DH Major Project - BT

by Michael Daniel Hawkes

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A study to understand the effects of using simple dashboard reporting and performance thresholds within an organisation

By

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Project submitted as part of the requirements for the award of BSc(Hons) Business & Information Technology
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Declaration

I, Michael Daniel Hawkes declare that I am the sole author of this Project; that all references cited have been consulted; that I have conducted all work of which this is a record, and that the finished work lies within the prescribed word limits.

This work has not previously been accepted as part of any other degree submission.

Signed : .....

Date : .....

Acknowledgements

- To Emily - my wife, for everything.
- To Dr Nicola Whitehead, for her continuous support and guidance. Always willing to help with nuggets of wisdom; always sharing a moment to have random fascinating conversations yet never giving the answer to a question – instead showing me a lifelong skill of ways to work out solutions myself. To learn how to learn.
- To my family who, unbeknownst to most of them provided all the support I needed to get me through the six years. My Dad in particular for his pearls of wisdom and experience.

Form of Consent

I Michael Daniel Hawkes hereby consent that my Project, submitted in candidature for the *B.Sc.(Hons) Business & Information Technology* degree, if successful, may be made available for inter-library loan or photocopying (subject to the law of copyright), and that the title and abstract may be made available to outside organisations.

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Abstract

Understanding the customer is a crucial aspect of an organisations strategy, especially in today's fierce industries. This statement transcends all industries and as such can be applied to any organisation. Big Data, Data Visualisation and Customer Relationship Management are methods/processes and beliefs that are continuing to evolve each day.

Underestimating the power of these variables and how they can directly impact the performance of an organisation cannot be overlooked.

This dissertation explores several key concepts underneath Data Visualisation, Customer Relationship Management and Big Data and presents a solution to a critical business problem – which, prior to starting this project was not known at the time.

Prior studies about Data Visualisation, Big Data and Customer Relationship Management are presented within the Literature Review section, along with widely-used techniques which are listed and discussed.

Finally, the solution to the business problem is presented along with a review of how the literature contributed to the project's success. This project will make a contribution to an international organisation by providing a new insightful report which identifies many improvement opportunities.

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1.0 Introduction

The company that is being assessed for this dissertation is BT. More specifically, BT Consumer (referred to as Consumer throughout). Consumer is the Sales and Service division that provides products and services tailored specifically for the individual user, or their family.

BT Group consists of BT Wholesale (B2B Communications Provider), Openreach (Infrastructure Management), TSO (Product Innovation) and BT Business (Products and Services for SMEs and Large Enterprises), along with Consumer.

Consumer is reliant on customers to purchase products and services, these products may include a combination of (but are not limited to) a telephone line, broadband connection, TV services, mobile telephones and contracts or Sports channels.

A critical element of enabling senior management to make the right decisions is business intelligence. Accurate and timely data provides near real-time information on a myriad of metrics and key performance indicators - that when used appropriately form part of business cases for new acquisitions, product developments, business/staff performance reviews to name but a few.

A key report within this focusses on customer 'effort'; the amount of effort a customer has to expend in order to receive an active service from BT. *Effort is classified as contacts in to the business in the form of phone calls, e-mails or online chat forums.*

Having reviewed the effort report, it became apparent that usage was low and well below the level senior managers expected. A disconnect was identified between what senior managers believed to be an extremely powerful tool and what front-line managers found to be a database that contained too much information and was too difficult to navigate.

Exacerbating this, it became more apparent the report was not being used during advisor performance reviews, contrary to senior management belief. The impact was a critical business report being produced at a cost to the company, intended to identify a cohort of advisors that required further assistance through upskill training. The report was designed as a one-stop-shop for all managers to use regularly. From a first line manager perspective, the output of these reviews should be shared with the senior team.

The database was advertised as all encompassing – with advisors from across the organisation – so managers could compare and measure the performance of their team members to those of another team. This was not being done.

In summarise, a number of issues were apparent:

1. Front line management were not using the report, contrary to the perception of their senior team.
2. Front line management viewed the report as 'passive' that was used 'now and again'; it was too complex and difficult to navigate.
3. The company was spending money producing a report that was not being used.

A paradox was seen, the design was meant to be easy to use and provide snapshot summaries of advisor performance. When in fact the people who needed it the most did not use it due to it being seen as 'convoluted'.

