to entry and the demand from consumers for artisan e-liquids, which are not produced on a mass scale.

2.15 Depth interviews highlighted that manufacturers of e-liquids tended to procure liquid nicotine from companies based in Switzerland. This is because large chemical companies that specialise in the production of liquid nicotine are based in Switzerland and, as a consequence, manufacturers of e-liquid considered this to be the highest quality liquid nicotine available.

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[2] Hardware is defined as all e-cigarette devices and components.
[3] Some degree of caution is required here given online panel members were asked about their online purchasing habits (i.e. purchase behaviour might be skewed towards online channels).

2.16 Businesses reported that there was a considerable amount of crossover between the categories of manufacturer, wholesaler and retailer within the e-liquid supply chain; in early 2016, the UK market comprised many small independent businesses that made e-liquid and sold the products *directly* to consumers (both through a terrestrial shop and through online channels).

What are the key products and why are they used?

2.17 The qualitative depth interviews suggested that over the past couple of years there had been a shift in consumer demand from smaller “pen” devices to larger “tank” style devices. The shift was attributed to the fact that larger devices offer longer lasting battery power and larger e-liquid reservoirs. Tank style devices also produce more vapour, which businesses felt consumers preferred.

2.18 The perceived shift in demand towards larger, more powerful devices was also said to have resulted in consumer demand for e-liquids with a lower nicotine content. Businesses explained that more powerful devices produce larger quantities of vapour, enabling the user to intake a comparable dosage of nicotine from an e-liquid with a lower concentration of nicotine.

2.19 Both the online survey and omnibus survey showed the main motivations for trying or using e-cigarettes was to reduce the amount of traditional tobacco products smoked. Specifically, the online survey showed the main motivations among consumer panellists for trying e-cigarettes were to reduce the amount of tobacco smoked (51%) or to help stop smoking traditional cigarettes (49%). Discussions with businesses revealed that they also held similar views on why their customers used e-cigarettes.

2.20 The online survey responses suggested that e-cigarettes have had a positive impact on the likelihood of consumers giving up traditional smoking. Two-fifths (39%) of current smokers reported that they had reduced the amount they smoked traditional cigarettes solely through the use of an e-cigarette while two-thirds (64%) of former smokers had stopped smoking solely through the use of an e-cigarette.

2.21 However, many of the consumer panellists that had reduced or stopped smoking traditional tobacco products did continue to use e-cigarettes. Seventy-two percent of current regular smokers that had reduced their smoking through the use of an e-cigarette currently used an e-cigarette, while 67% of consumer panellists that used to smoke traditional tobacco still used an e-cigarette.

How might the market develop further?

2.22 While businesses generally agreed that both the online and terrestrial markets would continue to grow in tandem; many felt that the Tobacco Products Directive[4] (TPD) would cause the market to consolidate. They anticipated that the TPD would increase the cost of manufacturing and importing hardware / e-liquids, which in turn they felt would cause smaller businesses to leave the market. In some cases, particularly among e-liquid manufacturers, it was felt that it would be manufacturers of cheaper and lower quality e-liquids (referred to as ‘cowboys’) that would be forced out of the market by increased costs. When considering how the respective markets might evolve, the feedback from businesses was always referenced in the context of the TPD.

[4] The European Union’s revised Tobacco Products Directive came into effect in May 2016. As well as updating rules for tobacco products, the revised Directive also includes regulations for e-cigarettes. *https://www.gov.uk/guidance/e-cigarettes-regulations-for-consumer-products*

2.23 Opinion was mixed regarding how the regulation might impact the respective size of the terrestrial and online markets. Some businesses felt the terrestrial side of the market might ‘outgrow’ the online because a reduced product range would be more appealing to larger retailers and mainstream supermarkets. However, other businesses believed the online market would ‘outgrow’ the retail market because consumers were expected to become more knowledgeable and less likely to require the advice/support of shop staff.

2.24 Some businesses predicted that the TPD could potentially have a positive impact upon demand for e-cigarettes as it was thought that the regulation could give the products greater credibility.

2.25 The market was expected to continue evolving at a fast technological pace, but there were no consistent predictions from businesses in terms of “what comes next?”

3 Introduction and background

Aims and objectives

3.1 While strategic research and forecasting companies (such as Nielsen[5] and Euromonitor[6] International) can provide data and analysis on the offline, or 'terrestrial', e-cigarette market there is less information available on the *online* market, partly due to its rapid evolution since 2006.

3.2 To help fill this evidence gap HMRC commissioned primary, exploratory research, to provide insight into the scale and characteristics of the online e-cigarette market. More specifically the core objectives of this research were to ascertain:

- What the scale of the online market is;
- How the supply chain functions;
- What key e-cigarette products are sold and who uses them; and
- What the expectations of suppliers are for the future of the market.

About e-cigarette devices

3.3 E-cigarettes are battery operated devices that were designed to simulate traditional cigarettes. They do not contain tobacco but use a heating element that vaporises a liquid solution, often containing nicotine and other chemicals, which is inhaled by the user. E-cigarettes were first patented in 2003, and first sold in Europe in 2006. Since then, their use and sales within the UK have rapidly expanded.

Methodology

3.4 To ensure the objectives were fully met a mixed methodology approach was undertaken. The stages included:

- **A scoping and development phase** including a literature review of existing evidence and a discussion with a representative from a trade body involved in the e-cigarette market. This provided insight which underpinned the main fieldwork stages. The scoping exercise took place during November and December 2015.
- **25 qualitative in-depth interviews with businesses involved in the supply chain across the sector.** This was the most appropriate methodology to explore the supply chain given relatively little was known about the number of stakeholders involved in the supply chain and their respective roles within it. Qualitative methods allow detailed insight into attitudes and perceptions, but the aim of qualitative research is not to extrapolate findings to the wider population. These findings should therefore be interpreted in this context and should not be taken as representative of all businesses involved in the e-cigarette market. Nineteen of the interviews were conducted face to face and six by telephone. They took place between 1 February and 4 April 2016.
- **562 quantitative online survey responses with consumer panellists who used or tried using e-cigarettes.** Consumers were recruited to take part in the research through an online panel as this was the most effective way to achieve a sizeable sample of consumers who had used or tried using e-cigarettes. Findings from the online survey are not representative of the general population of e-cigarette users, as the survey was conducted with a research panel of consumers, who are skewed towards certain demographics or characteristics. These findings should therefore be interpreted in this context. Fieldwork took place between 25 February and 1 March 2016.

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[5] http://www.nielsen.com/uk/en/insights/news/2013/smoking-in-the-uk-what-next-the-rise-of-the-e-cigarette-market.html
[6] http://blog.euromonitor.com/2015/06/vapor-devices-and-e-cigarettes-in-the-global-tobacco-market.html

- **176 quantitative face to face interviews with consumers who used or tried using e-cigarettes.** These interviews were achieved through the ONS Omnibus Survey (a face to face random probability survey, fully representative of the general population of adults in the UK). These interviews were conducted alongside the online survey to provide data which is representative of the general population of e-cigarette users. This was also used to determine how to weight the online survey findings to reflect the demographic profile of the general population of e-cigarettes users. The fieldwork took place during February 2016.

3.5 It is made clear throughout the report where findings refer to either the online survey or omnibus survey.

Sample structure

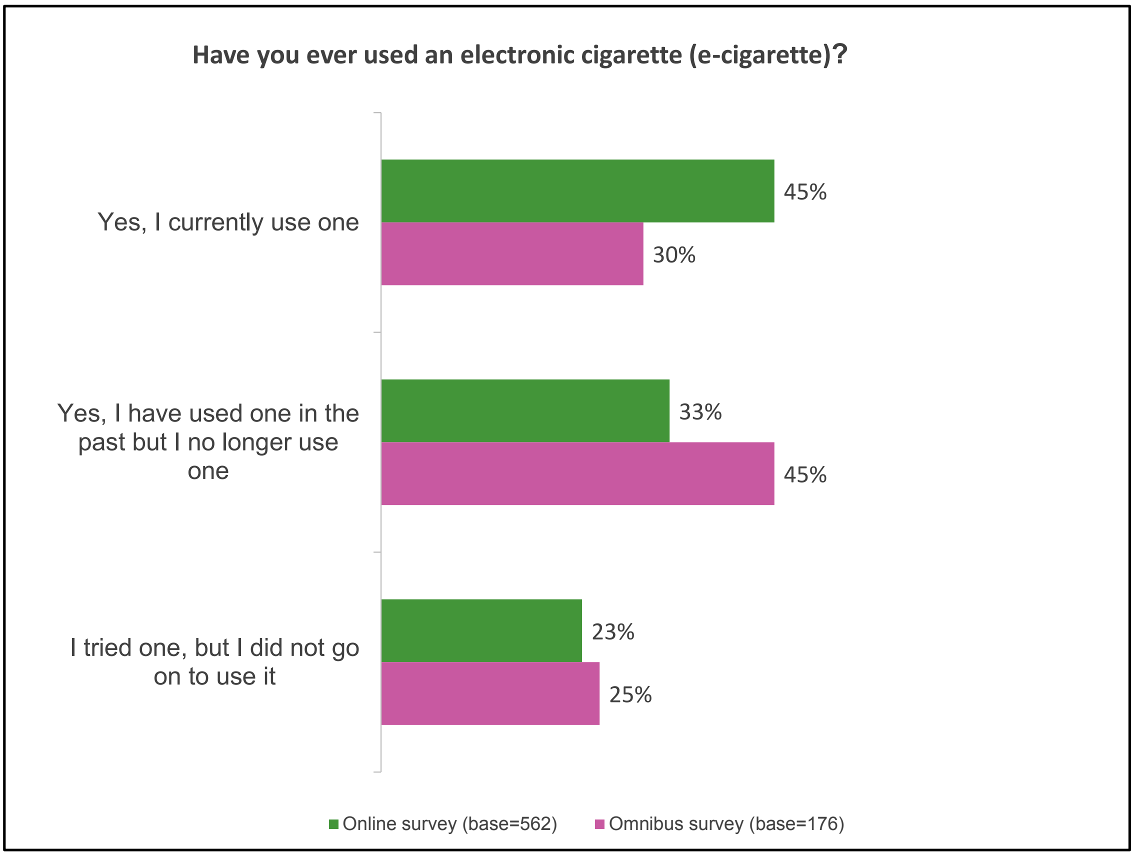
3.6 Table 3.1 summarises how the qualitative interviews with businesses were split between the primary activities of the business (it should be noted that in many cases businesses could be categorised into more than one of these categories).

Table 3.1 : Achieved qualitative interviews with businesses

Business categories	Number of qualitative interviews with businesses
Manufacturers	5
Wholesalers	5
Retailers *(less than 80% of sales online)*	6
Retailers *(more than 80% of sales online)*	9
Total	**25**

3.7 Figure 3.1 summarises how the achieved online survey responses and achieved omnibus survey interviews split between consumers who currently used e-cigarettes, consumers who had stopped regularly using e-cigarettes and consumers who tried (but did not go on to regularly use) e-cigarettes.

Figure 3.1 Achieved profile of online survey responses / omnibus survey interviews with consumers who used or tried using e-cigarettes.



3.8 As the chart shows, more consumer panellists that took part in the online survey were current e-cigarette users in comparison with the consumers that took part in the omnibus survey. The proportion of consumers that had only tried an e-cigarette was broadly similar in both quantitative strands of the research.

3.9 Further comparison between the two quantitative methodologies showed the online survey responses were skewed towards people who purchased e-cigarettes online in the past 12 months, as may be expected given the medium[7]. Around half (48%) of consumer panellists that participated in the online survey had purchased e-cigarettes online in the past 12 months compared to 25% of consumers that took part in the omnibus survey.

3.10 The demographic profiles of participants for each survey were compared to check whether the online survey was skewed by either age or gender (given it was not a random probability design). The analysis showed, that while broadly reflective by demographics, the online survey had slightly under represented men and younger people. The online survey data were therefore weighted to ensure the findings were reflective of the omnibus survey data. This weighted, online survey data were used throughout this report to provide more detail on the consumer demand side of the market.

[7] Given the Omnibus Survey was conducted through a random probability approach, allowing each participant an equal probability of being selected for interview, this strand of the research has been taken as the most accurate estimation of online purchasing behaviour.

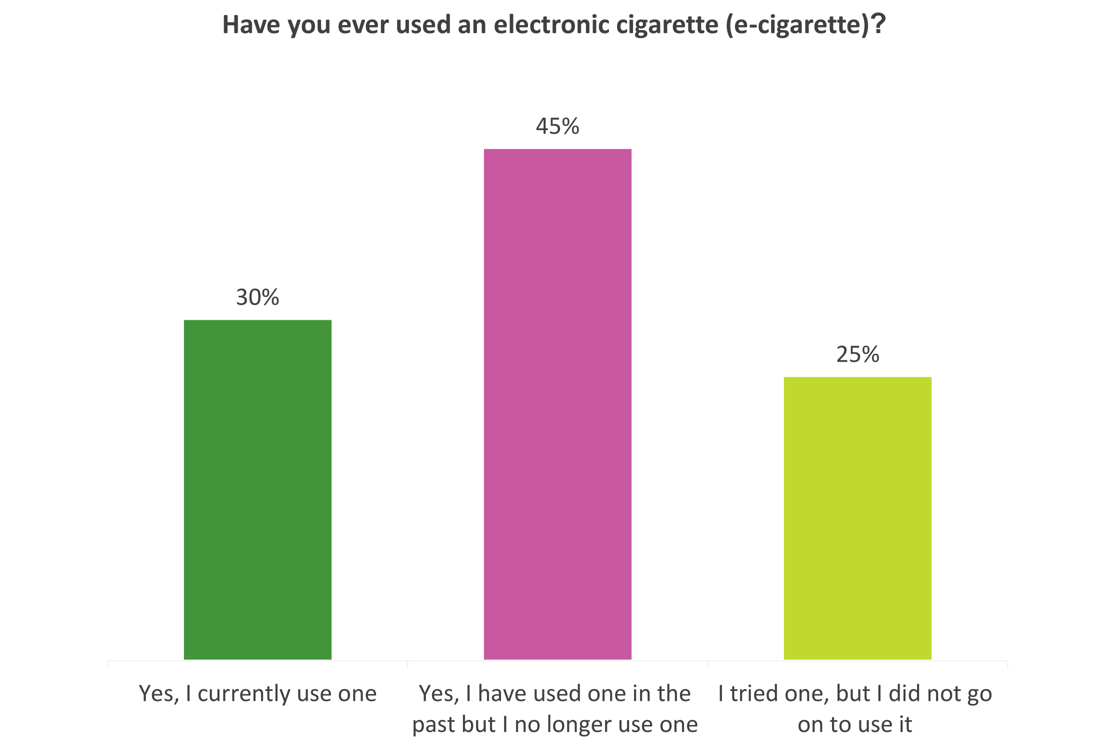
3.11 The technical appendix provides more detail on the methodology and comparisons between the two quantitative data sources.

4 The use of e-cigarette devices and accessories

The use of e-cigarette devices

4.1 As presented in figure 4.1, just under one-third (30%) of consumers that had used or tried e-cigarette devices before and participated in the omnibus survey were current users of e-cigarette devices. A further 45% of consumers had used an e-cigarette device in the past but no longer used one and a quarter (25%) had tried an e-cigarette device but did not go on to use it.

Figure 4.1 The proportion of consumers in the omnibus survey who had used or tried an e-cigarette device before and currently use, previously used or tried using e-cigarette devices

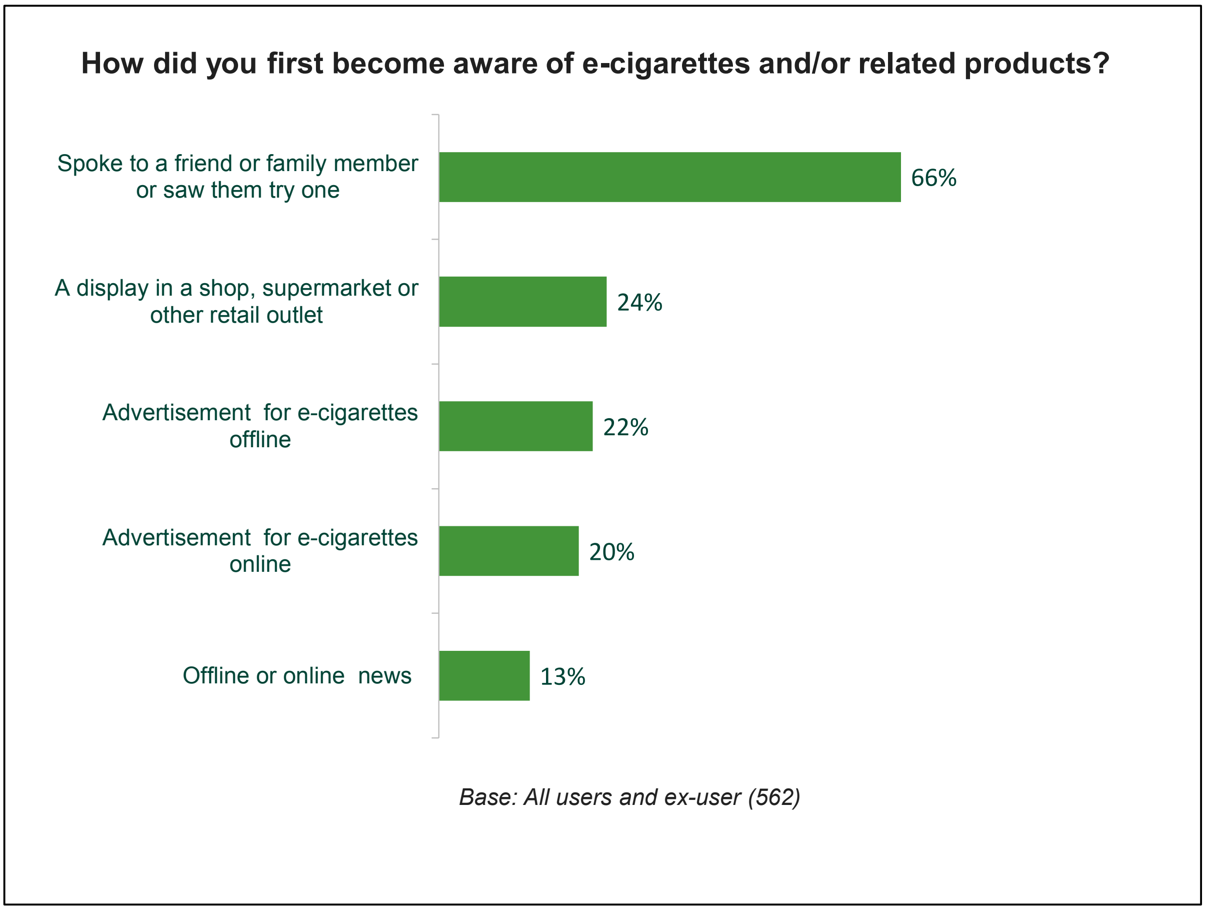


Base: Omnibus survey – consumers that had used or tried e-cigarette devices before (176)

How consumer panellists first became aware of e-cigarettes

4.2 The online survey showed (figure 4.2) that the predominant way in which consumer panellists first became aware of the product was through having spoken to a family member or a friend about e-cigarettes or seeing family members/friends try an e-cigarette or related product. Two thirds (66%) of consumer panellists reported that this was how they were first exposed to e-cigarettes.

Figure 4.2 How consumer panellists first became aware of e-cigarettes and related products



Main motivations for trying e-cigarettes

4.3 Both the online and omnibus surveys showed the main motivations for trying or using e-cigarettes was to reduce the amount of tobacco smoked. Discussions with businesses revealed that they also held similar views on why their customers used e-cigarettes.

4.4 Figure 4.3[8] summarises this: around one-third (32%) of consumer panellists participating in the online survey reported that they first tried e-cigarettes to help reduce the amount of tobacco they smoked and to stop smoking traditional cigarettes. The figure also shows findings were broadly aligned with a question asked on the omnibus survey[9]. This data showed close to half (44%) of consumers that took part in the omnibus survey used e-cigarettes as an aid to quit smoking and a fifth (23%) believed they were less harmful than cigarettes[10].

4.5 Twenty-three percent of consumers that took part in the omnibus survey reported that they first tried e-cigarettes because they wanted to try something new while a similar proportion of consumer panellists that participated in the online survey (22%) believed they were healthier than smoking tobacco. A

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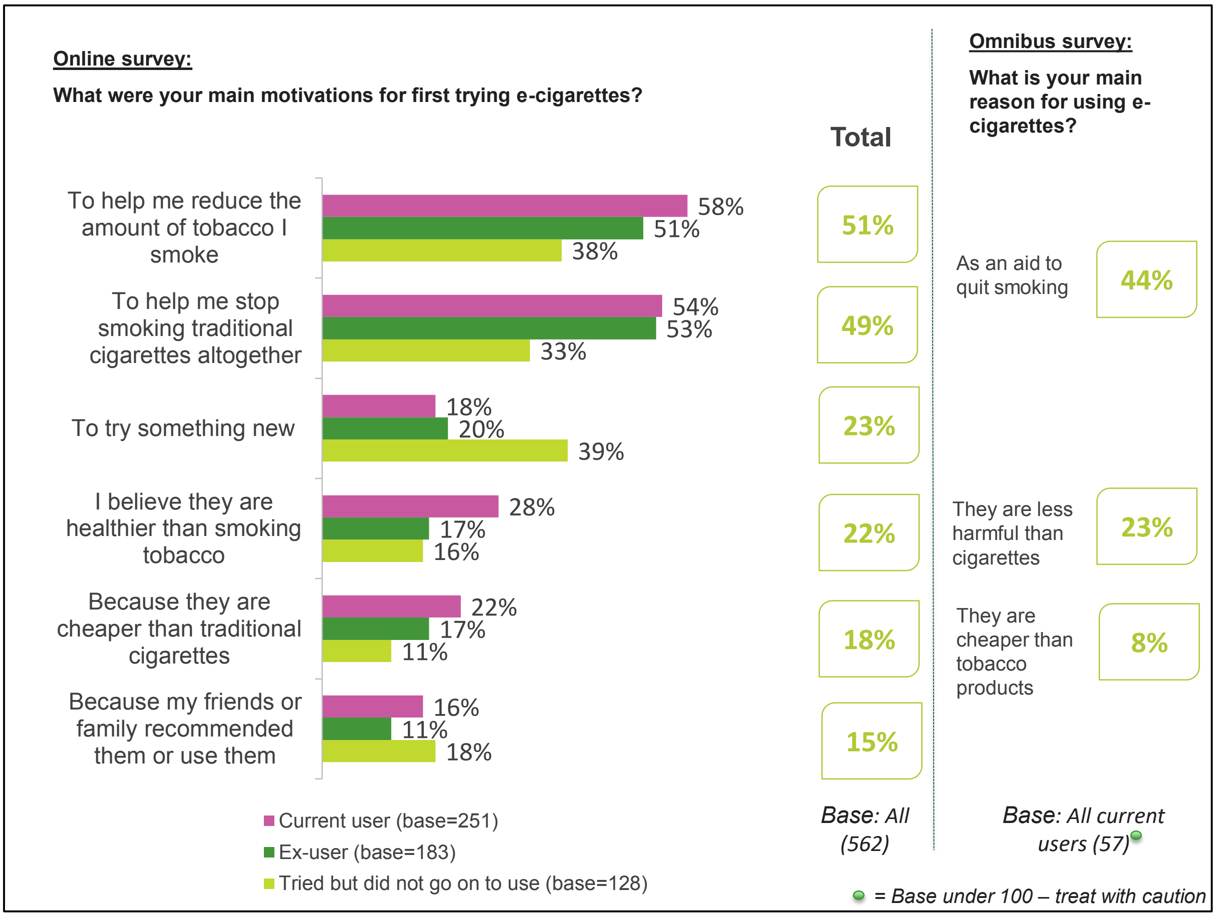
[8] Where responses do not add to 100% this is either due to rounding or because participants were able to choose multiple responses to a question.
[9] "What is your main reason for using e-cigarettes?" This question was commissioned by HMRC for a different research study as part of ongoing evidence building, but has been referenced in this report for context.
[10] The data table for this question is included in Annex B.

further 18% of consumer panellists reported that they first tried e-cigarettes because they were cheaper than traditional cigarettes, compared to 8% of consumers that took part in the omnibus survey.

