How can the analytics on Big Data affect the buying trends of customers in the retail industry?

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Abstract

Big Data has emerged as of one of the biggest business and technological buzzwords of recent years. "The term Big Data applies to information that cannot be processed or analysed using traditional tools or processes" (Eaton et al. 2012). A number of IT companies including International Business Machines (IBM), Hewlett Packard (HP) and Oracle are leading the development of Big Data analytics programs and are creating unique packages for retailers, which suggests that it is going to have a big impact on the retail industry.

The primary research has been carried out in the form of interviews, which has been conducted anonymously with representatives from COMPANY A and COMPANY B, to help meet the aims and objectives. Extensive secondary research has also been undertaken to provide more information to help answer the overall question: How can the analytics on Big Data affect the buying trends of customers in the retail industry?

There is a high probability that the main benefit of Big Data for retailers and their customers is being able to better understand customers, allowing for more personalised offers leading to higher sales and customer loyalty. One of the prominent factors that may affect the buying trends of retail customers is the channel by which purchases are made. The analytics of Big Data will undoubtedly have an impact on the buying trends of retail customers but ultimately when, where and how customers make purchases will be down to personal preference.

There is a distinct possibility that a collective view from a minimum of five retailers could prove more reliable, allowing for more representative conclusions to be made. As more and more data becomes available every second, and with the use of analytics tools becoming more commonplace in the retail industry, there could a huge impact for many years to come.

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1. Introduction

1.1 The Question

The question that will be answered is: **How can the analytics on Big Data affect the buying trends of customers in the retail industry?**

This reason this question is being asked is due to the emergence of one of the biggest business and technological buzzwords of recent years: Big Data. "The term **Big Data applies to information that cannot be processed or analysed using traditional tools or processes**" (Eaton et al. 2012).

A number of IT companies including the big three organisations: International Business Machines (IBM), Hewlett Packard (HP) and Oracle are leading the development of Big Data analytics programs and are creating unique packages for retailers (Korolov 2013). There is a distinct probability that these organisations believe Big Data is going to have a huge impact on the retail industry. If this were not the case, why would they devote so much time and effort developing programs around the analytics of Big Data?

1.2 Methodological Model

Interviews have been conducted with five COMPANY A professionals and one representative from COMPANY B who work with, or have a close association with, Big Data. This will help secure a better understanding of the topic and how it can affect the buying trends of retail customers. The COMPANY B representative gave a view from the retailers' perspective, whereas the COMPANY A employees' view is that of a supplier of products and services.

The six participants have agreed to be interviewed providing their names are kept anonymous, but have allowed their job title to be used. Each interviewee will be asked the same set of questions, outlined in the methodology (section 2). The interviews will then be analysed (section 3), firstly looking for agreeing statements, then for any difference of opinions.

Extensive secondary research has been undertaken (see sections 1.5 – 1.13) to provide a well rounded view of the topics outlined in the objectives (section 1.4). All finding have been discussed (section 4), with conclusions and recommendations being made in sections 5 and 6 respectively.

1.3 Aim

The aim of this report is to investigate how the analytics on Big Data can affect the buying trends of customers in the retail industry. This investigation will be done by conducting interviews with professionals in the fields of Big Data and retail, and undertaking extensive research around the relevant topics.

1.4 Objectives

1. To define these key words and phrases:
    - Big Data
    - Analytics
    - Retail Industry
    - Marketing
    - Market Segmentation
    - Ethics of Big Data
    - Buying Trends
    - Multichannel
    - Omnichannel
2. To identify the current and future impacts of Big Data on the retail industry.
3. To ascertain how retailers can benefit from analysing data.
4. To identify how retail customers can benefit from the analysis of Big Data.
5. To establish if, and how, Big Data will affect the buying trends of customers, taking into account how, when or where purchases are made.

1.5 Big Data

Big Data is one of the trends currently taking the technology world by storm. There are a number of industries that can use, and benefit from, Big Data including the retail industry that is the focus of this report. “Big Data is the next generation of data warehousing and business analytics and is poised to deliver top line revenues cost efficiently for enterprises” (Minelli, Chambers and Dhiraj 2013). This text goes on to suggest that Big Data has not just become available in recent years but it has always been there, there just have not been the tools and techniques to analyse the data. “The term Big Data applies to information that can not be processed or analysed using traditional processes or tools” ((Eaton et al. 2012). This statement backs up the belief of (Minelli, Chambers and Dhiraj 2013) that, until recently, there has been a lot of raw data which cannot be analysed.

Big Data is widely recognised as something that can have a huge impact on the operations of organisations now and in the future, with “most companies at an early stage with their Big Data journey” (Hurwitz et al. 2013). Data is growing at a frightening rate, the main reason for this being the growth and development of technology. The executive chairman of Google, Eric Schmidt, suggests “from the dawn of civilisation until 2003, humankind generated five exabytes (1000KB^6) of data. Now we produce five exabytes every two days and the pace is accelerating” (Rowan 2011). This is a huge claim to make but as he is the executive chairman of the Google, the world’s biggest search engine (Sullivan 2013), he should be a reputable source. This claim is almost incomprehensible, with it being difficult to relate to the sheer amount of data being produced; and only in recent years have tools and techniques been developed to handle this vast explosion of data.

1.6 Analytics

Analytics is another buzzword in the technology industry and it “refers to our ability to collect and use data to generate insights that inform fact-based decision-making” (Marr 2013). In the past, the data that was analysed was mainly used to predict what might happen in the future and was fully embraced by industries such as banks and insurance companies, but not by organisations such as retailers.

Big Data and analytics go hand in hand in the current technological age. “Big Data analytics uses predictive and prescriptive analytics and is changing the analytics landscape” (Minelli, Chambers and Dhiraj 2013). Predictive analytics uses data from the past to predict what

may happen, and the likelihood of it happening in the future. Whereas, prescriptive analytics is taking data from the past, using it to decide on what should be done next to achieve optimal results.

Business analytics usually looks at past sales figures and current market trends. “Three quarters of organisations who have implemented Big Data business analytics systems have noticed a significant competitive advantage” (COMPANY A 2012). The study was carried out by COMPANY A with the Said Business School at the University of Oxford and “reflects input from more than 1,100 business and IT executives, in 95 countries, combined with executive interviews and case studies” (COMPANY A 2012; COMPANY A CTA 2013. pers. comm.; COMPANY A CTA 2013. pers. comm.).

A study by the Economic Times suggests that large organisations using business analytics outperform competitors, who do not utilise this, by a wide margin. “The leaders are twice as likely to be in the (COMPANY A 2013) top quartile of financial performance within their industries; five times as likely to make decisions faster than market peers; three times as likely to execute decisions as intended and twice as likely to use data very frequently when making decisions” (Singh, Pearson and Aluru 2013). This suggests that organisations who can afford to implement analytic systems are benefitting hugely compared to those who have not yet invested in such systems.

This is extensive research that proves business analytics is affecting the way in which organisations operate, and that Big Data analytics is fast becoming vital to industries such as retail.

1.7 Retail Industry

Retailing is “business activities involved in selling goods and services to consumers for their personal, family, or household use” (Berman and Evans 2013). The retail sector consists of organisations that sell products and/or services to consumers. Supermarkets and other food outlets are classed as retailers, alongside department stores, specialist stores and fashion outlets. The main business model for the retail industry is Business to Consumer (B-2-C). This is “the selling of goods or services by a business directly to a consumer, rather than to another business” (Duermyer 2013).