I was approached by a senior stakeholder and asked to review the reporting processes along with the database itself and provide a resolution on how to ensure our operational teams were using it as per its intended use.

The output should be scalable and easily adapted without affecting the main database. Controllability was also a crucial factor, where regular maintenance and updates needed to be swift so as to not take the report offline for any substantial duration. The business was committed to having the report up and running quickly so design and implementation needed to be smooth and the transition from current to new state had to be faultless.

2.0 Literature Review

2.1 Overview of Customer Relationship Management

Customer Relationship Management, (CRM) is a term that has been widely used since the early 1990 (1). In its plainest sense it is how customer relationships are managed, using varying methods/tools and systems. It is not just a term to be used as a broad definition but one that is far more intriguing when explored in more detail.

Customer Relationship Management maybe widely known and acknowledged as the de facto term when referring to how businesses and organisations interact and manage their customers. However, it is a hotly contested discipline throughout the Information Technology world (1) and as yet a formal industry-wide agreement is yet to be reached on its exacting standards. The reason for this lies in the fundamental meaning of the acronym itself; the term CRM can mean either Customer Relationship Management, or Customer Relationship Marketing.

This notion can be expanded by identifying the term CRM as one that is too broad and multifaceted, resulting in it lacking clear definition. To exemplify this, CRM is seen as being multi-layered, where the customer could not only be the end-user but the distributor (that the business would invoice for a service) or the dealer (where their products are purchased) (2).

By their very nature, customers and organisations differ from one industry to the next. It should not be of a surprise to the reader that several definitions and arguments exist in order to attempt classification of CRM as an industry-wide standard (2).

An analogy could be as such: a shop may have a regular customers that the proprietor would meet on a daily basis. In the early stages when the customer was still unknown, the relationship with the shopkeeper would be formal. Over time and as the visits became more regular, the interactions and conversations would increase. The result is the relationship becomes more personal.

Conversely, a customer that is shopping in a city/town centre looking for a gift may call in to a store to make a one-off purchase. The relationship between the customer and the staff member would remain formal and friendly; the customer may only need to visit that shop once.

The underlying story in these examples is whilst the relationships are similar in principle (Customer-Shopkeeper) the relationships are different and as such managed differently. Even at grassroots level, CRM is active.

2.1.1 Definition of Customer Relationship Management

Customer Relationship Management is a process that increases understanding of how an organisation manages relations with its customers. Consequently, it is a *"business strategy that uses IT to provide an enterprise"* with a "*comprehensive, reliable and integrated view of its customer base"* (2).

CRM can be used to form complex business analyses by firstly storing vast amounts of customer data (calls, e-mails, letters etc...) and translating into actionable insight, of which the organisation will use to improve its working practises to give the best service possible to its customers (2).

2.1.2 Why are customer relations important?

Markets, economies and industries are changing. They are becoming more competitive and volatile (3).The business landscape is evolving and customers are facing more choice each day, from a time where a vast majority of items could only be purchased in-store to a time when customers could buy an array of goods via the internet.

Customers are being overloaded with information on new products and services from a myriad of different companies. From the click of a button customers can select a company to purchase their car insurance or phone and broadband services amongst

others. They can see an advert online advertising a special offer on a product from a company they may not be familiar with, but choose to visit that site and purchase - instead of the company they have bought from regularly (3).

Recognising customers as a critical element of an organisation is more pressing than ever (3). Organisations need to stand out from their competitors to be recognised by potential customers, or retained by current clients. New acquisitions and retentions are two separate discussion points that will be looked at in more detail at a later point in this dissertation.

Kumar and Reinartz state three key gradual, yet seismic factors modern firms are facing, with respect to changes in the business environment. These are:

1. Consumers
2. Marketplaces
3. Technology (3)

Knox, Payne et al take the above factors one step further and break them down to three elements they believe classify Customer Relationship Management. These are:

1. "*Identifying, satisfying, retaining and maximising*" the worth of a 'best' or 'high value customer.
2. *"Wrapping the firm around the customer"* in essence making sure every contact adds value to the customer.
3. Creating "*a complete picture*" of the customer (4)

In the authors view, it is the creation of a complete picture of a customer which epitomises Customer Relationship Management. For an organisation to be able to utilise a framework such as CRM to design, develop, implement and manage a framework that by its very definition is customer-centric, will only lead to positive results that any business needs to survive.

