

**Analysis and interpretation of competitive strategies  
and consumer behaviour using ComScore online  
panel data**

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## **ABSTRACT**

Telecommunications industry is considered to be one of the most important and fast growing industries globally, influencing daily the lives of millions of people. It is clear that mobile telecommunications markets are becoming more competitive and mobile operators need to strengthen and reshape their marketing strategies in order to survive and gain market share.

The aim of this project is to analyse the German and the UK telecommunications market and interpret online behaviours in the context of the marketing strategies of each competitor. The main research questions posed in the current project are how online performance indicators such as number and share of unique visitors can affect the marketing strategies of firms, how consumers use the online channel during their pre-purchase stage, how many competitors they consider before their final purchase and what is the exact online behaviour of consumers in the UK and Germany. ComScore, a digital business intelligence system, is used for the analysis of online panel data. ComScore uses very large panels of online users in order to collect data about online behaviour including information about consumers' purchases, websites browsing and online activity in general. The analysis of the data gave us valuable insights into the online consumer behaviour in the telecoms industry during the pre-purchase stage of their decision making process. The main outcome of the study shows that the German and the UK market are two of the most competitive telecommunications markets in Western Europe and the main competitor have embraced a variety of marketing strategies such as multi-branding, in order to remain competitive. In addition, the analysis shows that consumers use the Internet regularly for research and for purchases as well. However, the size of the online consideration sets in both markets is significantly smaller than expected and consumers only visit only a couple of retailers while researching.

The deliverable of this study is a management report that includes a comprehensive analysis of competitive strategies of the telecommunications market in the UK and Germany, Internet usage and consumer behaviour.

# 1. Introduction

Telecommunications industry is considered to be one of the most important and fast growing industries globally, influencing daily the lives of millions of people. It is worth mentioning that the penetration rate of telecommunications services has increased steadily over the past five years and there were 83.2 million mobile phone subscribers in the UK in 2011. According to Mintel, revenues for mobile phone subscriptions will reach £20.3 billion in 2016 in the UK alone (Mintel, 2012).

Mass mobile communications in the EU started in the early 1980s with the first generation analogue system, which was primarily designed for the transmission of voice signals. The invention of second-generation technology (2G) and third-generation systems (3G) introduced a new era in the history of telecommunications. 3G systems combine the traditional voice communications functions with high capacity data transfer and mobile access to the Internet. In addition, 3G technology allows full multimedia content such as TV, music, video and music on mobile phones and devices. These modern communication technologies have not only transformed the way we communicate, but also affected and reshaped the world's telecommunications markets. Mobile phones and services have become a common consumer electronic product and a necessity in people's everyday life.

It is clear that telecommunications markets are becoming more competitive and mobile operators need to strengthen and reshape their marketing strategies in order to survive and gain market share. In addition, Internet penetration and the increasingly use of broadband connections in Europe has affected consumer's buying behaviours. There is no doubt that technology and the Internet have changed and affected consumers' shopping behaviour. They use Internet to research, compare prices from different suppliers and read online reviews as well as purchasing. Since the beginning of e-commerce consumers have become more familiar and proficient with online shopping activities and demand for better options and services. This means that mobile operators need to use various online channels to promote their services, build their online presence and develop multi-channel strategies that will attract new customers.

By using online advertising, companies can increase the awareness of their products and their brand values, encourage customer interaction and communication and support their marketing strategies. Besides, online marketing should be part of the overall marketing strategy of the organization and the different marketing channels should integrate and support each other. Mobile operators need to understand their customers' behaviour and needs in order to develop marketing strategies that will lead to customer acquisition and retention. Internet offers a variety of interactive and multimedia capabilities such as search engine marketing, banner ads, e-mail marketing and Web 2.0 strategies that can increase the company's online competitiveness and the website's popularity and consumer interaction (Chen, et al., 2011).

### **1.1. Research Aims and Objectives**

The aim of this project is to analyse the German and the UK telecommunications market and interpret online search and buying behaviours in the context of the marketing strategies of each competitor. ComScore, a digital business intelligence system, will be used for the analysis of online consumer behaviour. ComScore uses very large panels of online users to collect and generate unique data into online consumer behaviour. ComScore is designed to collect data about online behaviour including information about consumers' purchases, websites browsing and online activity in general. The analysis of these data can help companies shape their online strategies, develop new marketing campaigns and forecast the market future based on the behaviour of online consumers.

The project covers the following subjects:

- Overview of German and UK telecommunications market in terms of size, growth, key developments and technology
- Comparison between the two served markets
- Analysis of the online marketing strategies of the key competitors
  - product innovations
  - multiple communication channels

- online activities
- Relationship between the online and overall marketing strategy
- Detailed analysis of online consumer search and purchase behaviour (use of the internet for research, price comparison)
- Performance of providers' websites

## **1.2. Project Structure**

This research is divided into two parts and six chapters.

Chapter 1 – Introduction: This chapter introduces the topics that will be discussed in this study. It provides a general description of the telecommunications markets, presents the research aims of this study and specifies the structure and the deliverables of this project.

### **Part I – Background Research**

Chapter 2 – Literature Review: This chapter is the literature review with a focus on the areas of this study. The concepts of “Online Marketing” and “Consumer Behaviour” are introduced and the main theories used on the field are presented. In addition, it presents an overview of the competitive strategies in the telecommunications industry such as multi-branding and examines the role of MVNOs in the market.

Chapter 3 – Research Methodology: This chapter describes the methodology used for this research and explains the methods used for analysing the data of this study.

### **Part II – Data Analysis**

Chapter 4 – The Telecommunications Market in the UK: In this chapter a detailed analysis of the telecommunications market in the UK is conducted. The main competitors are examined and classified in terms of their online and offline performance. Based on the analysis of ComScore data the consideration set for the UK market is calculated and other valuable findings of the online consumer behaviour are presented.

Chapter 5 – The Telecommunications Market in Germany: In this chapter a detailed analysis of the telecommunications market in Germany, similar to the one in chapter 4, is conducted.

Chapter 6 – Discussion and Conclusions: This chapter presents a general comparison between the two markets under study and the main findings of the analysis are highlighted. In addition, a final conclusion, limitations and further research are also provided.

### **1.3. Expected Outcome**

The deliverable of this project will be a management report that will include a comprehensive analysis of competitive strategies of the telecoms market in the UK and Germany, Internet usage and consumer research behaviour. A digital business intelligence system such as ComScore and other secondary market data will be used in order to measure and analyse the online performance of each competitor. Performance measurements can play a significant role in monitoring progress and can help managers make decisions in order to achieve a company's goals. ComScore data analysis will also create rich opportunities for generating new insights into how competitive strategies can affect consumer behaviour. Moreover, this project will examine how online marketing relates to overall marketing strategies and how it can enhance and support the company's overall business objectives.

This project will produce knowledge and findings about consumer behaviour, marketing strategies and online performance and it could be useful to telecommunications operators and companies that want to improve their services, achieve a sustainable advantage over their main competitors and accomplish high revenue growth.

The project will be considered successful if the goals of each phase been achieved within the specific time frame given and the overall project objectives have been covered. In addition, it is important to examine and prove that the existing theoretical frameworks can be applied in real markets.

# **Part I – Background Research**

## **2. Literature Review**

This chapter presents an overview of the existing literature on the major subject areas of this project. A description of topics such as ‘Online Marketing’, ‘Consumer Behaviour’ and ‘Internet Measurements Metrologies’ is required so that the reader can understand the key aspects of the project. This literature review takes into consideration books, business articles and academic journals in order to examine and understand the theories related with the project’s topic. Grey literature is also being used as a major source of information; other theses and dissertations, government publications and companies’ reports offer the most up to date research results and are being reviewed.

### **2.1 Online Marketing**

The Internet is often characterized as one of the most important and transforming technology inventions since the Industrial Revolution (Economist, 1999). When it was first introduced in the late 1980s, no one would expect that twenty years later the web could have changed and affected the way that people communicate, shop and doing business. Nowadays, the Internet has become widely accessible and it is the most common medium that people and business use for communicating and interacting with each other. The developments in the global economies and technology improvements have changed the traditional balance between customers and businesses (Teece, 2010) and the increasing levels of broadband penetration during the past two decades have introduces new opportunities for businesses and for consumers as well.

Companies from all industries have to change their current business models and develop new strategies if they want to remain competitive. In 1999, Andy Grove, the

chairman of Intel claimed that “in five years’ time all companies will be Internet companies, or they won’t be companies at all” (Economist, 1999). Nowadays most companies use Internet to support their marketing processes and develop online strategies that are fully integrated to the overall marketing plan. Traditional marketing based on identifying consumers’ need and create products or services that will satisfy these needs. Chaffey suggests that the same approach should be applied to internet marketing as well. “Customer-centric marketing can be defined as the approach to marketing based on detailed knowledge of customer behaviour within the target audience that seeks to fulfil the individual needs of customers” (Chaffey, et al., 2006). It is therefore essential for companies to understand their customers purchase behaviours and develop techniques that will lead to customer satisfaction, commitment and retention.

Online advertising and online retailing have dramatically changed the way that companies develop their marketing strategies and interact with consumers. According to Dave Chaffey online retailing or e-commerce is not only the process of selling and buying products through the Internet. E-commerce is defined as “all the electronically mediated information exchanges between an organization and its external stakeholders” (Chaffey, 2007). For example non-financial transactions such as customers asking for further information or from a business process perspective, the automation of business transactions and workflows that minimize costs should also be considered as e-commerce.

Online advertising or internet marketing can be defined as the use of internet and other digital media to support the marketing strategies of a company achieve its business objectives (Chaffey, et al., 2006). Online marketing is an essential and important part of the overall marketing plan of a company and it should be carried out not only by the “click-only” companies, but also from the traditional “click-and-mortar” organisations that have an online presence. The four major online marketing domains are:

- B2C – Business-to-consumer
- B2B – Business-to-business
- C2C – Consumer-to-consumer
- C2B – Consumer-to-business

		<b>Targeted to customers</b>	<b>Targeted to business</b>
<b>Initiated Business</b>	<b>By</b>	B2C – Business-to-consumer	B2B – Business-to-business
<b>Initiated Customer</b>	<b>By</b>	C2C – Consumer-to-consumer	C2B – Consumer-to-business

**Figure 2-1: Online Marketing Domains**

The B2C and B2B models are the most famous domains. The B2C describes the online transactions between businesses and the final consumer. The success of Amazon.com, Dell and other companies proves that the online channel offers a unique opportunity for business to grow and increase their profitability. These companies developed innovative business models based on direct online sales. B2B includes the online transactions between companies and their business customers. B2B e-marketplace is one of the major online trading platforms and large organisations are taking advantages from the number of suppliers and buyers via the B2B marketplace (Stockdale & Standing, 2004). C2C and C2B are two types of transactions where consumers transact directly with other consumers or businesses, but these models are not used so widely as the other two. EBay is the most popular C2C online platform, where consumers can sell and buy products from other consumers. Chaffey points out that “the increase of C2C interactions is a key feature of e-commerce and an important part of the Web 2.0 concept” (Chaffey, 2007).

## **2.2 Online Channel as a Competitive Force**

The increasingly use of the Internet by consumers either for researching or purchasing products presents a unique opportunity to businesses and marketers. Companies have realized that the value proposition of e-commerce includes

establishing new communication relationships with customers through electronic channels. It seems that going online and moving forward with an Internet strategy is no longer an optional choice, it is an imperative. Organizations try to integrate Internet technology to redesign processes in such ways that could strengthen their competitive advantages (Phan, 2003).

Besides, there are many benefits attributed to e-business not only for business, but for the buyers as well.

### **Enhanced Selling Process**

E-commerce offers a great number of advantages and companies that develop strategies to exploit these benefits can gain competitive advantage over those who lag.

- **Cost Reduction**

The reduction of costs in terms of time and effort required to complete transactions along with the efficiency factor are probably the main advantages of e-commerce (Damanpour, 2001). Web enabled transactions cost less over the long run because they lead to process automation and better inter-organizational coordination (Damanpour, 2001). By using the online channel, companies can sell products directly to their customers, which means that they can bypass resellers and other intermediaries and avoid agency fees and commissions. This can lead to lower prices, increase customers' satisfaction and create a bond of trust and loyalty between the company and the customer. In addition, the cost of an e-marketing platform is lower than the traditional marketing media and at the same time companies can promote their products to a wider reach of customers. This means that it is easier for companies to explore new market segments and acquire new customers. Besides, internet allows firms to expand their business globally and reach customers that may not be accessible otherwise due to location limitation.

- **Better Market Understanding and Customer Targeting**

Online transactions offer valuable insights about customers' needs, buying habits and attitudes. Almost all companies use information collecting technologies in order to automatically capture customer data on each transaction and observe purchase

behaviours. The analysis and interpretation of these data offer sellers the opportunity to target their customers better, forecast market trends and practice mass customization. Companies can target specific groups of customers easily and effectively by creating customer segmentation profiles based on a variety of characteristics such as age, gender, region of residence or income. The ease of collecting consumer preferences information allows many firms to customize and differentiate their products according to their customer's individual preferences and needs (Prasad, et al., 2001). There are many customization functions that sellers can include in their websites that enable customers to design a product in a way that meets their requirements and fits their own needs.

- **Customer Relations Management:**

Internet offers multiple opportunities for creating and maintaining satisfactory online customer experience and strengthens customer service and support functions. Companies can use their websites and social media in order to communicate directly with their customers, answer queries about products and receive feedback. A company who understands their customers' needs and takes into consideration their feedback can improve its products and delivery services faster than its competitor. By developing multiple communication channels for faster and easier information exchange, companies do not only increase customer satisfaction but also establish loyalty and trust. Then, it is easier for businesses to use these already established channels in order to advertise new products and services and retain customers.

- **Facilitate global presence**

As markets mature, customers become more sophisticated and are determined to find the product they are looking for at the best possible price and quality.

### **Enhanced Buying Process**

For the buyers the web is a convenient, time-saving and immediate medium to perform comparative shopping. Shoppers can shop from the convenience of their home and they don't need to travel to physical stores in order to search and compare products.

Unlike traditional brick and mortar stores where shoppers have limited search options, online shops can provide detailed information for all available products. Customers are able to locate many vendors, view detailed product information, make comparisons and find the best deal before purchase. Online stores provide customer with a great variety of products as they hold a larger inventory than the average physical store. Especially for retail stores, most times e-shops can guarantee the availability of almost any type of the merchandise. In addition, online tools such search functions and shopping navigators can make their purchase experience easier and faster.

### **2.3 Online Consumer Behaviour**

The relationship between online marketing and consumer behaviour has been observed by companies widely. Researching and studying the online interaction between consumers and companies was one of the most important and popular research topics in e-commerce during the past decade (Chen, 2009). The Internet has changed the way people search for information and make purchases. One of the most important changes in the buying environment is the greater availability of information (Mazaheri, et al., 2011). Consumers use the Internet in order to collect information about products and services for future purchases.

Liang and Lai suggest that the online shopping process is quite similar to the traditional one and the consumer decision process can be divided into five stages: problem recognition, search for information, evaluation of alternatives, choice and outcome evaluation (Liang & Lai, 2000). This five stage model was first described by Engel, Kollat and Blackwell and it is now the most widely accepted model that describes best the decision-making process of consumers (Darley, et al., 2010).

McKinsey & Company introduced another model of the consumer journey, which includes a number of new concepts that can affect the decision-making process of consumers. The McKinsey model has four basic stages: initial consideration, active evaluation, moment of purchase, post purchase (Court, et al., 2009). This model suggests that consumers have an initial consideration set of brands in mind, as they

are exposed to a variety of brands all the time. So when they are in need of a new product the initial consideration set of brands is created. During the evaluation stage, more brands are added to the initial consideration set and are being examined. At the moment of purchase one brand is selected and then follows the post purchase stage, in which “consumers shape their opinion for every subsequent decision, as the journey is an ongoing cycle” (Court, et al., 2009).