Figure 4.3 The motivations for first trying e-cigarettes and related products



4.6 In the online survey there were a number of notable differences in motivations for trying e-cigarettes by e-cigarette smoking status.

4.7 Consumer panellists who had only tried e-cigarettes once (39%) were more likely to state they did so to try something new when compared with current e-cigarette users (18%) and consumer panellists who had stopped regularly using e-cigarettes (20%).

4.8 Consumer panellists that were current e-cigarette users were more likely than the remaining groups to have started using them because they believed e-cigarettes to be healthier than tobacco (28%) and because they felt they were cheaper than traditional cigarettes (22%).

4.9 Businesses gave similar feedback when they were asked about their customers' main motivations for trying e-cigarettes. They believed that customers used e-cigarettes and related products to either assist in quitting smoking or as an alternative to smoking tobacco cigarettes.

I think it's [to do with] people stopping smoking. Not only is it a lot cheaper than smoking you also don't smell and it's a lot healthier.

Retailer, Online only, <5 employees, 2-4 years in business

4.10 Only two businesses mentioned experience of e-cigarette users opting to use e-cigarettes as a 'lifestyle choice', but stressed that nearly all e-cigarette users were trying to reduce the amount of tobacco cigarettes they smoked or to stop smoking tobacco cigarettes altogether[11]. The limited number of consumers who take up e-cigarette use as a lifestyle choice were said to be younger people who use them to 'impress' their friends, often using nicotine free liquids.

The only thing they [e-cigarette smokers] have in common is they're all ex-smokers. I don't know of anybody starting afresh. I do know from my kids that some kids use zero nicotine e-liquids almost like a new trend to impress their friends.

Manufacturer, 21+ employees, 4 years+ in business

4.11 Businesses suggested that e-cigarettes were rarely, if ever, used as a gateway into smoking traditional cigarettes (a concern that was highlighted in the literature review)[12].

It always seems to have been put out there that this is a gateway in [to smoking traditional cigarettes] whereas it's quite clearly an exit. There have never been so few teenagers or people smoking [traditional cigarettes]. Both legal and illegal elements of people smoking [traditional cigarettes] are decreasing, which is a good thing.

Retailer, mix of online and terrestrial sales, 5-10 employees, <2 years in business

4.12 A number of the founders and/or directors of smaller e-cigarette (or related product) businesses were e-cigarette users themselves. Not only did they cite similar reasons (to those given by consumer panellists in the online survey) as their own motivations for first trying e-cigarettes, but often as one of the main factors that sparked their interest in setting up a business in the sector.

My wife had always been a heavy smoker, around 20-30 a day and had smoked since she was 15. I'd been an occasional smoker, mainly social. My boss had an electronic cigarette. I asked him where he got it from, he told me, I purchased one for my wife and I couldn't believe how good it was. It was the first thing my wife got used to that she actually used. She'd tried the patches, gum and inhaler and couldn't get on with any of those. This was the only thing that worked for her [to help her quit smoking]. I thought that if it could stop my wife, it's got to be good.

Retailer, mix of online and terrestrial sales, <5 employees, 2-4 years in business

It was a revelation to me. I quit smoking with it and there is no zeal like the converted, so I became a retailer.

Retailer online only, <5 employees, 2-4 years in business

4.13 Other (often smaller) businesses started out as a hobby, with the owners making their own e-liquid in small batches. After growing in popularity (often in online forums) their business developed.

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[11] This finding is consistent with the *Action on Smoking and Health's* Use of e—cigarettes in Great Britain among adults and young people which reported that 96% of e-cigarette users in Great Britain are current smokers or ex-smokers.
[12] This suggestion from businesses is supported by findings from the online survey with consumer panellists. The online survey found that only 2% of all current users and ex-users of e-cigarette devices had never smoked traditional cigarette products.

I started mixing e liquids particularly for myself and I came across a recipe that I particularly enjoyed...I had no intentions or idea that this would turn into a business I just did it to get credibility and kudos on the forums, that was my motivation.

Wholesaler, <5 employees, 2-4 years in business

4.14 Discussions with businesses touched upon the social aspect of using e-cigarettes (or 'vaping'). Although only two businesses mentioned using e-cigarettes as a lifestyle choice, other businesses touched upon the social aspect of using e-cigarettes among existing users; the variety of hardware and e-liquid products on the market facilitated the formation of social activities such as 'vaping groups'. However, none of the businesses suggested that this social aspect was enough to encourage people who never previously smoked traditional cigarettes to *start* smoking e-cigarettes.

You've got people who started using e-cigarettes as a smoking cessation device that think 'actually this is quite cool' and they continue using.

Retailer, online only, <5 employees, <2 years in business

Lots of people see it as a pastime and social hobby. They get into vaping groups and it's a harmless activity and should be seen as such, like going to a coffee shop, and not seen like going to the chemist. This is less dangerous than eating peanuts, rock climbing or playing rugby.

Retailer, mix of online and terrestrial sales, 5-10 employees, <2 years in business

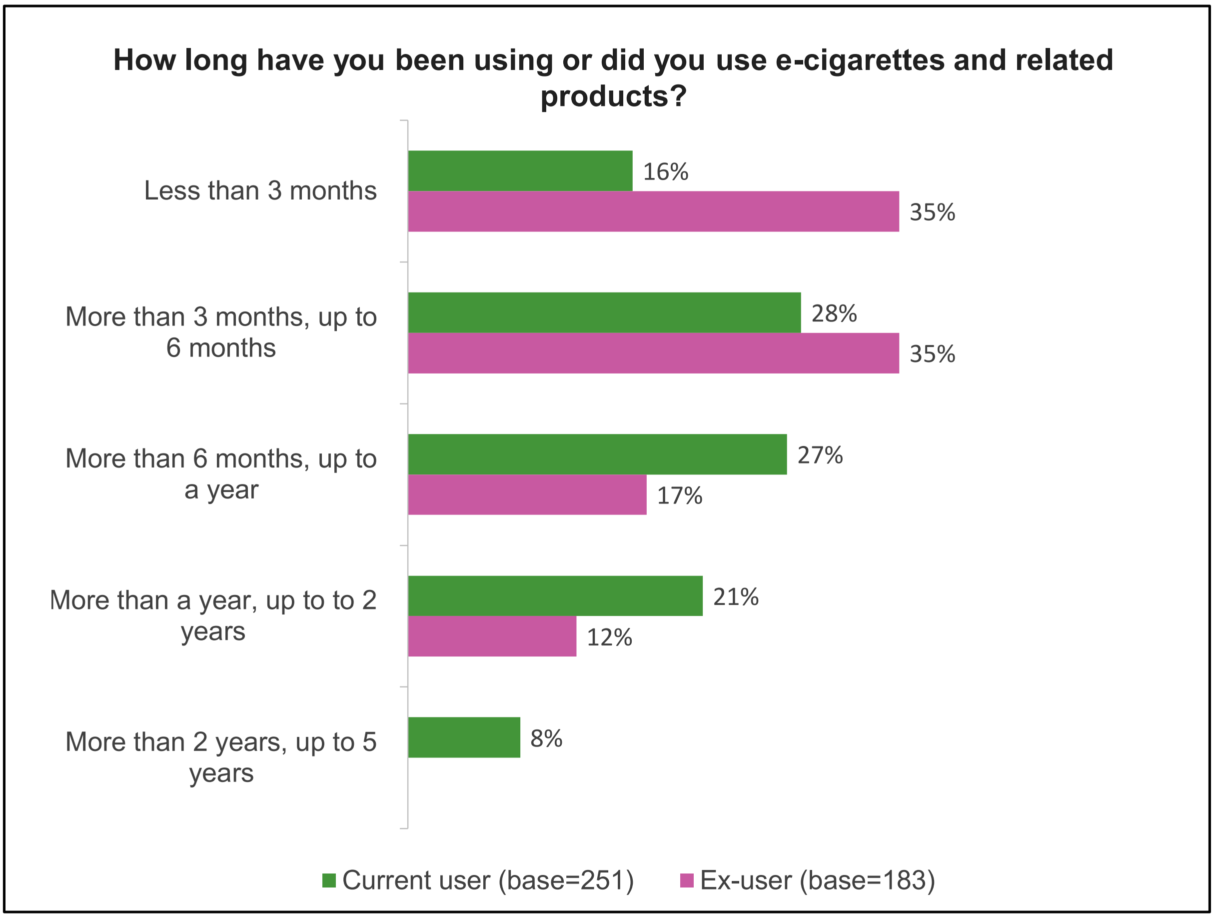
Length of time consumer panellists have used e-cigarettes

4.15 Figure 4.4 is based on the online survey and shows the length of time consumer panellists had been using e-cigarettes or used e-cigarettes before stopping varied considerably[13]. That said, and as may be expected, current users of e-cigarettes had generally been using e-cigarettes and related products for a longer period of time than consumers who had stopped using e-cigarettes.

4.16 Nearly a third (30%) of current users had been using e-cigarettes for more than a year, while over half (54%)[14] of current users had been using e-cigarettes for more than three months but less than a year.

[13] Consumers who had only *tried* e-cigarettes before stopping were not included in this analysis because they had not consistently used e-cigarettes.
[14] Due to the effects of rounding, numbers from the graph will result in slightly different values to that presented in the text, when added together.

Figure 4.4 Length of time consumer panellists used e-cigarettes and related products



The reasons why consumer panellists stopped using e-cigarettes and related products

4.17 Consumer panellists that took part in the online survey and reported being ex-users (either those who had *tried* e-cigarettes and did not go on to use them or who had stopped regularly using e-cigarettes) were asked to specify their reason(s) for stopping or not going on to use e-cigarette devices. The reasons provided are presented in figure 4.5[15].

4.18 Two-fifths (39%) of consumer panellists that were ex-users stopped using the products because they were unsure of the health risks. Twenty-nine percent stopped because they did not like the taste or sensation of using e-cigarettes, while 27% stopped using the devices because it was never their intention to use them regularly.

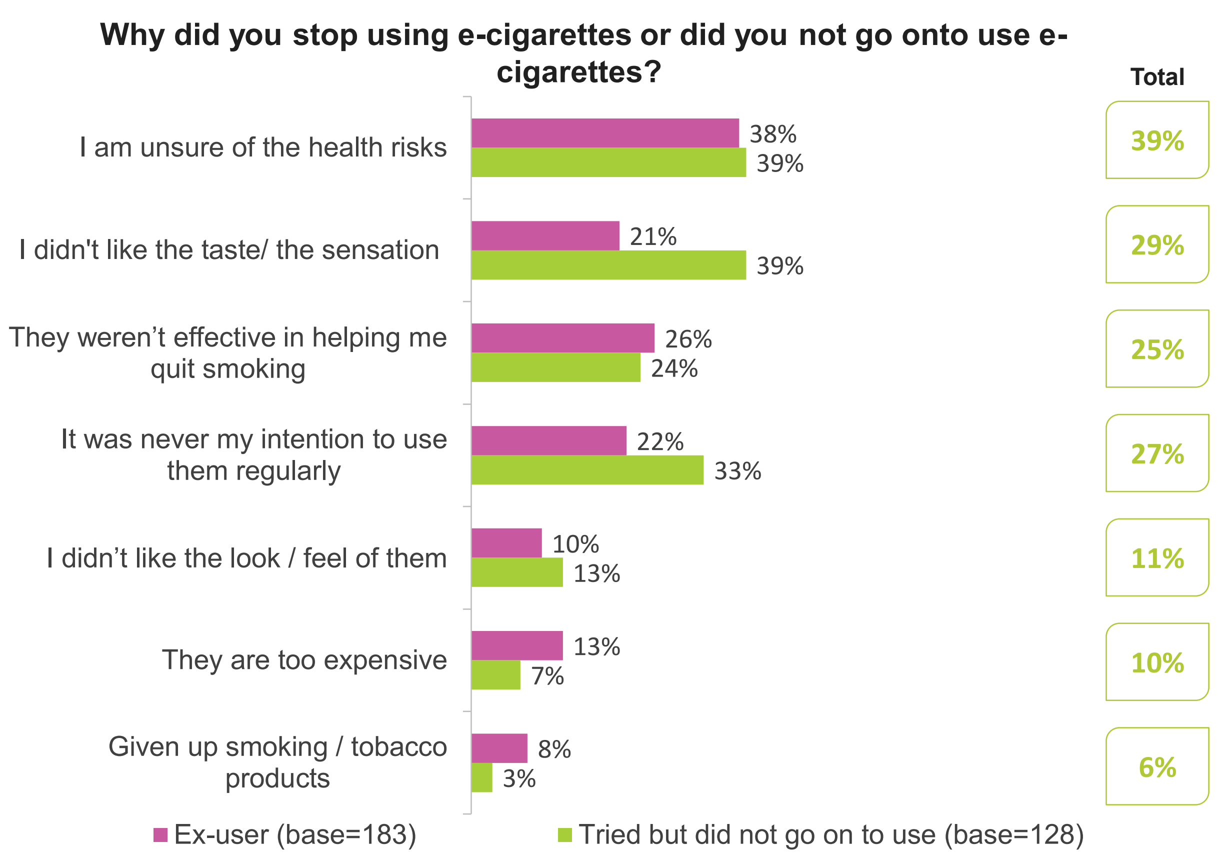
4.19 A quarter (25%) of ex-users of e-cigarettes stopped using them because they did not find them to be effective in helping them quit smoking[16].

[15] Please note that panellists were asked to select all the reasons that applied from a pre-coded list. Therefore the percentages do not sum to 100%.
[16] This accounted for 14% of the total 562 consumer panellists who took part in the online survey.

4.20 A further 6% of consumer panellists who were former users of e-cigarettes stopped using e-cigarettes because the devices had enabled them to give up tobacco products. Retailers and manufacturers did not voice any concerns that people giving up e-cigarette devices would harm the industry; although some consumers go on to quit smoking traditional cigarette products, businesses often believed some consumers continued to use an e-cigarette as a safer/cheaper alternative.

4.21 As figure 4.5 shows there were differences in behaviour between consumer panellists who tried e-cigarettes once and consumer panellists who stopped regularly using e-cigarettes. Two-fifths (39%) of consumer panellists who tried (but did not go on to use) e-cigarettes claimed to have stopped because they did not like the taste/sensation compared to a fifth (21%) of consumer panellists who stopped regularly using e-cigarettes.

Figure 4.5 Reasons consumer panellists stopped using e-cigarettes



Base: Ex-user and tried but did not go on to use (311)
Note: at this question consumer panellists were asked to select all the reasons that applied from a pre-coded list.

4.22 The reasons consumer panellists had stopped using e-cigarettes differed depending on the length of time of use. The following options were *more likely* to be selected among those who had used e-cigarettes for *six months or less* than those who had used for over six months[17]:

- They did not like the taste or sensation;
- They did not like the look/feel of them;

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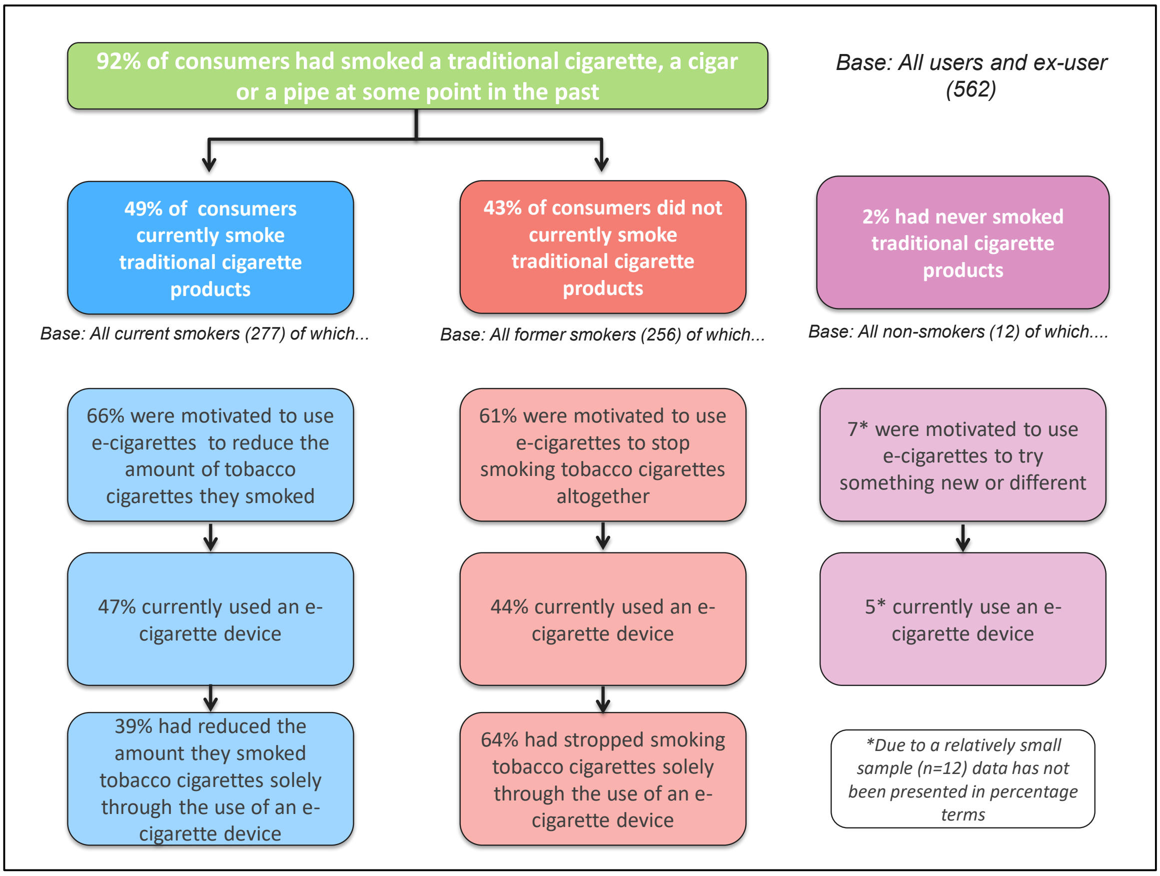
[17] Percentages have not been reported due to the relatively small base sizes.

- They did not think that they would be effective in helping them quit smoking; and
- They were too expensive.

Wider smoking behaviour of consumer panellists

4.23 As figure 4.6 shows, nearly all (92%) consumer panellists participating in the online survey had smoked a traditional cigarette, a cigar or a pipe at some point in their lives while half of all consumer panellists (49%) currently smoked at the time of the survey. 2%[18] had never smoked traditional cigarette products.

Figure 4.6 Summary of wider traditional smoking behaviour



4.24 Two-fifths (39%) of current smokers had reduced the amount they smoked traditional cigarettes solely through the use of an e-cigarette while two-thirds (64%) of former smokers had stopped smoking traditional cigarettes solely through the use of an e-cigarette.

4.25 However, many of these consumer panellists that had reduced or stopped smoking traditional tobacco products did continue to use e-cigarettes. Seventy-two percent of the current regular smokers that had reduced their smoking through the use of an e-cigarette currently used one, while 67% of consumer panellists that used to smoke traditional tobacco still used an e-cigarette.

4.26 The reasons consumer panellists currently used e-cigarettes were consistent with the reasons for first trying them. Principally, to reduce the amount they smoked traditional cigarettes (47%) or to stop

[18] This is comparable with other surveys, such as the YouGov study 'Use of electronic cigarettes (vapourisers) among adults in Great Britain (2016)' which showed only 2% of "never smokers" had tried an e-cigarette and 0.2% of "never smokers" were current e-cigarette users.

smoking them (46%). Two-fifths (38%) continued to use them because they enjoyed e-cigarettes and a smaller proportion (27%) used them because they perceived them to be healthier than smoking tobacco.

4.27 There were a small minority of users identified who had never smoked traditional cigarette products, who were motivated to use e-cigarettes to try something new or different (7 consumers) and who currently used an e-cigarette (5 consumers). These consumer panellists may align to the group described by the two businesses in section 4.10, i.e. people that used e-cigarettes as a ‘lifestyle’ choice.

Conclusions

4.28 The majority of people who used or had tried e-cigarettes become aware of them through their peers (family members or friends) rather than through advertisements, promotions and media coverage.

4.29 The main reason people started using e-cigarette devices was to help them reduce the amount of tobacco cigarettes they smoked or to help them quit smoking tobacco cigarettes altogether.

4.30 While e-cigarette devices played an important role in helping people quit smoking or reduce the amount of tobacco cigarettes they smoked, most people who stopped smoking tobacco cigarettes continued to use e-cigarettes.

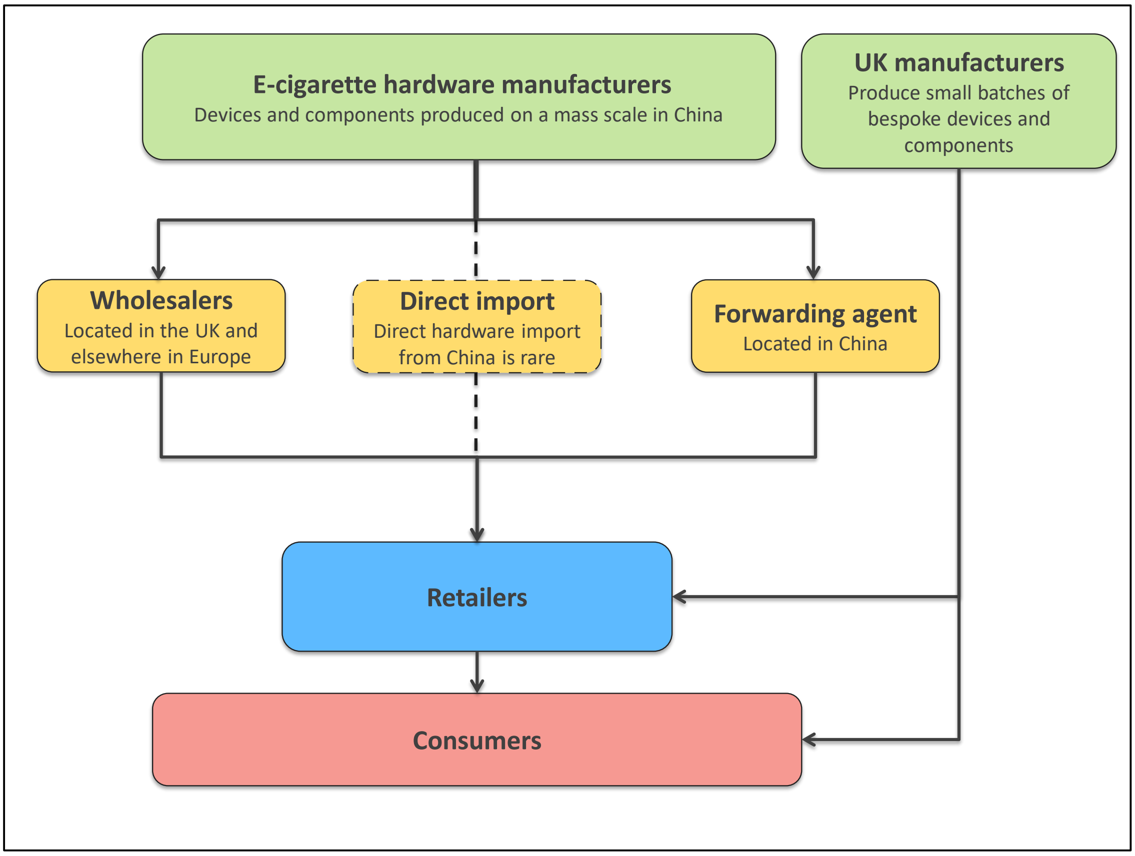
5 How the supply chain is operating

5.1 Interviews with the businesses revealed that there were two distinct supply chains in the e-cigarette market; one for e-cigarette hardware (e-cigarette devices and components) and one for e-liquids. The following chapter is based on the businesses' perceptions of each supply chain.