CRM puts the customer at the forefront of the company operations. It both teaches and reinforces the notion of a healthy organisation that relies on its customers but

deals with them in such a way that customers will almost feel obligated to stay, as a by-product of treating the customer in ways that retention is almost inevitable.

As with any new process or system the effect is the company will have data. The Oxford Dictionary defines data as *"facts and statistics collected together for reference or analysis"* (5). Data is information in its rawest form (6); a collection of numbers and words that in isolation may mean nothing to an organisation or a reader, but when analysed and presented - is transformed in to a context that is both meaningful and relevant to an organisation (7).

2.1.3 Why is information useful?

The Business Dictionary tells us: Information is not only useful, *"it is valuable"* (7). So much so that it can *"affect a behaviour, a decision, or an outcome"* (7).

In the context of CRM, Information - as a product of processed data - helps formulate the complete picture of a customer and how the company deals with them. Linking this back to the first element information can also:

1. Be used to **identify new customers** - by studying current market trends
2. **Measure the happiness** of current customers - through satisfaction surveys
3. **Retain current customers** - by providing services tailored to customers' needs
4. **Maximise profit** - identify areas within current marketing campaigns or product features that once resolved can lead to revenue and growth opportunities.

The author believes Customer Relationship Management and Data (from both meaningful and relevant information) are intrinsically linked.

From an Input, Process and Output viewpoint the input would be the customer physically *doing* something using the company system i.e. purchasing a product. A CRM-based process takes place where systems are used to acknowledge and dispatch the order but to also:

1. Measure the speed of the process
2. Record the number of departments needed in order to fulfil the order
3. Measure the efficiency of those departments

The output would be a fulfilled order despatched and delivered to the customer, complemented by a batch of back-end data the organisation can analyse.

CRM theories will expand on this and will be discussed in the next section.

2.2 Customer Relationship Management Theories

Bain.com says CRM is a process that companies utilise in order to understand their customer groups and therefore is an enabler of swift response. CRM technologies allow firms to "collect and manage large amounts of customer data and then carry out strategies based on that information" (8).

Overpinning these technologies are many theories; five of which are seen as the main schools of thought. In isolation these present differing views of CRM however when brought together show similar and comparable beliefs. These are:

1. The Industrial Marketing and Purchasing School
2. Nordic School
3. Anglo-Australian School
4. North American School
5. Asian *(guanxi)* School (1)

2.2.1 The Industrial Marketing and Purchasing School (IMP)

The IMP views customer relationships solely from a B2B perspective. The school itself was formed from humble beginnings where a group of researchers got together to try and explain how B2B works within a CRM environment. The school of Industrial Marketing and Purchasing put forth an argument whereby they believe B2B transactions occur within a contextualised border, in this case a customer relationship. It could be argued at this point that the authors suggest the B2B

transaction is therefore built from a current customer relationship. The team also identified the importance of relationship history which drove customer spending patterns (1).

An analogy could be as such: BT Consumer are reliant on customers both old and new to maintain success as a company. When current customer's contracts are due for renewal, a Retention offer is made to try and keep the customer which could include significant discounts on the current product portfolio - depending on the history of the customer and their relationship with BT.

Applying this example to the IMP (who believe customers and suppliers become institutionalised over time and form in to a set of roles both the customer and supplier expect the other to perform it could again be argued that a long term customer of BT would expect the company to simply provide a long-established stable service along with a trustworthy payment system (1)

2.2.2 Nordic School

The Nordic school puts emphasis on the role of customer service within a supplier-customer relationship, highlighting three major characteristics of a commercial relationship. These being:

1. Interactions
2. Dialogue
3. Value (1)

Interactions

Much like the IMP, the Nordic school also highlights the notion that transactions, or exchanges, occur within a contextualised environment. Building on this idea by arguing that *"Customers supply information, suppliers supply solutions"* (1). Exemplifying this again using BT, a customer would supply BT with their needs (i.e. the want of a broadband service) whereby BT would then supply the solution in the form of a product that has met the customers requirements.

Dialogue

Suppliers and customers being in dialogue with each other this forms the fundamental nature of the relationship and one which underpins the beliefs of the Nordic School. Here, Buttle and Maklan explain how the Nordic School puts emphasis on the fact communication is a two-way process between a customer and the supplier (1).

Value

Building on the two-way process mentioned previously, the value characteristic is generated by both the customer and the organisation. Where the customer provides the value in terms of money spent, and the organisation creates *future* value by delivering services the customer requires (1).