The annual worldwide revenue for the largest 250 retailers is $4 (Berman and Evans 2013) and this shows that it has a major impact on the global economy. The UK retail industry has a huge impact on the economy and has grown (year-on-year) by 2.1% up to August 2013 (Office for National Statistics 2013a).

Retail is the second largest industry in the United States both in the number of establishments and number of employees (Thomas and Segel 2006). It is also the second largest industry in the UK based on employment (Office for National Statistics 2013b). This figure may begin to increase due to the end of the recession, with more jobs becoming available. Alternatively, it may not increase due to the higher number of sales taking places through other methods, especially online.

“Retail sales are at their highest point in history despite a dip during the recent Great Recession” (Berman and Evans 2013). There could be a number of reasons for this including the constantly changing fashion industry. This not only affects the products created by high-end fashion brands, but also the low-end retailers. Retailers such as Primark, H&M and the Arcadia group offer cheaper versions or alternatives of fashionable items. This allows consumers to save money but still keep in touch with current trends.

Companies who offer business analytics solutions for retailers suggest that there are three key areas. These are seen as:

- Delivering a smarter shopping experience by understanding consumer behaviour patterns
- Build smarter operations by using analytics to optimize operational systems, processes and staffing
- Improve product assortment and supply chain decisions with client interaction insights (COMPANY A 2013).

Retailers may not yet know what they want from the data at their disposal. Companies such as COMPANY A are telling them what they need to know, and have created a portfolio of products to help retailers meet these three points.

1.8 Marketing

“Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and

society at large" (Association, American Marketing 2013). This suggests that marketing can be a simple process affected by a number of factors such as market research, communication and customers. A simpler explanation of marketing is "the action or business of promoting and selling products or services, including market research and advertising" (Oxford University Press 2013).

The marketing mix is a process made up of a number of tools to that are used to help organisations be successful in the marketplace. The mix is made up of 7Ps. These are: Product, Price, Promotion, Place, Physical Evidence, People and Process.
The diagram below takes a concise look at the factors for each of the 7Ps.

(Marketing Mix 2013)

The marketing mix traditionally consists of 4Ps:

- Product – what it is about your products or services that meets customer's needs? What are those needs and wants? What problems does it solve? (Jones 2013) Does the product or service have a USP? "A unique selling proposition/point (USP) is a description of the qualities that are unique to a particular product or service and that differentiate it in a way which will make customers purchase it rather than its rivals" (The Economist 2009)
- Price – How much will you charge for your product or service? What will the cost be to the customer? (Jones 2013)
- Promotion – What marketing and promotion tools will you use to communicate your core marketing messages? Via PR, advertising, sales, promotions, networking, telemarketing, incentive schemes, online, via customer newsletters or direct mail? (Jones 2013)
- Place (route of distribution) – Which location will you operate from? Where will your customer base be located? How convenient will buying from you be? (Jones 2013)

Peter Jones refers to there being only 4Ps but many other sources suggest that using 7Ps is becoming much more common. The 7Ps are also referred to as the "Extended Marketing Mix" in the Times 100 Business Case Studies (The Times 100 2013). The further 3Ps are:

- People: What are the important points of human contact between your customer and your business? (Marketing For Dummies 2013) People also includes employee to management relationships and organisational culture. (Marketing Mix 2013)
- Process: What are the processes involved in delivering your products and services to the customer? (Marketing For Dummies 2013)
- Physical Presence (sometimes called Physical Evidence): What are all the physical areas viewed by your customers, from your reception area through to your delivery vehicles and drivers? (Marketing For Dummies 2013)

According to a leading Retail Management Consultant at Retail Vision, there are three main points that should be focused on when creating a marketing strategy:

- Find out who your customers are.
- Discover what they want.
- Establish what needs to be done to deliver to your customers (Ibbotson 2013).

The first two points are simple. Find out which segments to target. This can be done in a number of ways, with social media still being a relatively new way of finding out about customers.

Social media marketing is becoming a new trend, especially in the retail industry with customers voicing their opinions on public sites for organisations and other customers to see alike. “Social media is a collection of web pages and applications that are designed to allow users to interact with their friends” (Brown 2010). Social media is seen as a great way to find out what customer perceptions are regarding products or services. Knowing what customers are saying can directly a marketing strategy. Being able to have a real time two-way conversation with customers opens up a whole new type of marketing. “Social media sites already offer great opportunities to engage and influence customers in ways that are different from traditional marketing approaches (Brown 2010). Data from social media is part of the Big Data revolution and will be used by organisations as one piece of the puzzle when creating new market strategies.

1.9 Market Segmentation

There are various ways in which you can segment a market. The different variables are often referred to as segmentation bases. Traditionally, segmentation bases have been classified into five major categories:

- Geographic,
- Demographic,
- Psychographic,
- Behavioural,
- Benefits Sought (Market Segmentation Study Guide 2012).

There are a number of factors to be considered for each of the five categories listed above. The geographic category can be split down into a number of factors such as country, region, town or city and urban or rural.

Using demographics as a way to segment a market is often see as the simplest way of doing so. This category can be split up by age, sex, marital status, education, occupation, religion and ethnic background. These are very traditional ways of segmenting a market, with retailers trying to move away from this to remove the possibility of stereotyping. “Relevance

is the name of the game in marketing these days, and stereotypes and generalizations simply aren't relevant to the everyday experiences of most consumers" (Beans 2013). Using factors such as lifestyle, social class, self-concept and interests shows that psychographics can also be used to segment a market. Behavioural factors such as special occasions, user and loyalty status, brand knowledge and shopping style are used to segment markets, often after they have been segmented by demographics. The benefits sought category mainly looks at the needs and motivations of consumers. Psychographic, behavioural and benefits sought are all categories which are more difficult to gather data on. This is due to consumers only wanting to give a limited amount of personal information to retailers. When it comes to sharing information "People in the UK feel comfortable sharing data with doctors (91 per cent), banks (74 per cent) and retailers (69 per cent)" (Elgot 2013). If 69% of the UK population is happy to share information with retailers, this suggests that the 31% of the population who are unwilling to share their information will be harder to segment.

1.10 Ethics of Big Data

"At its simplest, ethics is a system of moral principles. They affect how people make decisions and lead their lives. Ethics is concerned with what is good for individuals and society and is also described as moral philosophy. "The term is derived from the Greek word *ethos* which can mean custom, habit, character or disposition" (BBC 2013).

There are four elements of Big Data ethics according to Davis and Patterson: Identity, Privacy, Reputation and Ownership. "Big Data provides others with the ability to quite easily correlate various aspects of our identity – without our participation or agreement" (Davis and Patterson 2012). Any information that consumers allow retailers access to, may be used to create an impression that may not be accurate.

Privacy is a key term when it comes to ethics, for example "where an individual intentionally keeps any information about their identity private, at least one ethical question arises: what right do others have to make it public?" (Davis and Patterson 2012). It would be ethically wrong to publicise any information that had intentionally been made private by the original user.

Reputation is less likely to affect the general population, apart from celebrities or people in the public eye. If something that could be perceived as controversial is made public, it could

have a negative impact on the reputation of a person or organisation. The final element is the issue of ownership. If information is available freely online, does it matter who owns it? This is a major talking point in the data industry as "there are more than a dozen initiatives and programs designed to create a codified set of principles or guidelines" (Davis and Patterson 2012) regarding data.