E-cigarette hardware supply chain

5.2 Figure 5.1 summarises how businesses thought the e-cigarette hardware supply chain typically functioned.

Figure 5.1 Summary of the e-cigarette hardware supply chain



5.3 Feedback suggested that e-cigarette hardware was predominantly manufactured in China, mainly because of manufacturing expertise and cost.

5.4 Businesses located in China were seen to have expertise manufacturing e-cigarette hardware because this was the marketplace in which the technology was invented and where advancements in the technology continued to originate. There was also a cost advantage in manufacturing e-cigarette hardware in China.

The Chinese developed the e-cigarette and they are the experts in developing the hardware but also it's the cost – there is no one in Europe [who] can compete against them.

Retailer, mix of online and terrestrial sales, 5-10 employees, <2 years in business

5.5 There were a small number of businesses in the UK that manufactured e-cigarette hardware, including components. These businesses typically produced small batches of high-end and bespoke hardware. One business participating in the research manufactured small quantities of atomisers for e-cigarette devices and was aware of two other businesses based in the UK that manufactured similar e-cigarette components.

We don't really cater to mass produced products, we are more niche, so we have batches of less than 2,000 items at a time rather than making hundreds of thousands and selling them off cheaply. They are high end [products].

Manufacturer, <5 employees, 2-4 years in business

5.6 Retailers of e-cigarette hardware typically procured stock from third parties, with very few importing directly from manufacturers located in China. Retailers used third parties primarily for reasons of economy of scale and speed.

5.7 It was thought to be cheaper for retailers to use third parties rather than order directly from manufacturers in China. To import hardware directly from manufacturers, businesses were required to order large quantities of products and in turn incurred high shipping costs.

I used to order the hardware from China directly but to make it worthwhile you had to order tonnes and tonnes and it is easier now to get smaller quantities from the UK.

Retailer, online only, <5 employees, 4 years+ in business

5.8 It was also quicker for retailers to use third parties than ordering directly from manufacturers. Manufacturers in China were said to produce hardware after orders had been placed. As a consequence, there was often a long wait to import e-cigarette hardware from China.

…Because the manufacturers in most cases are building to order. So you place an order with the manufacturers, you've got a waiting time, they don't sit with stock on the shelves, whereas the trading companies are buying the stock and they've got stock to send straight out.

Retailer, mix of online and terrestrial sales, 11-20 employees, 4 years+ in business

5.9 Businesses described two types of third party used in the e-cigarette hardware supply chain: wholesalers and forwarding agents. Wholesalers were usually based in the UK, and in some instances elsewhere in Europe. These businesses imported e-cigarette hardware from manufacturers based in China and sold them on to UK based retailers.

I tend to buy them more from a UK based supplier. A lot of people spend their time importing it and then sell it at 5-10% profit, and they do genuinely wholesale it. I deal with just one of those suppliers.

Retailer, online only, <5 employees, 4 years+ in business

5.10 Forwarding agents were typically located in China. Businesses described how these agents tended to group together multiple orders made by UK retailers and export them as one shipment. Utilising forwarding agents enabled retailers to import products from numerous brands in China at a lower cost than would be possible if ordered directly from the manufacturers.

So there's agents out there [in China], they call themselves agents, who you will place an order for all twenty brands, they will source them from factories in China and send it over to you on one shipment.

Retailer, >80% online, 5-10 employees, 2-4 years in business

5.11 Once e-cigarette hardware was obtained by retailers, the produce was typically sold to consumers in the UK. However, for many retailers that operated online, hardware sales were also made to consumers outside of the UK. The businesses that exported e-cigarette hardware reported that the majority of these sales were made to consumers elsewhere in Europe.

We ship to every corner of Europe you know; we ship to Norway, Sweden, Finland, the States…Croatia, we literally ship everywhere.

Retailer, >80% online, 5-10 employees, 2-4 years in business

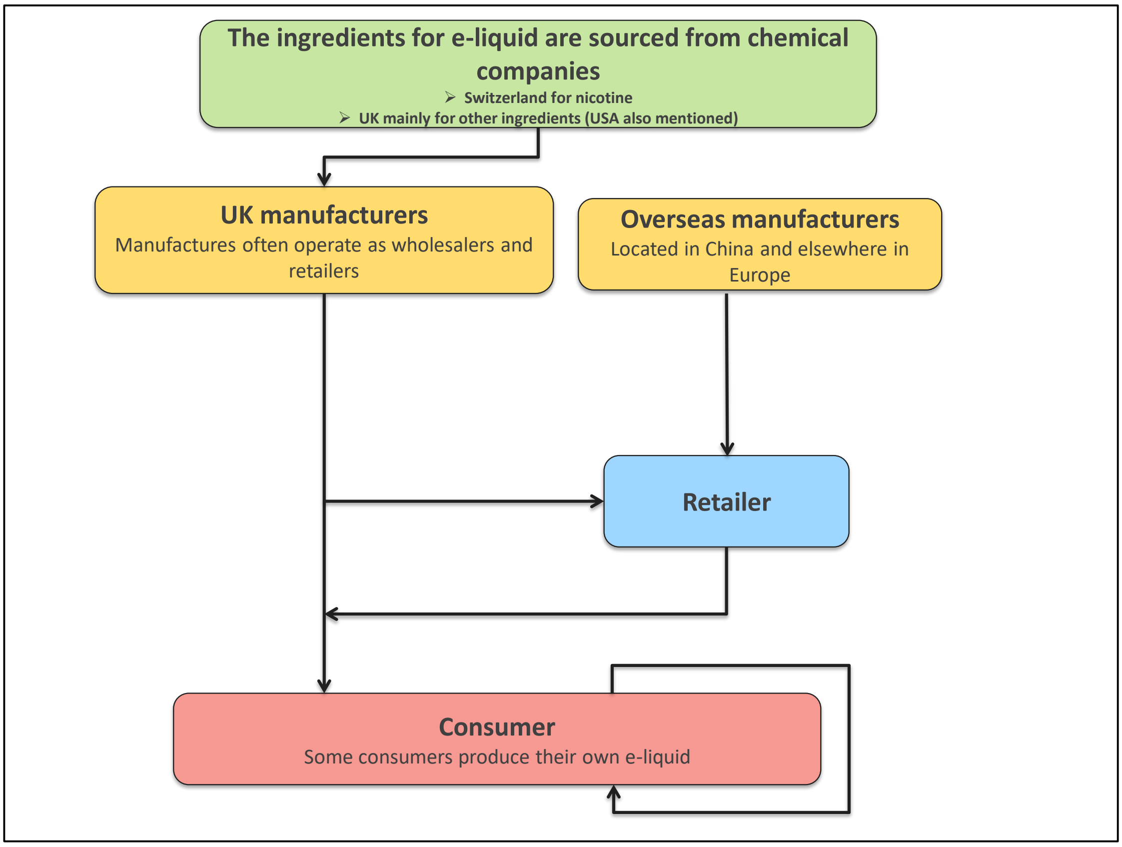
5.12 The main challenge in the e-cigarette hardware supply chain was perceived to be the regulatory changes due to be brought in, namely the Tobacco Products Directive (TPD) in May 2016. Businesses perceived that the introduction of this regulation would increase the costs of importing e-cigarette devices/components and push smaller businesses out of the market (the expected impacts of the TPD are outlined in greater detail in chapter 8).

5.13 A further challenge faced by some businesses involved in the e-cigarette hardware supply chain was the rapid pace of development in technology. In this context, some businesses found it difficult to stock the latest hardware on the market.

E-liquid supply chain

5.14 The e-liquid supply chain is summarised in figure 5.2

Figure 5.2 Summary of the e-liquid supply chain



5.15 The largest manufacturers of e-liquid in the world were said to be based in China (who also used Chinese nicotine supplies). A small amount of e-liquid manufactured in the USA and elsewhere in Europe was also sold in the UK.

5.16 Although e-liquids produced in China and the USA were imported by some UK based retailers, the majority of e-liquid sold in the UK was produced domestically. Wholesalers and retailers typically sourced e-liquid from smaller manufacturers based in the UK for both supply and demand side reasons.

5.17 From a supply side perspective, there were many domestic e-liquid manufacturers. As a consequence of e-liquid being readily available within the UK there was little need for businesses to import e-liquid.

5.18 From a demand side perspective, consumers were said to have a preference for e-liquid produced by smaller manufacturers outside of China due to a perception that it was of higher quality. A parallel was drawn by one business between small e-liquid producers and craft beer breweries.

You've got all the big breweries and you've got a craft beer market and you can draw similarities with craft beer to the e-cigarette market, there's always going to be those artisan [products] hitting niches.

Retailer, online only, <5 employees, <2 years in business

5.19 Businesses estimated that there were hundreds of e-liquid manufacturers in the UK, with a handful of larger manufacturers leading the field. The high number of e-liquid manufacturers in the UK was said to be because there were relatively few barriers to entry[19].

The products aren't as complicated as they are in some industries... there is a relatively low barrier to entry. Even though the market is quite crowded people take a plunge.

Retailer, online only, <5 employees, 2-4 years in business

5.20 The majority of UK manufacturers of e-liquid obtained Propylene Glycol (PG) and Vegetable Glycerine (VG) from chemical companies based in the UK. Flavouring agents were also typically sourced from UK based chemical companies, but some manufacturers imported specific flavouring agents from the USA. The flavouring agents used in e-liquid production were the same as those used in food production.

We deal direct with manufacturers in almost all cases and we have a pretty solid supply chain and manage all that all the way through. The raw ingredients we buy direct from the manufacturer, the bottles we buy from the bottle manufacturer, and we just compile those into the product here.

Retailer, online only, 21+ employees, 2-4 years in business

5.21 The research did not provide a strong indication of flavour preferences; there were perceived to be a wide variety of flavours and consumers are able to customise e-liquid flavours. Indeed, many businesses with a terrestrial presence made it clear that a lot of their consumers like to test/trial different flavours and liquids in the shop itself.

5.22 Manufacturers of e-liquids usually procured liquid nicotine from Switzerland. This was because the large chemical companies that specialise in liquid nicotine production were based in Switzerland and, consequently, this is where the highest quality liquid nicotine was said to be produced.

[19] Only four ingredients, each relatively easy to source, were required by businesses manufacturing e-liquids containing nicotine: Propylene Glycol, Vegetable Glycerine, flavouring agents and liquid nicotine.

Swiss nicotine is la crème de la crème of nicotine if you like… You know if you have Russian vodka, a tripled distilled, it's nice and clear, crisp? It's very similar to nicotine.

Retailer, >80% online, 5-10 employees, 2-4 years in business

5.23 There was a considerable amount of crossover between the categories of manufacturer, wholesaler and retailer within the e-liquid supply chain. All the UK manufacturers of e-liquid reported wholesaling their produce to retailers. Many also reported retailing their produce direct to consumers via their own website. In light of this, there were few businesses in the e-liquid supply chain that acted as standalone wholesalers.

5.24 Manufacturers and retailers of e-liquids reported that the majority of their e-liquid sales were made to customers in the UK. However, several businesses mentioned that they exported e-liquids to retailers and consumers overseas. The majority of these sales were made to retailers and consumers elsewhere in Europe.

The majority of mine are UK, but I do have a lot of customers in Norway and Sweden…Belgium, France, Italy, sort of all over.

Manufacturer, online only, <5 employees, 2-4 in business

5.25 A few businesses involved in the e-liquid supply chain believed that that some consumers produced their own e-liquid by obtaining and mixing the required ingredients. Two businesses reported selling the chemicals and equipment required for e-cigarette users to produce e-liquid for personal use.

Liquids are relatively simple to produce, so there's a lot of people making them in garden sheds.

Wholesaler, 11-20 employees, 2-4 years in business

The vast majority [of e-liquid stock] is ready made liquid but we do also have a DIY liquid in home supply kits as well, like in a home brew shop for beer.

Retailer, mix of online and terrestrial sales, <5 employees, 2-4 years in business

5.26 Several e-liquid manufacturers stated that the key challenge they faced in the e-liquid supply chain was the sourcing of e-liquid bottles. These businesses reported having to wait a long time for orders made by bottle manufacturers in China to be delivered.

We bought a few hundred thousand bottles from China [a] while ago and that took nearly six weeks to get here and by that point we had to go buy bottles from someone else because we [had] run out.

Retailer, online only, 21+ employees, 2-4 years in business

5.27 A further challenge in the e-liquid supply chain was perceived unfair competition from producers operating in the black market. Some businesses said that producers of e-liquids that do not comply with regulations were able to sell e-liquid at a higher profit margin and were therefore considered to be undercutting manufacturers abiding by regulations.

I am facing quite an unfair competition. I follow some standards in order to produce these goods from the bottling, packaging and fresh materials that I use in production methods. Everything is up to minimum standard…Someone else can do a bottle of liquid that looks, smells and tastes like mine, but it's not mine. They can sell it for a third of the price and make far more profit.

Manufacturer, 21+ employees, 4 years+ in business

5.28 This perceived unfair competition was said to have a negative impact upon the sales/turnover of some e-liquid producers. One business stated that they planned to act as a whistle-blower to counter these effects.

The biggest stunt in my growth is the fact that because I'm legit and have to pay VAT and declare everything honestly, there are several suppliers who can supply the same products as me 20% cheaper.

Wholesaler, <5 employees, 2-4 years in business

Marketing of e-cigarette hardware and e-liquids

5.29 Most businesses involved in the e-cigarette hardware supply chain and the e-liquid supply chain reported that they relied primarily on word of mouth to attract customers to their business, rather than conducting active marketing practices. This aligned with data from the online survey which showed that two thirds (66%) of consumer panellists were first exposed to e-cigarettes through speaking to a family member or a friend about e-cigarettes, or seeing family members or friends try an e-cigarette or related product.

Customers become the cheerleaders of it [the business].

Retailer, <5 employees, 2-4 years in business

5.30 However, some businesses, especially those that operated online, mentioned the use of advertisements on social media to attract custom.

Online advertising is easily accessible, widely understood and you can target very effectively. You can build a business for your online e-cigarettes store quite straightforwardly.

Tobacco manufacturer, 21+ employees

5.31 However, businesses that had used social media predicted that the use of this platform to market e-cigarette devices and e-liquids would soon stop as it would be prohibited under the TPD (this is discussed further in chapter 8).

5.32 Other marketing practices used by some businesses included advertisements on the radio, advertisements in magazines and appearances at trade shows.

Conclusions

5.33 Two separate supply chains exist within the e-cigarette market, one supply chain for e-cigarette hardware and one supply chain for e-liquid.

5.34 China was found to play a major role in the hardware supply chain and only a small amount of hardware was manufactured in the UK. UK based hardware comprised high-end, niche devices and components that were manufactured in small batches. Retailers in the UK, both online and terrestrial, sourced hardware from third parties rather than directly from manufacturers. Third parties were utilised because they are cheaper and are able to deliver hardware quicker.

5.35 The majority of e-liquid sold by UK based wholesalers and retailers was manufactured domestically. While companies in China are the biggest manufacturers of e-liquid globally, e-liquid manufactured in the UK was used by wholesalers and retailers because it was described as easier to obtain than imported e-liquid and because consumers perceive it to be of a higher quality.

5.36 UK based manufacturers of e-liquids source liquid nicotine from companies located in Switzerland (the large chemical companies that specialise in the production of liquid nicotine are based here and were considered to provide the highest quality liquid nicotine).

5.37 There were few perceived barriers to entering the e-liquid market. The ingredients required to produce e-liquid were perceived to be relatively easy to obtain and the process of combining them as relatively straightforward. As a consequence, there was a considerable amount of crossover between the categories of manufacturer, wholesaler and retailer within the e-liquid supply chain. Many e-liquid manufacturers not only produced e-liquid, but also wholesaled and retailed the e-liquids they produced.

5.38 Most businesses reported that they relied heavily on word of mouth to promote their business. Social media was also used as a more active form of marketing, usually by businesses who also operated online. Businesses predicted social media advertising may have to stop with the introduction of the TPD.

6 The relative importance of the terrestrial and online markets

The views of businesses

6.1 Nearly all manufacturers, wholesalers and retailers reported that their business had grown rapidly in recent years. One online retailer disclosed that their turnover had increased by 500% between their first and second year of trading, while a manufacturer of e-liquid mentioned that in the three years since the business started the number of employees had increased from five to 28. These anecdotal accounts of business growth indicated that the overall e-cigarette industry, including both the online market and terrestrial market, had grown rapidly over the past few years.

6.2 Although nearly all manufacturers, wholesalers and retailers reported fast paced growth, opinion was relatively evenly split on the comparative size of the online and terrestrial segments of the e-cigarette market. Businesses tended to judge the scale of the market on the number of online/offline retailers they were aware of, and used this to estimate what percentage of sales took place through online and offline channels.

6.3 A few businesses felt able to comment on the market value of both the online and the terrestrial markets, however, they were inconsistent between respondents.

I think that the UK market is probably worth a billion sterling at this moment in time, and I think it's growing, year on year, around 20-25%... I think probably at this moment in time, online [is bigger].

Retailer, online only, <5 employees, <2 years in business

Well, speaking to other vendors, some who have an online presence and a shop presence, their online presence takes one fifth of the turnover that the shop does.

Retailer, online only, <5 employees, 2-4 years in business

6.4 However, most businesses did not have views on the specific market value or the volume of sales across the online and terrestrial markets and were only able to provide this information with respect to their own business. In this context businesses often acknowledged that the feedback they gave represented their own personal views rather a definitive answer to how the market was structured.

6.5 Across the 25 qualitative interviews there were no clear patterns in businesses' views on the relative size of the market by the type or size of business. The following two quotes illustrate the range of estimations provided:

I think the online outweighs the terrestrial [in terms of sales] by… I wouldn't like to put a figure on it because I don't know; I would say it outweighs it considerably, probably 70%-30% maybe 80%-20%.

Manufacturer, 21+ employees, 2-4 years in business

I would say probably 80% is in a shop and 20% is sold over the internet, mainly by the shops that have it on their shelves but they also have a website.

Wholesaler, 11-20 employees, 2-4 years in business

Evidence for the online e-cigarette market being bigger than the terrestrial market

6.6 Where businesses believed the online e-cigarette market was comparatively bigger than the terrestrial e-cigarette market, three main themes emerged.

6.7 Firstly, online channels were seen to be better placed to meet consumer demand given the wide variety of products and accessories available. Businesses felt that terrestrial stores were simply unable to stock the range of products that consumers were looking for. To put this in context, one business estimated there to be over 25,000 varieties of e-liquids currently on the market.

> *If you buy [named brand] of cigarettes you can probably go into any high street store and buy [named brand] cigarettes. If you buy a particular brand of e-cigarettes or e-liquid it's very rare that you can walk into five different stores and find that brand in all those stores and people like the brand that they use, so that is the issue with off-line retailers at the moment.*

Retailer, online only, <5 employees, <2 years in business

6.8 Secondly, businesses explained that there were more online channels than terrestrial shops operating in the e-cigarette market because there were perceived to be relatively few barriers to setting up a new online business. E-liquid ingredients were relatively easy to source, mix and distribute/sell. Online channels also enabled businesses to keep their overheads low.

6.9 Finally, although mentioned less frequently than the reasons above, some businesses perceived the e-cigarette market to be intrinsically linked with the online community.

> *The market began online and the only thing that changed is the fact that you now have bricks and mortar shops which in comparative terms have come on recently… It's Internet driven.*

Wholesaler, <5 employees, 2-4 years in business

Evidence for the terrestrial e-cigarette market being bigger than the online market

6.10 Where business believed the terrestrial e-cigarette market was comparatively bigger than the online e-cigarette market two main themes emerged.

6.11 Firstly, many businesses (that felt the terrestrial market was bigger in terms of sales) were generally in agreement that the *number* of online businesses involved in the market was greater than the number of terrestrial stores but they felt that the online market had reached 'saturation point'.

> *You are a little fish in a big marketplace online now, and in a way the size of your fish online is getting smaller and smaller because there's more fish coming into the marketplace. Online is easier for everybody to sell from, so there's more people coming in, but it's saturated.*

Retailer mix of online and terrestrial sales, 11-20 employees, 4 years+ in business

> *There has been a considerable increase in the number of terrestrial shops in the last two years. Two years ago almost 100% of the e-cig market was online. Shops began to emerge as there was not any room for them to enter the online market.*

Wholesaler, <5 employees, 2-4 years in business

6.12 Businesses also explained that there were a few large retailers that dominated the online market to the detriment of smaller businesses, often because they come up on the first page of a search engine (using search engine optimisation[20]).

There are some big companies out there with massive websites, when you search for an "e-cig" on Google they come up on page one and they have a massive turnover.

Manufacturer, <5 employees, 2-4 years in business

6.13 In this context businesses explained that the terrestrial market had grown larger than the online market and these businesses expected this trend to continue.

6.14 Secondly, the 'craft' nature of the industry was mentioned by businesses. Businesses reported that consumers preferred terrestrial stores because it gives people the ability to talk to experts about how the devices work and to get advice. Businesses also mentioned that given the wider variety of products, flavours and accessories on offer, a visit to a shop means consumers can 'try before they buy'.

Usually the terrestrial market shrinks and you've got a massive online market but I think this is one of the few industries [where it is different] because people want to taste the flavours. This is where shops do really, really well especially because this is a new and emerging product or hobby.

Manufacturer, 21+ employees, 4 years+ in business

6.15 There was little evidence to suggest that people might get advice in person and then go online to make purchases to save money. One business felt it was not comparable to other electronic goods where this might be more likely to happen:

I think the high street is very important because that's where people see the product ... an e-cigarette is of lesser value and they might be tempted to buy it on the day rather than a TV where you can go online and save yourself £150 … I think the retail outlets are the showcase.

Wholesaler, <5 employees, 2-4 years in business

Views of tobacco manufacturers

6.16 Two interviews with tobacco manufacturers were conducted as part of the 25 qualitative in-depth interviews. The interviews with the tobacco manufacturers were very similar in that the businesses felt it was difficult to say for sure exactly which arm of the market (online or terrestrial) was bigger.

6.17 The two manufacturers felt there was no easy or formulated way to account for online sales and the high number of independent or smaller retailers.