2.2.3 The Anglo-Australian School

This school presents us with the notion that companies don't only form relationships with their customers, but with internal and external stakeholders alike. For example:

1. Employees
2. Shareholders
3. Suppliers
4. Buyers (1).

Stakeholder relationships are said to vary depending on the level of intensity of said relationship, according to the level and/or amount of investment from the stakeholder. A comparison is noted between the Anglo-Australian School and the IMP whereby the IMP is said to take a descriptive approach to CRM whereas the Anglo-Australian School is said to be prescriptive (1).

To summarise, the Anglo-Australian School's ethos is to help managers improve relationships within a diverse environment.

2.2.4 The North American School

A major theme within the North American School is the recognition of the interdependent relationship between excellent customer relations and successful business performance.

The North American School is said to view relationships as tools in their own right, that a successful organisation can use to their benefit for advantage within the marketplace (1).

2.2.5 The Asian School

This school is a philosophy for how businesses should interact within the broader Asian context (1).

The Asian School differs from all the others above in that as a philosophy it advocates the idea that business can only be conducted within networks dependent on status, whereas the previous four concepts each present and actively advertise the customer as one of the pillars of a successful relationship (1).

3.0 Elements of a CRM System

A CRM system is a software suite that assists in the managing of interactions with customers. Leland and Salter argue that for a company to be a success, in the context of making profit, the CRM system must monitor and track information about the customers the business engages with in order to meet the company objectives (9)

Furthermore, emphasis is placed on critically assessing the company's needs when selecting a CRM (9).

A common misinterpretation of CRM during the design and implementation phases is one where businesses feel they don't have a vital role to play. Businesses feel the design should be left to the experts (9).

Leland and Salter take this overview one step farther by asserting their belief that the ongoing success of a CRM system is dependent on picking the right CRM system at the outset (9).

In their online piece, Corporate Management defines a CRM system as one that will allow a "*company to track and organise its contacts with its current and prospective customers*". The CRM software enables the organisation to store customer information along with any interactions that can be accessed by anyone within the organisation itself (10).

Three ways are listed by which a company interacts with its customers:

1. **Front office contacts** that involve employees having direct contact with the customer.
2. **Back office operations** processes used to support the front-office.
3. **Business contacts** usually carried out in the form of networking, with suppliers or other internal/external stakeholders (10)

3.1 Key Elements of a CRM System

Listed below are a number of components of which software developers have used to create CRM systems. However, there are three core areas evident in each of these components (10):

1. Customer Service - The processes by which a company is able to sell products and services to its customers, through various mediums.
2. Sales Force Automation - Sales force automation allows companies to record each contact the customer makes, if a sale was successful or whether further action or follow-up is required.
3. Campaign Management - The Customer Service and Sales Force Automation elements are used within the Campaign Management arena to provide the company with the relevant insight it needs for a successful advertising campaign (10).

For a CRM system to be world class, it needs to "*be revolutionary in market incursion and evolutionary in technological up gradation*" (10)

3.2 CRM Building Blocks

The following building blocks should be used when designing and constructing a successful CRM system:

Vision - Leadership from the senior managers.
Strategy - Building the customer base from a robust corporate strategy alluding to the company needing to set targets and objectives in order to keep pushing the boundaries.
Customer Experience - CRM system must be designed in line with the ideal customer experience, through the seeking of real-time customer feedback.
Organisational Collaboration - having the relevant structures, processes, measures, skill levels and incentives in place to meet the goal objectives of the organisation.
Information - Creating the customer information drip-feed mechanisms to maintain a continuous flow of information in to the CRM system.

Metrics - Businesses must set metrics, both measurable and achievable in line with the CRM requirements (10).

3.3 Advantages and Disadvantages of a CRM System

There are a number of advantages to using a CRM system within an organisation, Corporate Management puts forward a set of overall benefits to a company as enabling (10):

1. Providing a better service to the customer
2. Increase customer revenues
3. Discover new customers
4. Cross/Up Sell Products
5. Enable more efficient contact centres
6. Simplification of sales and marketing processes

eConsultancy however present a slightly different picture, in which they argue there are only five key benefits of a CRM, these being:

1. **Efficiency -** through streamlining working practises. Improved efficiency isn't just as a result of implementing a successful CRM however, popular CRM platforms can integrate with other systems and platforms to combine data and insight, furthermore allowing companies to interact *"with customers in ways that they wouldn't have the resources to otherwise"*.
2. **Collaboration -** through allowing the organisation to share knowledge freely and openly. eConsultancy again argue that CRM systems *"give companies the ability to move away from tools"* and become entirely collaborative.
3. **Data -** Storing and providing the organisation with critical data. Here, eConsultancy argue data is "*often of limited practical use; its real value comes from data analysis and visualisation tools"*.
4. **Increased accountability -** by providing the tools required to spot when customers start to face issues and allowing employees across the organisation to understand "*their responsibilities to customers throughout the customer lifecycle"*.