1.11 Buying Trends

"A trend is more than a group of popular items that everyone is buying. It's really an expression of what matters to consumers at the moment - it's a sign of what they're excited about" (Malta 2013). Trends can apply to many industries including retail. They can give retailers an idea about which of their products might currently be popular and what may be in the future.

1.12 Multichannel

"Multichannel marketing refers to using a combination of indirect and direct communication channels – websites, retail stores, mail order catalogs, direct mail, email, mobile, etc. and enabling customers to take action in response using the channel of their choice." (SAS Institute Inc 2013). In other words, multichannel marketing is about giving consumers a choice of which channel or channels to use when researching or buying products.
"Multichannel marketing allows a business more opportunities to interact with customers - each channel can help promote the other channels" (Rouse 2007). The increased opportunity to interact with customers is one that cannot be ignored. If retailers can find more information about their customers, they will be able to target them personalised offers and promotions.

1.13 Omnichannel

"Omnichannel retailing means connected customers can shop for and purchase the same items across many different channels: In a retail store, on their home or laptop computers and perhaps most importantly, on their connected mobile devices, which allow them to shop online for virtually anything, virtually everywhere" (Motorola Solutions 2012). Previously, customers may have experienced different prices and offers online compared to in store but retailers are now moving towards having each channel directly linked to one another. This will remove the stress for customers of searching for whether they can get a product cheaper online or in store. The main benefit of having omnichannel retailers is to

make purchasing good or services as simple as possible for the consumer.

"The consumer does not perceive channels at all, simply a brand" (Toshiba & IBM 2013). This report by Toshiba and IBM suggests that consumers will view retailers as one brand, instead of a number of brands e.g. in store, online, catalogue orders etc.

2. Methodology

These are the steps that will be used to complete the dissertation and come to a suitable overall answer to the question:

"How can the analytics on Big Data affect the buying trends of customers in the retail industry?"

2.1 Qualitative Research

"The data that qualitative methods collect tends to be words, rather than numbers, in the form of transcripts, or fieldwork notes. That data is typically unstructured, and statistical methods cannot be used in its analysis" (Timmons 2005). The interviews undertaken will provide qualitative answers on the whole. Some of the questions require a "Yes" or "No" answer, but these answers will be expanded upon, therefore being qualitative also.

2.2 Quantitative Research

Quantitative research "refers to a group of methods whose main focus is on quantities, that is, numbers. Numbers will usually be the main type of data that these methods collect, and those numbers will be analysed using mathematical or statistical techniques" (Timmons 2005). Questions 2, 5 and 6 will bring quantitative answers as they are "Yes" or "No" answers and can be analysed as a statistic if needed. However, for the purpose of this dissertation, statistics will not be used as all answers have been expanded upon.

2.3 Primary Research

"Primary research (field research) involves gathering new data that has not been collected before. For example, surveys using questionnaires or interviews with groups of people in a focus group" (BBC Bitesize 2013). The primary research for this dissertation will be carried out as interviews with COMPANY A employees who have relevant knowledge and experience about Big Data and the retail industry. Interview requests were sent out to five large UK retailers with all but one request turned down. The overriding reason for this was

due to confidentiality; therefore these retailers will not be named. Interview requests were sent to gain a view from retailers in addition to the views from COMPANY A, as opinions may have differed. COMPANY B was the only retailer who agreed to be interviewed, providing the same procedure of anonymity as with COMPANY A was followed.

2.4.1 COMPANY A Interviewees

In order to gain an answer to the question, five professionals who work with Big Data will be interviewed. The five interviewees are from COMPANY A and work with, or have a close association with, Big Data. This will help secure a better understanding of the topic and how it can affect the buying trends of retail customers. All five of the COMPANY A employees have asked for their names to remain anonymous, but gave permission for their job titles to They have over 20 years experience of the industry and has worked closely with people working with Big Data and analytics for the past eight years. Two other employees have over 30 years experience of the retail industry and 16 years of Big Data experience between them. Their job titles are 'Retail and Financial Services Enterprise Sales Manager' and 'Client Executive for the Retail Industry'. Another employee, with over two decades technical experience, has held the position of 'Client Technical Architect (Master Certified IT Architect)' for the past 12 years. The final employee has two years experience as a graduate and holds the position of 'Information Management Sales Specialist'. The information received could be invaluable to help reach a realistic conclusion. The reason for asking a selection of COMPANY A employees is to ascertain whether opinions differ depending on job role and length of relevant experience.

2.4.2 COMPANY B Interviewee

The COMPANY B representative is the 'Head of Multichannel Business Development' who has over six years experience in retail, e-commerce and multichannel development. The information gained from a retailer will provide a different perspective (specifically for questions 3 and 7), compared to COMPANY A as a supplier of Big Data products or services.

2.5 Interview Questions

The same set of questions will be asked to each employee in the interest of fairness and consistency for analytical purposes. The questions are below:

Question 1: What impact does Big Data currently have on the retail industry?

Question 2: Will there be a bigger impact in the future?

Question 3: How can retailers benefit from analysing Big Data?

Question 4: How will retail customers benefit from this?

Question 5: Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

Question 6: Will Big Data have an affect on how or when customers buy products?

Question 7: Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to be used to push in store sales?

2.6 Ethics

The only ethical issue that may arise is during primary research, in particular when former colleagues at COMPANY A are interviewed about the impact of Big Data in the retail industry. After being asked for permission to use the contents of their interview, some have requested for their names to be kept anonymous. To be consistent, all of the interviews will be kept anonymous. Please see "Appendix 1 – Ethics Form" for confirmation of ethical approval.

2.7 Analysis of Interview Answers

Once the data has been collected from the interviews, the answers will be analysed and some early conclusions based on the primary research can be made. When analysing the answers, the agreements will be written about first of all, followed by any difference of opinions.

2.8 Secondary Research

"Secondary research (desk research) involves gathering existing data that has already been produced. For example, researching the internet, newspapers and company reports" (BBC Bitesize 2013). To help answer the question, a considerable amount of secondary research will be necessary. By using a number of different sources including textbooks, online articles, journals and videos. The textbooks to be used are 'Big Data For Dummies', 'Big Data, Big Analytics', 'Big Data: A Revolution That Will Transform How We Live, Work and Think' and

'Retail Management A Strategic Approach'. There are a number of online articles by Bernard Marr about Big Data and Analytics and a BBC Horizon video (*BBC Horizon 2013 The Age of Big Data* 2013) that will provide a different insight to the world of Big Data. Using these sources will provide a greater number of opinions from industry experts, allowing for a discussion incorporating the primary research analysis and these secondary sources.

These sources will provide a lot of background information around the topics of:

- Big Data - "Big Data is the next generation of data warehousing and business analytics and is poised to deliver top line revenues cost efficiently for enterprises" (Minelli, Chambers and Dhiraj 2013),
- Analytics - "refers to our ability to collect and use data to generate insights that inform fact-based decision-making" (Marr 2013) and
- The Retail Industry - Retailing is "business activities involved in selling goods and services to consumers for their personal, family, or household use" (Berman and Evans 2013).

2.9 Discussion, Recommendations and Conclusions

Once the primary research has been gathered, the relevant analysis carried out and secondary research evaluated, a well informed conclusion can be made. This will lead to appropriate recommendations being made.