The smaller manufacturers come and develop their own liquid so you have a wide range of suppliers. You have small suppliers that can produce small batches. So that gives a wide range of e-liquids and flavours and range of products that you can get. In terms of the size, it's very difficult to calculate because there's no formulated way of identifying what the online sales are.

Tobacco manufacturer, 21+ employees

[20] The process of maximising the number of visits to a website by ensuring the page is referenced as high as possible in search engines.

6.18 In this context, the manufacturers' feedback was based on assumptions and estimates based on their own sales/value and volumes, and data collected by their customer insight teams. One manufacturer estimated the online size of the market (in terms of volume) to be slightly bigger.

> *We only go by estimates. On our current understanding, we see the online [market] and what we call the traditional, the big stores, we see as representing the majority of the volume. So we assume that [by volume] more than 50% [of the market] is online.*
>
> **Tobacco manufacturer, 21+ employees**

6.19 The second manufacturer estimated that the market (by volume) was relatively evenly split between online and terrestrial sales. In both instances, manufacturers did point out their assumptions *"could be wrong".*

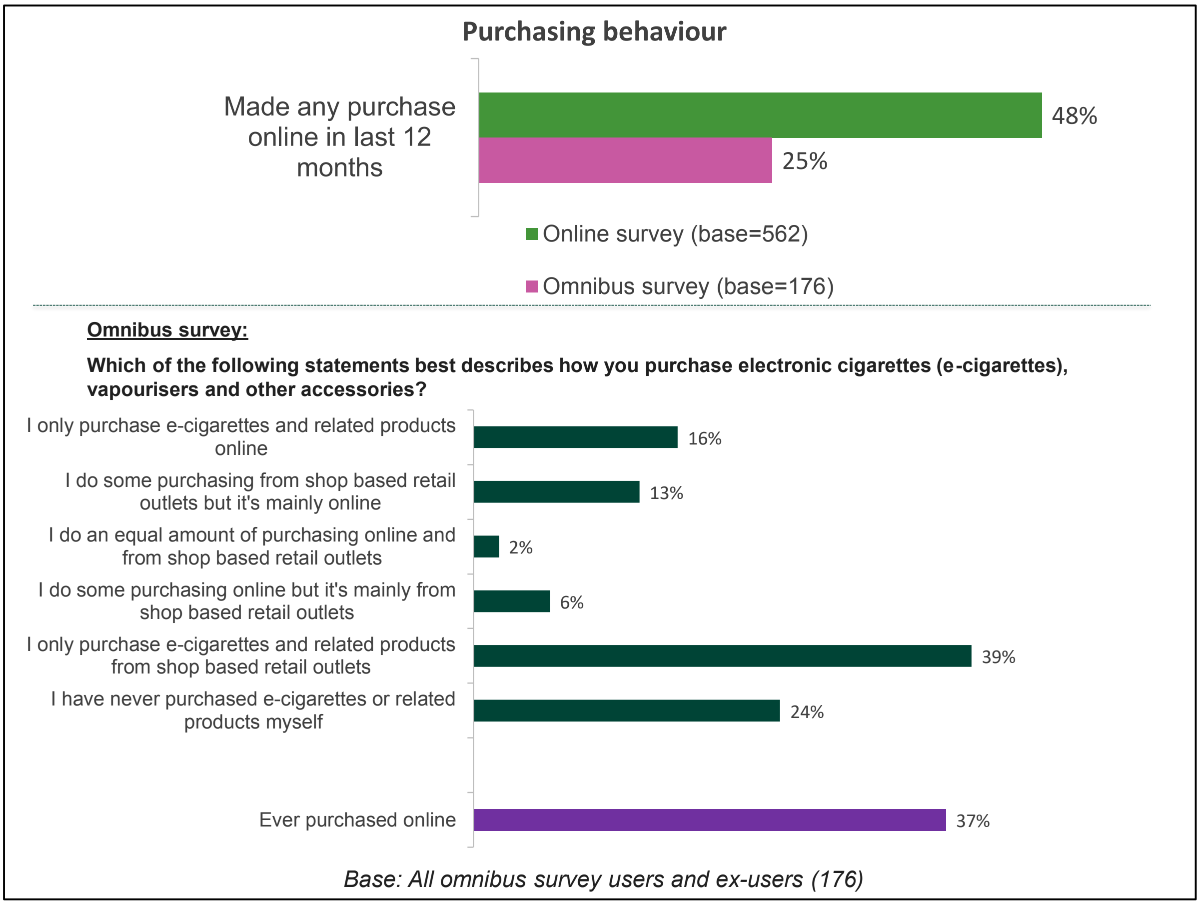
The proportion of consumers purchasing e-cigarettes and related products online

6.20 As figure 6.1 shows, consumer panellists taking part in the online survey were notably more likely to have made an online purchase in the last 12 months (48%) compared with consumers that were interviewed in the omnibus survey (25%).

6.21 Given the omnibus survey was conducted through a random probability approach, allowing each participant an equal probability of being selected for interview, this strand of the research has been taken as the most accurate estimation of online purchasing behaviour (particularly as an online survey methodology was likely to skew findings in favour of online purchases)[21].

[21] A skew in favour of online purchase behaviour was a known risk of the online methodology. An online approach was agreed to be the most pragmatic, cost effective method to survey consumers given the incidence rate of e-cigarette users in the general population is low.

Figure 6.1 Summary of purchasing behaviour



6.22 Focussing on the omnibus survey data in more detail, the bottom half of figure 6.1 shows that consumers were much more likely to buy e-cigarette products and accessories terrestrially, with two-fifths (39%) only purchasing e-cigarettes through shop based retail outlets.

6.23 This may suggest that, by numbers of consumers, the online segment of the market is smaller than the terrestrial segment (particularly when considering that the online survey would likely represent an upper limit - given its online skew - and that the proportion of consumers purchasing e-cigarette products online was still less than 50%).

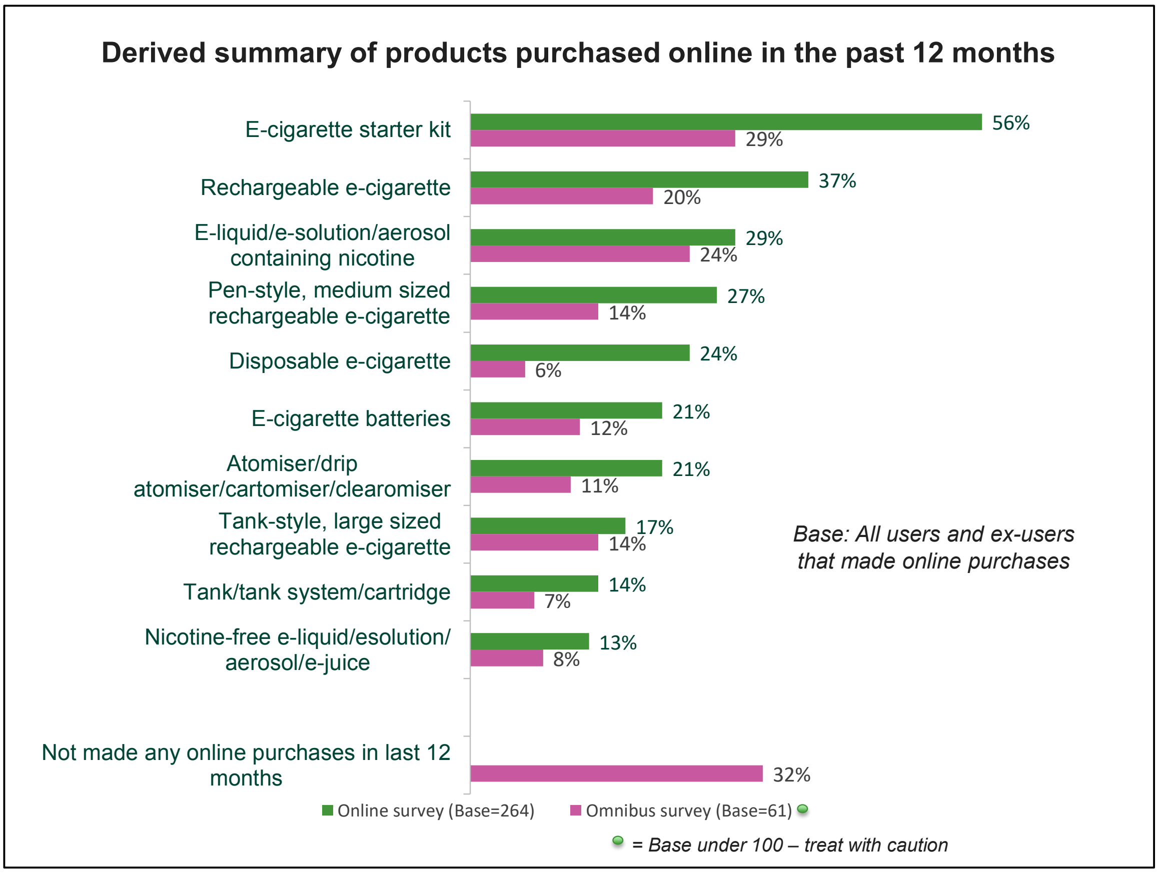
6.24 Purchasing behaviour was relatively polarised with only 2% of consumers reporting that they bought an equal amount through online and terrestrial channels. While a quarter (24%) had never purchased e-cigarettes for themselves, these tended to be consumers that had only ever tried e-cigarettes and had not gone on to use them regularly.

6.25 Figure 6.2 shows the proportion of consumers across both survey strands that had bought respective e-cigarette products in the past 12 months. While the comparison of both surveys demonstrates the skew towards online purchases through the online survey, the broad pattern was similar.

6.26 E-cigarette starter kits were the most likely product to have been purchased online in the past 12 months (56% and 29% of consumers that had made online purchases from the online and omnibus surveys respectively). Consumer panellists taking part in the online survey were also more likely to report that rechargeable e-cigarettes were purchased online in comparison with other products (37%).

6.27 Three in ten consumer panellists (29%) who made online purchases and took part in the online survey had bought e-liquids online, while one in four (24%) consumers taking part in the omnibus survey had bought e-liquids online.

Figure 6.2 Products purchased online in the in the past 12 months[22]



6.28 The online survey data also allowed exploration of which products were most likely to have been purchased solely online in the past 12 months[23] and solely from terrestrial stores in the past 12 months.

6.29 E-cigarette hardware was more likely to have been purchased *solely* online compared with e-liquids in the last 12 months. While half of consumer panellists who purchased atomisers/cartomisers/clearomisers (51%) and tank style large e-cigarette devices (49%) online in the past 12 months did so *solely* online, just under a third (30%) of consumer panellists who purchased e-liquids in the past 12 months did so *solely* online. This supports the qualitative feedback from businesses who felt that terrestrial channels form an important part of the market, particularly in terms of tasting/testing the wide range of e-liquids available to consumers. Indeed, the online survey found that 29% of consumer panelists who purchased e-liquids in the past 12 months did so *solely* from terrestrial shops, while 23% who purchased atomisers/cartomisers/clearomisers in the past 12 months did so *solely* from terrestrial shops

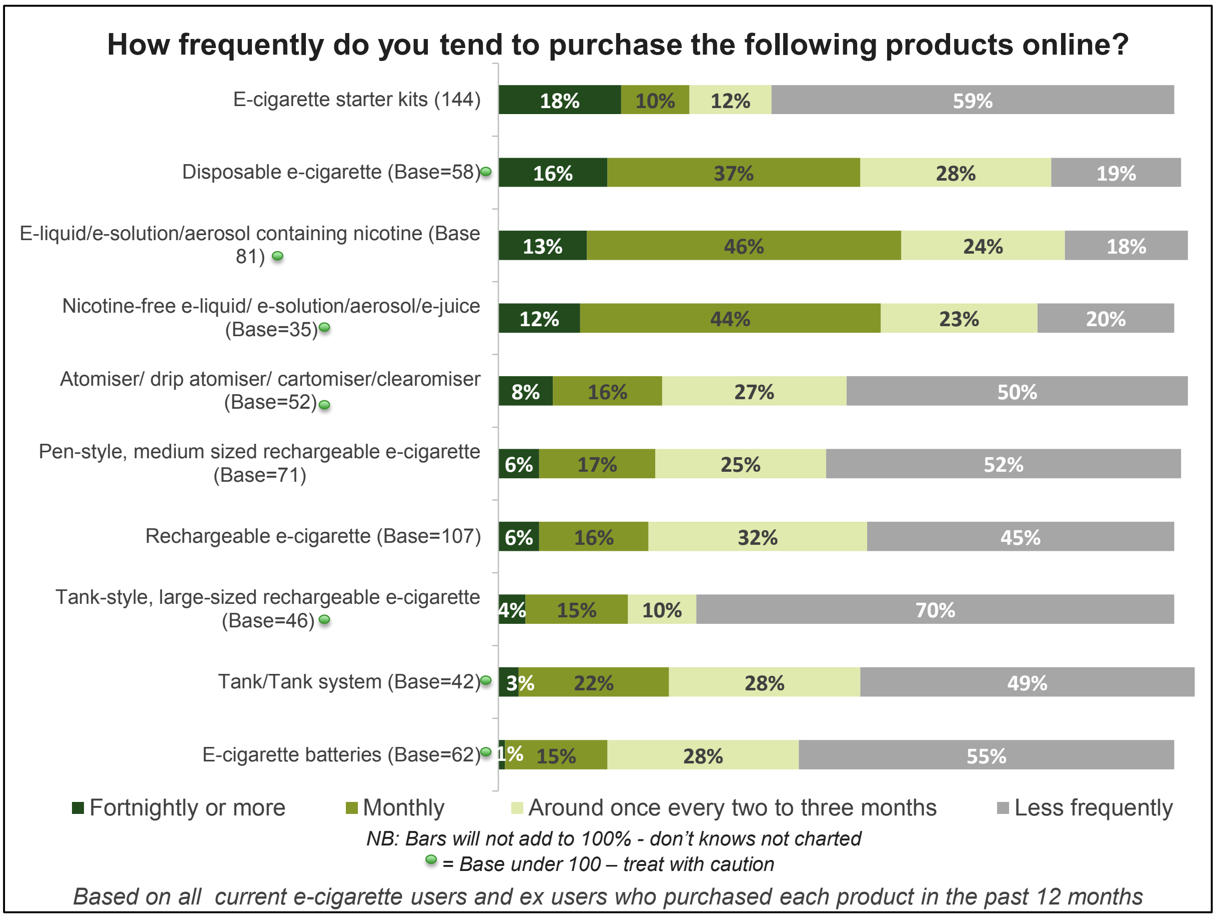
[22] The online survey data is derived from questions asked of consumers who had made at least one online purchase in the past 12 months meaning there is no data for the online survey for those not making online purchases.
[23] A chart showing this data graphically is included in Annex A.

6.30 The trend for hardware to be more likely to be purchased online than e-liquids could also signify that the consumption patterns of e-cigarette users are influenced by the price of e-cigarette products, as the price of e-cigarette hardware is considerably higher per unit than the price of e-liquid. This notion is supported when the consumption patterns of e-cigarette hardware are analysed in isolation. Hardware which typically has a higher price was more likely to be purchased *solely* online than hardware which typically has a lower price. While over half (51%) of consumer panellists who purchased tank style large e-cigarette devices in the last 12 months made this purchase *solely* online, only 14% of consumer panellists that purchased disposable e-cigarette devices had made this purchase *solely* online.

Frequency of online purchases made by consumer panellists

6.31 Figure 6.3 summarises the frequency of online purchases made by consumer panellists across the e-cigarette product range (i.e. of those who bought each product online in the last 12 months, how often they had done so). Some of the bases sizes are relatively small and should be treated with caution.

Figure 6.3 Frequency of online purchases made by consumer panellists in the last 12 months



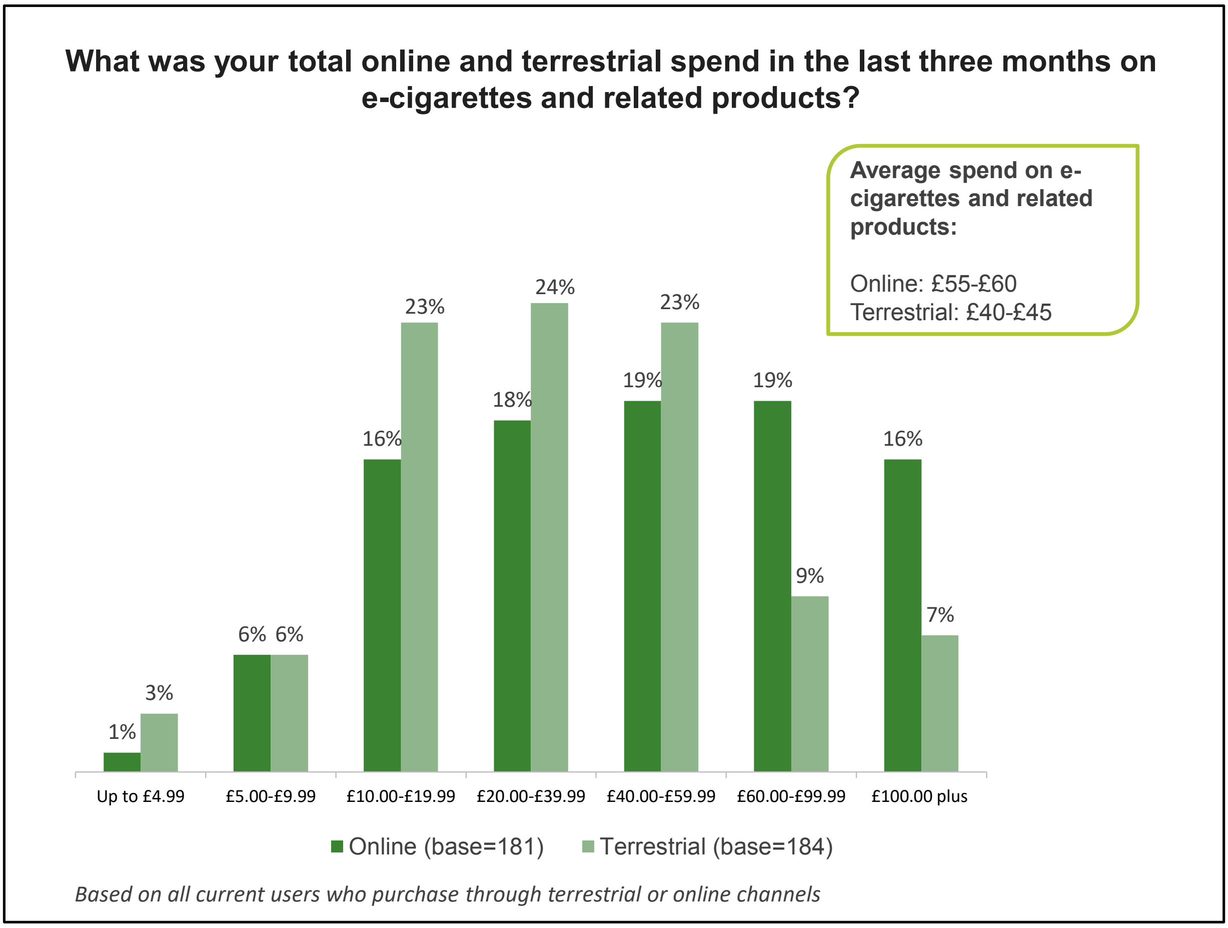
6.32 E-cigarette starter kits and disposable e-cigarettes were the most frequently purchased product online with 18% and 16% respectively buying them at least fortnightly. Among consumer panellists purchasing e-liquids online, over half bought them at least once a month online.

Typical spend through online and terrestrial channels by consumer panellists

6.33 The online survey sought to understand how much consumer panellists typically spend on hardware (e-cigarette devices and components) and e-liquids (here also including products which contain liquid i.e. disposable e-cigarettes) through both terrestrial and online channels.

6.34 Figure 6.4 summarises spend on e-cigarette hardware. Online spend on e-cigarette hardware was noticeably higher than terrestrial spend in terms of the distribution of answers. On average[24] online spend on hardware was c.£55-£60 compared with c.£40-£45 among consumer panellists purchasing these products through terrestrial channels.

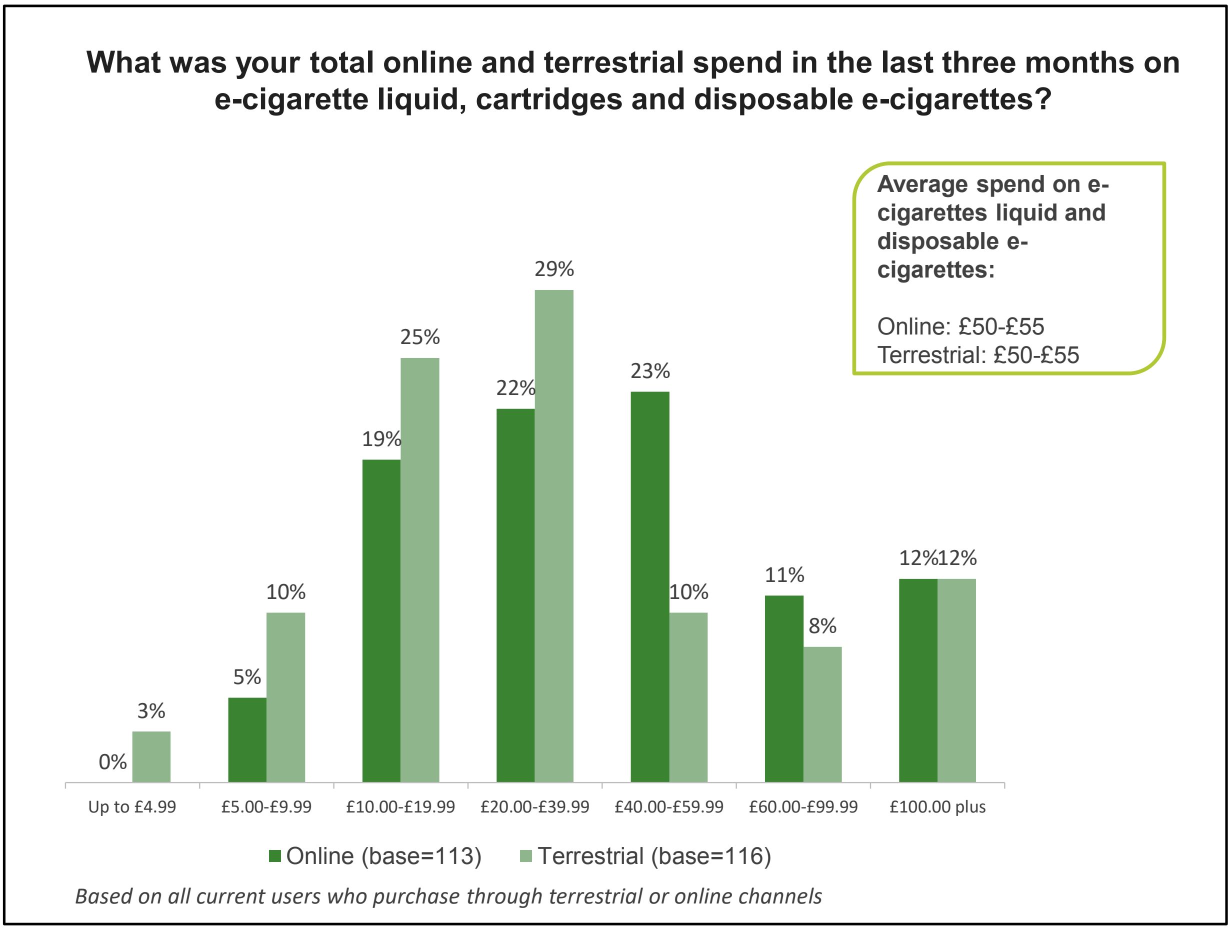
Figure 6.4 Online and terrestrial spend on hardware by consumer panelists



[24] Using the mean. The question was asked in banded ranges and mid-points have been applied to calculate the mean. With this in mind the average spend data should be treated as indicative.