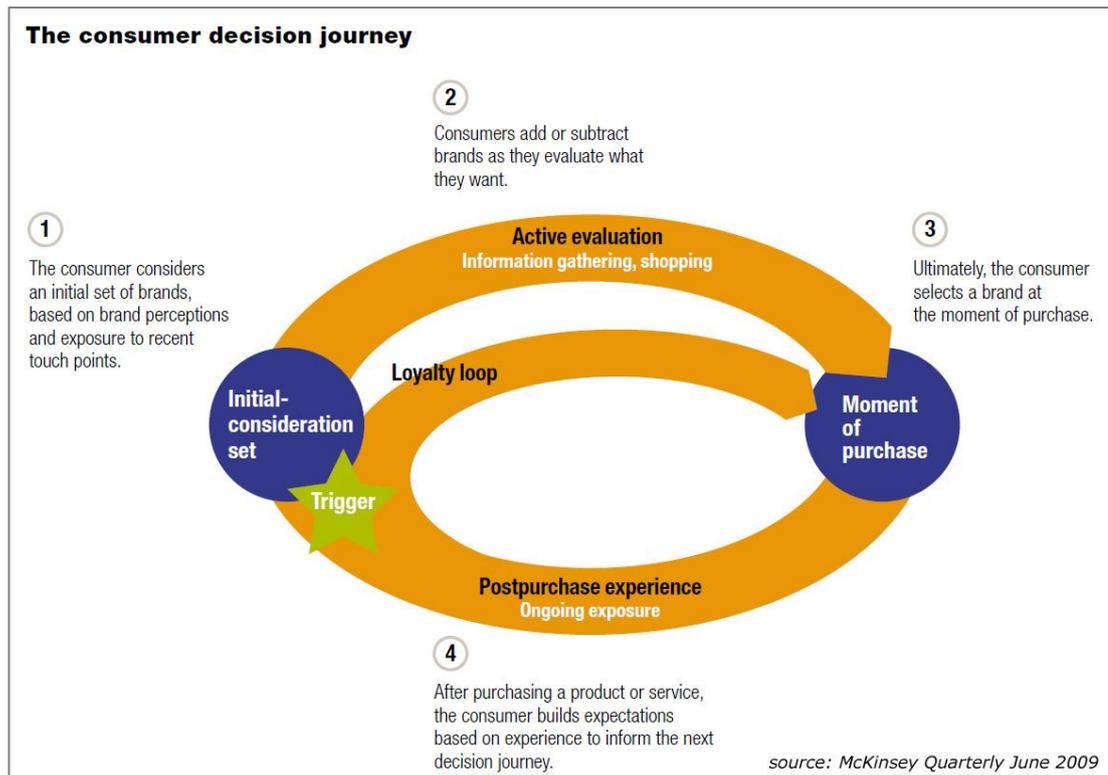
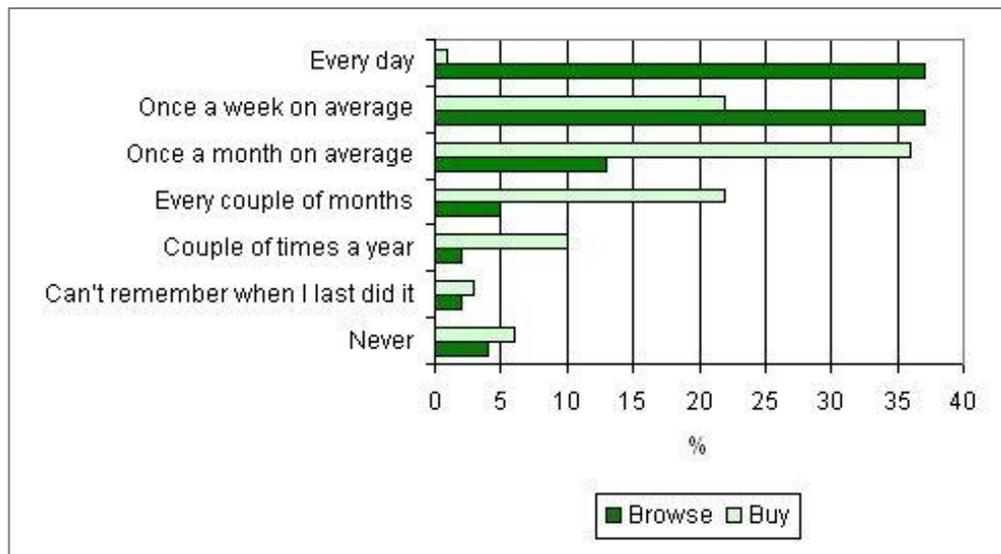


Figure 2-2: The consumer decision journey by McKinsey (Court, et al., 2009)

Both models include the concepts of research and consideration set. The stage of research has always been a critical part of the purchase process and the Internet has become a valuable tool for buyers who want to examine all options before buying. Consumers use the Internet to search for products, special offers and promotions, read reviews, and compare prices. According to Mintel and based on a survey conducted in November 2009, 37% of the online shoppers used the Internet for browsing and 20% for buying once on an average week (Mintel, 2010). Figure 2-3 show how often consumers in the UK use the online channel to browse and purchase goods.



**Figure 2-3: How often consumers go ‘online’ to browse and purchase goods, November 2009**

However, even though the number of people who access websites for product information is constantly growing, there is still a part of consumers that has never bought something online. Koufaris points out that one of the most important questions that organisations have to consider is “whether online customers think and act differently than their offline counterparts” (Koufaris, 2002).

There is a significant number of consumers spend more time online for searching information than actual purchasing. They use the internet for browsing and gathering information at the early stage of the purchase process and then buy the products in store. Several authors suggest that credit card and privacy issues are some apparent barriers that may prevent shoppers from buying online (Hoffman, et al., 1999) (Forsythe & Shi, 2003). Based on the results of an exploratory study conducted by Forsythe and Shi, the most common concerns regarding online purchasing, that expressed by users are (Forsythe & Shi, 2003):

- Difficulty in places order online
- Credit card trust issues
- Privacy and confidentiality concerns
- Potential delays in receiving merchandise

- Wrong product dispatch

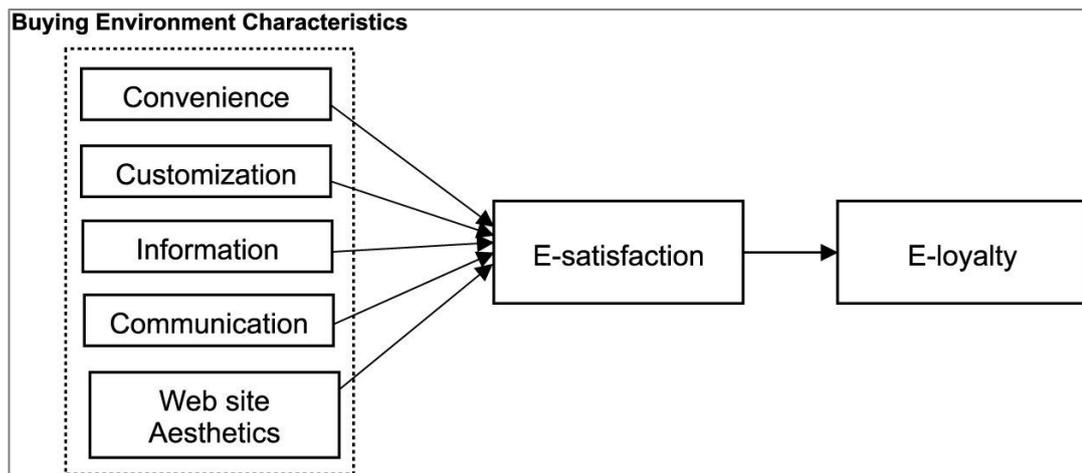
In addition, online shoppers cannot depend on their five senses for buying; they can't see and touch the products in person. Instead they can only depend on limited representations such as the descriptions and images (Koufaris, 2002).

Apart from that, Johnson suggests that lack of trust may be the primary reason that could make shoppers leave a website without purchasing (Johnson, 2007). It is a challenge for organizations to understand how the online environment supports and affects the purchase process. Effective customer support and customer-oriented services can help companies build trust and attract customers to shop online. Besides in the customer-oriented market system effective customer support is more important than product offerings or low prices (Singh, 2002). By building an appealing website environment and making online shopping an enjoyable experience, companies can influence shoppers to make online purchases.

For example a well-designed website that has good navigation options, search functions and shopping aid functions can influence both traffic and overall sales. An attractive buying environment creates a pleasant shopping experience and could have a positive impact on purchase intentions (Li, et al., 1999).

According to Kim *et al.* the following buying environment characteristics play a key role in achieving the e-satisfaction and can affect consumers' purchase decisions:

- convenience
- customization
- information
- communication
- web site aesthetics



**Figure 2-4: Buying Environment Characteristics (Kim, et al., 2009)**

Apart from the environment characteristics, marketers should also take into consideration that purchase behaviours can also be affected by the personal characteristics of each user such as culture, social group, gender, etc. Cheung *et al* proposed a model for analysing online consumer behaviour that takes into consideration the consumers' and product characteristics, environmental influences and merchant and intermediary characteristics (Cheung, et al., 2005). Consumer characteristics can refer to demographic variables but also to “consumers shopping orientations”, which refers to general shopping behaviours such as economic, store-loyal, price-oriented, brand-loyal and impulse shopper (Chang, et al., 2005).

## **2.4 Consumer Search Behaviour**

Searching for information is a key concept in the study of consumer behaviour and plays an important role in the decision making process. It is the second stage of the 5-stages decision making model and is a critical stage as information from different sources is needed before consumers make their final purchases. As the literature suggests it is an integral part of the problem-solving process in any information environment (Engel, et al., 1993) (Hodkinson & Kiel, 2003).

Search behaviour can be divided into different stages, depending on customer's knowledge of the market, the products and the number of retailers. Information

requirements and the frequency of purchasing are among the main factors that can affect the research process (Sproule & Archer, 2000). When customers want to buy a product for the first time they usually enter a concept-forming stage (Kaas, 1982). This means that the buyer searches information so that he can shape an image about the product characteristics and the relevant brands. This stage will result in the identification of the choice criteria and the form of an “awareness set” of brands (Kaas, 1982). When the choice criteria have been formed, consumers enter the “brand-identification stage” in which they need to examine and compare brand specific attributes and offers. During this process the original awareness set will be limited to a manageable set of potential brands (Sproule & Archer, 2000) that Kotler defines as consideration set (Kotler & Armstrong, 2007). On the contrary, if a consumer is already a frequent buyer of a specific product then he skips the first stage and enters directly to the stage of brand identification.

#### **2.4.1 Consumer Search Behaviour**

Information searching is the basis for the purchase decision process, both for the offline and the online environment. In the case of online purchases, consumers are usually using the Internet as their main resource for information seeking.

Online search behaviour has mainly two components; the web-wide search and the intra-site search (Hodkinson & Kiel, 2003). When consumers use an online search engine in order to locate the websites that will be used as the main information sources, we call it web-wide search. On the other hand, when consumers look for information within a relevant website is called intra-site search. Consumers on the “concept-forming stage” are more likely to perform web-side research, while consumers who are already familiar with the products and the market usually conduct intra-site search.

In addition, the activities of web-wide and intra-site search can measure the breadth and the depth of the online research. The concepts of breadth and depth refer to the number of individual web sites visited and the amount of research conducted within these websites. According to Hoffman and Novak (Hoffman & Novak, 1997) consumers search activity can be useful web metric for businesses and marketers and can help them develop marketing activities and interactive customer environments.

## **2.5 Marketing Strategies in the Telecommunications Market**

The mobile telecommunications industry is a very dynamic industry and has witnessed a substantial growth during the past twenty years. The rapid increase in market size and the huge growth of smartphone penetration rates created new business opportunities and more and more companies are interested in entering the telecoms market. Traditionally, mobile services were offered by the national telecommunications operator, which most times was the builder and the owner of the initial mobile infrastructure (Jaspers, et al., 2007). Gradually, with the liberalization and deregulation of the telecommunications industry new mobile networks operators (MNOs) entered the market with the aim of providing new services and products.

The technological developments and the rich base of potential customers made an extensive variety of companies and brands willing to enter the mobile telecommunications market. These new entrants are called mobile virtual network operators (MVNOs), own little or no network infrastructure and do not have their own spectrum license (Banerjee & Dippon, 2009). Instead, they must purchase network capability from MNOs and offer competitive services under their own brand name. MVNO's main try to attract additional users and create extra-value with their well-known brand names (Jaspers, et al., 2007) or develop new services for specific market segments that MNOs ignore (Banerjee & Dippon, 2009). The primary goal for an MVNO is to make profit by satisfying the expectations and needs of the chosen customer segment. Therefore, MVNOs need to develop and adopt business strategies that will help them accomplish these goals.

MVNOs base their strategies on a variety of factors but the most usual are (Kiiski & Hämmäinen, 2004): the customer segment they target, the technological infrastructure they own and their relationship with a MNO partner.

### **3. Research Methodology**

The purpose of this chapter is to provide an overview of the research methodology and define the research focus and the expected results of this project. In addition, it presents the primary data sources that will be used for this research and explains the methodologies that will be used for their analysis.

#### **3.1. Research Focus**

New technologies and the Internet are transforming the business markets and online marketing is increasingly integrated into the overall marketing strategies of each company. Companies from all industries moving online in order to establish new communication and distribution channels with their customers, gain insights about their purchase behaviours and develop strategies that will enable them outperform their rivals.

As presented in previous chapters, over the years many researchers and academics have acknowledged the importance of e-commerce and the fact that both businesses and consumers can gain advantage by using it. In addition, many research models and frameworks have been developed in order to analyse and predict consumers' online behaviour. Web analytics models have also been developed in order to measure the performance of a website and analyse the online data that are being collected from panel data or other online measurement methodologies.

For the purposes of this study panel data from ComScore and Alexa Online will be used in order to measure and analyse the performance of mobile operators' websites. Based on the analysis of these data and the literature review that was presented earlier the research questions posed in the current project are:

- How can online performance measurements, such as number and share of unique visitors, be interpreted in the offline world and how can these measurements affect the future marketing strategies of a firm?

- What's the connection between online unique visitors and the number of real customers?
- What are the connections between unique visitors, online sales and the overall sales of a company?
- What strategies should companies develop in order to improve their online performance, generate traffic and increase their online sales?
- How are consumers carrying out their research and what is the size of the online consideration set in the telecommunications market?

ComScore and Alexa collect data about the performance of a variety of websites. However, only with the right analysis these data will provide companies with insights into their websites online performance and will help them develop strategies to improve their business operations online and offline as well. It is worth mentioning that surveys have shown that even though companies store many terabytes of clickstream data and cookies and also invest heavily in Web analytics tools, only few of them know how to use these data effectively (Sen, Dacin, & Pattichis, 2006).