3. Analysis of Interviews

Five professionals from COMPANY A and one from COMPANY B who work with, or have a close association with, Big Data have answered all seven questions put to them. Each question will be analysed and will incorporate the views of all interviewees. For the purpose of this analysis, the interviewees will be referred to by an abbreviation for referencing purposes and in the main body of the text. These are shown below, with the abbreviation in brackets next to the job title:

- COMPANY A Vice President for the Retail (COMPANY A VP)
- COMPANY A Retail and Financial Services Enterprise Sales Manager (COMPANY A RFS)
- COMPANY A Client Executive for the Retail Industry (COMPANY A CX)

- COMPANY A Client Technical Architect - Master Certified IT Architect (COMPANY A CTA)
- COMPANY A Information Management Sales Specialist (COMPANY A IMS)
- COMPANY B Head of Multichannel Business Development (COMPANY B MBD).

3.1 Question 1: What impact does Big Data currently have on the retail industry?

The general consensus of the impact Big Data currently has on the retail industry is that retailers have not fully embraced it, including how the analytics of data can benefit them. This was summarised by the CX who said that retailers had "not really got to grips with Big Data and Analytics fully yet" (COMPANY A CX 2013. pers. comm.). Even though it appears that retailers are slightly apprehensive about Big Data, there is a belief that some are relishing the chance to look into Big Data, whereas others do not buy into it at all. One view is Big Data is "currently a trend that retailers are looking into" (COMPANY A VP 2013. pers. comm.). The view of the VP concurs with that of the CX who stated that retailers are "still trying to work out what is relevant and what isn't" (COMPANY A CX 2013. pers. comm.). The COMPANY B representative believes the main problem is that retailers "don't know what is being collected" (COMPANY B MDB 2013. pers. comm.). This view also ties in with that of the previous two COMPANY A views, suggesting Big Data suppliers such as COMPANY A know what the problem is, as do retailers. Most interviewees seem to agree about the current impact of Big Data, although another view is that "some people think Big Data is a marketing term and do not buy into it" (COMPANY A IMS 2013. pers. comm.). The same interviewee also suggests that some retailers think it will be great and want to be at the forefront of the Big Data boom, not wanting to be left behind in the market if competitors take advantage of its benefits. A view that slightly contradicts the others is that "almost all large retailers are either already taking advantage of Big Data or are thinking about using it" (COMPANY A RFS 2013. pers. comm.). This only takes into account large retailers and not the retail industry as a whole. **Without confirmation of which large retailers are being spoken about, the overriding opinion implies there is a distinct possibility that the majority of retailers are looking into how Big Data can benefit them. However, retailers are not convinced by it yet as they still need to know what data is being collected and how it can be used (as suggested by** (COMPANY B MDB 2013. pers. comm.)**).**

3.2 Question 2: Will there be a bigger impact in the future?

"Yes, very much at the beginning of the Big Data boom" (COMPANY A CX 2013. pers. comm.). All five interviewees hold the opinion that Big Data will definitely have a bigger impact in the future, with a number of explanations as to why this is the case. "Yes, we are very much at the start of the hype as more and more data is available" (COMPANY A RFS 2013. pers. comm.). The RFS gives a simple view of why there will be a bigger impact in the future whereas other interviewees gave further explanations on the matter such as "It is a lot cheaper to store data now than in the past" (COMPANY A CX 2013. pers. comm.). However, some views suggest that a definitive answer regarding what data can be used, could affect how quickly retailers adopt analytics packages to make use of their data. "Ethics could be an issue in the future. What data can retailers capture and can it be used ethically?" (COMPANY A CTA 2013. pers. comm.). There are a number of retailers that have already seen a positive impact of using Big Data before it became one of the latest business buzzwords. The VP spoke about how the Tesco Clubcard and the Tesco loyalty card are leaders in the field of retailers using Big Data. Sir Terry Leahy, pioneer of the Tesco Clubcard, believes "it is probably the first example of Big Data, which is the buzzword of today" (Leahy 2013). Tesco and Boots are two of the largest UK retailers using Big Data to their advantage but smaller retailers have not done so yet. The CTA acknowledges "smaller retailers will start to see a benefit in the future and they may link up with each other to provide joint offers" (COMPANY A CTA 2013. pers. comm.). There is a distinct possibility smaller retailers may start using Big Data when they have proof of the value of using it. The IMS suggests "it will have more of an impact when a number of case studies prove value and benefits of Big Data and the analytics of it" (COMPANY A IMS 2013. pers. comm.). **To conclude, there is a distinct possibility Big Data will have a much bigger impact on the retail industry in the future, due to the fact more data is now available. However, the speed at which the impact happens may depend on case studies that prove Big Data has a positive impact and the ethics around gathering data.**

3.3 Question 3: How can retailers benefit from analysing data?

"Retailers can learn a lot more about customer behaviour" (COMPANY A CTA 2013. pers. comm.). The CTA goes on to explain: "direct marketing can lead to increased sales and profits". Most interviewees agreed with the view that direct marketing could lead to higher sales based on a number of factors including personalised offers and better customer service. "Unlike media advertising, direct marketing enables you to target particular people

with a personalised message" (The Marketing Donut 2013). The RFS stated that "being more relevant in recommendations to customers, leads to more personalised offers which could drive higher sales" and understanding the customer can also lead to "cross selling and upselling products" (COMPANY A RFS 2013. pers. comm.). The CX states that being able to better understand customers, allowing for more individually focusing promotions, could provide data allowing retailers to have an improved "knowledge of how effective marketing campaigns are" (COMPANY A CX 2013. pers. comm.).

Being more well informed to decide on the next best action is another benefit to retailers. This can include how to cut costs, what marketing campaign to launch next and how to improve customer service. According to the IMS, retailers are "looking to improve call centres and telesales" (COMPANY A IMS 2013. pers. comm.). There is a remote possibility that call centres have a poor reputation because customers tend to contact them when they have a problem. "Time and time again, call centres have been voted one of the most frustrating things to use" (Hudson 2011). If the problem does not get resolved in the way they hoped for, they leave with a bad impression of the call centre.

One problem for retailers according to COMPANY B MBD is that they do not know which channels to invest in. "If retailers knew how many sales were attributed to a channel such as mobile, more money could be pumped into developing it" (COMPANY B MDB 2013. pers. comm.). This suggests that retailers currently have no way of tracking how many sales certain channels drive e.g. customers may search for a product on a smart phone app but not purchase the product on the app. It could, however, drive them into store to have another look at the product before purchasing. If retailers could track the lifecycle of a purchase from when a customer first looked at the product to when the transaction had been finalised, they would be able to see much clearer sales conversion rates.
Relevant promotions, recommendations and better customer service can lead to customers becoming more loyal to retailers. "More loyalty leads to higher spending and a greater overall lifetime spend" (COMPANY A VP 2013. pers. comm.). There is a possibility that having an enhanced understanding of customers will lead to higher sales and profits due to the lifetimes spend of loyal customers.

In conclusion, the main benefit of Big Data for retailers is understanding their customers, allowing for more personalised offers leading to higher sales and more loyal customers.

Other benefits include being able to make much more educated decisions on the next best action and which channels to focus on developing.

3.4 Question 4: How will retail customers benefit from this?

There is a distinct possibility that customers will reap benefits from Big Data due to the same factors benefiting retailers. By retailers collecting data about their customers, they should be able to put together a more personalised view of individual customers, culminating in a "more personal relationship between retailer and customer" (COMPANY A IMS 2013. pers. comm.). Customers are more likely to purchase more frequently at retailers where they feel more valued, especially if they are given more personalised offers. There appears to be a bargain hunting demeanour about UK customers whereby they do not want to pay full price for anything. "UK consumers like a bargain" (COMPANY A VP 2013. pers. comm.). This would suggest that a great way to get through to customers is to tailor "promotions and discounts on products they already want to buy" (COMPANY A RFS 2013. pers. comm.).