6.35 Figure 6.5 summarises spend on e-liquids (and/or devices containing e-liquids). Overall there was very little difference on average in the online spend compared with the terrestrial spend on e-liquids and products containing e-liquids.

Figure 6.5 Online and terrestrial on e-liquids by consumer panelists



6.36 The omnibus survey also explored online spend by consumers over the last three months. The achieved base sizes were very small for these questions but the averages were broadly aligned with the online survey data[25]. The omnibus survey did not explore the offline spend of consumers.

Websites used by consumer panellists to make online purchases

6.37 Online purchases were made using a wide variety of websites. The five[26] most commonly mentioned were:

- Vaporized.co.uk;
- Electronictobacconist.co.uk;
- 888vapour.co.uk;
- Amazon; and
- Ukecigstore.com

[25] 30 responses achieved for online spend on hardware (average c£58) and 12 responses achieved for online spend on e-liquids/products containing e-liquids (average c£45).
[26] A more detailed breakdown is included in the appendix.

Conclusion

6.38 Anecdotal accounts of business growth indicated that the overall e-cigarette industry, including both the online market and terrestrial market, had grown rapidly over the past few years. However, manufacturers, wholesalers and retailers were relatively evenly divided in their views over whether the online market or the terrestrial e-cigarette market was bigger.

6.39 Businesses that believed the online e-cigarette market was bigger than the terrestrial e-cigarette market generally felt that:

- online channels were better placed to meet consumer demand given the wide variety of products and accessories available;
- there were more online channels than terrestrial shops operating in the e-cigarette market because there were relatively few barriers to setting up a new online business; and
- the e-cigarette market is intrinsically linked with the online community (i.e. through online forums).

6.40 Businesses that believed the terrestrial e-cigarette market was bigger than the online e-cigarette market felt that:

- the *number* of online businesses involved in the market was greater than the number of terrestrial stores but that the online market had now reached 'saturation point' and was smaller in terms of sales volume than the terrestrial market;
- consumers preferred terrestrial stores because it gives them the ability to talk to experts about how the devices work, get advice about products and trial devices and e-liquids; and
- terrestrial shops offer a wider variety of products, flavours and accessories.

6.41 While manufacturers, wholesalers and retailers were relatively evenly divided in their views over which segment of the market was bigger, the quantitative data suggests:

- more consumers purchase through terrestrial channels than online channels (evidenced by the omnibus data which showed 25% of e-cigarette users/ex users had purchased these products online in the past 12 months); but
- the price of consumer purchases tends to be higher online, particularly in terms of hardware (hardware which typically has a higher price was more likely to be purchased solely online than hardware which typically has a lower price).

7 Expectations over how the market will develop

The expectations of businesses

7.1 The interviews with businesses revealed consistent themes on how the e-cigarette market had developed (and would continue to develop). These trends related both to the hardware (i.e. e-cigarette devices and components) and the e-liquids used within the devices.

7.2 Businesses believed that over the past couple of years there had been a shift in consumer demand from smaller pen devices to larger tank style devices. One reason for this could be because tank style devices have a longer battery life, have a larger capacity for e-liquid, and are more customisable (i.e. they enable the user to control wattage and voltage)[27].

It's evolving over time. When it first started it was a little battery with a button and a little tank. Now it's getting to these variable voltage things, variable wattage... so it's evolving.

Retailer, 80%+ online, <5 employees, 2-4 years in business

7.3 However, businesses felt that demand will remain for smaller pen style devices. Some businesses had experience of selling these types of device to new users and older users.

In terms of hardware, older individuals tend to want a device that looks like a cigarette. Younger users are using larger tank mods.

Manufacturer, 21+ employees, 2-4 years in business

7.4 Many businesses explained that the shift in demand towards larger, more powerful devices had resulted in consumers demanding e-liquids with lower nicotine content. Businesses explained that more powerful devices produce larger quantities of vapour, enabling the user to intake a comparable dosage of nicotine from an e-liquid with a lower concentration of nicotine.

7.5 Given many consumers were also using e-cigarette devices as an aid to reduce the amount of traditional tobacco cigarettes they smoked, some consumers were also naturally looking to reduce their nicotine intake over time. However, businesses were generally agreed that the reduction in nicotine strength had primarily been caused by advancements in the technology.

The changes in hardware have driven changes in liquid consumption and changes in liquid preference have driven changes in hardware... the industry is very trend based.

Retailer, online only, <5 employees, 2-4 years in business

7.6 Following this perceived trend, a number of business predicted that over the next year the average strength of e-liquids would drop to under 5mg.

The trend has been lower and lower [nicotine levels], back in 2013 the bestseller was 18 mg. Through the early part of 2014 it dropped to 12 mg. By the end of 2014 it was significantly [lower at] 12 mg and all last year we saw it go from 12 to 6 mg. At the beginning of 2015 we introduced 3 mg. We didn't have 3 mg before.

Wholesaler, <5 employees, 2-4 years in business

[27] Controlling the wattage and voltage enables the consumer to have greater control of the delivery of the vape such as the temperature of the liquid, the dryness of the inhalation and the amount of vapour cloud that is produced.

New devices could lead to the most popular e-liquid strength dropping from 10-20mg to 2-5mg.

Retailer online only, <5 employees, 4 years + in business

7.7 Generally, nicotine free e-liquid was perceived by businesses to have made up only a small proportion of the e-liquid market. There were some indications that it might be growing, although overall feedback from businesses was mixed. Some businesses were currently selling nicotine free e-liquids at the time of the interview while other businesses were planning to sell them at some point in the future. A few businesses described nicotine free products as being ‘the end goal’ for consumers if they are trying to quit their addiction to nicotine.

Zero nicotine is the end goal for most users as most are intending to quit nicotine. I have at least two or three [customers] who order zeros [nicotine free liquids] off me every week.

Retailer online only, <5 employees, 4 years + in business

7.8 However, one business, while agreeing that the trend for reduced nicotine-liquids would continue, did not agree that there would be a substantial increase in demand for nicotine free liquid.

They are not a medicine, they are an alternative: a combustion free alternative. So a lot of people won't take up e-cigarettes with a view to a move on to 0% nicotine at a later date. They will take up e-cigarettes because they enjoyed smoking and they want to continue doing something like that in a slightly safer way.

Manufacturer, 21+ employees, 2-4 years in business

7.9 One business predicted that there might be a move towards consumers purchasing nicotine free e-liquids alongside pharmaceutical grade nicotine, with the intention of mixing/making their own. They referred specifically to South Korea where duties on e-liquids containing nicotine had recently been introduced and they had anecdotally heard this was happening. However, this was not a common view held among businesses.

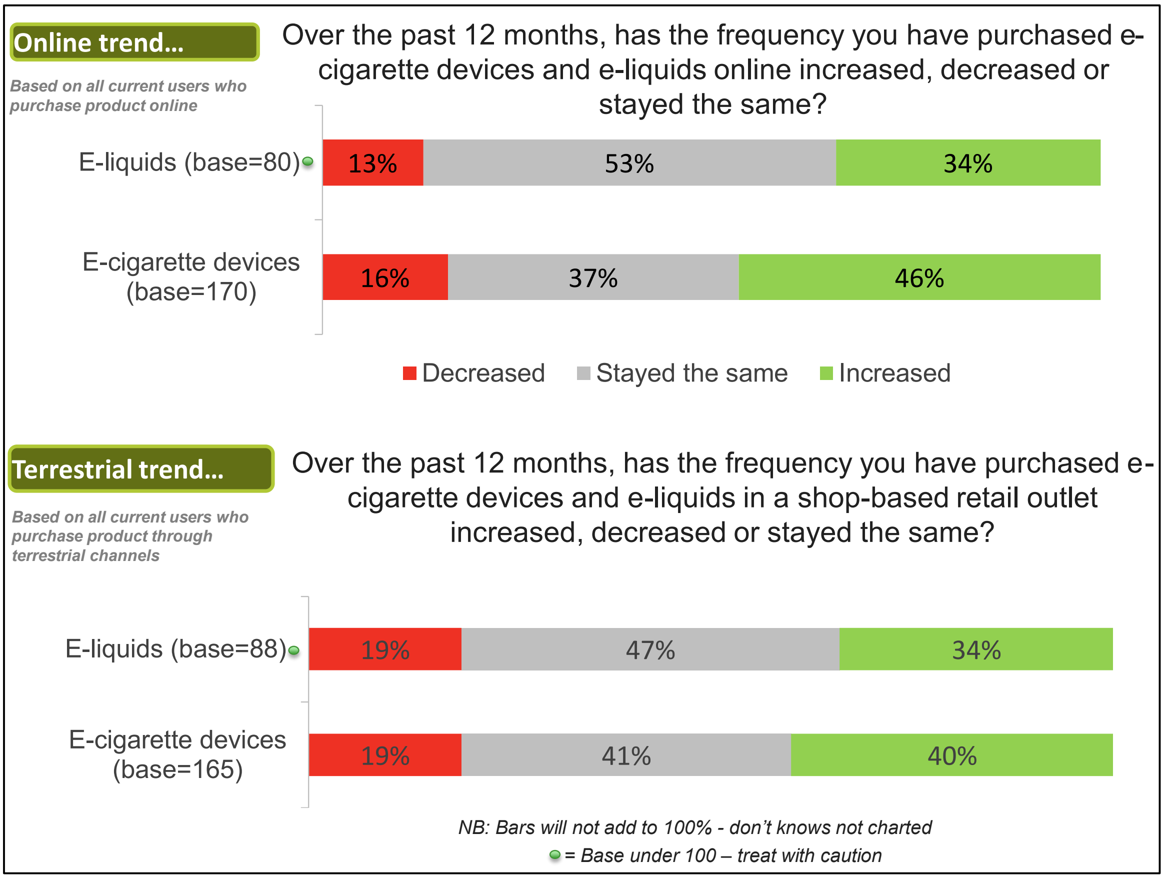
Consumer trends and expectations

7.10 Consumer panellists who had purchased e-cigarette hardware / e-liquids over the past 12 months were asked through the online survey whether the frequency of their purchases had increased, decreased or stayed the same over this period.

7.11 As figure 7.1 shows, over a third of current e-cigarette users reported that the frequency of their purchases had increased in the last 12 months. Consumer panellists buying e-cigarette devices online reported this in the highest proportions, where 46% had increased how often they made purchases.

7.12 Among consumer panellists who stated that the frequency of their purchases had increased over the past 12 months, the average spend in the last three months tended to lie between £50 and £60.

Figure 7.1 Whether the frequency of purchases made by consumer panellists had increased/decreased over the previous 12 months



7.13 Current e-cigarette users were also asked about whether they felt their future purchases of e-cigarettes and related products was likely to increase, decrease or stay the same. As figure 7.2 shows, while the majority felt the frequency of their purchases would remain the same, a higher proportion of consumer panellists felt that the frequency of their online purchases would increase (32%) compared to the proportion who felt the frequency of their terrestrial purchases would increase (22%).

Figure 7.2 Current user expectations on the future e-cigarette purchases

7.14 Current users who reported that the frequency of their online purchases would increase were asked why. The most common answers included choice and value, specifically[28]:

- There was more choice available online;
- Products were cheaper / better value online;
- There were special bargains / offers online; and
- It was more convenient / easier to purchase online.

[28] As this question is based on a relatively small sample (n=69) data have not been charted/shown in percentage terms

7.15 This finding was closely aligned with feedback from businesses who stated that the choice available online was one of the main reasons given for the belief that the online e-cigarette market was bigger than the terrestrial market.

Conclusion

7.16 Businesses reported that there has been a shift in consumer demand from smaller pen style devices to larger tank style devices. This shift in consumer preference has increased demand for e-liquids with a lower nicotine content. As the technology in e-cigarette devices continues to evolve, it was anticipated that the average strength of e-liquid will drop further to under 5mg of nicotine. This does not necessarily mean consumers will inhale less nicotine, given some businesses expected devices to continue to evolve and become more powerful.

7.17 In terms of the general ‘direction of travel’, based on the consumer panellist data, the online market is likely to grow further relative to the terrestrial market (many people expected their terrestrial purchases to decrease and their online purchases to increase). Further, online spend for devices was shown in chapter 6 to generally be higher than for e-liquids.

7.18 However, there were clear expectations among manufacturers, wholesalers and retailers that the terrestrial market would continue to be operate as a channel in the sector and would not be made redundant by online channels. There was evidence from the in-depth interviews that consumers value the opportunity to sample e-cigarette products in person through terrestrial outlets.

8 Anticipated longer term trends

Regulation

8.1 The European Union's revised Tobacco Products Directive (TPD) came into effect in May 2016. Last updated in 2001, the new Directive aims to improve the functioning of the EU's internal market for tobacco products, while assuring a high level of public health. One of the revisions made to the TPD was the introduction of regulations on e-cigarettes and e-liquids. These include:

- A maximum threshold of nicotine content in e-liquids (20mg/ml);
- A health warning[29] covering 30% of the front and back of e-cigarette packaging;
- Minimum standards[30] on e-cigarette devices and e-liquids; and
- The requirement for manufacturers and importers to provide information[31] about e-cigarette devices and e-liquids before being sold in the EU.

8.2 At the time of this research (Feb-April 2016) the TPD had yet to come into force but many businesses believed that the TPD would cause the market to consolidate; businesses expected that the TPD would increase the cost of manufacturing and importing hardware / e-liquids, which they felt would cause smaller businesses to leave the market.

8.3 Some businesses predicted that as micro and small businesses depart from the e-cigarette market, larger businesses (including large tobacco companies) that would be better placed to carry the regulatory burden of the TPD would fill the gap left behind. Businesses expected that this process would take place in all areas of the market, from manufacturers to retailers. Businesses did not give a specific timeframe for when this change would happen (although there was evidence to suggest that some smaller businesses were starting to leave the market before the introduction of the TPD)[32].

> *Most small businesses just won't be able to hang on. Bigger businesses will take over and you will see mergers as happens in big business.*
>
> **Retailer online only, <5 employees, 4+ years in business**

> *If you ask me what this market looks like in five years' time; it will be owned almost 100% by the tobacco companies themselves or subsidiaries owned by tobacco companies.*
>
> **Wholesaler, <5 employees, 2-4 years in business**

8.4 Businesses predicted that the TPD would result in a considerable contraction in the number of e-liquid producers operating in the UK due to the cost of having to undertake toxicological tests and pay a notification fee. Prior to the TPD most e-liquid producers reported that they did not carry out toxicological tests on their e-liquid.

---

[29] The health warning reads "This product contains nicotine which is a highly addictive substance".
[30] The minimum standards specify that devices must have a maximum tank volume of 2ml; devices and e-liquids must be protected against breakage and leakage; and devices must deliver a consistent dose of nicotine.
[31] This information includes ingredients, emissions and toxicological data has to be provided to the MHRA through the European Common Entry Gate (EU-CEG) notification portal.
[32] One business explained during the interview that they were already starting to plan their 'exit strategy' and knew of other businesses in a similar position.

8.5 Businesses suggested that there would be a reduction in the number of businesses importing hardware from outside the EU as a consequence of the TPD, because in order to import products a business would potentially have to pay a notification fee in order to be allocated an EU-CEG (a European Common Entry Gate).

We've got two hundred and eighty something products. It's a lot of money. It's six figures that we've had to invest. The number of people manufacturing will greatly reduce and there'll be quite a few but not that many left who are willing to spend the money to pay for the registration. The registration fee is quite expensive.

Manufacturer, <5 employees, 2-4 years in business

8.6 Some businesses, particularly e-liquid manufacturers, were positive about the regulatory effect of the TPD. They believed that the increased cost to production would push certain manufacturers out of the market, who were perceived to be producing e-liquids cheaply and of a low-quality. These were referred to by several manufacturers as 'cowboys'. They felt that the potential departure of these manufacturers from the market would remove unfair competition and usher in a level playing field for manufacturers. This was perceived to be a positive outcome for the industry.

It's [the TPD] going to get rid of a lot of the cowboys....it was pretty much unregulated [before] so you could buy these flavours in, buy your nicotine in; you could buy all the constituent parts and put it all together.

Wholesaler, <5 employees, 4 years + in business

8.7 Despite these suggestions, businesses did not feel that hardware would be mass produced in the UK. They felt China would still have a huge comparative advantage in manufacturing, and businesses predicted that a few large wholesalers would emerge in the UK who import and distribute on behalf of UK retailers. Meanwhile, they felt that smaller retailers/wholesalers using forwarding agents would drop out of the market in light of the potential notification fees they would have to pay.

8.8 Most businesses did not expect consumer demand for e-cigarettes to be negatively affected by the TPD. Indeed, some businesses predicted that the TPD could potentially have a positive impact on demand for e-cigarettes as they thought the regulation could give the products greater credibility. These businesses suggested that the introduction of minimum standards would improve the perception of e-cigarette products, leading them to be viewed as regulated, safe products.

It will set a bar, you know, along the lines of either food or pharmaceutical [products] which obviously makes it safer, so the people will be able to do it without having to worry that they're going to harm themselves any more than the base level of harm from the activity would possibly bring to them.

Wholesaler, 11-20 employees, 4 years + in business

Once the TPD comes into effect properly, once there is a clear number of suppliers in the UK that will continually be compliant with products, I think you'll see a lot more shops over time start to open or you'll see the supermarkets or the newsagents and things like that stocking the right products because these products will now start to tick all of the right boxes and they will be legally compliant and regulated.

Manufacturer, 21+ employees, 2-4 years in business

8.9 Even though most businesses did not predict that the TPD would affect demand for e-cigarettes, some businesses suggested that the incoming regulation (particularly the restriction of device tank size to 2ml) would push some consumers to import non-compliant devices from outside the EU.

Reducing the maximum tank size to 2ml will force users to shop elsewhere. This is because such a small tank size will require users to fill it up two or three times a day. Hardware sales will be pushed towards the black market; people will be importing their own from [company] and buying direct from China.

Manufacturer, 21+ employees, 2-4 years in business

8.10 Although most businesses felt confident predicting the impact of the TPD there were some who were still unsure how the regulation would impact their business and the market as a whole. In these instances, businesses implied that the changes being made to the e-cigarette market under the TPD had not been effectively communicated with all businesses practicing in the e-cigarette market.

At this moment in time we don't know exactly how it's going to affect our importing of e-liquid, whether we've got to get licensed for it for every product or not…We don't know whether we're going to have a bill for £150,000 or just £5,000 to actually keep trading in the stuff.

Retailer, mix of online and terrestrial sales, 11-20 employees, 4 years + in business

8.11 In terms of what the consequences of the TPD would be for the online and terrestrial sides of the market, some businesses felt the terrestrial side of the market might 'outgrow' the online market in the future because the regulation might reduce the product range. This was felt to make e-cigarette products more appealing to larger retailers and mainstream supermarkets. Further, a few businesses suggested that growth of the online e-cigarette market could be hampered by the TPD as it would prohibit the use of social media as a platform for advertising.

Once the tobacco products directive comes in on that online advertising is removed, it's going to be much harder to establish yourself as a new player in that market [the online market].

Tobacco manufacturer, 21+ employees

8.12 Conversely, there were businesses that believed the online side of the market will outgrow the retail side of the market in the future because consumers will become more knowledgeable and less likely to require the advice/support of terrestrial shop keepers.

Technology

8.13 Most businesses were unable to predict future developments in e-cigarette technology with absolute certainty. However, a representative of a large tobacco company stated that the most recent generation of e-cigarette devices were not the end point; there was expected to be further evolution in the technology.

8.14 Some of the potential changes in e-cigarette device technology speculated by businesses included:

- Devices that use a ceramic heating element instead of a coil to heat e-liquid;
- Devices that can deliver nicotine without any need for heating. This was said to be possible through the development of devices which function as a spray/inhaler;
- Devices with more power and a lower level of electrical resistance. This change would make it possible for devices to create a larger amount of vapour; and
- Devices with online capabilities that enable consumables and components to be re-ordered from the device itself.

Conclusion

8.15 Some manufacturers, wholesalers and retailers believed that the introduction of the TPD will cause the e-cigarette market to consolidate. They expected the EU Directive would increase the cost of manufacturing and importing e-cigarette devices and e-liquids which in turn would cause micro and small businesses to leave the market and for larger businesses to fill the gap left behind.

8.16 In some cases, especially among e-liquid manufacturers, the departure of small and micro businesses was considered to be a positive potential outcome of the TPD; it was anticipated that the incoming regulation would compel ‘cowboy’ businesses, who manufacture low-quality cheap e-liquid, to leave the market.

8.17 Some businesses predicted that the TPD could potentially have a positive impact upon demand for e-cigarettes as they thought that the regulation could give the products greater credibility.

8.18 Opinion was mixed regarding how the TPD could affect the respective size of the terrestrial and online markets.

8.19 There was little consensus among businesses about technological developments in e-cigarette devices. However, it was widely considered that e-cigarette devices will continue evolving at a rapid pace.

9 Annex A: Technical appendix

Qualitative research with businesses in the supply chain of the online e-cigarette market

Methodology

9.1 Sample was sourced through desk research. All businesses found to be in scope were sent an advance letter explaining the nature of the research. Twenty-five qualitative in-depth interviews were conducted.

9.2 The interviews lasted approximately 60 minutes and were conducted with senior decision makers within each of the businesses. The job titles varied depending on the nature and size of the businesses but included:

- Owners / proprietors;
- Managing Directors / CEOs;
- Financial Directors;
- Operational Directors / Managers; and
- Directors of technology / innovation.

9.3 A semi-structured topic guide, developed by IFF Research and HMRC, was used to carry out the interviews. This ensured key topics were explored in sufficient detail while also allowing the flexibility to explore issues raised spontaneously by the respondent. Participants were provided with a datasheet in advance of the interview to help them prepare for more technical questions, including the split of their online/terrestrial sales.

9.4 Nineteen of the interviews took place face to face, and six took place by telephone if it was more convenient for the participant. Fieldwork took place between 1 February and 4 April 2016.

Sample structure

9.5 Table 9.1 summarises how the achieved interviews with businesses were split between the primary activities of the business (though it should be noted that in many cases businesses could be categorised into more than one of these categories).

Table 9.1 : Achieved interviews with businesses

Business categories	Number of interviews
Manufacturers	5
Wholesalers	5
Retailers *(less than 80% of sales online)*	6
Retailers *(more than 80% of sales online)*	9
Total	**25**

9.6 Two large tobacco firms took part in the research. In one case this involved speaking to five people within the organisation (though this counted as "one" interview for the purposes of reporting). During this interview the business had different representatives in attendance so the most appropriate person could answer each question (there were no real differences in opinion between the participants and the dynamic was not that of a discussion/focus group).

Analysis

9.7 An analysis framework was used to interpret the emerging themes. This was structured under headings relating to the objectives, allowing sessions to be compared and objective judgements made about the commonality of experiences.

9.8 The quotes in this report are all directly from the qualitative interviews and have been transcribed verbatim (after being anonymised).