5. **Improved Customer Experience -** The biggest benefit of using a successful CRM system is that it in turn leads to a better overall customer experience, through bringing all of the above areas together (11).

3.4 Disadvantages of a Customer Relationship Management System

Topics relating to a successful CRM system have so far been discussed. However, it is apparent there are a number of disadvantages from using a CRM system.

1. A mistaken choice during the design and implementation phases may may the CRM system more complicated to use.
2. A CRM system is not an easy implementation process within organisations (12).

Brookins builds on these disadvantages by identifying two additional areas which may be affected during the implementation phase of a CRM. These being:

3. **Learning Curve -** The company may be forced to hire a training and development company to support the rollout of the new system, by providing in-depth training to its staff at a cost to the business.
4. **Staff Resistance to Change -** It may not become immediately apparent to employees regarding the benefits of the new system. Managers may need to invest additional time in explaining to the workforce what the new system means for them and how it can improve the health of the organisation (13).

Exciting IP present their views on the disadvantages of a CRM System:

5. Task duplication may increase, if the systems aren't fully aligned
6. If the software is too complex to use, employees may refuse to use it.
7. Short-term ROI (Return on Investment) may be hard to achieve.
8. The implementation may fail if the system isn't fully aligned to the business objectives (14)

To counteract these disadvantages, some proposals put forward could be:

1. Offer interactive training to the staff and employees at all levels. Early investment should reap rewards for swift acceptance. (13)
2. Ask the managers to demonstrate the features of the new system to their team.
3. Ensure interfaces are easy to use and appropriate help functions are in place.

4.0 A History of Customer Relationship Management

CRM Switch Staff explains CRM as not being the fully-functional software and philosophy many of us may recognise today. Further explaining CRM "has evolved out of a variety of other business programs" (15). In essence, CRMs evolution has been through the amalgamation of past and present techniques.

4.1 The 1980s

Database marketing involved collecting and analysing customer data. Through the use of statistical modelling the output was then used to customise how the organisation dealt with its current and/or potentially new customers (15).

Contact Management Software was introduced by ACT! in the Early 1980s. This was, in essence a digital version of a Filofax. As this new software platform developed, other vendors began designing and releasing their own versions of CMS. Towards the end of the decade and with the advent of personal computers, CMS systems became more prolific and these developments resulted in a swift rise in the software development industry.

4.2 The 1990s

The first major step towards commercial CRM software began in the early 1990s. Vendors such as Brock Control Systems continually pushed the evolution of Contact Management Systems towards SalesForce Automation (15). Webopedia defines SalesForce Automation as "a technique of using software to automate the business task of sales" (16).

By the mid-90s SalesForce Automation and Contact Management Systems had together evolved to resemble what we today recognise as a CRM. The term 'CRM' became ever more popular during this period (15).

CRM Switch Staff continue to explain that the last half of the 1990s brought "huge change to the CRM industry". Vendors such as Oracle and Baan joined the industry alongside Siebel and SAP (15).

By the end of the decade and with the rise of the Internet, Intranet and Extranet (15) CRM became even more popular. Software as a Service (SaaS) became more prevalent. TechTarget define SaaS as "a software distribution model in which applications are hosted by a vendor or service provider". This hosting is usually done via the Internet (17).

4.3 The 2000's

Business2Community conclude the history of CRM by explaining how it changed during the 2000s. During this period, companies began to "see CRM as a way to manage all business relationships via a single platform" (18). Most notably:

1. Offering CRM via The Cloud and open source platforms 2. Offering CRM over mobile devices and during the rise of Social Media (18).

4.4 Present Day

"The sky's the limit; the breadth and depth of a fully optimised CRM platform is vast" is how Business2Community explain CRM in its present form. The industry is said to be "worth £36.4 billion by 2017 according to Gartner" (18).