Another way retail customers will benefit from Big Data is the real time availability of price comparisons and reviews of product or services. "Having instant access to other consumer feedback is a positive" (COMPANY A CX 2013. pers. comm.). There has been a huge increase in the number of UK customers with access to the Internet. "In 2013, 36 million adults (73%) in Great Britain accessed the Internet every day" and "72% of all adults bought goods or services online" (Office of National Statistics 2013c). There is a possibility that online price transparency, using search engines to compare prices, has made an impact on the number of customers buying goods or services online. **In conclusion, the main benefit of Big Data to retail customers is having a more personal relationship with the retailer, which could include better customer service and personalised offers. Another benefit is the availability of price comparisons and other consumer feedback.**

3.5 Question 5: Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

"Yes, but it is down to personal preference. Customers will probably buy more but only to a point, based on their disposable income and other factors" (COMPANY A CTA 2013. pers. comm.). The CTA believes it will definitely affect the buying trends of customers, but this does not relate directly to spending more money. It could lead to a higher individual spend of some customers but probably not as a collective because it is "a lot more difficult to predict marketing success for customers as a collective" (COMPANY A IMS 2013. pers. comm.).

Most interviewees agree that Big Data will affect the buying trends of customers, however there is a difference of opinions regarding how it will affect trends. "There will be more attention paid to customers and a higher customer retention leads to a greater overall spend" (COMPANY A IMS 2013. pers. comm.). This view of the IMS goes back to how customers will benefit from Big Data but they believe it also has an impact on buying trends. This implies a possibility that in the long term, Big Data will affect buying trends but not necessarily in the short term. However, the CX believes the availability of customer reviews will have a huge affect on buying trends. "Good reviews = higher trade, bad reviews = lower trade" (COMPANY A CX 2013. pers. comm.). The option to look online and have reviews at your disposal is a huge factor that could affect the buying trends of customers. This is the main factor of Big Data that can affect the buying trends of customers, which is not directly linked to retailers.

One other factor that can affect buying trends is a relatively new technology: presence zones. "Presence Zones can help retailers deliver a unified customer experience across all channels. It can engage shoppers in real time with contextually relevant interactions and can help optimise store operations to differentiate the brand" (IBM 2013). The RFS believes that real time offers will have a major impact on buying trends. Presence zones technology allows retailers to "send real time offers to customers that they know are in store because they have signed up to their app on a smart phone" (IBM 2013). For example, if a customer receives a 20% off coupon on everything in store if you purchase within the next hour, they may be more likely to purchase than leave it and come back another day.

The main conclusion to this question is that all interviewees believe Big Data will affect buying trends of customers, in one way or another. There is a difference of opinion about

how they will be affected with factors such as a greater understanding of the customer, online reviews, disposable income and presence zones being discussed.

3.6 Question 6: Will Big Data have an affect on how or when customers buy products?

There were three differing opinions about whether the time or medium in which customers make purchases will be affected by Big Data. “It is very difficult to pin customers down to buy at a certain point until the customer is highly satisfied, however it will be down to personal preference” (COMPANY A IMS 2013. pers. comm.). The IMS believes that it will be very difficult to affect how and when customers purchase something due to a number of external factors that may affect them as an individual. A differing view comes from the VP who suggests: “click and collect can be a huge player in the retail market at the moment” (COMPANY A VP 2013. pers. comm.). Customers can buy at any time and then collect their goods when it is convenient. This view may invalidate the question because the question could be raised as to when the product or service is actually bought. Is it when they reserved and/ or paid for it online? Or is it when they collected, and possibly paid for, their purchase? However, a third view for the CTA is that “three main aspects will affect customer buying trends. These are time based, location based and mood based” (COMPANY A CTA 2013. pers. comm.). This view suggests that it will not just be Big Data that will affect how or when customers make a purchase. It could be the only factor, but it could also be affected by time, location and current mood of the customer.

In summary, there are differing opinions regarding how or when customers will buy products. One view is that it will be very difficult to affect it, whilst another is that click and collect is a big factor, with the question of when has the purchase actually been made, arising. Combining all of the views, Big Data will affect the ‘how’ or ‘when’ in some way, but other factors such as time, location and mood will also contribute.

3.7 Question 7: Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to push in store sales?

“Currently Big Data analytics is more likely to push online promotions but moving towards omnichannel retailing” (COMPANY A CX 2013. pers. comm.). The CX suggests that online sales are currently being pushed but there is a distinct possibility that it will be used to push omnichannel sales. “We are moving into an omnichannel world but other sales channels also need to be taken into consideration” (COMPANY A CTA 2013. pers. comm.). The other

channels could be telesales, click and collect, post, email and social media or a combination of all of these, plus online and in store. “You can’t really class the analysis of data as Big Data, unless you include all of the channels (omnichannel)” (COMPANY B MDB 2013. pers. comm.). This is a bold statement, suggesting there is a strong possibility that retailers believe Big Data includes all channels. As the interviewee is Head of Multichannel Development, they are likely to have a good knowledge and understanding of what channels are included in Big Data.

Ultimately, personal preference will affect which channel customers use to make their purchases. “Consumers still driving which channels they want to use, leaving retailers little choice but to go with what the customers want” (COMPANY A CX 2013. pers. comm.). Showrooming, where a customer would look at a product in store but go on to purchase it at a cheaper price online, is another factor that needs to be taken into consideration. An example of showrooming would be: “Having selected a camera in the store, you use your smartphone to check online and discover that a rival retailer is promoting the same camera for £50 less on their website, and can deliver it to you the next day. You immediately purchase the camera online and go home empty-handed, while the store remains oblivious to the cost of any missed sales” (Butler 2013). This would support the view that retailers want to become omnichannel. Social media is another channel that can be used for sales but it is “used currently for damage limitation” (COMPANY A CTA 2013. pers. comm.). The CTA believes that social media such as Twitter is currently used to work out resolutions to customers problems rather than create sales opportunities. **In summary, the overwhelming opinion from all six interviewees is that retailers are pushing for an omnichannel view of their business. They do not want to target a specific channel, as they want customers to view all channels as a single shopping experience. To conclude, there is a distinct possibility Big Data analytics will be used to push sales through all channels.**

3.8 Other Findings

“Big Data allows people to identify lucrative customer segments and develop rich and relevant multichannel customer journeys to retailers” (COMPANY A RFS 2013. pers. comm.). This statement is how the RFS would answer the dissertation question that is being asked. They believe Big Data opens up lots of information that can benefit both the retailer and its customers.

“Five years ago, retailers had no idea who was buying what, who has been into stores and who had bought online” (COMPANY A RFS 2013. pers. comm.). Now Big Data helps retailers understand individuals, allowing them to create a higher amount, of much smaller market segments to target.

4. Discussion

This study was undertaken to see how the analytics on Big Data might affect the buying trends of customers in the retail industry. For an informed conclusion to be made, a number of aspects had to be addressed.

Books, websites, articles, reports and videos were used to collate a comprehensive view on various topics related to the original question. These topics are:

- Big Data
- Analytics
- The retail industry
- Marketing
- Market segmentation
- Ethics of Big Data
- Buying trends
- Multichannel and
- Omnichannel.