### 3.2. Research Framework

#### Generic Framework

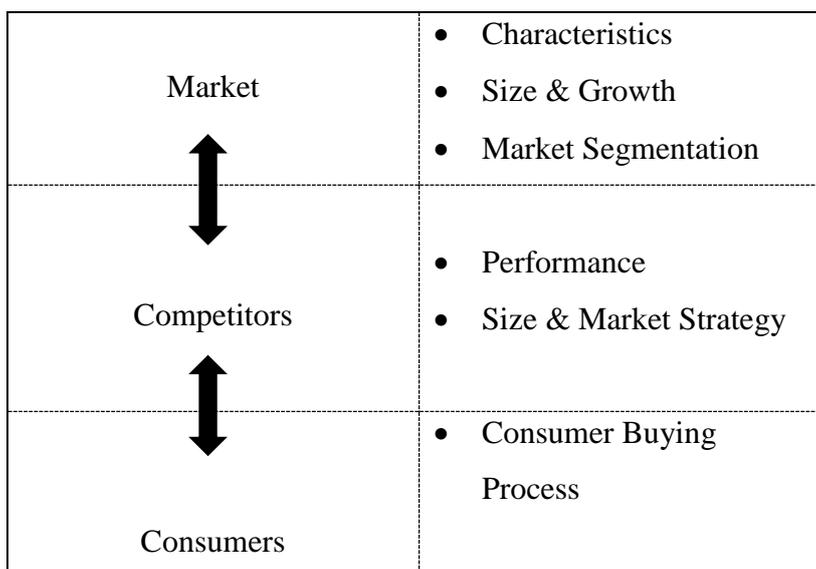


Figure 3-1: Generic Framework - prepared by the author

The purpose of this study is to analyse the online marketing strategies of the main mobile operators in the UK and Germany and interpret online consumer behaviours. Figure 3-1 presents an overall conceptual framework that includes the main entities to be researched. It also shows the possible linkages between the three entities. The two-way linkages between consumers and competitors and competitors with markets emphasize the interactions between these entities. It also suggests that in order to analyse each entity and its characteristics, it is important to understand how these entities are connected and interact with each other.

This framework will be used in order to analyse the UK and the German markets and present the online marketing strategies of each competitor.

For the online market analysis, it is important to evaluate its main characteristics such as the size and growth and also discuss and forecast its future development. Porter's five forces model will be used to analyse the competitive strategies of the dominant operators in each market.

### **3.3. Market and Competitive Strategies Analysis**

#### **3.3.1. Porters Five Forces Analysis**

Telecommunications industry is one of the most competitive markets both in the UK and Germany. However, in order to understand the competitive strategies of each operator, it is important to analyse first the industry's structure and dynamics. Porter developed a framework that facilitates the analysis of an industry by identifying five key groups of forces that can affect competition. He suggests that customers, suppliers, substitutes and potential entrants are all "competitors" and are able to affect the performance of a firm (Porter, 2008).

When the forces are intense it means that the competition in this industry is really high and as a consequence almost no company are more profitable than the others.



Figure 3-2: Porter's five competitive forces (Porter, 1980)

### 3.3.2. MVNO's Marketing Strategies

The UK and German telecommunications market have both a great number of MNVOs, offering a plethora of concepts, formulas and services. In 2010, MVNOs' market share reached 10% in the UK and 20% in Germany (Eurostat, 2011), (Faesch, 2011).

In order to examine and analyse the online and general marketing strategies of each MVNOs, we will classify each operator based on the following criteria:

- Low price
- Service differentiation
- Customer Focus

### 3.4. Internet Measurements Methodologies

Marketing research techniques, such as surveys or personal interviews have always been used by marketers in order to collect data which will help them analyse and understand consumer behaviours. Competitive business environments demand extensive market research so that firms can understand and fulfil their customers' needs. Since online retailing is constantly growing, now companies need data about consumer online activity in order to develop competitive internet marketing strategies and make reliable forecasts. Web analytics tools provide companies with a collection of data about a website's traffic, page views and unique visitors. The analysis of these data can offer insightful information about the performance of a web site and the user experience, which can help companies define their online strategies and set business objectives.

The principal ways to analyse a website's activity are

- Site-centric (Census or Server-Based Audience Measurements)

The most common sources to collect site-centric data are the web server's log-files or the page tag logs. Site-centric data are usually collected directly by the website owner through commercial software or by web analytics companies that act on behalf of the owner. Server logs are electronic text files that are automatically created and record all the request activity made to the server. Log files collect a variety of data such as client IP address, date, time, referrer and other. Page tag logs are similar to server logs but it also one involves a Java script tag that is placed on every website's page. Tags can be places on web pages, videos, photos or ads and every time this content is assessed a census tag call is recorded by the server.

The analysis of these data can provide accurate information about the website traffic and performance. Google, WebTrends and Adobe are recognised companies that use this method.

- User-Centric (Online Panel-Based Measurements)

User-centric data are collected in a different way since this method involves the recruiting of a sample panel of identified Internet users, who have previously agreed to share their online usage data. In addition, tracking software is installed on the panellist's computer, which records the user's browsing activity and purchase behaviour across different web sites.

(Mullarkey, 2004). The analysis of these data can provide information about individual behaviour since each panellist is observed over long time periods. Nielsen, ComScore and Alexa are the most recognised panel-based measurement companies.

### **3.4.1. Panel Data**

According to Gerald Lohse “panels are used widely in market research in order to study consumer purchase patterns, test new products and evaluate promotional campaigns” (Lohse, et al., 2000). Panel data is multi-dimensional dataset which contain information about the behaviour of a random sample of entities that have been observed over time. Online panels are groups of people who have agreed to give their feedback and participate in online surveys. By using panels to collect data, companies can understand their consumers’ decision-making process and develop strategies that will improve their customers’ Web experience. The advantage of panel data is that they provide information about consumer behaviour over time, which means that companies are able to compare responses and detect changes from one time period to another. Even though the collection of panel data could be expensive to establish initially, the cost of panels can be lower than the collection of cross-sectional or time series data over the long term. Apart from that, panel data can collect more information and are more accurate than cross-sectional data. (Lohse, et al., 2000)

### **3.4.2. ComScore Inc.**

ComScore is a digital business intelligence system that uses very large panels of online users to collect and generate unique data into online consumer behaviour. It was founded in 1999 and its objective was to provide an accurate view of online users’ activity, Web usage and buying behaviours based on a 2 million person global panel.

ComScore introduced a hybrid methodology called Unified Digital Measurement (UDM), which is a blend of Server-Based Audience Measurement and Panel-Based Measurement. This approach combines measurements from the 2 million person comScore global panel with server-based metric techniques such as tags placing. Participating companies place tags on their website content and every time this content is accessed, comScore servers record the tag calls.

UMD measures the traffic of a website, provides geographical information about the website audience and examines the visitors' online activity and behaviour. In addition, it offers a range of metrics such unique audience, page views and time spent as well as visitor loyalty.

### **3.4.3. Alexa Internet Inc**

Alexa is Web Analytics company that provides commercial web traffic data for over 30 million websites worldwide. It was founded in 1996 by Brewster Kahle and Bruce Gilliat and its main purposes were to provide accurate and free statistical data for all websites. Alexa is currently a California-based company and a subsidiary of Amazon.

Alexa's traffic estimates are generated by using thousands of different types of toolbars and add-ons that are compatible with Google Chrome, Firefox and Internet Explorer. Alexa toolbars is a free service and can be used by site owners in order to create add-ons that will engage their visitors and increase traffic on their websites. In addition, Alexa has made available a variety of tools for developers, such as the Alexa Toolbar Creator so they can create custom toolbars and include Alexa products in their websites.

### 3.5. Web Analytics Framework

A website's effectiveness and performance can be measured by considering a list of factors and criteria. Web analytics companies provide companies with some key measures in order to define online distribution. These are:

- Visitors (total unique visitors, average daily visitors, reach)
- Visits and pages (total visits, total pages viewed, average visits per visitor)
- Time spent (total minutes, total visits, average minutes per visit)

#### 3.5.1. Panel Data Analysis

ComScore provides us with data about the performance of the websites and the behaviour of consumers. By analysing online panel data we can gain insights into the behaviour of consumers in the overall market and the level of their interaction with one specific or multiple retailers.

For our analysis we will use three different kinds of ComScore reports and combine our findings in order to interpret consumer behaviours towards the major operators.

<b>Report</b>	<b>Analysis</b>	<b>Findings</b>
Key Measures report	<ul style="list-style-type: none"><li>• Overall behaviour</li><li>• Interaction with a specific retailer</li></ul>	<ul style="list-style-type: none"><li>• Relation between the online and the traditional channel</li><li>• Website's performance</li><li>• Usage Intensity</li></ul>
Cross-Visiting report	<ul style="list-style-type: none"><li>• Cross-visiting behaviour across multiple websites</li></ul>	<ul style="list-style-type: none"><li>• Extent of cross-visiting rates</li></ul>

Audience report	Duplication	<ul style="list-style-type: none"> <li>• Online consideration set</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-purchase process behaviour</li> </ul>
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**Table 3-1: Com Score Data Analysis Methodology**

The main calculations of the analysis are:

**Overall Behaviour and Adoption of the Internet/Reach:**

In order to examine the overall adoption of Internet in a sector we need to understand the concept of reach. Reach is a metric that shows the portion of the internet users that using a particular website (Kotha & Rajgopal, 2004) and it is based on the number of unique visitors. Unique visitors’ metric gives us the number of users who have visited a website in a specific time period and are measured only once. We calculate the relation between the online visitors and the consumers of a specific retailer in order to find metric shows the ratio between the share of unique visitors and the share of customers.

$$Relation\ UV\ and\ Customers = \frac{Share\ of\ Unique\ Visitors}{Market\ Share}$$

If this ration is greater than one then it means that behaviours of the online and the offline channel are different and the website is over performing. If it is equal to one, then consumers behave in similar ways online and offline. If the ratio is less than one then the operator’s website underperforming and it is not being visited enough by its customers.

**Cross-Visiting Behaviour**

By analysing the number of cross-visitors, we can examine how online users interact with different competitors. Buyers in their pre-purchase stage usually visit different retailers in order to collect information about products and services and compare prices. We can calculate the percentage of cross-visitors as a portion of the total visitors of a retailer and then divide it to the share of customers.

$$Relation\ of\ Cross\ visitors\ and\ customers = \frac{Share\ of\ cross\ visitors}{Market\ Share}$$

## **Consideration Set**

As consideration set, we define the number of websites visited by byers while being on the pre-purchase stage. In order to calculate this metric, the total number of unique visitors of all the competitors is added up. Then we subtract the number of users who have visited only one website, as these users are probably customers that make use of e-services. This number is shows the total visits of consumers who have visited more than one retailer. We call these users researchers, because they are probably visiting a number of retailers in order to search and compare products. Then we divide this portion by the number of cross-visitors.

$$\text{Consideration Set} = \frac{\sum UV - \text{Number of UV who have visited only one website}}{\text{Number of researchers}}$$

## **Part II – Data Analysis**

### **4. The Telecommunications Market in the UK**

#### **4.1. Mobile Market Overview**

The UK telecommunications market was among the first markets in Europe that were deregulated in the early 1980s. Mobile telecommunications were introduced in 1983 and Cellnet (a joint venture of BT Group and Securior) and Vodafone were the only operators that were licenced to provide national cellular radio networks. Two years later the two cellular operators launched their analogue network and began commercial service. This duopoly period ended in 1991 with the liberalisation of the telecommunications market and two more licences awarded to Mercury One2One and Orange.

For the next decade Vodafone and Cellnet were the dominant operators in the UK market providing wide network coverage, availability and competitive prices. By the end of 1998, there were 34 million mobile phone users and the penetration level in the UK was over 60% (Industry, 2001). Mercury One2One was purchased by Deutsche Telecom and rebranded to T-Mobile in 2002. In addition, Cellnet was rebranded to O2 and two years later was acquired by Telefónica, a Spanish telecommunications company. Vodafone and O2 continued to dominate the market until 2010 when Orange and T-Mobile merged and Everything Everywhere was formed. Since then EE has become the largest mobile network provider with 32% market share and a mobile customer base of around 26.2 million.

The UK mobile sector experienced phenomenal growth during the 2000s and revenue from mobile services grew by an average of 12% a year over the past decade (Figure 4-1). Telecommunications market has become one of the most important sectors in service marketing and the mobile penetration rate in the UK stands at more than 100% (Shukla, 2010).

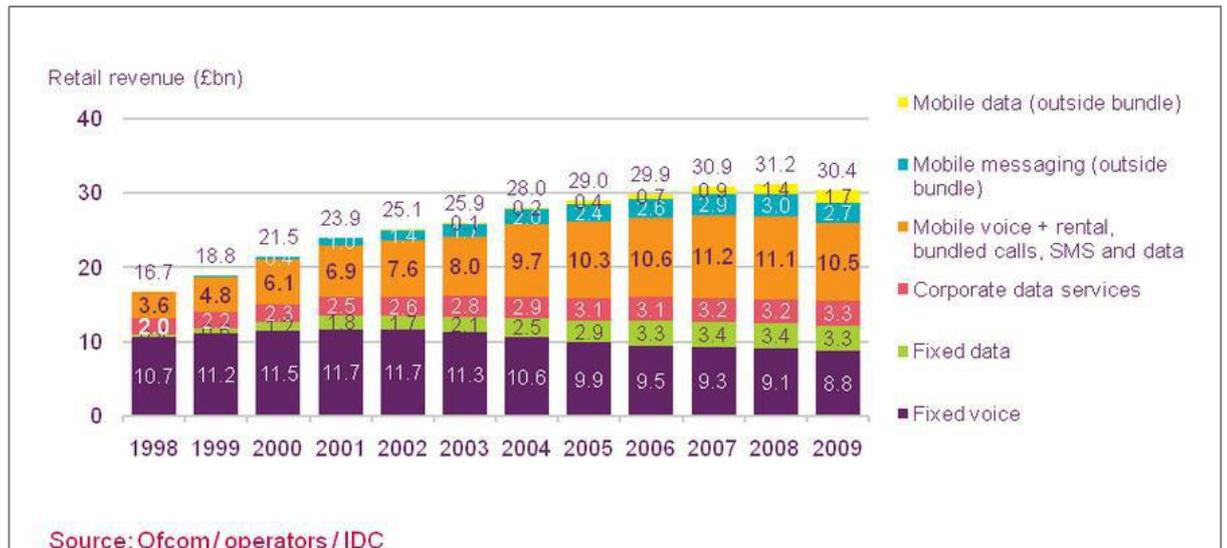


Figure 4-1: UK Telecoms industry retail revenue during the 2000s

## UK Market & Competitive Strategies Analysis

As described in previous chapter (3.3 Research Framework) one of the frameworks that will be used to analyse the competition in the UK market is Porter’s five forces model. Each of these competitive forces will be considered and applied to the UK Telecommunications market in order to show how these forces affect the performance of the market.

- The bargaining power of buyers

Buyers in the UK telecommunications industry hold a great amount of power. There are three main operators and almost a dozen of smaller ones and this means that customers have a great variety of telecom products and services and they can choose the products that best fit their needs. In addition, most products and services are standardized and there is no differentiation. So if a customer is not satisfied by one operator’s price, then he can easily switch and buy the same product from a different vendor. A couple of years ago customers didn’t change operators easily because they didn’t want to lose their personal mobile number. However, mobile number portability enables users to retain their telephone numbers when changing from one mobile operator to another, which makes switching cost even lower.

However, the buyer power can vary between the different market segments; for example enterprise customers may rely on products which are customized to fit their business needs and are locked into long-term contracts.

- The bargaining power of suppliers

The supplier power mainly comes from supplier switching costs, the differentiation degree of the products they offer, importance of quality, and strength of the distribution channel (Porter, 2008). In the telecoms industry the main suppliers are the cell phones manufacturers and their bargaining power varies depending on the brand name and the size of the company. For example, brands such Apple and Samsung that are particularly popular among the consumers can be considered powerful suppliers. They can raise their products' prices or squeeze profitability out of an industry in order to capture more of the value for themselves (Porter, 2008). In addition suppliers who offer differentiated and popular products that cannot be substituted easily (for example Apple with the iPhone or the iPad) have the power to negotiate prices with telecom operators. However, network operators' stores are among the main distribution and marketing channels for cell phones manufacturers. Therefore, since phone manufacturers and operators depend on each other, the bargaining power of suppliers is moderate.

- The threat of new entrants

The threat of new entrants in the UK telecom sector can be characterised as low. The biggest barriers for new entrants are the infrastructure costs, the government regulations and the fact that existing operators have already obtained much of the market. The cost for entering the telecoms industry is very high for a start-up company and huge capital investment is required in order to cover the expenses of creating and maintaining a physical network. Additionally, government regulations may place certain restrictions and burdens because all new operators should get approval by the UK Telecoms regulator Ofcom in order to offer mobile services. Apart from these barriers, new entrants would have to compete with the existing operators, who have already dominated the market and have built strong relationships of trust and loyalty with their customers.