Quantitative research

Online survey with consumer panellist e-cigarette users

Sample

9.9 Research Now (an online panel provider) was used to source and recruit the sample for the online survey. Panellists had been recruited from a wide variety of internet sites and through partnerships with leading brands to limit the bias associated with limited source recruitment. The panellists were incentivised (75p for a 15 minute survey) for their participation in the survey to help ensure reliable levels of response and that time was given for considered responses.

9.10 As can be seen from the table 9.2, the Research Now panel was skewed towards younger people and women in comparison with the general population.

Table 9.2 How the Research Now panel compared with the general population

	Population Statistics (from ONS data)	RN Panel Statistics
Gender		
Male	49%	32%
Female	51%	68%
Age		
16-24	14%	24%
25-34	17%	26%
35-44	17%	19%
45-54	17%	15%
55-64	14%	10%
65+	22%	5%
Social Grade		
ABC1	53%	54%
C2DE	47%	46%

9.11 To ensure the sample would be reflective of general population demographics, Research Now invited participants to participate in nationally representative proportions to ensure the achieved sample was as representative as possible of e-cigarette users.

Methodology

9.12 The online survey was designed and scripted by IFF in consultation with HMRC, and was hosted by IFF. In total 562 quantitative online survey responses were achieved with consumers who had used or tried using e-cigarettes at some point in the past.

9.13 Fieldwork took place between 25 February and 1 March 2016.

Sample structure

9.14 Table9.3 summarises how the achieved online responses split between consumers who currently used e-cigarettes, consumers who had stopped using e-cigarettes and consumers that had tried using e-cigarettes. It also shows the maximum confidence interval (i.e. margin of error) on a finding of 50%.

Table 9.3 Achieved online responses from consumers and confidence intervals

Have you ever used an electronic cigarette (e-cigarette?)	Number of online responses	Max. margin of error (50%)
Yes, I currently use one	251	+/-6.19
Yes, I have used one in the past but I no longer use one	183	+/- 7.24
I tried one, but I did not go on to use it	128	+/-8.66
Total	**562**	**+/-4.13**

Face to face ONS omnibus survey

Methodology

9.15 The *ONS Omnibus survey* covers all adults living in private residences in Great Britain, the Isles of Scilly and the Scottish Highlands and Islands.

9.16 The Omnibus survey uses a random probability approach to sampling and is fully representative of the population. In February 2016, 2,010 households were randomly chosen from Royal Mail's Postal Address File to take part in face-to-face interviews. The response rate was 49% (908 responding cases).

9.17 Of the 908 achieved interviews, 176 qualified for this survey module (i.e. they currently used e-cigarettes, had stopped using e-cigarettes or had tried using e-cigarettes).

Sample structure

9.18 Table 9.4 summarises how the 176 achieved face to face interviews split between consumers who currently used e-cigarettes, consumers who had stopped using e-cigarettes and consumers that only ever tried using e-cigarettes. It also shows the maximum confidence interval (i.e. margin of error) on a finding of 50%.

Table 9.4 Achieved face to face interviews with consumers and confidence intervals

Have you ever used an electronic cigarette (e-cigarette?)	Number of f2f interviews	Max. margin of error (50%)
Yes, I currently use one	57	+/-11.39
Yes, I have used one in the past but I no longer use one	74	+/-12.98
I tried one, but I did not go on to use it	45	+/-14.61
Total	**176**	**+/- 7.39**

Overall approach to analysis

9.19 Given the quantitative online data was not achieved through a random probability sample, no significance testing has been applied to the online quantitative data. Where there were notably big differences between particular sub-groups these have been noted in the commentary but these should *not* be treated as statistically significant differences.

Weighting

9.20 Weighting factors were applied to the Omnibus data by ONS to correct for unequal probability of selection caused by interviewing only one adult per household, or restricting the eligibility of the module to certain types of respondent. The weighting system also adjusted for some non-response bias by calibrating the Omnibus sample to ONS population totals.

9.21 The data collected through the Omnibus survey was the most accurate way of profiling consumers who used or had used/tried using e-cigarettes in the past given this approach to sampling and weighting.

9.22 The online survey data was therefore compared against this ONS profile by age and gender, the comparison and is shown in table 9.5 below. It showed that while broadly reflective by demographics, the online survey had slightly underrepresented men and younger people.

Table 9.5 How the online and face to face surveys compared by demographics

	Source	
	Online survey n=562 (unweighted)	**Face to face survey n=176** (weighted)
Gender		
Male	48%	58%
Female	51%	42%
Age		
16-24	7%	24%
25-44	46%	41%
45-54	19%	14%
55-64	18%	14%
65-74	10%	6%
75+	0%	1%

9.23 A weighting factor was applied to the online survey data to ensure the findings reflected the demographic profile of all consumers who used or had used/tried using e-cigarettes in the past (i.e. based on the data from the face to face Omnibus).

Potential limitations of the online data

9.24 A comparison of behaviours showed the online sample was skewed in favour of consumers that had made a purchase online in the past 12 months (as was expected given the online methodology).

9.25 This is summarised in table 9.6, which shows 48% of consumers responding online had made an online purchase in the last 12 months in comparison with 25% of consumers taking part in the face to face omnibus.

Table 9.6 How the online and face to face surveys compared by online purchase behaviour

Of all in scope for the research	Source	
	Online survey n=562 (unweighted)	**Face to face survey n=176** (weighted)
Purchased any e-cigarette products online in last 12 months	**48%**	**25%**
Not purchased any e-cigarette purchase online in last 12 months	**52%**	**75%**

9.26 Given the omnibus survey was conducted through a random probability approach, allowing each participant an equal probability of being selected for interview, this strand of the research has been taken as the most accurate estimation of online purchasing behaviour (particularly as an online survey methodology was likely to skew findings in favour of online purchases).

10 Annex B: Charts/data not included in the main report

Figure 10.1 All websites used for online purchases

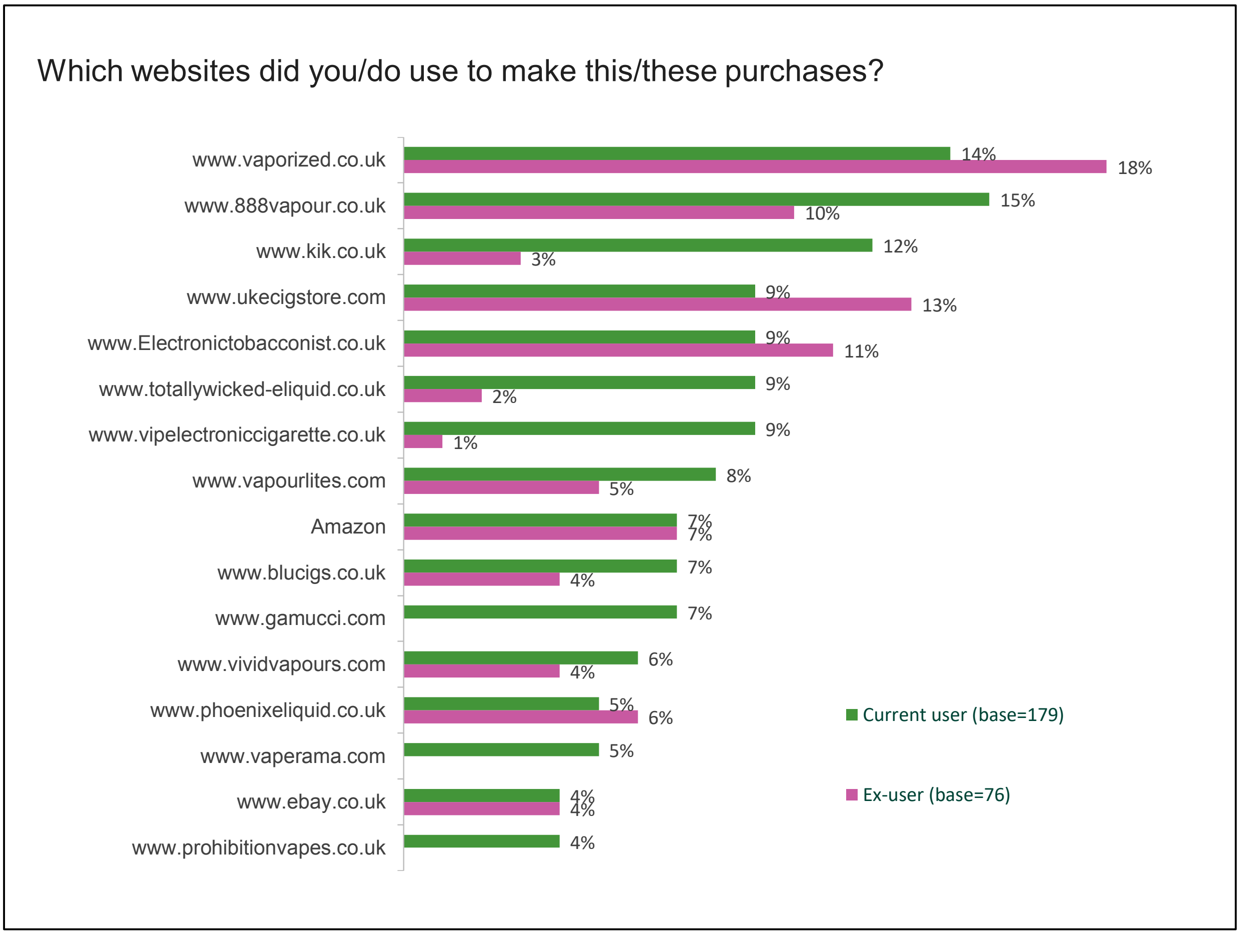
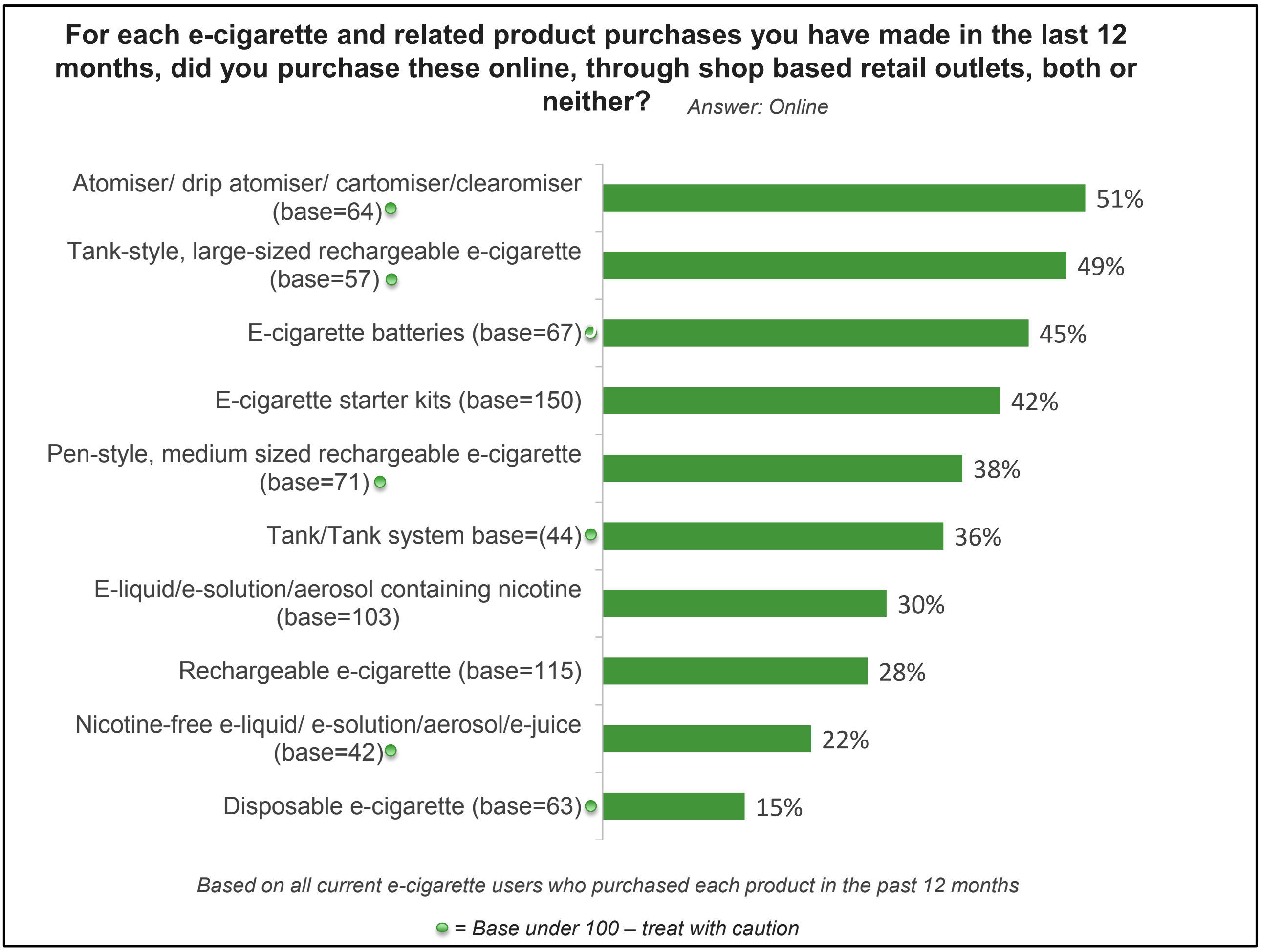


Table 10.1 Main reason for using e-cigarettes (Omnibus survey)

Base: All current users of e-cigarettes	*n=57**
What is your main reason for using e-cigarettes?	%
As an aid to quit smoking	44
They are less harmful than cigarettes	23
There is a range of different flavours available	9
They are cheaper than tobacco products	8
They can be used indoors	4
Other	10
Refused/Don't know	3

** Small base (under 100): Treat with caution*

Figure 10.2 Products purchases solely online (online survey)



11 Annex C: Topic guide and data sheet

Introduction (2-3 mins)

- **Introduce self**

- **Introduce IFF Research and work we are conducting for HMRC**
  - Thank you for agreeing to take part in this valuable piece of research.
  - The interview will take up to 60 minutes.

- **Confidentiality**
  - All the information we collect will be kept in the strictest confidence and used for research purposes only.
  - We will not pass any of your details on to any other companies. It will not be possible to identify any individual or individual company in the results that we report to HMRC and the answers you give will not be traced back to you.
  - Participation is voluntary and – although it will greatly help if you answer all our questions frankly – you may decline to answer specific questions if you wish.

- **Recording**
  - Permission to record for researcher use only confirmed.
  - At the end we will ask if you are happy to have an anonymised version of this transcript provided to HMRC – no obligation to agree

- **Subject**
  - HMRC are trying to get a better understanding of how the online electronic cigarette (or e-cigarette) market operates, what products are available to customers and current/anticipated trends in the online e-cigarette market and their interaction with other novel tobacco products, like heated tobacco. We are interested in your opinions even if you do not know precise answers.
  - By e-cigarettes we mean battery powered devices designed to simulate the experience of traditional cigarettes. It generally uses a heating element that vaporizes a liquid solution. Some may release nicotine while others use a flavoured vapour. Unlike traditional cigarettes they do not contain tobacco and do not involve combustion.

Respondent background (2-3 mins)

- **What is your role in the organisation?**
- **How long have you worked here?**
- **How did you get involved in the e-cigarette industry?**

Explain to participant: The e-cigarette is a relatively new market and whereas a body of information exists about the e-cigarette "terrestrial" market, there is little reliable information about the scale, size and make-up of the online market, largely because it has developed so quickly over the last few years. It is in this context I'll be asking you for your views on the online market in order to provide insight into its scale and characteristics. Before we do that I'd just like to ask you a bit more about your business...

Understanding the business (5 mins)

- **How would you categorise your business?**
    - Manufacturer? Wholesaler? Retailer? A combination?
    - Is your business vertically connected or integrated? (i.e. different stages in the supply chain are owned or controlled by the same company or group)
    - Which industry would you say your business belongs to?
- **And more specifically...**
    - What exactly is manufactured/sold by the business?
    - Which are the most important products to your business? Why?
- **Is this establishment the only establishment within the organisation or is it part of a larger organisation?**
    - Has it changed over time?
    - Is the organisation UK, EU or non-EU owned? Where are your headquarters?
    - Where are located the different divisions (production of different products, distribution, etc.)?
- **Can you tell me a bit more about the history of your business?**
    - When was the business established?
    - What is the business's legal company status?
    - How long has the business been involved in the e-cigarette market and the on-line market specifically?
    - What prompted the business to get involved in the e-cigarette market?
- **IF NOT ALREADY COVERED: [How has the business developed / changed in the time you have been here?]**
    - In structure and ownership
    - Part of the market more relevant to you (e-cigs vs. other products and on-line vs. retail)
    - What has driven these developments?

Understanding the supply chain (18 mins)

- **Explore overall views of e-cigarette market at this point in time**

- **Can you describe what the overall e-cigarette market looks like currently?**
  - Explore the comparative size of the terrestrial versus online market?
    - Which is bigger?
    - Which has the most potential for growth?
    - What is the comparative size?

IF RESPONDENT UNABLE TO GIVE A RESPONSE: We are interested in your general perceptions of the market *– not an exact breakdown of figures*

- **To what extent is your business involved in supplying/selling e-cigarettes through the online market versus the "terrestrial" market – i.e. sales through physical shops**
    - Which market is bigger for you currently?
    - Which market is more important to the business? Why?
    - What is the comparative size and/or scale of the e-cigarette online market (including heated tobacco products)?

- **Can you talk me through how your supply chain for the e-cigarette products you manufacture/wholesale/retail online works?**
  - Where are products manufactured?
  - Are they imported? Do you import them directly? If not, who is the importer?
  - Do you fulfil orders from warehouses in the UK, or do you dispatch them from outside the UK?
  - Involvement of third parties/wholesalers? How many?
  - Retailers? Online vs terrestrial?
  - If supplying both the terrestrial and online market, give a sense of both and how they differ
  - Is the supply chain any different for devices and e-liquid?

- **And do you think this is typical of the wider market based on your experience?**
- **How much cross-over is there in the industry?**
  - I.e. between the manufacturing / distribution / retailing of products?

INTERVIEWER TO "MAP OUT" SUPPLY CHAIN FOCUSING SPECIFICALLY ON THE ONLINE MARKET ESTABLISHING THE FOLLOWING:

- **IF NOT ALREADY COVERED: What is your business' role / where do you sit in the supply chain for online e-cigarette products?**
  - What part of the supply chain described above is for the online market?
  - Is there any difference for devices and e-liquid?
  - How many businesses are involved?

- **Who are the other key players / agents in the manufacture / distribution / retail of these products in the online market?**

INTERVIEWER NOTE: Please get respondent to focus specifically on the online e-cigarette market if they begin to drift into the market as a whole.
  - Across product categories (e.g. device, e-liquids, accessories)
  - Do you own any of these businesses? I.e. as subsidiaries of your own?

- **What are the key challenges faced in the supply chain?**
  - Overall?
  - By you as a business?
  - How do you try to overcome these challenges?

FOCUS SPECIFICALLY ON E-LIQUIDS:

- **Who are the key manufacturers of e-liquids**?
  - What is the name of the business?
  - Where are they based?
  - Why is it sourced from this country?
- Are there different manufacturers for nicotine based liquids and none nicotine liquids or do some companies manufacture both?
- Do you extract the nicotine from raw tobacco? If so, how? Where is it made?
- Do you sell you sell liquid nicotine (i.e. for people to make their own e-liquid)?
  - IF YES Is this acquired from the same supplier?
  - IF NO: Why not?

- **Which e-liquid products are the most popular: nicotine or nicotine free?**
- IF MANUFACTURERS / SELLS / DISTRIBUTES E-LIQUIDS: **What strength of e-liquids do you sell / distribute / manufacture?**

<u>Customers, products and sales (20 mins)</u>

I'd now like to refer to the data sheet we sent you in advance of this interview – we appreciate the market is very diverse and not all sections will be relevant to you.

- **Use sheet to check and discuss the following**
  - Number of employees at site/across the business
  - Turnover
  - Overall volume of sales
  - Overall number of customers
  - Breakdown by product
  - Breakdown by online vs terrestrial channels

ENSURE THE FOLLOWING IS COVERED:

- **Basing these discussions on the datasheet, to ensure we have consistent information, accurate information what are your online e-cigarette sales currently like at a general level?**
  - Have they increased / decreased / stayed about the same over the last few years? Has the trend been different for various device types and nicotine vs. nicotine-free liquid?
  - What has driven these changes?
  - Which products are most important to you as a business?
  - Has this changed over time?
    - What is driving these changes?

- **What do you think is the general perception of e-cigarettes at the moment amongst your customers?**

- **Could you talk me through your customer base? What are their key characteristics / demographics / profile?**
  - Do you collect customer relationship management information about your customers? If so, what?

- **Does your customer profile differ in the online and terrestrial markets?**

  - PROBE SPECIFICALLY ON AGE: Do you see a difference in the age demographic in term of the online versus terrestrial markets?
  - What accounts for these differences?

- **How do you segment / group your customers?**
- Do you break them into certain categories e.g. point of purchase, use of websites, by brand/type of products purchased, level of sales, purchase frequency, value, return versus new customers, ex-smokers versus never-smokers?
- Has the profile of customers changed at all in recent years? Do you expect it to change in the future and how?
- And thinking about the online market? Do you think this has (or will have) an impact in changing the profile of e-cigarette customers?

- **How does your business market itself to customers?**
  - How much active targeting of customers do you do?
  - What marketing means do you use? Which are the most effective?

- **Explore degree to which customers are involved in the e-cigarette market predominately because of smoking cessation versus "a lifestyle choice"**
- **INTERVIEWER NOTE: Focus on this question is customer behaviour rather than how the business is marketing e-cigarettes.**
  - What makes you say that? How have you reached this view?
    - Media / political discourse / experience of the industry / personal experience / general anecdotal evidence
  - Do you think this will change in the future?

- **IF NOT ESTABLISHED: How have conditions changed over the last few years / since e-cigarettes came into the market?**
  - Gain an indication of the extent to which demand is increasing or decreasing and the reasons why.

- **IF NOT ESTABLISHED: Find out about the location of markets (local, national, international) and the extent to which there is competition either from local, national, or international producers.**

- **IF NOT ESTABLISHED: How has the e-cigarette markets changed as the online market has developed?**
  - Has the location/size of the market opened as the online market has matured?
  - In what ways?

<u>Future Trends (10 mins)</u>

- **What is the direction of travel for the e-cigarette online market?**
  - Which changes do you anticipate happening over the next few years?
  - What do you anticipate will be key factors driving change in the future?
    - Product development
    - Legislation / regulation
  - Do you think you will see any changing trends for demand for various device types and nicotine vs. liquid?
  - What do you think will drive these changes if so?
  - Which products will be most important to you as a business in the future?
  - How will this have changed over time?
    - What will drive these changes?

- **What are the key growth opportunities within the online market?**
  - Do you expect to face any big challenges in the next few years?

- **What does the future of the "terrestrial" market versus online market look like?**

- **In addition to the products / services you offer, what other products are emerging in the alternative to tobacco market?**
  - Where are the specific areas of innovation?
  - Do you think these are the kind of things you will also supply in the future?
  - How has your product portfolio changed over time?

INTERVIEWER NOTE: Key question

- **Do you see the market consolidating or merging in any way?**
  - Between which companies?

Do you see the balance between your terrestrial and online offering changing for your businesses in the next few years? Why?

Final wrap up

- **Check whether there is anything else they'd like to add that hasn't been discussed?**

- **And would you be happy for us to pass a transcript of this interview to HMRC, on an anonymised basis, i.e. with any identifiers removed?**

Yes	
No	

NOTE TO INTERVIEWER: Please record in the box below any comments respondents would like removed from the transcript.