In order to gain further information, five professionals who work with Big Data were interviewed. The five interviewees from COMPANY A and one from COMPANY B who work with, or have a close association with, Big Data and have given an insight as to how it can affect the buying trends of retail customers.

The following questions will be answered by combining analysis of the interviews and finding from extensive research.

4.1 What is Big Data and how is it relevant to the retail industry?

The retail industry is made up of organisations that sell products and/or services to consumers, with the industry being the second largest in the UK (Office for National

Statistics 2013b). **Examples of retail organisations include supermarkets, department stores, specialist stores and fashion outlets.**

"The term Big Data applies to information that cannot be processed or analysed using traditional tools or processes" (Eaton et al. 2012). The vast amount of data currently available, and the speed that new data is created is one of the reasons that Big Data is one of the trends being spoken about in the retail industry. For Big Data to be useful it needs to be analysed. Anyone, including retailers, can "use data to generate insights that inform fact-based decision making" (Marr 2013).

Big Data is relevant to the retail industry for many reasons. According to the majority of the COMPANY A interviewees, **it can help retailers learn a lot more about consumers** with one suggesting that analysing their behaviours allows "direct marketing which can lead to increased sales and profits" (COMPANY A CTA 2013. pers. comm.). This may also allow customers to save money on purchases they are interested in. **There is a distinct possibility that Big Data will be extremely relevant and have a big impact on the retail industry, for both retailers and consumers.**

4.2 What are the main benefits and drawbacks of Big Data to retailers and their customers?

Big Data could be mutually beneficial to both retailers and customers. "Being more relevant in recommendations to customers, leads to more personalised offers which could drive higher sales" (COMPANY A RFS 2013. pers. comm.). This statement from the COMPANY A RFS suggests that retailers could increase sales by finding out more information about their customers and using it to offer more relevant promotions. **Therefore, the main benefit to the retailer would be increased sales, with customers benefitting from offers on the products or services they are interested in.**

However, the major stumbling block of retailers using Big Data could be customers consenting access to personal information. Privacy is a key term when it comes to ethics and it would be ethically wrong to publicise any information that had intentionally been made private by the original user. **Any information that consumers allow retailers access to, is likely to be used to create an impression and place them in a segment with other consumers, and this could make them apprehensive about the information they give out in**

case it creates a false impression. However, according to the interviewees and other research, there is a low possibility of any other drawbacks of Big Data.

4.3 Will Big Data affect buying trends of retail customers and which channels will be affected?

"A trend is more than a group of popular items that everyone is buying. It's really an expression of what matter to consumers at the moment" (Malta 2013). This definition suggests buying trends are more complicated than what is popular or current fashion, it is what people are excited about.

Big Data will undoubtedly have an impact on the buying trends of retail customers but ultimately when, where and how customers makes purchases will be down to personal preference. However, by retailers having a greater knowledge of their customers, it could lead to a higher overall spend of individual customers over their lifetime. The COMPANY A IMS believes it is "a lot more difficult to predict marketing success for customers as a collective" (COMPANY A IMS 2013. pers. comm.). **Throughout the research, a number of sources suggested that the main way Big Data could affect buying trends is by the information retailers collect and analyse about their customers, and how it can be used to benefit both parties.** (Jones 2013) and (Brown 2010) suggest that marketing and market segmentation will have the greatest impact on the buying trends of customers. "Stereotypes and generalisations simply aren't relevant to the everyday experiences of most customers" (Beans 2013). A number of the COMPANY A interviewees concur with this view by suggesting that the more customer information available, the more difficult it will be to place them in a specific segment, causing a shift in how retailers view their customer base.

There is one other factor that will be affected by Big Data, which has been overlooked by all but one interviewee. **The COMPANY A CX believes the availability of online independent reviews of products and services will have a major impact on buying trends.** The only evidence found to back this up is from an article in the Guardian. "Although social media sites and forums may not generate the financial returns for which investors yearn – they play an increasingly important role in how consumers judge the quality of goods and services" (Doward 2013). This conclusion was made after a study was conducted on 300 restaurants in the US, however the article does go on to say that this can be applied to all

industries. **There is a possibility that this can be applied to retailers, therefore suggesting that independent reviews can have an impact on the buying trends of customers.**

The primary analysis shows that most interviewees believe Big Data will have an affect on more than one channel. They believe that all channels will combine to become omnichannel that "means connected customers can shop for and purchase the same items across many different channels" (Motorola Solutions 2012). Retailers are moving from a multichannel offering to an omnichannel way of operating. The key difference is that multichannel offers different channels with each one working as a separate entity e.g. if orders are made online, the product has to be delivered. Whereas omnichannel retailers would allow the product to be ordered online, but picked up in a local store. Logistically, this poses a greater challenge for retailers but allows the whole transaction run more smoothly for customers. The COMPANY A VP backs up this view and believes "click and collect can be a huge player in the retail market" (COMPANY A VP 2013. pers. comm.). **Personal preference will have an impact on which channels are used but the general consensus is that most channels will be affected as part of an omnichannel strategy.**

"Five years ago, retailers had no idea who was buying what, who has been into stores and who had bought online" (COMPANY A RFS 2013. pers. comm.). This interviewee pointed out that only five years ago, when none of the current analysis tools were available, retailers knew very little about their customers. With the rapid development of technology, more and more information is being analysed by retailers, allowing a greater understanding of individuals and the creation of smaller market segments. The executive chairman of Google, Eric Schmidt, suggests "from the dawn of civilisation until 2003, humankind generated five exabytes (1000KB^6) of data. Now we produce five exabytes every two days and the pace is accelerating" (Rowan 2011). There is a possibility that in the next five years, retailers and customers alike will have an unfathomable amount data available to help them make decisions on how to promote and purchase products or services respectively, meaning that Big Data will have an even bigger impact in the future.

5. Final Conclusions

5.1 Recap of Aim

"The aim of this report is to investigate how the analytics on Big Data can affect the buying trends of customers in the retail industry. This investigation will be done by conducting interviews with professionals in the fields of Big Data and retail, and undertaking extensive research around the relevant topics."

Interviews were carried out with five professionals from COMPANY A and one representative from COMPANY B, all of whom work with, or have a close association with, Big Data. This will help secure a better understanding of the topic and how it can affect the buying trends of retail customers. The transcripts from these interviews can be seen in appendices two to seven. The answers from the interviews were analysed and combined with secondary research (sections 1.5 to 1.13) to meet the objectives, thus answering the overall question of this investigation.

5.2 Recap of Objectives

1. *To define key words and phrases.* These were defined in sections 1.5 to 1.13.
2. *To identify the current and future impacts of Big Data on the retail industry.* The current and future impacts were identified in sections 1.5, 3.1 and 3.2.
3. *To ascertain how retailers can benefit from analysing data.* The benefits to retailers were outlined in sections 3.3 and 4.2.
4. *To identify how retail customers can benefit from the analysis of Big Data.* The customer benefits were identified in sections 3.4 and 4.2.
5. *To establish if, and how, Big Data will affect the buying trends of customers, taking into account how, when or where purchases are made.* The effects of buying trends were established in sections 3.5, 3.6 and 4.3.

5.3 Answering the question: How can the analytics on Big Data affect the buying trends of customers in the retail industry?

Throughout this report, a number of sources suggested that the main way Big Data could affect buying trends is by the information retailers collect and analyse about their customers, and how it can be used to benefit both parties.