- The threat of substitute products or services

In a competitive environment such as the UK telecommunications market, the threat of substitute product or services is very high. Switching costs are low and consumers can easily switch operators if they are not satisfied with the services that an operator offers. Customers can easily find cheaper alternative operators that offer the same services and deliver greater value to the end user. In addition, the quality of internet calls has been improved greatly over the past years and internet telephony has become extremely popular among consumers. Broadband companies such as Google and Skype offer the benefits of free calls or other Internet based telephony services in competitive prices.

- Rivalry among existing competitors

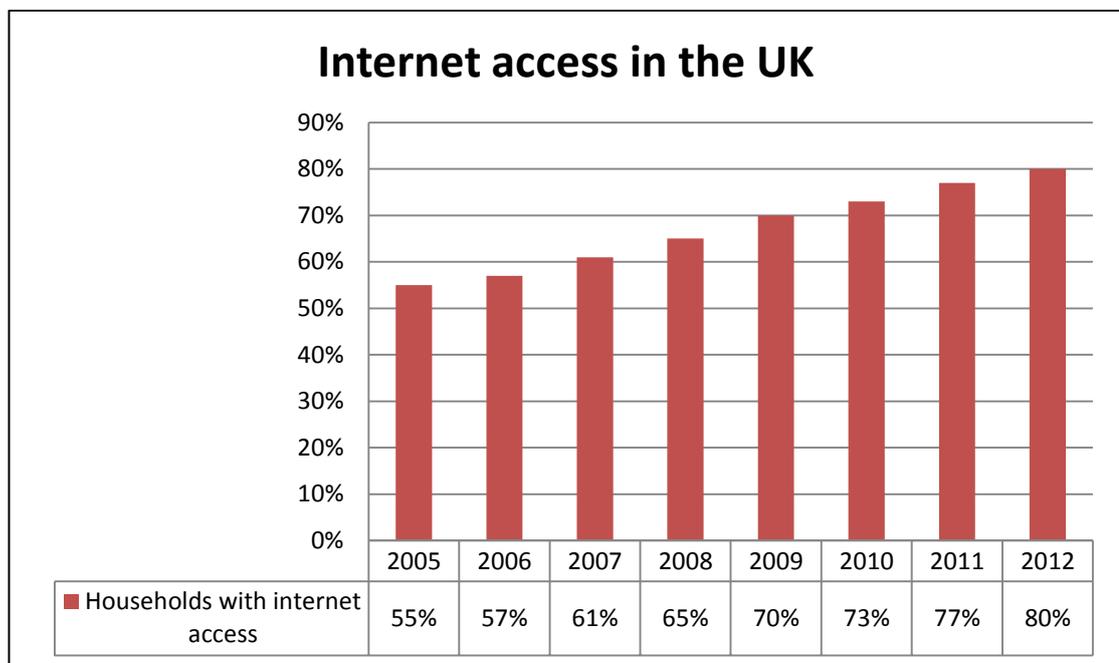
The rivalry among existing competitors is very high in the UK. Since 2010, EE has become the largest mobile network operator in the UK with around 28 million customers, thanks to its combined customer base of Orange and T-Mobile. O2 and Vodafone follow with 22.5 and 19 million UK customers respectively. The three market leaders follow multi-brand strategies and lease bandwidth to smaller operators such as GiffGaff, Tesco Mobile, Asda Mobile, etc. As the mobile industry becomes increasingly mature, customer segmentation becomes a necessity so that companies can target their customers better and provide them with services that fit their needs. So rivalry comes from different sources in different segments. For example services that target customers with low cost programs and contracts are almost the same for every operator. However, when it comes to premium customers, such as enterprise accounts then the competition is higher and operators try to differentiate their services in order to outperform their rivals.

## **4.2. Internet and use of E-services in the UK**

In the UK Internet and online services have been gaining popularity over the past decade and e-commerce has been embraced by consumers and retailers. The UK market is now the largest per capita e-commerce market and the second-largest online-advertising market globally (Boston Consulting Group, 2010). According to the Boston Consulting Group in 2009 the Internet contributed an estimated £100 billion, or 7.2 % of GDP to the U.K. economy. Most retailers have incorporated the

Internet into their business practices and try to develop online marketing strategies that will help them reach more customers.

In addition, Internet penetration in the UK is high and the majority of people have Internet access. In 2012, 21 million households in the UK (80 per cent) had Internet access compared to 19 million (77 per cent) in 2011 (Office for National Statistics, 2012). The number of people who use the Internet on a daily basis has also risen and in 2012, 33 million adults accessed the Internet every day, which is more than double the 2006 figure of approximately 16 million ((Office for National Statistics, 2012). Figure 4-2 shows that the adoption of the Internet is relatively advanced and the use of the Internet by British households has been gradually increased over the past few years.



**Figure 4-2: Internet Penetration in the UK**

The rates of Internet penetration are important and e-commerce plays an important role during the whole customer journey; from online research and price comparison to the final purchase decision. However, it is also important to examine the use of the Internet for research as well as purchasing purposes.

Most consumers use the internet to research, collect information about products and compare prices across different suppliers. According to a survey conducted by OxIS in 2011, 84% of the UK population went online to research products and compare

prices and almost 86% bought something online (Dutton & Grant, 2011). These numbers indicate that consumers have not only accepted the Internet as a new shopping channel but also use it at their pre purchase stage in order to research products (Figure 4-3).

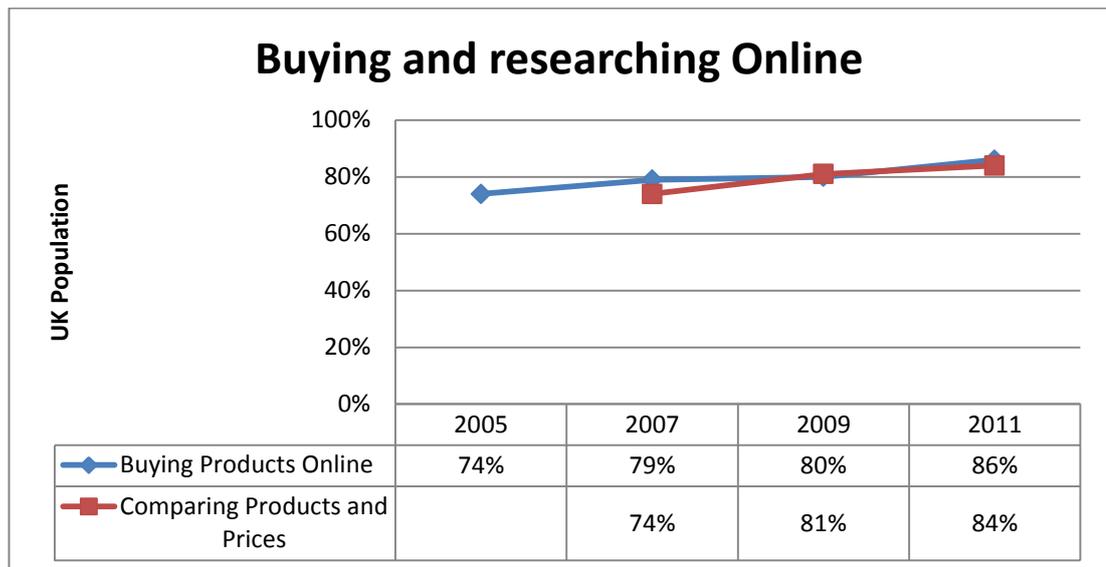


Figure 4-3: Use of the Internet in the UK (Dutton & Grant, 2011)

Additionally, the continuous increase of portable devices has become the driving factor for the rapidly growth of mobile Internet. The adoption of smartphones continues to rise and the demand for better mobile services will increase. During the past few years, there has been a continuous increase in the number of users who use portable devices in order to access the Internet. In 2003, even though 85% of the British population owned a mobile phone, only 11% of mobile phone users used their phone for online services. By the end of 2010, 97% of British people possess a mobile phone and almost half of them used their mobile phone to access the Internet (Dutton & Grant, 2011). The popularity of mobile devices such as smartphone and tablets is one of the main reasons that the demand for mobile data traffic is on the rise. By the second half of 2010, 12.8 million smartphones were in use, counting more than a quarter of all mobile phones (Group, 2010). Activities in mobile internet have become so popular that even those who don't own a mobile web-enabled device intend to buy one soon (Group, 2010). Smartphone penetration exceeds 60%

in the UK market and smartphones are becoming the most popular mobile Internet access medium (Young, 2012).

### **Main Online Activities on Mobile Operators' Websites**

Table 4-1 shows the main online activities that users can do when they visit an operator's website. The activities can be divided to those that are aimed at customers and those that are intended for all users. Activities such as online account management can be accessed only by customers, who have followed a registration and authentication process.

<b>Customers</b>	<b>Visitors/Researcher</b>
See offers/plans (upgrade to a new plan)	See offers/plans
See mobile devices (upgrade to a new one)	See mobile devices (buy one)
See account (top-up, see latest bill)	Get a free SIM
Customer Support/Help	Research on the provider
Store Locator	Store Locator

**Table 4-1: Online Activities for customers and users**

### **4.3. Competitor Analysis**

Telecommunications Industry in one of the most advanced and competitive markets in the world. This section introduces the UK mobile marketplace by analysing the profiles of the largest mobile operators.

Telecommunications industry in the UK is dominated by three major operators that maintain their own networks and command a considerable market share. All of them are part of multinational telecommunications corporations that provide mobile phone, landline, Internet, mobile Internet and other services.

These are:

- O2, owned by Telefonica Europe
- Vodafone, owned by Vodafone Group
- Everything Everywhere, a 50:50 joint venture between Deutsche Telecom (T-Mobile) and Orange S.A. (Orange UK)

In addition to those there are many virtual mobile phone operators that use the infrastructure of the above three. These are:

- Virgin Mobile using the EE network
- Giff Gaff using O2 network
- Tesco Mobile using the O2 network
- Vectone Mobile using the EE network
- Lycamobile using the O2 and EE network
- Talkmobile using the Vodafone network
- Asda Mobile using the Vodafone network
- Lebara Mobile using the Vodafone network
- Family Mobile (IKEA) using the EE network

Everything Everywhere is currently the largest mobile operator in the UK with a market share of about 32% in 2012. O2 holds 27% and Vodafone follows with 23%.

	<b>Operators</b>	<b>Customer Segment</b>	<b>Products</b>
<b>Group 1</b>	<ul style="list-style-type: none"> <li>• Vodafone</li> <li>• O2</li> <li>• Orange</li> </ul>	<ul style="list-style-type: none"> <li>• Consumers</li> <li>• Corporate users</li> </ul>	<ul style="list-style-type: none"> <li>• Post-paid,</li> <li>• Pre-paid</li> <li>• Premium services</li> </ul>
<b>Group 2</b>	<ul style="list-style-type: none"> <li>• Giff Gaff</li> <li>• T-Mobile</li> </ul>	<ul style="list-style-type: none"> <li>• Consumers</li> <li>• Students</li> <li>• Youth market</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-paid</li> <li>• Low-price services</li> </ul>
<b>Group 3</b>	<ul style="list-style-type: none"> <li>• Virgin</li> <li>• Three</li> </ul>	<ul style="list-style-type: none"> <li>• Youth market</li> <li>• Smartphone users</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-paid</li> <li>• Mobile data plans</li> </ul>

**Table 4-2: MNOs and MVNOs in the UK classified into groups**

## **4.4. Online Data Analysis**

### **4.4.1. Internet usage key measures**

#### **Visitors – Site Size**

The number of unique visitors represents the number of online users who visited an operator's website during a specific timeframe and are counted only once. In order to analyse the size and the audience of each website, we need to measure the number of its unique visitors and compare it to the number of customers of each operator. In addition, we calculated the share of unique visitors and the ratio of unique visitors to market share. Market share data and the number of mobile customers were gathered from the operators' websites and their annual reports, while all the online data were provided by ComScore reports. Based on the data in the report, Orange is the operator with the highest number of total unique visitors (3,533 thousand) followed by O2 with 3,080 thousand visitors. Vodafone and Three come next with almost the same number of visitors, 2,570 thousand and 2,218 thousand respectively. We notice that even though O2 has 22,500 thousand customers and Orange has 17,000 thousand, it seems that more people visit Orange website on a daily basis. This happens because Orange website is a web portal that does not only provide information about mobile products but also has a sub-domain with news and entertainment. According to Alexa, 56% of Orange website visitors go to the subdomain (web.orange.co.uk), which means that they interested in the news and entertainment section of the website. So, this portion of visitors was eliminated from our analysis, because it is clear that the purpose of these visits is not part of an online buying process. Hence, 56% of the total unique visitors were excluded and the number of unique visitors that we consider for our analysis is 1,554 thousand instead of 3,533.

	<b>Unique Visitors (000)</b>	<b>Customers (000)</b>
<b>O2</b>	3,087	22,500
<b>Vodafone</b>	2,570	19,000
<b>Three</b>	2,218	8,400
<b>Orange</b>	1,554	17,000
<b>T-Mobile</b>	1,505	9,000
<b>GiffGaff</b>	1,109	4,500
<b>Virgin</b>	34	865

**Table 4-3: Key Measures, ComScore, April 2013**

We see that O2 and Vodafone, the dominant operator in terms of customer number are also the leading players in terms of website traffic. Three follows closely with 2,218 thousand. Orange and T-Mobile, that both operate under the EE, record similar number of unique visitors; 1,554 and 1,505 respectively. Virgin comes in the last places with just 24 thousand unique visitors. We notice that Three has more online visitors than Orange, even though Orange has a significantly higher number of subscribers.

On order to be able to compare competitors based both on their online performance and the market performance, we calculated a relation between their number of unique visitors and their market share in terms of subscribers. Table 4-4 shows the relation between the online and the offline market channels. When the relation between the share of unique visitors and the market share is close to 1, then it means that the number of online users is relative to the number of customers.

	<b>Number of unique visitors</b>	<b>Share of Unique Visitors</b>	<b>Market Share</b>	<b>Relation (UV/Market Share)</b>
<b>O2</b>	3,087	26%	27%	0.9
<b>Vodafone</b>	2,570	21%	23%	0.9
<b>Three</b>	2,218	18%	10%	1.8
<b>Orange</b>	1,554	13%	20%	0.6
<b>T-Mobile</b>	1,505	12%	11%	1.1
<b>Giff Gaff</b>	1,109	9%	6%	1.5
<b>Virgin</b>	34	1%	3%	0.3
<b>Total</b>	12,078	100%	100%	-

**Table 4-4: Share of UV, Traditional Market Share and UV/Market Share ratio**

The table above shows that the dominant operators such as Vodafone and O2 have the highest numbers of unique visitors but the share of the online market is relative to their share of customers. So their website performance is according to their actual size. On the other hand Three and GiffGaff are very popular among online users. The relation between the two channels is higher than 1, which means the websites of these operators are over performing. Giff Gaff is a discount operator that has no physical stores, so it exploits the Internet as its main distribution channel. It mainly focuses on young customers and students that are keen on using the Internet as their main purchase channel. It seems that smaller operators such as Giff Gaff and Three can benefit from their online presence and reach more customers.