Section or reference point	Text/context:

THANK RESPONDENT AND CLOSE INTERVIEW

As a thank you for participating, we would like to donate £25 to a charity of your choice.
Would like donation made
Charity name and address
Interviewee signature: Date:
I declare that this survey has been carried out under IFF instructions and within the rules of the MRS Code of Conduct.
Interviewer signature: Date:
Finish time: Interview Length Mins

HM Revenue & Customs

IFF Research

Understanding the Online E-cigarette Market

Interview Preparation Form

Thank you for agreeing to take part in this research. Your participation will make a valuable contribution to improving HMRC's understanding of the online e-cigarette market.

This form is designed to provide us with some background information on your business's staff numbers and turnover. It will help you prepare for the interview discussion, so you don't need to remember figures off the top of your head. Where precise figures are unavailable estimates are perfectly acceptable.

Please do not return this document to either HMRC or IFF Research. The document is intended to be used by yourself to refer to during the discussion.

Again, we would like to emphasise that any information provided will remain completely anonymous and HMRC will not be able to identify any individual or organisation that has participated. All research procedures adhere to the Market Research Society Code of Conduct and the provisions of the Data Protection Act.

If you have any queries regarding this form, or the wider survey in general, please contact [NAME] on [PHONE NUMBER] or via email on [EMAIL ADDRESS].

1. How many individuals are employed at your site?

2. If your establishment is part of a larger organisation, how many individuals are employed by the e-cigarette proportion of the business (across all sites)?

3. What was your business' s <u>total</u> turnover (across all sites) over the past 12 months from e-cigarette devices and e-liquids?

4. What was the <u>total</u> volume of e-cigarette devices and e-liquids sold by your business (across all sites) over the past 12 months?

Devices	E-liquids

HM Revenue & Customs

IFF Research

5. Please fill in the table below in order to provide a breakdown of your business's total turnover (across all sites) over the past 12 months from e-cigarette products.

You can complete the table using either absolute figures or percentages of overall turnover over the past 12 months (provided at question 3) – whichever you find easier.

PLEASE NOTE: Completion of Column C is optional.

	A: Online **Your business's turnover (across all sites) from ONLINE sales of e-cigarette devices and consumables**	**B: Offline** **Your business's turnover (across all sites) from OFFLINE sales of e-cigarette devices and consumables.**	**C: Total** **Your business's TOTAL turnover (across all sites) from all e-cigarette device and consumable sales over the past 12 months (A + B).**
Total turnover from e-cigarette products over the past 12 months *All e-liquids and devices sold/manufactured across all your sites*			
Non-rechargeable disposable e-cigarettes			
Rechargeable 'Cig-a-like' e-cigarettes			
Rechargeable tank systems			
Total turnover from e-cigarette devices			
E-liquids/cartomizer refills (containing nicotine)			
E-liquids/cartomizer refills (not containing nicotine)			
Total turnover from e-cigarette consumables			
Total turnover from other e-cigarette products			

12 Annex D: Online questionnaire

Thank you very much for taking part in this survey relating to e-cigarettes for HM Revenue and Customs (HMRC).

The survey should take around 10 minutes to complete. Your feedback will be extremely valuable as it will help HMRC better understand the online e-cigarette market.

The survey will be conducted on an anonymous basis and responses will be kept entirely confidential, in line with the Code of Conduct of the Market Research Society. If you would like further information or would like to contact someone about the research please click here.

[HYPERLINK TO REASSURANCES]

To begin, please click the forward arrow at the bottom of the screen...

REASSURANCES
The interview will take around 10 minutes to complete.
Please note that all data will be reported in aggregate form and your answers will not be reported to HMRC in any way that would allow you to be identified.

For any questions about the research, contact [NAME] on [PHONE NUMBER] or [EMAIL ADDRESS].

To verify the authenticity of the research contact the HMRC research project manager, [NAME], on [PHONE NUMBER] or [EMAIL ADDRESS].

For further information about research standards or the Market Research Society's (MRS) Code of Conduct, please call them on 0500 396999 or info@mrs.org.uk

S Screener

ASK ALL

S1 **Have you ever used an electronic cigarette (e-cigarette)?**

PLEASE SELECT ONE OPTION ONLY

Yes, I currently use one	1	CONTINUE (CURRENT USER)
Yes, I have used one in the past but I no longer use one	2	CONTINUE (EX-USER)
I tried one, but I did not go on to use it	3	CONTINUE
No, I have never used one but I might use one in the future	4	
No, I have never used one and I will not use one in the future	5	THANK AND CLOSE
I am unsure / I don't know what an electronic cigarette is	6	

ASK IF USED TO USE E-CIGARETTES BUT NO LONGER DO (S1=2)

S2 **How long ago did you stop using e-cigarettes?**

12 months ago or less	1
More than 12 months ago	2

A Use of e-cigarettes

ASK IF CURRENT USER OR EX-USER (S1=1 OR 2)

A1 [IF CURRENT USER: **How long have you been using]** [IF EX-USER: **How long did you use] e-cigarettes and related products? This includes the devices themselves, e-liquids, capsules, cartomisers, tanks and accessories.**

PLEASE SELECT ONE OPTION ONLY

Less than 3 months	1
More than 3 months, up to 6 months	2
More than 6 months up to a year	3
More than a year, up to 2 years	4
More than 2 years, up to 5 years	5
More than 5 years, up to 10 years	6
More than 10 years	7
Don't know / can't remember	8

ASK ALL

A2 **How did you first become aware of e-cigarettes and/or related products?**

PLEASE SELECT ALL THAT APPLY

Spoke to a friend / family member / colleague about using an e-cigarette or saw them try one	1
Advertisement for e-cigarettes offline (e.g. TV, billboard, cinema, magazine, newspaper)	2
Advertisement for e-cigarettes online	3
I saw a celebrity, a famous person or a character on screen using an e-cigarette	4
Display for sale in a shop / supermarket / market stall or other retail outlet	5
Offline news (e.g. articles in newspapers or magazines, TV news reports)	6
Online news	7
Other (please specify)	8
Don’t know / can’t remember	9

ASK ALL

A3 **What were your MAIN motivations for first trying e-cigarettes?**

PLEASE SELECT ALL THAT APPLY

ASK IF CURRENT USER

A3a **And why do you currently use / buy e-cigarette and related products?**

PLEASE SELECT ALL THAT APPLY

	A3 - Main motivation for 1st trying	A3a – Current motivations
Because I enjoy it / them		1
To help me reduce the amount of tobacco I smoke	2	2
To help me stop smoking traditional cigarettes altogether	3	3
To try something new / different	4	4
Because they are cheaper than normal / traditional cigarettes	5	5
Because they are growing in popularity / they are a new trend	6	6
Because my friends / family / colleagues recommended them or use them	7	7
I believe they are healthier than smoking tobacco	10	10
I like collecting the different types of / devices / accessories / liquids	12	12
Other (please specify)	13	13
Don't know / can't remember	14	14

ASK IF USED TO USE E-CIGARETTES OR TRIED E-CIGARETTES BUT DIDN'T GO ON TO USE THEM (S1=2 OR 3)

A4 **[IF USED TO USE THEM BUT STOPPED: Why did you stop using e-cigarettes?] [IF TRIED BUT DIDN'T GO ON TO USE: Why did you not go on to use e-cigarettes?**

PLEASE SELECT ALL THAT APPLY

I didn't like the taste / the sensation	1
I didn't like the look / feel of them	2
They weren't effective / I didn't think they would be effective in helping me quit smoking	3
They are too expensive	4
I am unsure of the health risks	5
I couldn't find the product (s) I wanted	6
It was never my intention to use them regularly	7
Other (specify)	8
Don't know	9

B Current buying habits

ASK CURRENT USERS (S1=1) AND EX-USERS WHO STOPPED WITHIN THE LAST 12 MONTHS (S2=1)

B1 **Which, if any, of the following e-cigarette products have you purchased in the last 12 months?**
PLEASE SELECT ALL THAT APPLY

E-cigarette starter kits All-in-one kits that contain everything consumers need to start using e-cigarettes and can include for example, the device, e-cigarette battery, e-liquid and tanks.	1
Disposable e-cigarette Cigarette-shaped device consisting of a battery and a cartridge containing an atomizer to heat a solution. Not rechargeable or refillable and is intended to be discarded after product stops producing aerosol.	2
Rechargeable e-cigarette Cigarette-shaped device consisting of a battery that connects to an atomizer used to heat a solution	3
Pen-style, medium sized rechargeable e-cigarette Larger than a cigarette, often with a high capacity battery, may contain a prefilled or refillable cartridge (often called a clearomizer). Often come with a manual switch allowing to regulate length and frequency of puffs.	4
Tank-style, large-sized rechargeable e-cigarette Much larger than a cigarette with a higher capacity battery and typically contains a large refillable cartridge. Often contains manual switched and a battery casing for customizing battery capacity. Can be easily modified.	5
E-cigarette batteries	6
E-liquid / e-solution / aerosol containing nicotine (bottles or cartridges)	7

Nicotine-free e-liquid / e-solution / aerosol / e-juice (bottles or cartridges)	8
Tank / tank system / Part of the device the user fills with e-liquid.	9
Atomiser / drip atomiser / Cartomiser / Clearomiser An atomiser is a device with small coil that heats to turn e-liquid into vapour A cartomiser is a cartridge with an in-built atomiser containing fibre substance that soaks up the e-liquid and coil. A clearomiser is a cartridge with wicks to soak up the e-liquid which then get heated by a coil.	10
Other (please specify)	11
Don’t know	12

ASK CURRENT USERS (S1=1) AND EX-USERS WHO STOPPED WITHIN THE LAST 12 MONTHS (S2=1)

B2 **Think about the e-cigarette and related products purchases you have made in the past 12 months and how you made these purchases. For each product, please say whether you purchased them online, through shop-based retail outlets, both or neither?**
PLEASE SELECT ONE OPTION ONLY.

PROGRAMMER: ONLY DISPLAY OPTIONS CODED AT B1

	I purchased this product online only	I sometimes purchased this product from a shop-based retail outlet but it was mainly online	I purchased this product both online and from shop-based retail outlets an equal amount	I sometimes purchased this product online but it was mainly from shop-based retail outlets	I purchased this product from shop based-retail outlets only	I did not purchase this product from either shop-based retail outlets or online	Don't know / can't remember
E-cigarette starter kits All-in-one kits that contain everything consumers need to start using e-cigarettes and can include for example, the device, e-cigarette battery, e-liquid and tanks.	1	2	3	4	5	6	7
Disposable e-cigarette Cigarette-shaped device consisting of a battery and a cartridge containing an atomizer to heat a solution. Not rechargeable or refillable and is intended to be discarded after product stops producing aerosol.	1	2	3	4	5	6	7
Rechargeable e-cigarette	1	2	3	4	5	6	7

Cigarette-shaped device consisting of a battery that connects to an atomizer used to heat a solution.							
Pen-style, medium sized rechargeable e-cigarette Larger than a cigarette, often with a high capacity battery, may contain a prefilled or refillable cartridge (often called a clearomizer). Often come with a manual switch allowing to regulate length and frequency of puffs.	1	2	3	4	5	6	7
Tank-style, large-sized rechargeable e-cigarette Much larger than a cigarette with a higher capacity battery and typically contains a large refillable cartridge. Often contains manual switched and a battery casing for customizing battery capacity. Can be easily modified.	1	2	3	4	5	6	7
E-cigarette batteries	1	2	3	4	5	6	7

E-liquid / e-solution / aerosol containing nicotine (bottles or cartridges)	1	2	3	4	5	6	7
Nicotine-free e-liquid / e-solution / aerosol / e-juice (bottles or cartridges)	1	2	3	4	5	6	7
Tank / tank system Part of the device the user fills with e-liquid.	1	2	3	4	5	6	7
Atomiser / drip atomiser / Cartomiser / Clearomiser An atomiser is a device with small coil that heats to turn e-liquid into vapour A cartomiser is a cartridge with an in-built atomiser containing fibre substance that soaks up the e-liquid and coil. A clearomiser is a cartridge with wicks to soak up the e-liquid which then get heated by a coil.	1	2	3	4	5	6	7
Other (please specify)	1	2	3	4	5	6	7
Don't know	1	2	3	4	5	6	7

IF PURCHASED E-CIGARETTES OR RELATED PRODUCTS ONLINE IN THE LAST 12 MONTHS (ANY B2 = 1-4)

B3 **Which website(s) did you use to make this / these purchases?**

PLEASE SELECT ALL THAT APPLY

www.888vapour.co.uk	1
www.blucigs.co.uk	2
www.Electronictobacconist.co.uk	3
www.gamucci.com	4
www.kik.co.uk	5
www.phoenixeliquid.co.uk	6
www.prohabitionvapes.co.uk	7
www.totallywicked-eliquid.co.uk	8
www.ukecigstore.com	9
www.vaperama.com	10
www.vaporized.co.uk	11
www.vapourlites.com/	12
www.vipelectroniccigarette.co.uk	13
www.vividvapours.com/	14
Other (specify)	15
Don't know	16

IF OTHER SPECIFY AT B3 (B3=15)

B3a **Please list all the websites you used to make these purchases?**

WRITE IN

Don't know	1

IF PURCHASED E-CIGARETTES OR RELATED PRODUCTS ONLINE IN THE LAST 12 MONTHS (ANY B2 = 1-4)

B4 **How frequently do you tend to purchase the following products online?**

PLEASE SELECT ONE OPTION ONLY.

PROGRAMMER: ONLY DISPLAY OPTIONS CODED AT B2_1-4

	Fortnightly or more	Monthly	Around once every two to three months	Around once every 6 months	Around once a year	Less than once a year	I have only purchased this product once in the past	Don't know / can't remember
E-cigarette starter kits All-in-one kits that contain everything consumers need to start using e-cigarettes and can include for example, the device, e-cigarette battery, e-liquid and tanks.	1	2	3	4	5	6	7	8
Disposable e-cigarette Cigarette-shaped device consisting of a battery and a cartridge containing an atomizer to heat a solution. Not rechargeable or refillable and is intended to be discarded after product stops producing aerosol.	1	2	3	4	5	6	7	8
Rechargeable e-cigarette Cigarette-shaped device consisting of a battery that connects to an atomizer used to heat a solution	1	2	3	4	5	6	7	8
Pen-style, medium sized rechargeable e-cigarette	1	2	3	4	5	6	7	8

Larger than a cigarette, often with a high capacity battery, may contain a prefilled or refillable cartridge (often called a clearomizer). Often come with a manual switch allowing to regulate length and frequency of puffs.								
Tank-style, large-sized rechargeable e-cigarette Much larger than a cigarette with a higher capacity battery and typically contains a large refillable cartridge. Often contains manual switched and a battery casing for customizing battery capacity. Can be easily modified.	1	2	3	4	5	6	7	8
E-cigarette batteries	1	2	3	4	5	6	7	8
E-liquid / e-solution / aerosol containing nicotine (bottles or cartridges)	1	2	3	4	5	6	7	8
Nicotine-free e-liquid / e-solution / aerosol / e-juice (bottles or cartridges)	1	2	3	4	5	6	7	8
Tank / tank system Part of the device the user fills with e-liquid.	1	2	3	4	5	6	7	8
Atomiser / drip atomiser / Cartomiser / Clearomiser	1	2	3	4	5	6	7	8

An atomiser is a device with small coil that heats to turn e-liquid into vapour A cartomiser is a cartridge with an in-built atomiser containing fibre substance that soaks up the e-liquid and coil. A clearomiser is a cartridge with wicks to soak up the e-liquid which then get heated by a coil.								
Other (please specify)	1	2	3	4	5	6	7	8
Don’t know	1	2	3	4	5	6	7	8

IF PURCHASED E-CIGARETTES OR RELATED PRODUCTS ONLINE IN THE LAST 12 MONTHS (ANY B2 = 1-4)

B5 **Over the past 12 months, has the frequency at which you have purchased e-cigarettes and related products ONLINE increased, decreased or stayed the same?**

PLEASE SELECT ONE OPTION PER COLUMN

	IF PURCHASED E-CIGARETTE DEVICES ONLINE (Any B2_1-5=1-4)	IF PURCHASED E-CIGARETTE LIQUIDS ONLINE (Any B2_7-8=1-4)
	E-cigarette devices	E-liquids
Much more frequently over the past 12 months	1	1
Slightly more frequently	2	2
About the same frequency	3	3
Slightly less frequently	4	4
Much less frequently	5	5
Don’t know / can’t remember	6	6

IF PURCHASED E-CIGARETTES OR RELATED PRODUCTS OFFLINE IN THE LAST 12 MONTHS (ANY B2 = 2-5)

B6 **Over the past 12 months, has the frequency at which you have purchased e-cigarettes and related products FROM SHOP-BASED RETAIL OUTLETS increased, decreased or stayed the same?**

PLEASE SELECT ONE OPTION PER COLUMN

	IF PURCHASED E-CIGARETTE DEVICES OFFLINE(Any B2 1-5=2-5) E-cigarette devices	IF PURCHASED E-CIGARETTE LIQUIDS OFFLINE (Any B2_7-8=2-5) E-liquids
Much more frequently over the past 12 months	1	1
Slightly more frequently	2	2
About the same frequency	3	3
Slightly less frequently	4	4
Much less frequently	5	5
Don't know / can't remember	6	6

IF PURCHASED E-CIGARETTES OR RELATED PRODUCTS ONLINE IN THE LAST 12 MONTHS (ANY B2 = 1-4)

B7 **What was your total <u>online</u> spend in the last three months on e-cigarettes and related products?**

IF PURCHASED E-LIQUIDS, CARTRIDGES AND DISPOSABLE CIGARETTES ONLINE (B2_2, 6 OR 7=1-4)

B7a **And what was your total <u>online</u> spend in the last three months on the e-cigarette liquid, cartridges and disposable e-cigarettes only?**

	B7 – Total spend	B7a E-liquid, cartridges and disposable e-cigarette spend

Up to £4.99		
£5.00 to £9.99	1	1
£10.00 to £19.99	2	2
£20.00 - £39.99	3	3
£40.00 - £59.99	4	4
£60.00 - £79.99	5	5
£80.00 - £99.99	6	6
£100.00 - £119.99	7	7
£120.00 - £139.99	8	8
£140.00 - £159.99	9	9
£160.00 - £179.99	10	10
£180.00 - £199.99	11	11
£200.00 - £299.99	12	12
£300.00 - £399.99	13	13
£400.00 - £499.99	14	14

£500+	15	15
Don't know	16	16

IF PURCHASED E-CIGARETTES OR RELATED PRODUCTS FROM RETAIL OUTLETS IN THE LAST 12 MONTHS (ANY B2 = 2-5)

B8 **What was your total spend in the last three months on e-cigarettes and related products from <u>shop-based retail outlets</u>?**

IF PURCHASED E-LIQUIDS, CARTRIDGES AND DISPOSABLE CIGARETTES FROM A RETAIL OUTLET (B2_2, 6 OR 7=2-5)

B8a **And what was your total spend in the last three months on the e-cigarette liquid, cartridges and disposable e-cigarettes from <u>shop-based retail outlets?</u>**

	B8 – Total spend	B8a E-liquid, cartridges and disposable e-cigarette spend
Up to £4.99	1	1
£5.00 to £9.99	2	2
£10.00 to £19.99	3	3
£20.00 - £39.99	4	4
£40.00 - £59.99	5	5
£60.00 - £79.99	6	6
£80.00 - £99.99	7	7
£100.00 - £119.99	8	8
£120.00 - £139.99	9	9

£140.00 - £159.99	10	10
£160.00 - £179.99	11	11
£180.00 - £199.99	12	12
£200.00 - £299.99	13	13
£300.00 - £399.99	14	14
£400.00 - £499.99	15	15
£500+	16	16
Don’t know	17	17

ASK ALL

B9 **Think about your future purchase behaviour of e-cigarettes and related products. Please state whether you think your online and offline spend it is likely to increase, decrease or stay the same.**

	Increase a lot	Increase a little	Stay the same	Decrease a little	Decrease a lot	DK
_1 Online purchasing of e-cigarettes and related products	1	2	3	4	5	6
_2 Shop-based retail purchasing of e-cigarettes and related products	1	2	3	4	5	6

IF ONLINE PURCHASING IS LIKELY TO INCREASE (B9_1=1 OR 2)

B10 **Why do you think that is?**

PLEASE SELECT ALL THAT APPLY

There is more choice available online	1
Newer / more innovative products online	2
Products are cheaper / better value online	3
Better quality products online	4
More special offers / bargains online	5
More convenient / easier to purchase online	6

I have an online account	7
Access to customer forums/ better expertise / advise	8
Other (specify)	9
Don't know	10

IF ONLINE PURCHASING IS LIKELY TO DECREASE (B9_1=4 OR 5)

B11 **Why do you think that is?**

PLEASE SELECT ALL THAT APPLY

There is more choice available offline	1
Newer / more innovative products offline	2
Products are cheaper / better value offline	3
Better quality products offline	4
More special offers / bargains offline	5
More convenient / easier to purchase offline	6
I have all the products I need for the foreseeable future	7

Other (specify)	8
Don’t know	9

C Wider smoking behaviour

ASK ALL

C1 **Have you ever smoked a cigarette, a cigar or a pipe? Please exclude electronic cigarettes.**
PLEASE SELECT ONE OPTION ONLY

Yes	1
No	2
Don’t know	3

ASK THOSE WHO PREVIOUSLY SMOKED (C1=1)

C2 **Do you smoke cigarettes at all nowadays?**

Yes	1
No	2
Don’t know	3

ASK THOSE WHO HAVE EVER SMOKED (C1=1) AND DO NOT SMOKE NOWADAYS (C2=2)

C3 **Have you ever smoked cigarettes regularly? Please exclude electronic cigarettes.**

Yes	1
No	2
Don't know	3

ASK THOSE WHO HAVE SMOKED REGULARLY (C3=1)

C4 **What age were you when you started smoking cigarettes regularly? Please exclude electronic cigarettes.**

PLEASE SELECT ONE OPTION ONLY

Under 16	1
16-24 years old	2
25-34 years old	3
35-44 years old	4
45-54 years old	5
55 to 64 years old	6

65+	7
Don't know / can't remember	

ASK THOSE WHO CURRENTLY SMOKE (C2=1) OR PREVIOUSLY SMOKED REGULARLY (C2=2 AND C3=1)

C5 **And how long [IF CURRENTLY SMOKE: have you been smoking cigarettes for?] [IF USED TO SMOKE: had you been smoking cigarettes for?] Please exclude electronic cigarettes.**

Less than 3 months	1
More than 3 months, up to 6 months	2
More than 6 months up to a year	3
More than a year, up to 2 years	4
More than 2 years, up to 5 years	5
More than 5 years, up to 10 years	6
More than 10 years, up to 20 years	7
More than 20 years	8
Don't know / can't remember	9

ASK THOSE WHO CURRENTLY SMOKE (C2=1) OR PREVIOUSLY SMOKED REGULARLY (C2=2 AND C3=1)

C6 **Which statement best describes your smoking habit?**

PLEASE SELECT ONE OPTION ONLY

I smoke (d) intermittently / socially (e.g. not daily but fairly regularly)	1
I smoke (d) between 1 and 4 cigarettes a day	2
I smoke (d) between 5 and 10 cigarettes a day	3
I smoke (d) between 11 and 20 cigarettes a day	4
I smoke (d) 21 or more cigarettes a day	5
Don’t know	6

ASK THOSE WHO CURRENTLY SMOKE (C2=1) OR PREVIOUSLY SMOKED REGULARLY (C2=2 AND C3=1)

C7 **Have you stopped or reduced the level at which you used to smoke cigarettes specifically through your use of an e-cigarette?**

PLEASE SELECT ONE OPTION ONLY

Yes, I have stopped or reduced the amount I used to smoke cigarettes entirely through the use of an e-cigarette	1
Yes, I have stopped or reduced the amount I used to smoke cigarettes through the use of an e-cigarette as well as through other means	2

No, I use an e-cigarette but is has not reduced the amount I smoke cigarettes	3
Don't know	4

D Demographics

ASK ALL

D1 **Are you…?**

PLEASE SELECT ONE OPTION ONLY

Male	1	
Female	2	
Prefer not to say	3	

ASK ALL

D2 **What is your age?**

PLEASE SELECT ONE OPTION ONLY

16-17 years old	1	
18-19 years old-	2	
20-24 years old	3	
25-34 years old	4	
35-44 years old	5	

45-54 years old	6	
55-64 years old	7	
65-74 years old	8	
75+ years old	9	
Prefer not to say	10	

ASK ALL

D3 **Choose one of the groups below to indicate your ethnic group.**
PLEASE SELECT ONE OPTION ONLY

White		
White English, Welsh, Scottish, Northern Irish, British	1	
White Irish	2	
Gypsy or Irish traveller	3	
Any other white background	4	
Asian		
Asian Indian	5	
Asian Pakistani	6	
Asian Bangladeshi	7	
Other Asian	8	
Black	9	
Black African	10	

Black Caribbean	11	
Other Black	12	
Arab	13	
Chinese	14	
Mixed		
White & Black Caribbean	15	
White & Black African	16	
White & Asian	17	
Other Mixed	18	
Other Ethnic Group		
Any Other Ethnic Group	21	
Prefer not to say		
Prefer not to say	22	

ASK ALL

D4 **How would you best describe your current employment status?**

Full-time employed (30 hours or more a week)	1
Part-time employed (less than 30 hours per week)	2
Self-employment	3
Not in paid work, including retired or unable to work	4
Student	5
Prefer not to say	6

ASK ALL

D5 **Please select from your household the occupational group of the person with the highest wage. If retired and have a pension, or have been out of work for less than 6 months - please answer for their most recent occupation.**

PLEASE SELECT ONE OPTION ONLY:

NOTE: THIS INFORMATION IS USED FOR CLASSIFICATION PURPOSES.