Most notably, we are told "63% of CRM projects fail to deliver on their investment" and the way to overcome this is for the company to hire a CRM consultant, to ensure the company fully exploits the benefits of a successful and fully integrated CRM system (18).

5.0 Overview of Big Data

With the advent of Customer Relationship Management, having developed from various guises during the late 1980s, 1990s and during the 2000s businesses are becoming ever more reliant on 'Business Intelligence and Analytics'.

Business Intelligence and Analytics "[reflects] *the magnitude and impact of data-related problems to be solved in contemporary business organisations"*. This area supports Customer Relationship Management by providing decision makers with the requisite insights to make the right business decisions (19).

Along with Big Data, Business Intelligence and Analytics have both emerged as important areas of interest within the academic and business communities, particularly over the past twenty years. Studies within industry identified business analytics as one of the four key technological trends of the 2010s and onwards. It is said that *"97 percent of companies with revenues exceeding $100 million were found to use some form of business analytics"* (19).

Customer Relationship Management relies on data to support the various functions within an organisation in building the complete picture of a customer, all of which are stored in many databases. For example:

- Logging the date and time when a customer called in
- Logging the customers account details
- Noting if the customer had to call back
- Documenting (through feedback forms) why the customer called in
- Who the customer spoke to
- Which department that person sits in

BT Consumers Business and Intelligence teams would collect vast amounts of data relating to the above and more. As we can imagine, one customer contact would result in lots of data regarding that conversation being stored. If that customer were to call back, then the data of the follow-on interaction would also be stored. If we

multiply this by the average number of calls Consumer advisors handle each week, which is around 700 thousand we can begin to see just how much data an organisation is able to store (and analyse) regarding its customers.

The databases can grow exponentially and store many million rows worth of customer-related data. This is called 'Big Data'.

6.0 Introduction to Big Data

Big Data is *"an evolving term that describes a voluminous amount of structured, semi-structured and unstructured data that has the potential to be mined for information"* (20).

Big Data can be characterised in three ways:

1. Volume - the sheer amount of data available
2. Variety - the different types of data available (referred to in previous section)
3. Velocity - the speed at which data must be processed (20)

Big Data is described as referring to voluminous amounts of data, it doesn't however refer to a specific quantity of data, as such different organisations may refer to their large data-sets as being 'Big Data' in isolation. However in a hypothetical situation should these databases ever be compared, there would be a fluctuations in the sizes of the data - but all termed as being 'Big Data' (20)

Where Big Data has been introduced as relating to various structures of data, Big Data also concerns *"large-volume, complex, growing data-sets with multiple, autonomous sources"* (21).

6.1 Fundamental Characteristics of Big Data

A fundamental characteristic of Big Data is that it deals with large volumes of data, from diverse areas. As touched upon previously, advisors would store customer data via a feedback form or a system could store data automatically based on the advisors actions (21).

Big Data can also be autonomous. *"Data sources* [are] *able to generate and collect information without involving (or relying on) any centralised control"* (21).

We can compare this approach to the World Wide Web, where many servers store many various types of data. However this data is connected and readily accessible by any user with the appropriate access levels (21).

In the case of BT Consumer, customer data is stored and can be accessed/used in many different ways by:

- The advisors manager for performance discussions
- The centre manager to identify trends within their centre
- Business Analysis teams to track trends across the organisation
- Transformation teams to use the data as part of their business transformation programmes

6.2 How will Big Data help transform businesses?

There are four key areas where Big Data will help in Business Transformation:

6.2.1 Big Data will expand customer intelligence

One of the benefits of Big Data is its ability to not solely rely on one data source. Big Data *"examines a broad range of sources that include structured information such as purchase histories"* (22).

Analytics from using Big Data also allows the organisation to analyse any unstructured data and pair it with the structured data. For example, a customer may post a complaint on social media regarding a recent conversation with the organisation which could be intercepted by the organisation itself. The person could then use this to locate the customer's conversation details and act accordingly. All of which involves analysing multiple databases.

6.2.2 Big Data will improve Operational Efficiency

Big Data is *"moving from the realm of data scientists into everyday business transactions and encounters"* (22).

A BT Call Centre Manager could review multiple databases from performance to customer data in real-time to act upon any improvement areas which may be required.

6.2.3 Big Data and Mobile means businesses will have new processes

As companies continue to become more data-centric, it's "*only natural those insights find their way into the hands of people who can put them into action"* (22).