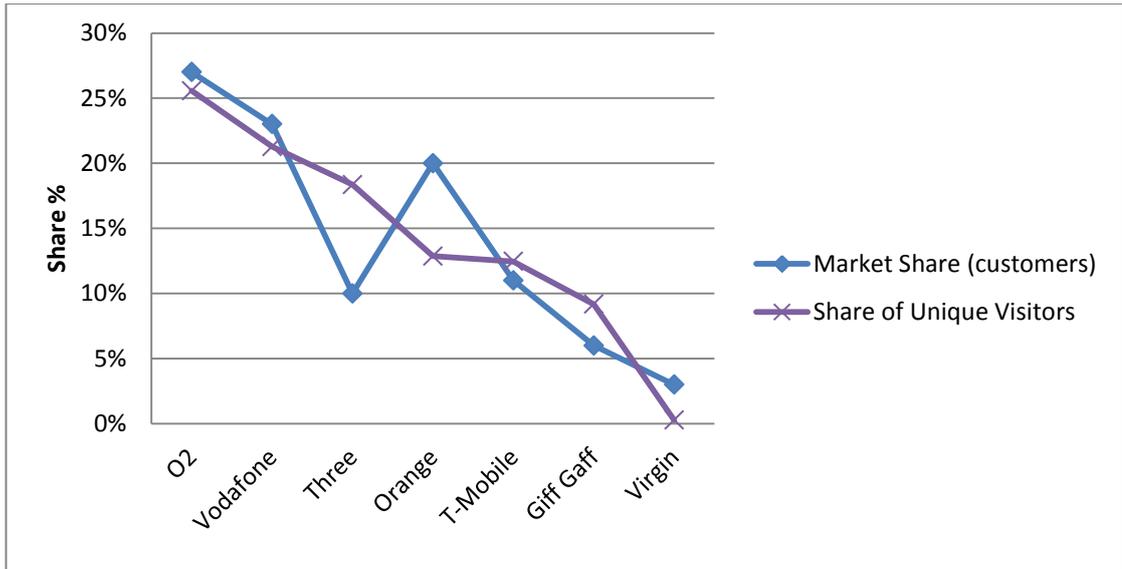


Figure 4-4: Share of unique visitors - Share of customers

### Reach

Reach refers to the total number of online visitors who have been exposed to the website and had the opportunity to interact and browse the website content. Table 4-5 shows an overview of operators' websites' visitors in terms of reach and average daily visitors. In addition, we calculated the relation between the number of daily visitors with the number of customers by dividing the share of daily of daily visitors with each operator's market share.

	Reach	Average Daily Visitors (000s)	Share of Daily Visitors	Relation (Share of Daily Visitors/Market Share)
<b>O2</b>	6.9	186.182	22%	0.90
<b>Vodafone</b>	5.8	153.320	18%	0.91
<b>Three</b>	5	198.352	24%	1.8
<b>Orange</b>	7.9	154.957	19%	0.65
<b>T-Mobile</b>	3.4	85.378	10%	1.09
<b>Giff Gaff</b>	2.5	57.347	7%	1.5
<b>Virgin</b>	0.1	1.271	0%	0.3
<b>Total</b>	31.5	835.850	100%	-

Table 4-5: Reach and Average Daily Visitors, ComScore, April 2013

## Visits and Page Viewed - Site Traffic

Site Traffic refers to the total number of visits and the total number of page views that shows how busy a website is during a specific timeframe. These measures can give us insights about the websites' popularity and can help marketers decide what measures and strategies need to be taken to improve the online presence.

We assume that the high numbers of visits and pageviews mean that a great number of people visit the website to search information about products and services. The following table shows the number of total visits and the number of total pages views. For each operator we calculated the number of pages that were viewed in each visit by dividing the number of total pages viewed to the number of total visits.

	<b>Total Visits (000)</b>	<b>Total Pages Viewed (MM)</b>	<b>Number of Pages Viewed in each visit</b>
<b>O2</b>	6,641	64	9.65
<b>Vodafone</b>	5,244	67	12.79
<b>Three</b>	9,474	38	4.02
<b>Orange</b>	17,393	178	10.3
<b>T-Mobile</b>	3,051	19	6.16
<b>Giff Gaff</b>	1,985	14	6.89
<b>Virgin</b>	44	0	0
<b>AVG</b>	10.958	54	8.3

**Table 4-6: Site Traffic - ComScore Key Measures January 2013**

Table 4-6 shows that Orange has the most popular and engaging website. However, as it mentioned earlier Orange website contains news and entertainment subsections. So it is difficult to distinguish the users who visited the website to research products from the ones who visited the website to keep up for the news. We notice that the leading operators (O2 and Vodafone) have the highest numbers of pages viewed in each visit. This means that these websites probably offer a greater deal of information organized in many pages and visitors have more opportunities for searching and browsing.

### Time Spent - Usage Intensity

Another factor that we should consider when analysing each mobile operators website performance is the time that visitors spent on the website. This will enable us to examine the websites' usability and accessibility. Longer visit duration indicates that users can navigate the website easily and explore it.

	<b>Average Minutes per Visit</b>	<b>Number of Pages Viewed in each visit</b>
<b>O2</b>	6.1	9.65
<b>Vodafone</b>	5.7	12.79
<b>Three</b>	2.5	4.02
<b>Orange</b>	6.7	10.3
<b>T-Mobile</b>	4.1	6.16
<b>Giff Gaff</b>	4.4	6.89
<b>Virgin</b>	4.5	0
<b>AVG</b>	4.9	8.3

Table 4-7: Usage Intensity, ComScore January 2013

O2 and Orange seem to have the most active websites. As we see, users who visit these websites stay on average 6.1 and 6.7 minutes per visit. Vodafone and Virgin follow with similar 5.7 and 4.5 minutes per visit accordingly, rates that are both above the average.

In order to interpret the time spent on a website, we should consider whether the user is researcher or a customer. Researchers are usually in the pre-purchase stage, which means that they are looking for information about products and services. If the user is a customer, then he probably visits the website to have online access to his account, pay or print bills, check usage or use other online services.

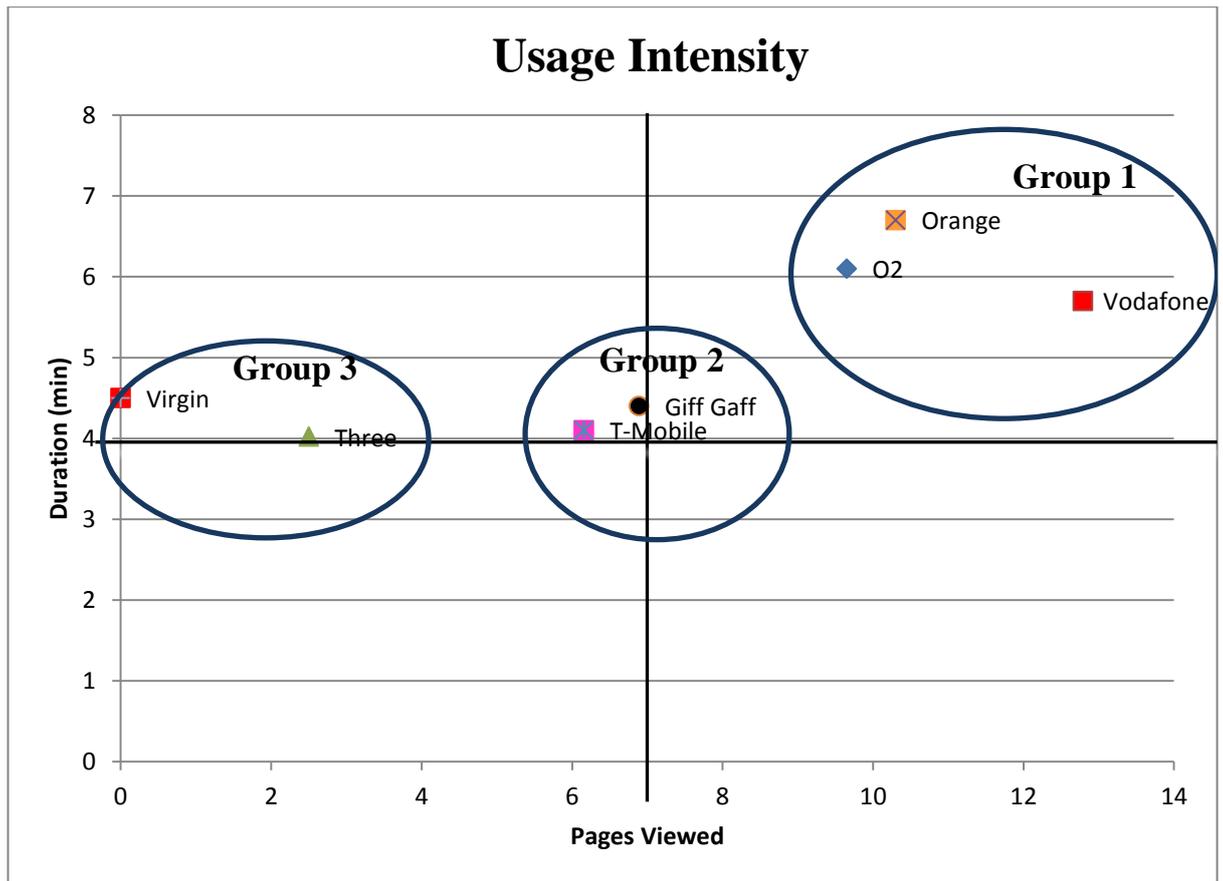


Figure 4-5: Usage Intensity, April 2013

On average, consumers spend 4.9 minutes and visit more than 8.3 pages every time they visit an operator’s website. We can say that this is a high intensity of use. Visitors who stay longer on websites and browse many pages bring more value to the company as they become familiar with the brand and the products and they are likely to make a purchase. However, sometimes high numbers of page views and longer visits may mean that the user cannot find the right product or use the website easily. We notice that Orange has relatively higher rates than the average because as was mentioned earlier its websites offers a variety of subsections such as entertainment and news. On the contrary, Three’s website is not used as much by online consumers and has the lowest number of average minutes and average number of pages visited per visit. Table 4-8 presents the operators classified into groups according to their strategic focus and their website performance.

	<b>Operator</b>	<b>Strategic Focus</b>	<b>Customer Focus</b>
<b>Group 1</b>	<ul style="list-style-type: none"> <li>• Vodafone</li> <li>• O2</li> <li>• Orange</li> </ul>	<ul style="list-style-type: none"> <li>• Premium Services</li> <li>• High Quality Network and availability</li> <li>• Post-Paid Services</li> </ul>	<ul style="list-style-type: none"> <li>• Consumers</li> <li>• Corporate Users</li> </ul>
<b>Group 2</b>	<ul style="list-style-type: none"> <li>• Giff Gaff</li> <li>• T-Mobile</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-Paid Services</li> <li>• Basic Services</li> <li>• Low Price Strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Youth Market</li> <li>• Average Consumer</li> </ul>
<b>Group 3</b>	<ul style="list-style-type: none"> <li>• Virgin</li> <li>• Three</li> </ul>	<ul style="list-style-type: none"> <li>• Product Differentiation</li> <li>• Focus on one customer segment</li> </ul>	<ul style="list-style-type: none"> <li>• Smartphone Users</li> </ul>

**Table 4-8: Strategic Groups**

#### **4.4.2. Shared Audience and Cross-Visiting Behaviour**

Site traffic and the number of unique visitors are major performance indicators of a website, but if we want to understand and interpret consumer behaviour we should also take into consideration the shared audience between the different market competitors. In the pre-purchase phase most consumers actively seek out information about products, offers and evaluate their options. Consumers usually visit more than one retailer in order compare prices and search for different products and services.

ComScore provides us with the cross visiting data that can give us insights about the total number of shared visitors between the main competitors.

The table below specifies the number of visitors in terms of hundred who have cross-visited between the main operators. For example, Vodafone and O2 share 482,000 visitors while T-Mobile and Orange share 395,000 visitors. It is obvious that the market Vodafone, O2 and Orange, which are the market leaders, share a great number of users. O2 and Vodafone share the greatest number of visitors (482,000), while Virgin and Orange share the lowest number of visitors (4,000). Virgin and GiffGaff, which are the smallest operators under study, share the lowest number of visitors in total than any other operator.

	O2	Vodafone	Three	Orange	T-Mobile	Virgin	GiffGaff
O2	-	482	397	463	296	5	179
Vodafone	482	-	344	454	353	6	188
Three	397	344	-	330	321	5	161
Orange	463	454	330	-	395	4	168
T-Mobile	296	353	321	395	-	6	125
Virgin	5	6	5	4	6	-	4
GiffGaff	179	188	161	168	125	4	-
<b>Total</b>	<b>1,822</b>	<b>1,827</b>	<b>1,558</b>	<b>1,814</b>	<b>1,496</b>	<b>30</b>	<b>825</b>

Table 4-9: Cross-Visiting between the main operators

In order to perform comparisons between the operators and understand better which operators have the highest percentages of shared audience, we need to find the share of cross-visitors for each operator. The share of cross-visitors can be calculated if we divide the number of shared visitors by the total number of all visitors. Then, we can calculate the cross-visitors distribution in order to find the relation between the share of cross-visitors and the share of unique visitors for each competitor (Table 4-10).

<b>Operator</b>	<b>Total cross-visitors (000)</b>	<b>Share of cross-visitors</b>	<b>Share of unique-visitors</b>	<b>Relation (Cross-Visitors / Unique Visitors)</b>
O2	1,822	19.44%	26%	0.7
Vodafone	1,827	19.49%	21%	0.9
Three	1,558	16.6%	18%	0.9
Orange	1,814	19.36%	13%	1.4
T-Mobile	1,496	15.96%	12%	1.2
Virgin	30	0.3%	1%	0.3
GiffGaff	825	8.8%	9%	0.9
<b>Total</b>	<b>9,372</b>	<b>100%</b>	<b>100%</b>	<b>-</b>

**Table 4-10: Cross-Visitors and Unique Visitors Relation**

We observe that GiffGaff and Virgin have the most loyal visitors as they share the lowest number of unique visitors. On the contrary, Orange and T-Mobile have the highest percentages of shared visitors, so we assume that their websites are mostly being visited by researchers who are comparing prices and products across different websites.

### **Cross-visiting Behaviour**

By analysing the cross visiting and shared audience reports from ComScore we can calculate the total number of shared visitors and examine how many user visit one or more than one websites. Table 4-11 shows cross visitors in terms of hundreds (000) and also as a percentage of the total unique visitors.

	<b>Unique Visitors (000s)</b>	<b>Unique Visitors (%)</b>
<b>Unduplicated Unique Visitors</b>	11,210	100%
<b>Duplicated Unique Visitors</b>	2,852	25%
<b>Unique Visitors who visited one website only</b>	8,385	75%

**Table 4-11: Consumer's cross-visiting rate, ComScore April 2013**

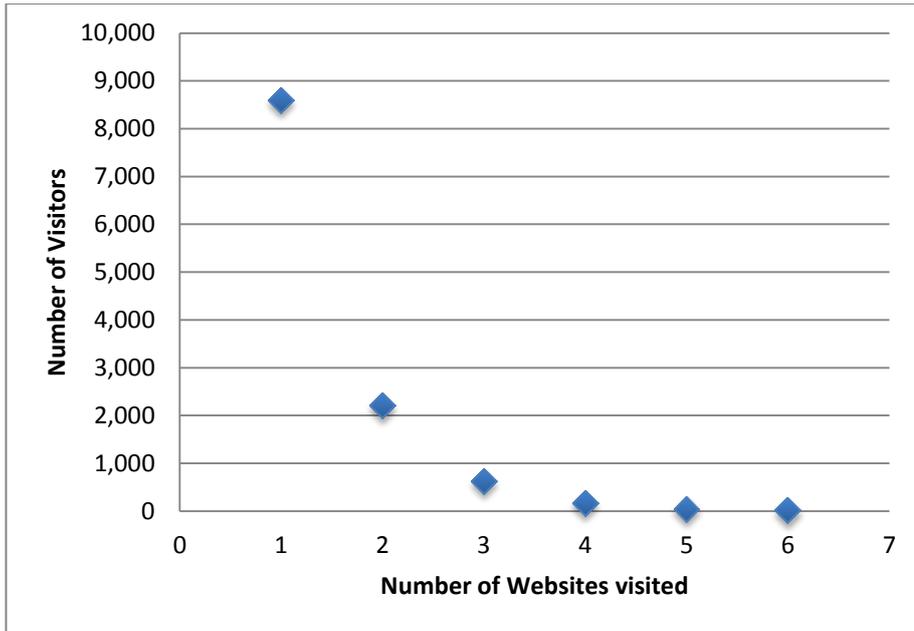
Unduplicated unique visitors are the total number of users who visit the websites of the UK mobile operators. Duplicated are those who have visited two or more websites. We assume that duplicated unique visitors are consumers who are at the stage of pre-purchase, so they visit a number of websites to research and compare products and services. We can call these visitors researchers. Mobile operators should focus on researchers because they are on their purchase decision-making process and they search for the best product offer. On the other hand, consumers who visit only one operator’s website are probably customers of this operator, so they accessed the website to use online services. Table 4-11 shows that out of the 11,210 thousand unique visitors, 75% are probably customers who use online services, while only 25% of them are potential customers.