Skilled manual worker e.g. Skilled Bricklayer, Carpenter, Bus/ Ambulance Driver, Plumber etc.	1
Semi or unskilled manual worker	2

e.g. Manual workers, all apprentices to be skilled trades, care worker, shop assistant, etc.	
Casual worker e.g. Non-permanent worker, zero hours contract worker, etc.	3
Unemployed with state benefits (e.g. Job seekers allowance, income support, disability living allowance, etc.)	4
Retired and living on state pension	5
Homemaker	6
Full-time carer of other household member	7
Student	8
Intermediate managerial / professional / administrative e.g. Solicitor, Board director small organisation, middle manager in large organisation, principle officer in civil service/local government	9
Higher managerial / professional / administrative e.g. Solicitor, Board Director in a large organisation (200+ employees, top level civil servant/public service employee)	10

Prefer not to say	11

ASK ALL

D6 **Choosing from the following bands, please could you tell me the value of your total household income (before tax)? You can tell me per year, per month or per week. Would you say that it is…?**

Up to £9,999 a year / Up to £833 a month / Up to £97 - £192 a week	1
£10,000 - £19,999 a year / £834-£1,666 a month / £193 - £384 a week	2
£20,000 - £29,999 a year / £1,666 - £2,499 a month / £385 - £577 a week	3
£30,000 - £39,999 a year / £2,500-£3,333 a month / £578 - £769 a week	4
£40,000 - £49,999 a year / £3,333 - £4,166 a month / £770 - £958 a week	5
£50,000 - £59,999 a year / £4,167 - £4,999 a month / £959 - £1,150 a week	6
£60,000 - £69,999 a year / £5,000 - £5,832 a month / £1,151 - £1,342 a week	7
£70,000 - £79,999 a year / £5,833 - £6,665 a month / £1,343 - £1,533 a week	8
£80,000 - £89,999 a year / £6,666 - £7,499 a month / £1,534 - £1,725 a week	9
£90,000 - £99,999 a year / £7,500- £8,332 a month / £1,726 - £1,917 a week	10
£100,000 a year or more / £8,333 a month or more / £1,918 a week or more	11

Prefer not to say	12

THANK YOU FOR PARTICIPATING. THE SURVEY IS NOW COMPLETE.

Finally we would just like to confirm that this survey has been carried out under IFF instructions and within the rules of the MRS Code of Conduct. Thank you very much for your help today.

13 Annex E: Face to face Omnibus questionnaire

IF EVER USED E-CIGARETTES

A1 Which of the following statements best describes how you purchase electronic cigarettes (e-cigarettes), vapourisers and other accessories?

This includes the purchase of the devices themselves, e-liquids, capsules, cartomisers, tanks and accessories.

READ OUT. SELECT ONE ANSWER ONLY.

I only purchase e-cigarettes and related products online	1
I do some purchasing from shop based retail outlets but it's mainly online	2
I do an equal amount of purchasing online and from shop based retail outlets	3
I do some purchasing online but it's mainly from shop based retail outlets	4
I only purchase e-cigarettes and related products from shop based retail outlets	5
I have never purchased e-cigarettes or related products myself	6
Don't know	7

IF EVER PURCHASED E-CIGARETTE PRODUCTS ONLINE (A1 = 1-4/7)

A2 Which of the following products have you purchased online in the past 12 months?

READ OUT. SELECT ALL THAT APPLY.

E-cigarette starter kits IF NEEDED: All-in-one kits that contain everything consumers need to start using e-cigarettes and can include for example, the device, e-cigarette battery, e-liquid and tanks.	1
Disposable e-cigarette IF NEEDED: Cigarette-shaped device consisting of a battery and a cartridge containing an atomizer to heat a solution. Not rechargeable or refillable and is intended to be discarded after product stops producing aerosol. Sometimes called an e-hookah.	2
Rechargeable e-cigarette IF NEEDED: Cigarette-shaped device consisting of a battery that connects to an atomizer used to heat a solution typically containing nicotine.	3
Pen-style, medium sized rechargeable e-cigarette IF NEEDED: Larger than a cigarette, often with a high capacity battery, may contain a prefilled or refillable cartridge (often called a clearomizer). Often come with a manual switch allowing to regulate length and frequency of puffs.	4
Tank-style, large-sized rechargeable e-cigarette IF NEEDED: Much larger than a cigarette with a higher capacity battery and typically contains a large refillable cartridge. Often contains manual switched and a battery	5

casing for customizing battery capacity. Can be easily modified.	
E-cigarette batteries	6
E-liquid / e-solution / aerosol containing nicotine	7
Nicotine-free e-liquid / e-solution / aerosol / e-juice	8
Tank / tank system / cartridge IF NEEDED: Part of the device the user fills with e-liquid.	9
Atomiser / drip atomiser / Cartomiser / Clearomiser IF NEEDED: An atomiser is a device with small coil that heats to turn e-liquid into vapour A cartomiser is a cartridge with an in-built atomiser containing fibre substance that soaks up the e-liquid and coil. A clearomiser is a cartridge with wicks to soak up the e-liquid which then get heated by a coil.	10
Other (please specify)	11
Don't know	12

IF EVER PURCHASED E-CIGARETTE PRODUCTS ONLINE (A1 = 1-4/7)

A3 What was your total online spend in the last three months on e-cigarettes and related products?

IF EVER PURCHASED E-LIQUIDS, CARTRIDGES OR DISPOSABLE E-CIGARETTES ONLINE (IF A2=2, 7, 8, 9 = 6)

A3a And what was your total online spend in the last three months on the e-cigarette liquid, cartridges and disposable e-cigarettes only?

PROMPT WITH RANGES IF NECESSARY. PLEASE SELECT ONE OPTION ONLY

	A3 – Total spend	A3a E-liquid, cartridges and disposable e-cigarette spend
Up to £9.99	1	1
£10.00 to £19.99	2	2
£20.00 - £39.99	3	3
£40.00 - £59.99	4	4
£60.00 - £79.99	5	5
£80.00 - £99.99	6	6
£100.00 - £119.99	7	7
£120.00 - £139.99	8	8

£140.00 - £159.99	9	9
£160.00 - £179.99	10	10
£180.00 - £199.99	11	11
£200.00 - £299.99	12	12
£300.00 - £399.99	13	13
£400.00 - £499.99	14	14
£500+	15	15
Don’t know	16	16

14 Annex F: Literature review

A 'light touch' literature review of published reports and academic articles on the e-cigarette markets was undertaken to ensure that the study built upon what was already known rather than replicating it. The table below provides a summary of eleven reports and articles that were reviewed and highlights the potential implications for the study.

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
Use of electronic cigarettes (vaporisers) among adults in Great Britain *Action on Smoking and Health (2015). "Use of e—cigarettes in Great Britain among adults and young people", Action on Smoking and Health Fact Sheet.*	A fact sheet compiled by Action on Smoking and Health (ASH) on the prevalence of electronic cigarettes use amongst adults in Great Britain in May 2015. Fieldwork was carried out online between the 26th of February and the 12th of March 2015. The total sample size was 12,055. Mode of contact: Online survey	It is estimated that 2.6 million adults in Great Britain are users of electronic cigarettes. Around 2 out of every 5 users of electronic cigarettes in Great Britain are ex-smokers, whilst 3 out of 5 users are current smokers. Between 2010 and 2014 the use of electronic cigarettes amongst smokers increased from 2.7% to 17.6%. However, the proportion of smokers using electronic cigarettes remained the same between 2014 and 2015. In contrast, the proportion of ex-smokers using electronic cigarettes increased from 4.5% in 2014 to 6.7% in 2015. The key reason why current smokers use electronic cigarettes is to reduce the amount they smoke. Meanwhile the main reason reported by ex-smokers is to help them to stop smoking.	In light of the findings of this publication, it would be interesting to understand if/how the purchasing behaviour and habits of use differ amongst smokers and non-smokers.

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
		66% of electronic cigarette users use a rechargeable product with a reservoir or tank that is filled with e-liquid, 26% use a device that is rechargeable with replaceable pre-filled cartridges and 5% use disposable electronic cigarettes.	
Adult Smoking Habits in Great Britain, 2013 *ONS (2014). "Adult Smoking Habits in Great Britain, 2013", ONS Statistical Bulletin*	A statistical bulletin by the Office for National Statistics outlining smoking and e-cigarette habits in the UK. Examines data collected on the Opinions and Lifestyle Survey, an omnibus survey run by the Office for National Statistics. Data collected between Jan and Mar 2014 on cigarette smoking status of e-cigarette users. Mode of contact: Face-to-face survey	Electronic cigarettes are used buy 12% of current smokers, 5% of ex-smokers and 0.14% of individuals that have never smoked. E-cigarettes are used mainly as smoking cessation aid and for the previewed health benefits compared to smoking tobacco. Over half of e-cigarette users claimed that their main reason for using the devices was to stop smoking, and around one in five said their main reason for using e-cigarettes was because they thought they were less harmful than conventional cigarettes.	Smokers and ex-smokers are the main users of e-cigarettes, with only 1 in 300 people who have never smoked using e-cigarettes In the quantitative survey of e-cigarette users it would be interesting to investigate wider smoking behaviour, in order to assess whether proportions have changed, in comparison to this document, as e-cigarettes have become more popular.
Smoking in England 2015 report	Provides a top line summary of the evidence to date using reliable reviews supplemented by	E-cigarettes are considered less harmful than smoking cigarettes but are not 100% safe.	**Consumer survey:**

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
West R, Hajek R, McNeill A, Brown J and Arnott D. (2015) "Electronic cigarettes: what we know so far". Briefing report to UK All Party Parliamentary Group on Pharmacy.	individual studies that appear later and alter the conclusions. This document will be updated as new evidence emerges.	Use of e-cigarettes among "never smokers" remains rare in the UK and the US. - Surveys of 11-14 year olds in Britain show that almost no never smokers report current use - Adolescents who smoke traditional cigarettes has continued to decline making it unlikely that e-cigarettes are acting as a gateway into smoking at a population level Products: E-cigarettes vary widely in appearance and nicotine delivery. The advent of e-cigarettes has not had a detectable impact on quit attempt rates: Use of e-cigarettes in a quit attempt is associated with increased abstinence rates compared with using no aid or licenced nicotine products bought from a store or placebo (nicotine-free e-cigarettes). Use of e-cigarettes while smoking appears to be associated with a small reduction in cigarette	Consider including questions about: - Views on regulation and impact this would have on purchase behaviour. - Views on how products are marketed and influence this has on decision making and purchase habits.

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
		consumption; its effect on subsequent smoking is not clear. There are highly active e-cigarette user groups who oppose highly restrictive regulation: Several active user groups who share information about products and techniques for use and argue to protect e-cigarette use against restrictive regulation of products. E –cigarettes are promoted using the full range of marketing tools with some branding and imagery being similar to that used for cigarettes.	
Electronic cigarettes *Britton, John, and Ilze Bogdanovic (2014). "Electronic Cigarettes: A Report Commissioned by Public Health England." Public Health England.*	Published in May 2014, this report outlines the electronic cigarette products available in the market, the current trends in electronic cigarette use and the potential health effects of electronic cigarettes. All findings are based on secondary research.	Electronic cigarettes are defined as devices which provide users with inhaled doses of vaporised nicotine. Electronic cigarettes were invented in China in 2003 and entered the European market in 2005. Over recent years the use of electronic cigarettes has increased significantly, but varies markedly between countries and is more common amongst younger age groups.	In both the qualitative and quantitative arms of the research it may be worth exploring the perceived health effects of e-cigarettes and the portrayal of the health effects of e-cigarettes. Although the health effects of e-cigarettes are not a primary focus for this research, the perceived health effects

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
		Electronic cigarettes are said to contain far less harmful toxins than produced from conventional cigarettes. The report concludes that electronic cigarettes offer "vast potential health benefits" in relation to cigarettes and recommends that the devices should be incorporated into public health policy to complement existing tobacco control policies.	amongst users and the portrayal of health effects by manufacturers/wholesalers/retailers will undoubtedly have an influence upon demand for such devices and the trajectory of the market.
E-cigarette uptake and marketing report – Public Health England 2014 *Bauld, L., Angus, K. and De, A.M., (2014) "E-cigarette uptake and marketing: A report commissioned by Public Health England".*	A report commissioned by Public Health England carried out by the UK Centre for Tobacco and Alcohol Studies and the University of Stirling, published in May 2014.	The market and marketing of e-cigarettes is discussed as well as the uptake by children in the UK, USA and other countries. However only one survey existed at the time of writing this report which identified e-cigarette use in children in the UK and involved a sample of 2,178 11-18 year olds. Of 11-18 year olds that had heard of e-cigarettes (two thirds of the original sample) 7% reported they had tried e-cigarettes at least once.	In light of the use of e-cigarettes amongst younger age brackets, we recommend people aged 16-18 are included in the survey (Research Now have confirmed this is feasible). It may also be of interest to examine how companies carry out their marketing in reference to the sale and promotion of products and services online

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
		Brand ECigaretteDirect has stated half of its sales come from the internet and are driven by community recommendations, innovation, social media and blogging.	(i.e. the importance of social media, blogging and forums).
E-Cigarettes: A Disruptive Technology That Revolutionizes Our Field? *Fagerstrom, K., Etter, J.F. and Unger, J.B., (2015) "E-cigarettes: a disruptive technology that revolutionizes our field?". Nicotine & Tobacco Research, 17(2), pp.125-126.*	An article published in Nicotine and Tobacco Research in October 2014 reviewing the history, function and use of e-cigarettes.	The increase in popularity of e-cigarettes is discussed as well as global responses to their use. Evidence relating to potential health impacts is reviewed as well as the e-cigarette's relationship with initiating or reducing a traditional smoking habit. Sales of e-cigarettes products increased dramatically around 2010 and have now surpassed nicotine replacement therapy (NRT) sales. The market is expanding dramatically, with some analysts predicting that sales of e-cigarette products will overtake sales of traditional cigarettes within 10 years. Almost all big international tobacco companies have their own e-cigarettes products.	Do e-cigarettes products of big tobacco companies hold a large market share of the online e-cigarette market? Have online suppliers of e-cigarettes moved from selling traditional Nicotine Replacement Therapy (NRT) products to largely e-cigarette products?

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
Electronic cigarettes: fact and faction *West, R. and Brown, J., (2014). "Electronic cigarettes: fact and faction". British Journal of General Practice, 64(626), pp.442-443.*	An editorial written by academics at the University College of London's Department of Epidemiology and Public Health. Published in Sept 2014 in the British Journal of General Practice.	This article reviews evidence on the safety of e-cigarettes and their relationship with traditional smoking, addressing concerns that e-cigarettes may 're-normalise' smoking leading to an increase in smoking prevalence, that they may act as a gateway to smoking and their role as a cessation device.	There is constant development of e-cigarette technology, we need to be aware of this to ensure we include all relevant products in our discussions. We could explore how important the safety of e-cigarettes/ toxicology of 'e-liquid' is to manufacturers/ suppliers/consumers.
'Vaping' profiles and preferences: an online survey of electronic cigarette users *Dawkins, L., Turner, J., Roberts, A. and Soar, K., (2013). 'Vaping' profiles and preferences: an online survey of electronic cigarette users. Addiction, 108(6), pp.1115-1125.*	Fieldwork undertaken in 2011 and 2012 **Aims:** to characterize e-cigarette use, users, and effects, in a sample of Electronic Cigarette Company (TECC) and Totally Wicked E-Liquid (TWEL) users. **Design and Setting:** Online survey hosted at the University of East London with links from	**Awareness:** 41% had heard about e-cigs from the internet, 35% from personal contact **Product use:** 72% of users used a "tank system". Most commonly the eGo-C (although origin of the sample should be noted when considering this finding).	Need to consider the difference between product types and brand names. Can potentially use the product list from the study when asking respondents about product use. Need to consider how respondents identify products. Do they know specific product types or can only identify brands they use?

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
	TECC/TWEL websites between September 2011 to May 2012. **Measurements:** Online questionnaire. **Participants:** 1347 respondents from 33 countries (72% European), mean age 43 years, 70% male, 96% Caucasian, 44% educated to degree level or above. Mode of contact: Online survey	Females more than males more likely to opt for sweet flavours and liked products that are more likely to resemble cigarettes. 18 mg fluid was the most popular (49%), very few reported using non-nicotine cartridges / liquid. **Attitudes / Motivations** 81% felt they were healthier and 70% reported an improvement in coughing and breathing (70%) And tobacco the most popular flavour (53%). **Conclusions:** E-cigarettes tend to be used for smoking cessation but for a longer duration than NRT and were generally regarded as efficacious. There is little evidence of dual use	
Smoking revolution: a content analysis of electronic cigarette retail websites. *Grana, R.A. and Ling, P.M., (2014) "Smoking revolution: a content analysis of*	An academic article which aims to describe the main advertising claims made on branded e-cigarette retail websites.	**Products offered:** Almost all sites sold a starter kit, replacement parts, and solution cartridges for rechargeable models (one website only sold disposable e-cigarettes). E-cigarette cartridges and solutions were available in many strengths and nicotine levels, but strength	Consider whether those who purchase online have "go-to" websites where they purchase products in one place or whether they use a range of sites.

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
electronic cigarette retail websites". American journal of preventive medicine, 46(4), pp.395-403.		descriptors did not correspond consistently to specific levels of nicotine. Only products advertised as having no or zero nicotine matched a reported level of 0 mg of nicotine. Some of the strength descriptors present on the websites, such as ultralight, light, mild, and full-flavored, have been historically used by tobacco companies to describe cigarettes. **Website characteristics:** Almost all websites (98%) offered contact information in multiple formats, including telephone (76%), e-mail (54%), physical address (51%), online contact form (34%), and live chat (5%). Twelve percent of sites had an age restriction, requiring the user to click on a box to state that they were over a certain age to view the site. None required proof or outside verification of age. **Conclusions:** - E-cigarette websites frequently contain unfounded health claims, smoking cessation claims, and	Possibly include questions around appeal of websites and whether they "engage" with providers through their sites (e.g. have they ever contacted them etc.) Questions around key take-out(s) of sites and views on marketing messages.

Report title and authors	General description	Coverage and overall assessment (Findings)	Implications for study
		marketing claims that could undermine smoke-free policies and appeal to youth. - The Internet has been a main channel of dissemination of e-cigarette marketing and sales. However, only a small percentage of sites had an age restriction, which was only to click a box to state that the user is over a certain age. This easily circumvented age verification leaves open room for youth access and marketing exposure.	
E-cigarettes: A Rapidly Growing Internet Phenomenon *Yamin, C.K., Bitton, A. and Bates, D.W. (2010). E-cigarettes: a rapidly growing Internet phenomenon. Annals of internal medicine, 153(9), pp.607-609.*	An academic article published in the Annals of Internal Medicine in November 2010. All findings are based on secondary research.	The presence of e-cigarettes on the internet, in terms of online searches, virtual user communities and online retail is said to be increasing rapidly. I Between January 2007 and January 2010 Google searches containing the term “electronic cigarettes” increased by 5000%, causing it to be classified by Google as a ‘breakout’ term.	The article suggests that the online segment makes up a substantial proportion of the overall e-cigarette market. However, there is no indication of how big the online market is in relation to the terrestrial market. Although this paper has no direct implication upon the design of the study, it confirms the existence of a research gap concerning the size of the online market.

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Electronic cigarettes in England – latest trends (2015 Q3) *West R., Beard E. and Brown J. (2015). Trends in electronic cigarette use in England: www.smokinginengland.info/sts-documents/*	The Smoking Toolkit Study (STS) involves a monthly household survey of representative sample of the adult population in England to track key performance indicators relating to smoking and smoking cessation. This piece summarises the data collected on electronic cigarettes since the second quarter of 2011 until the third quarter of 2015. Mode of contact: Face-to-face survey	The use of e-cigarettes is increasing, but has slowed during 2015. The use of e-cigarettes appears to be increasing most amongst long-term ex-smokers and individuals attempting to quit smoking. Growth in e-cigarette use has been accompanied by a reduction in use of licensed nicotine products and prescription medication. The use of e-cigarettes is broadly even across all age bands. Women are slightly more likely to use e-cigarettes than men. Higher social grades are more likely to use e-cigarettes.	Both the qualitative and quantitative surveys present a prime opportunity to confirm whether growth in e-cigarette use has slowed down and, if so, why this has occurred. It may be interesting in the quantitative arm of the research to explore what motivates those attempting to quit smoking and those that have successfully quit smoking to opt to use e-cigarettes instead of Nicotine Replacement Therapy products and whether ex-smokers continue to use e-cigarettes after quitting conventional cigarettes. It may also be worthwhile in the quantitative part survey to explore why women and those

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			of a higher socio-economic classification use e-cigarettes.

IFF Research

Chart House
16 Chart Street
London N1 6DD
Tel: +44(0)20 7250 3035
Website: iffresearch.com

Contact details: Alistair Kuechel and Rob.Warren
Alistair.Kuechel@iffresearch.com
Rob.Warren@iffresearch.com