There is a high probability that the main benefit of Big Data for retailers is being able to better understand their customers, allowing for more personalised offers leading to higher sales and customer loyalty. Other benefits may include being able to make much better informed decisions such as the next best action and which channels to focus on developing. Retail customers could benefit from Big Data by developing a more personal relationship with the retailer, resulting in better customer service and personalised offers. There is a distinct possibility that the availability of online reviews of products and services will have a major impact on buying trends e.g. a collection of positive expert and peer reviews may influence consumers to purchase a product instead of an alternative.

One of the prominent factors that may affect the buying trends of retail customers is the channel by which purchases are made. It is highly likely personal preference will have an impact on which channels are used but the general consensus of the six interviewees is that most channels will be affected as part of an omnichannel strategy. The analytics of Big Data will undoubtedly have an impact on the buying trends of retail customers but ultimately when, where and how customers make purchases will be down to personal preference.

6. Recommendations

This research was carried out to see whether the analytics of Big Data would affect the buying trends of customers in the retail industry. The combination of primary and secondary research suggests that this is the case.

6.1 What further research could be carried out?

For a more informative view on the impact of Big Data, additional retailers could be interviewed. A number of retailers were sent requests to be interviewed, with all but one declining citing confidentiality as the reason. COMPANY B was the only retailer to be interviewed and it cannot be assumed that their views are representative of retailers in

general. There is a distinct possibility that a collective view from a minimum of five retailers could prove more reliable, allowing for more representative conclusions to be made. There is also an option to interview retail customers. However, they may be unfamiliar with Big Data, analytics and how retailers may use the information to benefit them.

6.2 Could the primary research be carried out differently?

The way in which the primary research was carried out should not be changed as all potential interviewees were approached and communicated with in a courteous and professional manner.

6.3 Were any objectives not completely met?

All objectives were completely met as shown in section 5.2.

6.4 What will happen with Big Data in the future?

Currently, Big Data is seen as a buzzword in the business and IT industries. Will it make an impact on the retail industry just in the near future or will it have a long term impact over a number of years? As more and more data becomes available every second, and with the use of analytics tools becoming more commonplace in the retail industry, there could a huge impact for many years to come.

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Appendices

1. Appendix 1 – Interview transcript: COMPANY A - Client Executive for the Retail Industry
2. Appendix 2 – Interview transcript: COMPANY A - Client Technical Architect
3. Appendix 3 – Interview transcript: COMPANY A - Information Management Sales Specialist
4. Appendix 4 – Interview transcript: COMPANY A - Retail & Financial Services Enterprise Sales Manager
5. Appendix 5 – Interview transcript: COMPANY A - Vice President of the Retail Industry
6. Appendix 6 – Interview transcript: COMPANY B – Head of Multichannel Business Development

Appendix 1 - Client Executive for the Retail Industry at COMPANY A

Interview took place 30/10/2013 at 17:00 – 17:40

What impact does Big Data currently have on the retail industry?

- Retail industry not really got to grips with Big Data and Analytics fully yet.
- Loads more data now readily available (mobile, online, multi-channel).
- IT departments used to be in control of all their data.
- Didn't used to use data properly before when tools/ techniques weren't available.
- Still trying to work out what is relevant and what isn't.
- Data now externally available but is not easily recognisable e.g. social media, website cookies.
- Mobile phone company's data – phone calls, web browsing could be used
- Telematics – black boxes in cars used by some insurance companies can track exactly where people are driving, where they are passing on regular journeys etc.
- Retailers have to get a lot more data savvy to use data to its full potential

Will there be a bigger impact in the future?

- Yes, very much at the beginning of the Big Data boom.
- It is a lot cheaper to store data now than in the past.
- More and more data is becoming available.
- Ethics is the only sticking point when getting hold of certain data.

How can retailers benefit from analysing Big Data?

- More personalised offers.
- Higher sales.
- Better customer service.
- Better knowledge of when and where products are bought.
- Knowledge of how effective marketing campaigns are.

How will retail customers benefit from this?

- Price transparency e.g. Google a product to find the cheapest price.
- More promotions, therefore likely to lead to savings.
- Customers will feel more valued by the retailer.
- Easier for consumer to understand who they are buying from.

- Much more information about products is becoming available.
- Having instant access to other consumer feedback is a positive.

Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

- Yes, without a doubt.
- Independent reviews (external data) will have a huge affect.
- Good reviews – Higher trade.
- Poor reviews – Lower trade.

Will Big Data have an affect on how or when customers buy products?

- Yes – same as above answer.
- If promotions are there, they will definitely spend more.

Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to be used to push in store sales?

- Currently it is more likely to be used online but moving towards "omnichannel" e.g. if you order anything from John Lewis, you can pick it up from your nearest Waitrose store (click and collect).
- Online offers work well, less hassle for customers.
- Consumers still driving which channels they want to use leaving retailers with little choice but to go with what the customers want.

AOB

- Speak to COMPANY B – Head of E-Commerce
- Speak to COMPANY C – Head of Mobile

Appendix 2 - Client Technical Architect (COMPANY A Certified Architect, Master Certified IT Architect)

Interview took place 30/10/2013 at 11:15am - 11: 45am

What impact does Big Data currently have on the retail industry?

- Customers used to buy based on personalised services
- Retailers trying to get back to model where customers buy more when promotions are personalised (like in the "olden days")
- Retailers want to create a more personalised view by asking customers what they want
- Fundamental shift from demographics to the individual

Will there be a bigger impact in the future?

- Yes, especially with retailers starting to data mine now.
- When all the data analysis joins up, it will be very interesting to see how retailers act upon the data.
- Smaller retailers will start to see a benefit in the future.
- May see smaller retailers link up with each other to provide joint offers.
- Ethics could be an issue in the future. What data can retailers capture and can it be used ethically?

How can retailers benefit from analysing Big Data?

- Retailers can learn a lot more about customer behaviour.
- Direct marketing to customers can lead to increased sales and profits.

How will retail customers benefit from this?

- Customers will save money through personalised offers
- They could be made aware of offers/ products they were not previously aware of.
- Big Data can be used to predict what a certain person might want/ need to buy and could also be used to help recommend gifts for family/friends based on their demographic.

Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

- Yes, but it is down to personal preference.
- Eventually people will be put into “personality groups” instead of the current demographics such as age, sex or location.
- Customers will probably buy more because of Big Data and the analytics but only to a point, based on their disposable income and other factors.

Will Big Data have an affect on how or when customers buy products?

- Yes. There are three main aspects that will affect customer buying trends.
- These are time based, location based and mood based. These factors can affect how or when a customer buys on their own, or as a combination.

Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to be used to push in store sales?

- Definitely both as we are moving to an “omnichannel world”.
- Retailers will push promotions to find out the favoured channel.
- Other sales channels also need to be taken into consideration. These are telesales, post, email and social media and often a combination of these.
- There is no specific area to focus on.
- Social media e.g. Twitter being used currently for damage limitation e.g. COMPANY C security guard refusing to let a mother breast feed in store.
- Retailers use how influential people are on social media to promote product and send free products out, asking people to review them and publicise this to their followers/ friends. This is seen a free instant marketing for retailers.
- Asos opened up in Australia via Facebook reviews and no other marketing.

AOB

- Speak to COMPANY B – Head of E-Commerce
- Speak to COMPANY C – Head of Mobile

Appendix 3 - Information Management Sales Specialist at COMPANY A

Interview took place 01/11/2013 at 10:15 – 10:45

What impact does Big Data currently have on the retail industry?