By adding the number of unique visitors we can find the number of total visits to the operators’ websites. We call this number “Online Sales Opportunities” and it shows the size of the online channel within the industry. In addition, we calculated the online consideration set. This number shows the number of suppliers that buyers actively consider in their decision-making before purchasing a product or service (Holland & Mandry, 2012). The consideration set is also an indicator of the breadth of consumer research in the market. Table 4-12 shows the number of online sales opportunities and the consideration set in the UK.

<b>Online Sales Opportunities</b>	15,592
<b>Number of visits for e-services</b>	8,385
<b>Number of visits for research</b>	$15,592 - 8,385 = 7,207$
<b>Consideration Set</b>	$7,207 / 2,825 = 2.5$

**Table 4-12: Online Sales Opportunities, Consideration Set**

We observe that consumers in the UK visit on average 2.5 websites while being on their pre-purchase phase. The size of the consideration set is significantly smaller than expected if we consider that there are four major operators and more than ten smaller virtual operators in the market.



**Figure 4-6: Number of Visitors vs. Numbers of Websites**

Figure 4-6 shows the relation between the number of visitors and the number of websites that they visit during their decision-making process. We observe that the number of visitors decreases as the number of websites visited increases. As the report suggests, 8,835 thousand users who visit only one website are probably customers of this particular operator and their purpose of visit is probably to perform account management activities. The rest of the online visitors are probably conducting online research. It is worth mentioning that the number of users who visit all the websites is almost zero. This graph also confirms the finding that researches visit on average only 2.5 retailers.

The graph is created based on the theory of geometric series ( $\sum_{n=0}^{\infty} ar^n = a + ar + ar^2 + \dots + ar^{n-1}$ ) and the data from the audience duplication report.

The numbers of visitors were multiplied by a fixed amount called the common ratio (R), so that we would calculate the number of visits for each case. The report provides us the number of users who visited only one website, so we had to calculate the number of user who visited more than one website and add these numbers up in order to acquire the number of total visits. Since we can't calculate the exact number

of people who visited two, three or four websites, we calculate these numbers empirically.

$$R = 0.26$$

<b>Consideration Set</b>	<b>Number of Visitors</b>	<b>Visits</b>
1	8,385	8,385
2	2,230	4,461
4	593	1,780
5	158	631
6	42	210

**Figure 4-7: Data for the Geometric Sequence Graph**

## **5. The Telecommunications Market in Germany**

### **5.1. Mobile Market Overview**

German telecommunications market is one of the largest and most mature mobile markets in Western Europe. Since the 1990, the telecommunications sector has become a key part of the German economy and is one of the most important and profitable industries in the country. The continuous technological progress and the significant regulatory reform of the sector have affected the market's performance. The removal of monopoly rights by state-owned operators and the liberalization of the market facilitate the development of a highly competitive environment. The unrestricted market access to all forms of telecommunications allowed the entrance of multiple operators and led

The first non-military public mobile communications network was introduced in 1958 into Germany and was owned by the Deutsche Bundespost. The Deutsche Bundespost (German federal post office), a state-owned company, was responsible for all the post office and communication services. In 1989, it was split into three entities, one being Deutsche Bundespost Telekom. By the end of 1995 Deutsche Bundespost Telekom, the giant state-owned telephone company had built a massive infrastructure in Germany and was running a telecommunications service monopoly. In 1996, Deutsche Bundespost Telekom was privatized and became Deutsche Telekom. Since then, many things have changed and since 1998, that the market was fully liberalized, new licenses have been awarded and an increased number of operators have entered the market. The aim of market liberalization was not only to provide customers with improved price and services, better quality and product range, but also to enable the overall economic development of the sector (OECD, 2004). Nonetheless, only when analogue networks were replaced by digital networks, based on the GSM standard, competition started to increase. At the end of 1999, there were four major network operators sharing the market; Mannesmann/Vodafone, Deutsche Telekom, E-Plus and VIAG Intercom. These four GSM operators offered high network availability, quality of service and a variety of products and services for the consumers. The demand for mobile access started to

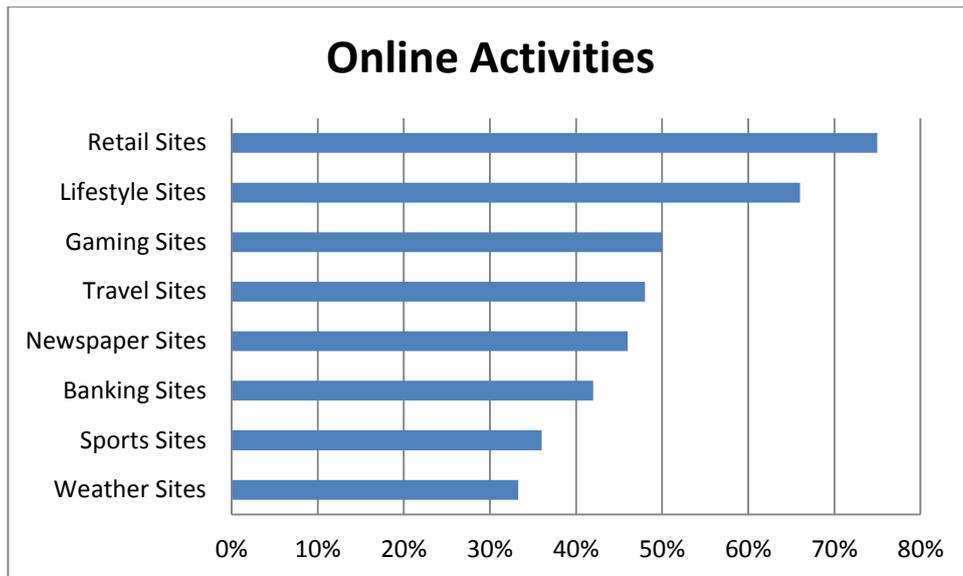
grow and the number of mobile access lines increased dramatically from 0.92 million at the end of 1992 to 23.32 million at the end of 1999 (Gerpott, et al., 2001). The market and the competition continued to grow and 6 UMTS licences awarded in 2001. New operators were free in entering any segment of the market and compete with the incumbent operator Deutsche Telecom.

The mobile sector continued to grow during the 2000s and currently the German market is one of the most competitive markets in Europe. The number of mobile phone audience in Germany is 61 million, which is the highest rate among the European countries. The German wireless telecommunication service market grew by 1.3% in 2011 to reach a value of 34.1 billion euro and by 4.3% to reach a volume of 113.6 million subscribers.

## **5.2. Internet and use of E-services in Germany**

According to ComScore consumers in European countries spent on average 27 hours online per month (ComScore, 2013). Out of the 18 EU markets analysed, German consumers spent 24.6 hours online. The Internet Audience in Germany reached 52 million users in 2012, which is the second highest rate after the Russian online audience that was 61 million. This means that the online audience grew by 3% 2011.

Another study from ComScore shows that in 2013 the online audience grew by 11% to more than 57 million. During June 2013, online users in Germany spent on average 20 hours online doing the following activities (ComScore, 2013).



**Figure 5-1: Online activities in Germany during June 2013, Source: ComScore**

Figure 5-1 shows that in June 2013 77% of the German online population visited retail websites. E-commerce is increasing rapidly in Germany and this graph confirms that online shopping is one of the most popular online activities of German consumers. In 2012 e-commerce generated turnover of 27.6 billion, an increase of 27% compared to the previous year. It is forecasted that digital buyers will rise to 45.9 million in 2016 from 41.2 million (50% of the domestic population) in 2012 (Germany Trade & Invest Agency, 2013).

### 5.3. Competitor Analysis

Mobile telephony is undoubtedly the most important and competitive sector of the telecommunication market in Germany. The market is characterized by the significantly high number of service providers that offer different tariffs with a vast of different charges. There are four major operators in Germany and many discount MVNOs sharing the market. MVNOs are providers that buy capacities and network access from the network operators and set competitive retail prices independently. The main network providers are:

- T-Mobile (Deutsche Telecom)
- Vodafone

- E-Plus (KPN)
- O2 (Telefonica)

All of them are part of multinational telecommunications companies and follow a multi brand marketing strategy by owning a number of smaller operators that focus on different customer segments. Table shows the major operators, the group to which they belong and their subsidiary companies.

<b>International Group</b>	<b>German Operator</b>	<b>Subsidiary Operator</b>
Deutsche Telecom	Telecom	Congstar
Vodafone Group PLC	Vodafone	-
KPN	E-Plus	BASE
		Simyo
		AY Yildiz
		Blau
Telefónica	O2	Fonic

**Table 5-1: Major Operators and their subsidiary companies**

T-Mobile belongs to the former state monopoly Deutsche Telecom and is the largest mobile operator in Germany with 38 million customers followed by Vodafone with 33 million. E-Plus and O2 hold the third and fourth position respectively with 24 and 19 million customers.

Each operator's market share in terms of subscriptions is a good indicator of the operator's size. Comparisons between the market share and the share of online unique visitor will give us insights about how consumers use online services and search for mobile products. In 2012, Deutsche Telecom and Vodafone dominated the market with a market share of 32% and 31% respectively. E-plus follows with 21% and O2 with 17%.

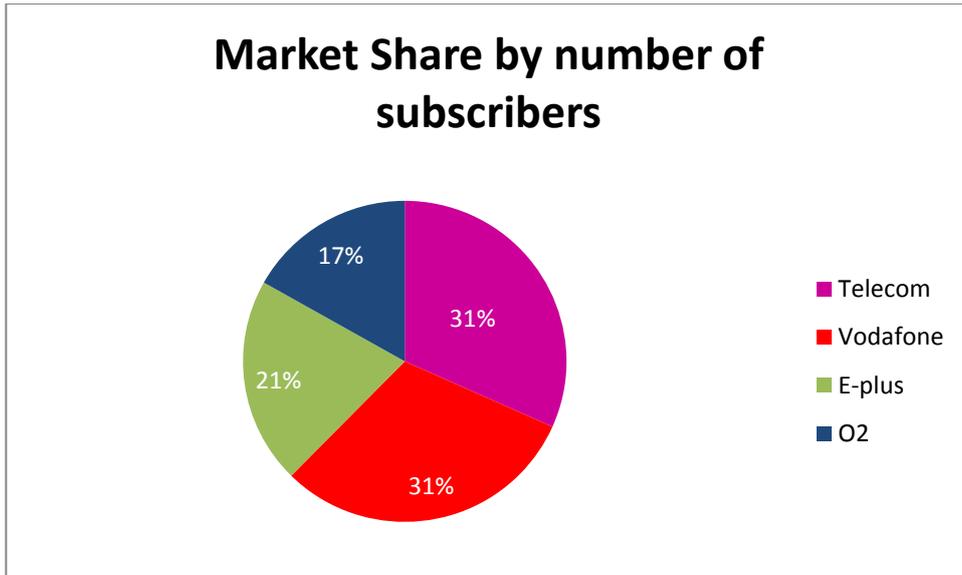


Figure 5-2: Market Share by number of subscribers in 2012

#### 5.4. Customer Segmentation in the German Telecoms Market

Apart from Vodafone, all the other major operators follow a multi-branding strategy so their products can satisfy as many customer segments as possible. For example, Telefonica's O2 brand mainly targets private and business contract clients in the premium segment while its subsidiary Fonic targets low-spending customers who prefer buying cheaper pre-paid products. T-Mobile and Vodafone are based on their high quality network infrastructure and provide their customers with high value and premium services. E-Plus follows a similar strategy with various tariff structures and uses multiple own brands such as Base, Simyo and Ay Yildiz. Base offers flat-free packages and competitive prices, Simyo is a web only prepaid mobile operator that focuses mainly on young and price sensitive consumers, while Ay Yildiz targets the Turkish community in Germany and offers the best tariffs towards Turkey. Table 5-2 show the main mobile operators in Germany and their subsidiaries operators.

<b>Operator</b>	<b>Customer Focus</b>	<b>Subsidiary Operator</b>	<b>Subsidiary Operator Customer Focus</b>
<b>Vodafone</b>	<ul style="list-style-type: none"> <li>• Consumers</li> <li>• Corporate Users</li> </ul>	-	-
<b>T-Mobile</b>	<ul style="list-style-type: none"> <li>• Average Consumer</li> <li>• Older Consumers</li> </ul>	<b>Congstar</b>	<ul style="list-style-type: none"> <li>• Students</li> <li>• Young consumers</li> </ul>
<b>O2</b>	<ul style="list-style-type: none"> <li>• Average Consumer</li> </ul>	<b>Fonic</b>	<ul style="list-style-type: none"> <li>• Consumers</li> <li>• Young</li> <li>• Students</li> <li>• Price-conscious consumers</li> </ul>
<b>E-Plus</b>	<ul style="list-style-type: none"> <li>• Average Consumer</li> </ul>	<b>Base</b>	<ul style="list-style-type: none"> <li>• Students</li> <li>• Young consumers</li> </ul>
		<b>Simyo</b>	<ul style="list-style-type: none"> <li>• Price-conscious consumers</li> <li>• Young Consumers</li> </ul>
		<b>Blau</b>	<ul style="list-style-type: none"> <li>• Price-conscious consumers</li> </ul>
		<b>Ay Yildiz</b>	<ul style="list-style-type: none"> <li>• Users of the Turkish community</li> </ul>

**Table 5-2: Mobile Operators in Germany**

## 5.5. Internet usage key measures

For the analysis of the online panel data from ComScore, we will follow the same procedure as with the analysis of the data for the UK market. Table 5-3, shows the number of Unique Visitors for each competitor. This represents the number of unique visitors that visit the operator's website in April 2013 and are counted only once. Based on the ComScore data we can calculate the share of unique visitors for each operator (Table 5-3).

<b>Operator</b>	<b>Unique Visitors (000s)</b>	<b>Share of Unique Visitors</b>
Vodafone	5,383	33%
T-Mobile	2,619	16%
O2	2,604	16%
Base	1,690	10%
Congstar	1,401	9%
Simyo	728	5%
E-plus	627	4%
Blau	544	3%
Fonic	466	3%
Ay Yildiz	38	0%

**Table 5-3: Number of unique visitors, Key measures - ComScore, April 2013**

Vodafone is the leading operator with 5, 383 thousand visitors. T-Mobile comes to the second place with 2,619 thousand visitors and O2 follows closely with 2,604 thousand unique visitors. Base and Congstar also have the same amount of visitors with 1,609 and 1,401 thousand unique visitors accordingly. Smaller operators such as Simyo, E-plus, Blau and Fonic have significantly lower number of unique visitors than the leading operators (Vodafone, T-Mobile and O2) and almost half the visitors of Base and Congstar. Vodafone, T-Mobile and O2 are the three major operators that share the market. It is obvious that these operators also have the highest share of

unique visitors. Table 5-4 shows the online sales opportunities for each operator and its subsidiary brand.