- Some people think "Big Data" is a marketing term and don't buy into it.
- Some think it will be great (taking the forefront, great opportunity)
- So many "touchpoints" (sources to get data from)
- Some customers unsure of the benefits and see it as a huge transformation to incorporate it into their business.
- Retailers are concerned about the competitiveness of others and don't want this to affect them, wanting to improve their own customer service.
- Retailers don't want to be left behind and want to know more about the benefits of Big Data.

Will there be a bigger impact in the future?

- Yes, companies who aren't currently using Big Data will do so in the future.
- At present, retailers are focused in "fixing" other problems first.
- It will have more of an impact when a number of case studies prove value and benefits of Big Data and the analytics.

How can retailers benefit from analysing Big Data?

- Retailers will save costs by managing data in a cheaper way.
- They don't just want to "dump" data in a standard database anymore.
- Predictive analytics can help proactively retain property/ products.
- Companies working together to "triangulate" phone signals, seeing where consumers are, which store they are near to that they visit regularly, sending them a promotional text to tempt them into purchasing something.
- Customer service improvements – looking to improve call centres and telesales.
- "Omnichannel" or "single pane of glass" view is what retailers want their business to end up like

How will retail customers benefit from this?

- Customer care/ service will be improved
- Customers will benefit in the long term

- Companies will understand customers a lot more leading to more specific promotions
- Marketing deals/ offers will increase
- There will be a more personal relationship between retailer and customer

Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

- Yes, as there will be more attention paid to customers.
- Individual customer point of view: Yes, they will spend more.
- Customers as a collective: a lot more difficult to predict marketing success.
- "Higher customer retention leads to greater overall spend".

Will Big Data have an affect on how or when customers buy products?

- Personal preference.
- Online comparisons may lead people to decrease in "impulse buying".
- Higher incentives could increase sales.
- Very difficult to pin customers down to buy at a certain point until customer highly satisfied.

Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to be used to push in store sales?

- Combination of both – omnichannel.
- If data is available, retailers will market across all channels.

Appendix 4 - Retail and Financial Services Enterprise Sales Manager for the North at COMPANY A

Interview took place 16/11/2013 at 10:30 – 11:20

What impact does Big Data currently have on the retail industry?

- Easier for some retailers than other to use Big Data to impact them
- Retail industry not really got to grips with Big Data and Analytics fully yet.
- Loads more data now readily available (mobile, online, multi-channel).
- Didn't used to use data properly before when tools/ techniques weren't available.
- Still trying to work out what is relevant and what isn't.
- Data now externally available but is not easily recognisable e.g. social media, website cookies.
- Almost all large retailers are either already taking advantage of Big Data or thinking about using it

Will there be a bigger impact in the future?

- Yes, very much at the start of the hype
- More and more data is available
- More companies will start using Big Data

How can retailers benefit from analysing Big Data?

- Being more relevant in recommendations to customers, and having better customer service.
- More personalised offers to drive higher sales.
- Can decide on the next best action
- Cross selling and upselling products

How will retail customers benefit from this?

- More promotions and personalised offers, therefore likely to lead to savings.
- Customers will feel have more choice on how they want to be contacted.
- Potential promotions and discounts on products they already want to buy

Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

- Yes, without a doubt.
- May not necessarily affect the times they shop but could do if promotions are limited to certain time constraints
- It could affect the retailers they decide to shop with
- Presence zones – "current/ right now offers"

Will Big Data have an affect on how or when customers buy products?

- Yes – same as above answer.
- If promotions are there, they will definitely spend more.

Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to be used to push in store sales?

- Multichannel
- Research/ price search online
- In store to view products then buy online if cheaper
- Might not have an impact on the instore to online proportions of sales
- Cover "showrooming" – Martin Butler article
- Reverse showrooming? Google it
- Retailers can't work out who has bought products online after going into store to look at the product/s

AOB

- "Big Data allows people to identify lucrative customer segments and develop rich and relevant multichannel customer journeys to retailers". Paul Ryan

Appendix 5 - Vice President of Retail/ Retail Industry Leader at COMPANY A

Interview took place 06/11/2013 at 10:40am - 11:05am

What impact does Big Data currently have on the retail industry?

- COMPANY A website
- Mass explosion of data
- Different types of data – videos, social etc
- Currently a "trend" that retailers are looking at
- Visual advertising in petrol stations – Tesco (Amscreen – look at news article)
- Social data to engage people in a different way
- Kohls department stores in US – using "Presence Zones"
- Apple doing "beacons" and 4G to improve more precise information about locations
- In conclusion, a few bigger retailers currently experimenting

Will there be a bigger impact in the future?

- Leaders – Tesco (Clubcard), COMPANY B, COMPANY C, Boots (Loyalty card)
- Will have a much bigger impact in the future

How can retailers benefit from analysing Big Data?

- Understanding customer more
- More personalised leading to more loyal customers
- More loyalty leads to higher spending
- Lifetime spend – loyal customers and more promotions

How will retail customers benefit from this?

- More relevant promotions
- UK consumers "like a bargain" more than other consumers around the world
- Look at COMPANY A white papers on Big Data
- What info do people want to share? What info will the give up willingly?

Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

- Yes
- More personalised = more likely to spend money

- CPG company will benefit more (CPG companies run websites etc)

Will Big Data have an affect on how or when customers buy products?

- Potentially
- Click and collect a huge player in retail market at the moment
- Can buy at any time, then collect at a convenient time

Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to be used to push in store sales?

- Omnichannel retailer
- One customer experience
- Store, online, click and collect
- Look for article on John Lewis/ Waitrose collection

Appendix 6 - Head of Multichannel Business Development at COMPANY B

Interview took place 27/12/2013 at 14:30 – 14:55

What impact does Big Data currently have on the retail industry?

- Relatively limited
- Retailers in general don't collect data in an accurate and efficient way
- Problem 1 – what is being collected?
- Problem 2 – access to information. Can it be used to do anything with?

Will there be a bigger impact in the future?

- Absolutely, for retailers who start to get it right.
- Especially if they collect data from all areas of the business such as in store and online. The bigger impact will come when all areas are looked at (omnichannel view).

How can retailers benefit from analysing Big Data?

- They will be able to see the value of individual channels.
- They can see the lifetimes of multiple channels.
- Tracking the lifetime of individual transactions/ purchases.
- Allows retailers to know where to invest (which channels)
- Mobile doesn't have great sales conversion rates but does drive people in stores (and to purchase in store).
- If retailers knew how many sales were attributed to mobile, more money would be pumped into developing it.
- The overarching view of retailers regarding Big Data is to allow the to create an omnichannel shopping experience, using the strengths of each channel to increase overall sales/ customer loyalty.

How will retail customers benefit from this?

- Much more relevant and personalised service.
- Presence zones offers/ discounts. If they allow retailers to track the channels they are using, times they are using them and the content they are viewing, the more likely they will benefit from offers and a better overall customer experience.

Will Big Data affect buying trends of customers? E.g. are they more likely to spend money in store if they are offered extra discounts?

- May increase customer spend as they will have less wasted time searching for products

Will Big Data have an affect on how or when customers buy products?

- Yes – same as above answer.
- Lifetime spend and average spend will increase, not just one of them.
- Two metrics: Average order spend and Frequency.

Are retailers more likely to use Big Data analytics to push online promotions/ sales? Or is it more likely to be used to push in store sales?

- Omnichannel.
- It is not really using Big Data if it does not include all channels.