Operator	Subsidiary Operator	Online Sales Opportunities	Share of Online Sale Opportunities	Market Share
Vodafone	-	5,838	35%	31%
T-Mobile	Congstar	4,020	24%	32%
E-Plus	Base	3,628	22%	21%
	Simyo			
	Blau			
	AY Yildiz			
O2	Fonic	3,070	19%	17%
<b>Total</b>	-	16,556	100%	100%

Table 5-4: Share of Unique Visitors

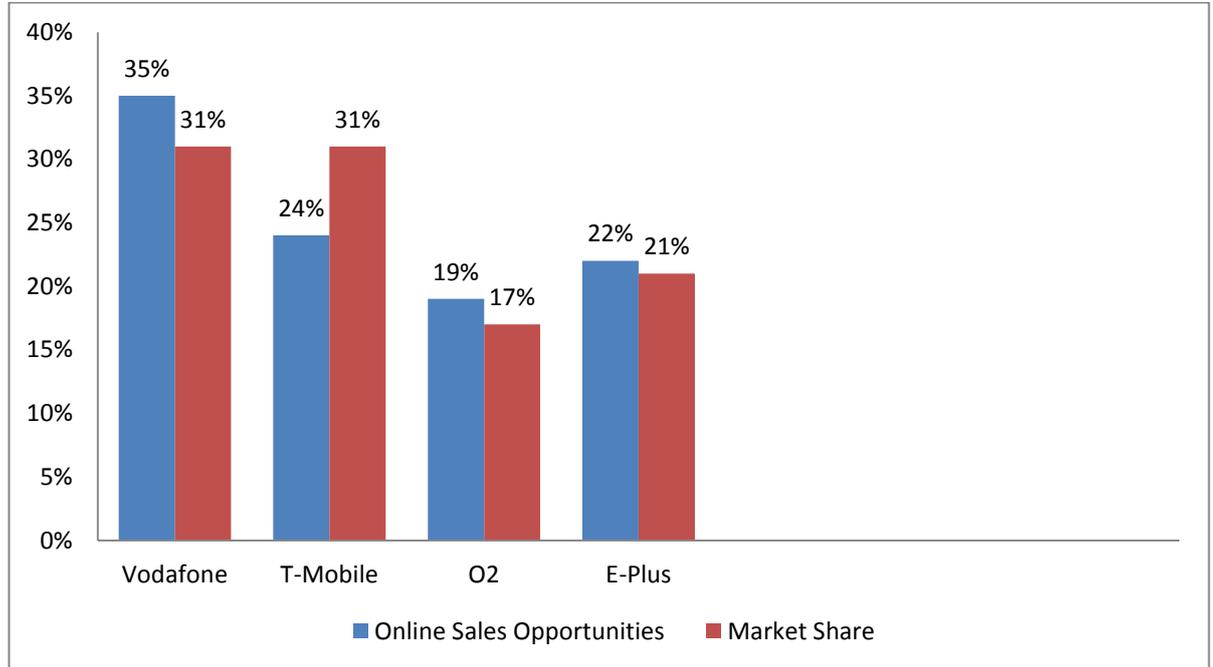


Figure 5-3: Relation between online share opportunities and market share

## Visits & Page Views – Site Traffic

ComScore reports provide us with key measures about the total number of visits, the number of page views as well as the average number of daily visitors. By analysing this data we can calculate the site's traffic and tell how busy a website is during the month. The higher a website is, the higher the chances for the operator to earn profits from the online channel.

<b>Operator</b>	<b>Total Visits (000)</b>	<b>Total Pages Viewed (MM)</b>	<b>Average Visits per Visitor</b>
<b>Vodafone</b>	10,967	53	2
<b>O2</b>	7,164	48	2.8
<b>T-Mobile</b>	4,768	40	1.8
<b>Congstar</b>	4,563	10	3.3
<b>Base</b>	3,189	18	1.9
<b>E-plus</b>	1,203	11	1.9
<b>Simyo</b>	1,101	6	1.5
<b>Blau</b>	913	7	1.7
<b>Fonic</b>	749	4	1.6
<b>Ay Yildiz</b>	59	0	1.6

Table 5-5: Number of Visits and Page Views, ComScore, April 2013

Vodafone and O2 are the most popular websites with 10,967 and 7,164 thousand visits respectively. T-Mobile and Congstar account almost half of the total visits with 4,768 and 4,563 thousand visits accordingly (Table 5-5). Based on these results we can presume that these websites are more popular among consumers because they are well designed, easily navigated and allow consumers to find what they want in just a few clicks.

<b>Operator</b>	<b>Share of Average Visits per Visitor (%)</b>	<b>Share of Unique Visitors (%)</b>
<b>Vodafone</b>	10%	33%
<b>T-Mobile</b>	9%	16%
<b>O2</b>	14%	16%

<b>Base</b>	9%	10%
<b>Congstar</b>	16%	9%
<b>Simyo</b>	8%	5%
<b>E-plus</b>	10%	4%
<b>Blau</b>	8%	3%
<b>Fonic</b>	8%	3%
<b>Ay Yildiz</b>	8%	1%
<b>Total</b>	100%	100%

**Table 5-6: Share of Average Visits per Visitor/ Share of Unique Visitors**

The number of total visits and page views is an important indicator of a website’s popularity but we also need to compare this number with the frequency that consumers visit a website. A business that builds online trust by making users feel comfortable with the website content can lead to consumer commitment. By observing tables 5-5 and 5-6, we can tell that Congstar has the most committed and loyal visitors. Each user visited Congstar 3.3 times in a month, which means that visitors returned to the website either to complete a purchase or to look for more information. O2 and Vodafone also seem to have engaging websites with 2 and 2.8 average visits per visitor. T-Mobile, one of the dominant operators in the market, reports an average of 1.8 visits that is below the frequency of Base, which is a smaller operator. This means that consumers do not use T-Mobile’s online channel as frequent as the customers of Base and Congstar. Besides, T-Mobile’s target audience is the average or older users, while Congstar and Base customer base is mainly composed by younger people that use the Internet as their main source of information.

### **Time Spent – Usage Intensity**

The time that a visitor spent on an operator’s website is another significant aspect that we should consider when explaining consumer behaviour. The duration of visit is the average time that users spent on a website. During the pre-purchase stage consumers usually stay on a website longer so they can gather information about products, prices and services. In addition, in this stage consumers tend to visit more than one page of a website in order to make comparisons and find what service or

products suit them most. So, the visit duration and the number of pages that consumers visit can give use insights about their purpose of visit and the usage intensity of the website.

Table 5-7 shows the average duration in minutes and the number of pages that users visited while browsing on the operator’s website. ComScore reports provided us with the data about the duration of visit, so we calculated the numbers of pages visited in each visit by dividing the total pages viewed by the total visits.

<b>Operator</b>	<b>Average Minutes per Visit</b>	<b>Number of Pages Visited</b>
<b>O2</b>	7.9	6.7
<b>E-plus</b>	5.8	9.4
<b>Base</b>	4.7	5.5
<b>T-Mobile</b>	4.3	0.8
<b>Fonic</b>	3.9	5.0
<b>Blau</b>	3.7	7.5
<b>Ay Yildiz</b>	3.2	3.6
<b>Simyo</b>	2.8	5
<b>Vodafone</b>	2.7	4.8
<b>Congstar</b>	1.7	2
<b>AVG</b>	<b>4.1</b>	<b>5.1</b>

Table 5-7: Key measures - ComScore April 2013, Usage Intensity

We notice that on average consumers spent 4.1 minutes on the operators’ websites and accessed 5.1 pages per visit. O2 reports the highest length stay with 7.9 minutes per visit, which is double than the average metric. E-Plus follows with 5.8 minutes per visit, a metric that is again higher than the average. We can say that O2 and E-plus have the most engaging and interesting websites, because consumers not only staid longer but they also browsed more pages than the average rate. For example smaller operators such as Blau have a high number of page views. However, since the duration of visit is not equally high as the number of page views, we can assume

that maybe this website is not so well designed and visitors need to search many pages in order to find what they look for.

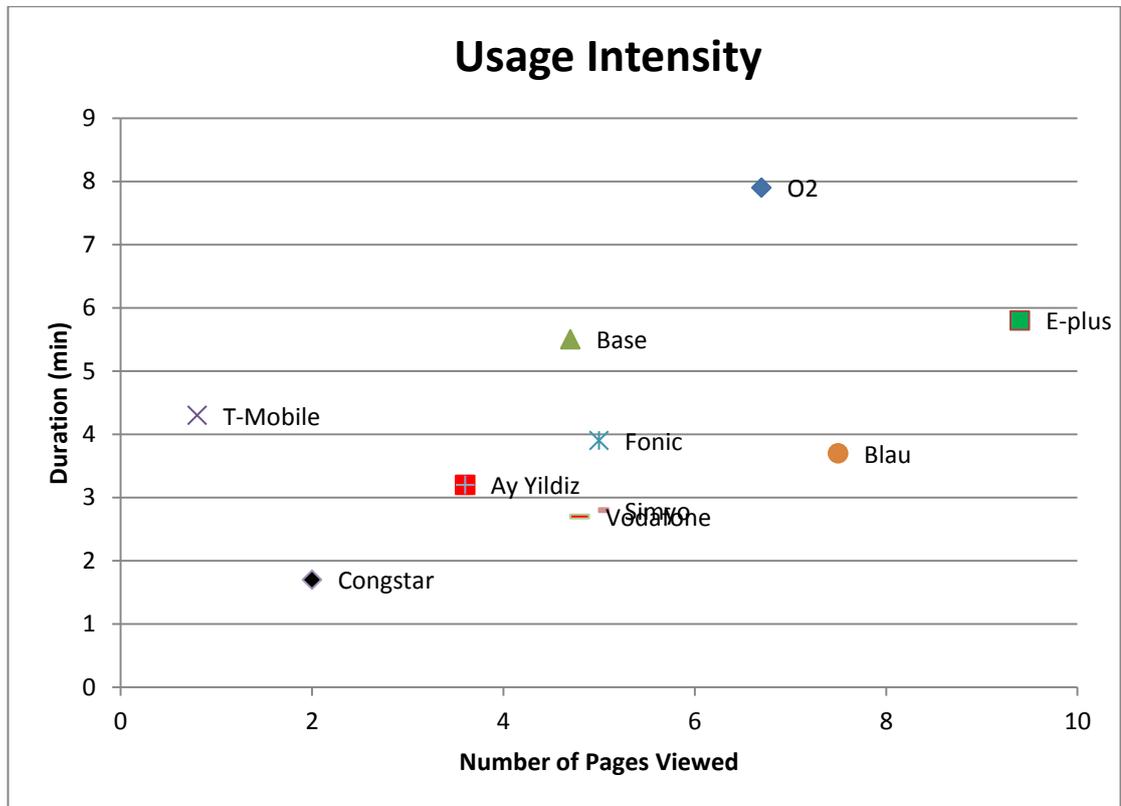


Figure 5-4: Usage Intensity

### 5.5.1. Shared Audience and Cross-Visiting Behaviour

ComScore reports provide us with data about the shared audience between the operators and the cross-visiting behaviour of the users. Cross-visitors are the number of visitors who have visited more than one website. When consumers are on the pre-purchase stage, they usually cross-visit between operators in order to search for the best offers and compare prices. Table 5-8 shows the number of cross-visitors in terms of hundreds for each competitor.

<b>Operator</b>	<b>Vodafone</b>	<b>T-Mobile</b>	<b>O2</b>	<b>Base</b>	<b>Congstar</b>	<b>Simyo</b>	<b>E-plus</b>	<b>Blau</b>	<b>Fonic</b>	<b>Ay Yildiz</b>
<b>Vodafone</b>	-	480	498	317	248	127	117	88	115	8
<b>T-Mobile</b>	480	-	323	243	154	91	94	87	67	15
<b>O2</b>	498	323	-	240	120	104	98	106	90	5
<b>Base</b>	317	243	240	-	108	96	117	74	61	8
<b>Congstar</b>	248	154	120	108	-	60	28	55	50	3
<b>Simyo</b>	127	91	104	96	60	-	41	54	30	5
<b>E-plus</b>	117	94	98	117	28	41	-	34	30	17
<b>Blau</b>	88	87	106	74	55	54	34	-	33	5
<b>Fonic</b>	115	67	90	61	50	30	30	33	-	4
<b>Ay Yildiz</b>	8	15	5	8	3	5	17	5	4	-
<b>Total</b>	<b>1998</b>	<b>1554</b>	<b>1584</b>	<b>1264</b>	<b>826</b>	<b>608</b>	<b>576</b>	<b>536</b>	<b>480</b>	<b>70</b>

**Table 5-8: Number of cross visitors between operators**

We see that Vodafone, T-Mobile and O2 share a great number of visitors, while smaller operators such as Congstar, Simyo and Blau do not. O2 and Vodafone share the greatest number of visitors (480 thousand), while Ay Yildiz and Congstar share the lowest number of users (3 thousand). Operators that share a high number of visitors mean that they probably offer the same products and services, so consumers visit both websites in order to find the best offer. In addition, these operators probably have the same target audience. For example, both Vodafone and T-Mobile focus on premium customer with one or two year contracts and their main strategy is to sign up customers to more expensive offers. On the contrary Base, Congstar and Simyo focus more on budget-conscious and younger customers.

In order to explain and interpret better the number of shared visitors we also compared the cross visiting numbers with the total number of unique visitors and calculate the percentage of visitors who cross visit.

<b>Operator</b>	<b>Total Cross-visitors</b>	<b>Share of cross-visitors</b>	<b>Share of Unique Visitors</b>	<b>Cross Visitors – Unique Visitors Relation</b>
<b>Vodafone</b>	1998	21%	33%	0.64
<b>T-Mobile</b>	1554	16%	16%	1.02
<b>O2</b>	1584	17%	16%	1.04
<b>Base</b>	1264	13%	10%	1.33
<b>Congstar</b>	826	9%	9%	0.97
<b>Simyo</b>	608	6%	5%	1.28
<b>E-plus</b>	576	6%	4%	1.52
<b>Blau</b>	536	6%	3%	1.88
<b>Fonic</b>	480	5%	3%	1.68
<b>Ay Yildiz</b>	70	1%	0%	0.74
<b>Total</b>	9496	100%	100%	-

**Table 5-9: Cross Visitors and Unique Visitors relation**

We observe that users who visited Blau, Fonic and Simyo, have also visited other websites too, which make us assume that these users are online researchers. On the contrary Ay Yildiz is the operator that has the most loyal visitors, since it's the operator that has the lowest rate of cross visitors. However, this result was predictable because Ay Yildiz is an operator that targets mostly German residents of Turkish descent. So by offering the best tariffs for communications to Turkey, Ay Yildiz has managed to gain the trust and loyalty of its audience.

Apart from the number of shared visitors, ComScore also provides us with the exact percentages of each operator's shared audience. The data are displayed on the table below:

	<b>Vodafone</b>	<b>O2</b>	<b>T-Mobile</b>	<b>Base</b>	<b>Congstar</b>	<b>E-plus</b>	<b>Fonic</b>	<b>Blau</b>	<b>Simyo</b>	<b>Ay Yildiz</b>
	%	%	%	%	%	%	%	%	%	%
<b>Vodafone</b>	-	11.2	10.8	7.1	5.6	2.6	2.6	2.0	2.9	0.2
<b>O2</b>	18.5	-	12.0	8.9	4.5	3.7	3.3	3.9	3.8	0.2
<b>T-Mobile</b>	20.0	13.5	-	10.1	6.4	3.9	2.8	3.6	3.8	0.6
<b>Base</b>	22.1	16.7	16.9	-	7.5	8.1	4.3	5.2	6.7	0.5
<b>Congstar</b>	27.1	13.1	16.9	11.8	-	3.0	5.4	6.0	6.6	0.4
<b>E-plus</b>	20.7	17.4	16.7	20.7	4.9	-	5.3	6.0	7.2	3.0
<b>Fonic</b>	20.6	16.1	12.1	11.0	8.9	5.4	-	6.0	5.4	0.8
<b>Blau</b>	15.8	19.2	15.7	13.4	9.9	6.1	6.0	-	9.8	0.9
<b>Simyo</b>	24.5	19.9	17.6	18.5	11.6	7.9	5.8	10.4	-	1.0
<b>Ay yildiz</b>	23.0	13.5	43.7	22.6	9.9	48.5	12.7	14.6		-

**Table 5-10: Percentages of Cross Visitors between Operators**

By examining Table 5-10, we see percentage of an operator's audience that also visited another operator. For example, the table show that the cross visiting percentage of Vodafone to O2 is 11.2% while the cross visiting percentage of O2 to Vodafone is 18.5%. This means that 11.2% of Vodafone visitors visited also O2 and 18.5% of O2 visitors visited also Vodafone. It seems that Vodafone's website is particularly popular among consumers because it records the highest cross visiting

rates than any other operator; 27.1% of Congstar and 24% of Simyo visitors also accessed the website of Vodafone (Figures 5-5, 5-6).

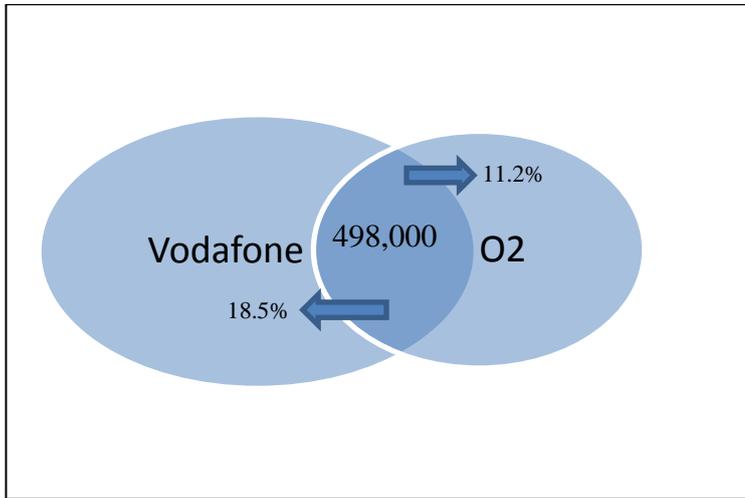


Figure 5-5: Percentage of Shared Visitors between O2 and Vodafone

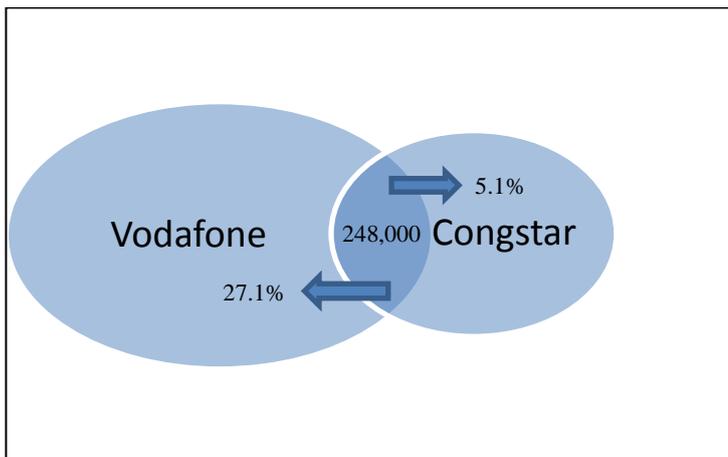


Figure 5-6: Percentage of Shared Visitors between Congstar and Vodafone

### 5.5.2. Duplicated Audience

So far we have examined the number of cross visitors and have analysed the overall cross visiting rate between the main competitors. ComScore provides us with another report that called audience duplication report and gives us valuable information about the number of online sales opportunities and the consideration set

of the consumers. The consideration set is the number of brands that consumers examine before making their final decision.

Based on the analysis of the ComScore report, table 5-11 was generated.

<b>Unique Visitors</b>	<b>Unique Visitors (000s)</b>	<b>Unique Visitors (%)</b>
Unduplicated unique visitors	10,757	100%
Duplicated unique visitors	2,165	20.1%
Unique Visitors who visited one website only	8,592	79.9%

**Table 5-11: Consumers' cross visiting rate, ComScore, Audience Duplication, April 2013**

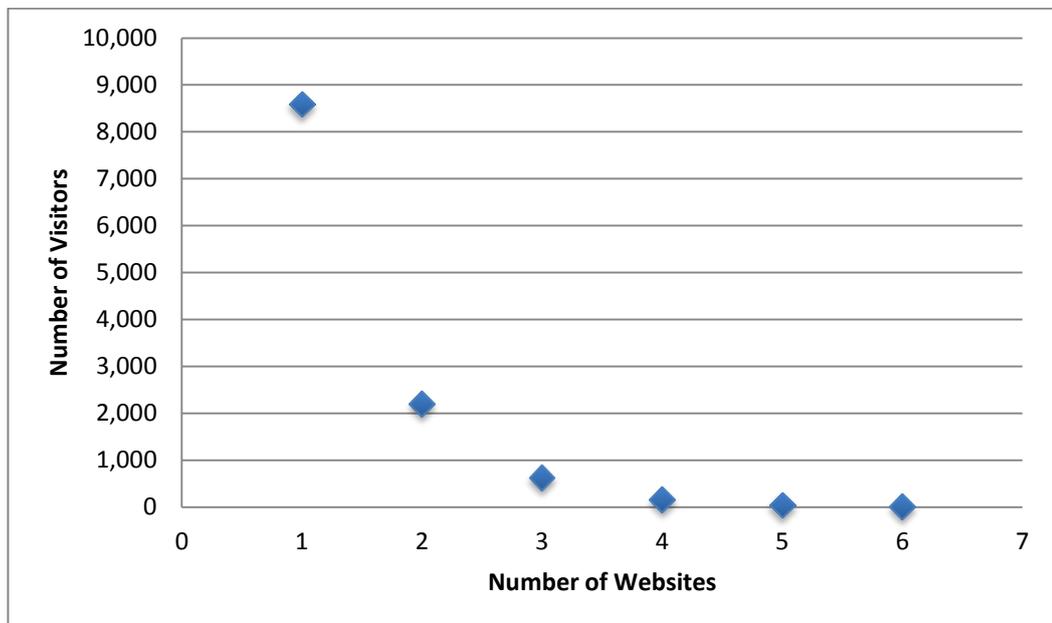
The number of unduplicated unique visitors represents the total number of unique visitors of the 10 German operators under study. The number of duplicated unique visitors represents the users who visited two or more websites. By extracting the number of duplicated unique visitors from the number of unduplicated unique visitors, we found the number of unique visitors who visited one website only. As table 5-8 shows, 20.1% of visitors have visited more than one website which means that 2,165 thousand users are online researchers. The other 8,592 thousand (79.9%) have visited only one website, which means that they are probably customers making use of online services.

If we add the number of unique visitors then we can find the number of total visits to the operators' websites. We could call this number 'online sales opportunities', because every time a researcher enters a website, then he becomes a potential customer. In order to examine the way researchers behave during their pre-purchase stage, we need to exclude the visitors who visited one website only. Then by assuming that all the cross visitors are doing online research, we can find the average number of websites that users visit during their pre-purchase stage.

<b>Online Sales Opportunities</b>	<b>14,129</b>
<b>Number of visits for e-services</b>	8,592
<b>Number of visits for research</b>	$14,129 - 8,592 = 5,537$
<b>Consideration Set</b>	$5,537 / 2,165 = 2.55$

**Table 5-12: Consideration Set, ComScore Audience Duplication**

It seems that consumers visit on average 2.5 operators before making a decision. The size of the online consideration set can be characterized as small as there are more than 10 network operators in the German market and consumers usually examine on average 2.5 operators during their research phase. This is confirmed by the graph below, which shows that the number of visitors increases the number of websites visited decreases.



**Figure 5-7: Number of Visitors vs. Number of Websites visited - German Market**

## **6. Discussion and Conclusion**

### **6.1. Comparison between the UK and German Mobile Telecommunications Market**

The UK and the German mobile telecommunications market have achieved a significant growth during the past decade. Germany accounts for 17.8% of the European wireless telecommunications services market value while the UK accounts for a further 14% of the European market (Keynote, 2012).

Chapters four and five described and presented a detailed analysis of the mobile telecommunications market in the UK and Germany. The basic characteristics of each market were identified and the main competitors were described. The analysis of different sets of panel data from both markets provided us with valuable insights into the online performance of the mobile operators and the behaviour of online consumers. As a result we obtained interested findings and we are now able to make comparisons between the two markets.

Both markets are characterized by a great number of regular and virtual mobile network providers that offer a variety of services and tariffs. Within the UK market alone each of the major mobile network operators offers more than 200 different types of plans (Keynote, 2007). We can say that mobile telecommunications sector in both Germany and the UK has reached its saturation point and rivalry among the main competitors is expected to remain strong.

Particularly in the German market the competition is fierce and major operators follow a multi branding strategy in order to maximise their consumer reach. E-Plus, T-Mobile and O2 have set up a MVNO strategy by owning a number of smaller virtual operators in order to target specific customers segments and gain market share. This approach provides them with more business opportunities; by being a dominant and a niche player of the market they can offer distinct products to a wide spectrum of customers. By doing so, each brand shapes its own strategy and tries to keep a unique identity but at the same time provides the Group with a higher market share.

In addition, we can say that as the market matures, customers become more experienced and demanding. The penetration of mobile phones in both markets has been explosive; both countries are among the major global markets for mobile subscriptions with penetration rates of 127% for Germany and 130% for the UK (Keynote, 2012). Consumers have been using mobile phones for years, so they have begun looking more and more for more sophisticated and individual deals.

Consumers use the online channel for researching, comparing prices and products before they make a purchase online or in a store. According to Eurostat, in 2009, 70% of Internet users searched for products online in Germany, while the corresponding rate for the UK was 65%. Table 6-1 show the online sales opportunities for each market.

	<b>Online Sales Opportunities (000s)</b>
<b>UK</b>	15,592
<b>Germany</b>	14,129

**Table 6-1: Online Sales Opportunities for the UK and German market**

Based on the results from our analysis, the dominant providers in the UK had 32% reach of the online population. During the same period, almost 27% of the online consumers have been reached by the major mobile network operators in Germany.

	<b>Overall Reach</b>
<b>Germany</b>	32%
<b>UK</b>	27%

**Table 6-2: Overall reach in the UK and German market**

Another finding was that larger operators attract more online visitors than the smaller ones. O2 in the UK and Vodafone in Germany, which are the leading operator in terms of customer, recorded the highest shares of unique visitors. However, even smaller operators can reach more consumers online if they focus on the development of their online marketing strategies. For example, Three and Giff Gaff in the UK market seem to benefit from their online presence and have high online visibility.

Besides, Giff Gaff is a web only operator, so it uses the Internet not only as a commercial transaction medium, but also as a delivery and customer interaction channel.

In addition, the analysis of online consumer behaviours indicates that online researchers in the UK spend more time online than the ones in Germany. The average duration of a visit in the UK is about 5 minutes while in Germany is 4.1 minutes. The average number of pages that users visit is also higher in the UK. Usage intensity rates are shown in table 6-3. The rate of repeated visits is also higher for the UK market, which indicates that operators have managed to gain the customers' trust and loyalty. The average visit per visitor in the UK is 2.6, while in the Germany the corresponding value is 2 visits per visitor. This finding means that British consumers conduct more in-depth research, as they visit an operator's website 2 or 3 times before they make their final purchase decision.

	<b>UK</b>	<b>Germany</b>
<b>Average minutes per visit</b>	4.9	4.1
<b>Average number of pages visited</b>	8.3	5.1
<b>Average visits per visitor</b>	2.6	2

**Table 6-3: Usage Intensity UK vs. Germany**

In order to understand the behaviour of consumers during the pre-purchase phase, we also examined the cross-visiting rates and identified the size of the consideration set for each market. Based on the result, 25% of British web users have cross-visited. German users follow with a cross-visiting rate of 20.1%. The online consideration set was also calculated and the result shows that consumers in both markets visit on average 2.5 websites during their pre-purchase research stage. The size of the consideration set is significantly lower than expected and this indicates that consumers visit on average two or three retailers. Consequently, out of the 8 major operators in the UK, only two or three are being visited by consumers during the decision making process. The sizes of the online consideration sets for both markets are shown in Table 6-4.

	<b>Online Consideration Set</b>	<b>Cross-visiting rates (%)</b>
<b>UK</b>	2.5	25%
<b>Germany</b>	2.5	20.1%

**Table 6-4: Online Consideration Sets for the UK and German market**

## **6.2. Conclusions**

The purpose of this study was to examine how consumers use the online channel, what they are searching and how they are carrying out their research during their pre-purchase decision process. Online panel data allowed us to measure the online activities of consumers on each stage of their online journey. The use and the analysis of panel data and other online metrics can provide important information not only for researchers but also for marketing managers. Panel data analysis gave us valuable insights into the way people interact and use the online channel. Apart from that, they provided us with interesting findings for the online performance of businesses and their online marketing strategies.

As a result the initial research question on how consumers use the online channel during their pre purchase decision-making process was answered. In addition, this study produced knowledge and findings about the concept of online consideration set as an important marketing indicator of consumer research. We can say that the analysis of online panel data facilitated our attempt to understand and interpret the actual behaviour of online researchers during their online purchase journey. In addition, this analysis led to a better understanding of complex concepts and theories of online marketing.

Two different markets of the mobile telecommunications industry, the UK and the German, were chosen for this research. The mobile network providers sector has become one of the most important sectors in service marketing (Shukla, 2010). The UK has the largest market in Europe in terms of revenue and number of subscribers (Ofcom, 2010) while the German one follows with high number of mobile penetration as well.

After a thorough examination of the two markets under study, it can be concluded that even though both markets have reached their saturation phase, in terms of online research, the British market is more developed than the German one. Based on the results of our analysis, consumers in the UK use the online channel more frequently and investigate more in-depth than the ones in Germany. This means that they spend more time online; they browse more pages and visit each website multiple times during a month. However, the size of the online consideration sets in both markets is smaller than expected and consumers only visit two or three retailers while researching. Given the fact that both markets are characterized by a high number of competitors, this rate is significantly low and it indicates that consumers visit only a limited number of retailers.

Finally, as the tendency to use online service increases and the online market becomes more competitive in both countries, we can argue that the understanding of online consumer behaviours is vital for retailers. Hence, German and British network operators should try to expand their services offered via the Internet in order to reach and acquire new customers.

### **6.3. Limitation and further research**

The data analysis of this study was mainly based on panel data from ComScore. Panel Data” are used widely in market research in order to study consumer purchase patterns and evaluate promotional campaigns” (Lohse, et al., 2000). However, panel data research has some major disadvantages that can affect slightly the result of a study. According to Lohse panel attrition is one of the main panel data disadvantages as it can be very large. Panel attrition is the loss of panel member over the time, which can result in a final panel that is not good representative of the population (Lohse, et al., 2000).

In addition, panel data measure the Internet usage only from the computers that the panel data software is installed. However, nowadays consumers use a wide variety of devices to access the internet. Smartphones, tablets and other web-enabled devices are used from consumers to access the Internet. In Germany alone there are 30 million mobile Internet users, accessing the Internet on their smartphones for products purchase, web sites browsing and price comparisons (Accenture, 2012).

Moreover, nearly 33% of the UK page views are from a mobile device and over 14% of smartphone users in the UK purchased or researched products and services via their mobile device in 2012 (ComScore, 2013).

Therefore, a suggestion for future research would be a study that examines the Internet usage on a mobile device such as tablets and smartphones in combination with the usage on a desktop device. Besides, most surveys highlight that mobile Internet usage is on the rise across mature markets (Accenture, 2012), so a study on mobile consumer behaviour could provide us with interesting findings.

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