A business intelligence manager in BT would have a smart phone, which is set to regularly receive relevant performance updates from across the organisation. Having this level of real-time performance data enables the manager to make the correct recommendations as soon as required.

Using data from many different sources BT are now able to track the amount of 'effort' a customer has to go through in order to successfully progress their order. Having this visibility enables the Intelligence teams to track:

- The length of time a customer spent on the phone
- At what point during the order journey a customer needed to call in
- What drove the call
- How many times the customer needed to call in during the life of the order
- How efficient the advisors were whilst dealing with the advisors

This insight is fed to the relevant contacts to set various performance metrics to drive improvement across the organisation.

6.2.4 Data can be shared across functions

Data and analytics, from Big Data can be employed as a service. Reports can be merged together and delivered to key stakeholders as 'packages' instead of isolated reports. Big Data allows organisations to gather data collectively and share appropriately. Organisations such as BT can *"employ big data by sharing a pool of scientists and resources, getting the expertise they need without venturing beyond their core competencies"*. In short, many people can contribute to a single project through the use of Big Data (22).

7.0 Bringing it all together

7.1 Data Visualisation - Why is it important?

Data visualisation is *"the presentation of data in a pictorial or graphical format"*. As humans, we've *"depended on visual representations such as charts and maps to understand information more easily and quickly"* (23).

As more and more customer data is collected by organisations (Big Data), senior leaders and decision makers need to be regularly updated with critical performance information for the part of the organisation they are responsible for; due to the way the "*human brain processes information, it is faster for people to grasp the meaning of many data points when they are displayed in charts and graphs"*. One immediate benefit is that management no longer need to sift through piles of papers for a quick answer to a business performance issue (23).

Data visualisation is a "*general term"* used to describe "*any effort to help people understand the significance of data by placing it in a visual context"* (24).

Organisations have at their finger tips an almost limitless amount of data for which they can analyse and make the appropriate business recommendations. However, presenting and visualising the output of that analyses is just as significant so as to get the salient points across in as succinct a manner as possible.

7.2 Using dashboards to present data

Stephen Few explains dashboards as having become a popular way of presenting critical business information at a glance. However, "*few do so effectively"* (25). A dashboard should be a single slide or sheet that gives the reader the updates they need to see.

For BT, a Business Intelligence manager may wish to see:

- Weekly call volumes
- How many calls were abandoned during this time
- How many customers repeated back in to the business within a week
- How many complaints were opened during a set period

A finance manager however, may wish to know:

- How many orders were placed during a week
- What type of orders were placed
- How many minutes an advisor has spent talking to customers
- Whether overtime is required to deal with customer demand.

All of these can first be brought together using Big Data and then presented to the relevant people via dashboards.

"*Dashboards engage the power of visual perception to communicate a dense collection of information efficiently, with exceptional clarity*" (25).

7.3 The importance of dashboards in business

A *"visual can communicate more information than a table in a much smaller space"* and that *"graphical excellence is that which gives to the viewer the greatest number of ideas in the shortest time with the least ink in the smallest space"* (26).

A managers time is just as important as their input, so providing them with the information needed to explain the situation in the least amount of space and words should open the door for discussions in how to overcome a problem.

There are two goals when referring to a successful piece of data visualisation, these are:

1. Ensure the visualisation is explanatory, whilst;
2. Also ensuring it is exploratory (26)

Using a visual which directs the reader across a defined path is by its own nature explanatory. In the context of this project, explanatory visuals will be used as these are the most commonly used (26).

According to Ralph K. Yeh, visualisation techniques are an alternative to mechanical data mining processes. Visual explanation and exploration has *"proven as an effective tool in data mining and knowledge discovery"*. This is largely in part to users being able to recognise structural features more quickly through visualisation than standard text patterns (27).

Using a data dashboard along with appropriate visualisation techniques can *"complement the data mining techniques"* and also *"the combination of data mining and data visualisation, plus the enormous storage space in data warehouse, can provide precious information"* to decision makers, as stated previously (27)

There is an intrinsic link between Big Data, Data Mining and Data Visualisation - all of which fall underneath the banner of Customer Relationship Management.

7.4 Information and Scientific Data Visualisation

Data visualisation is a term formed from two already existing sub-categories, *"Information Visualisation"* along with *"Scientific Visualisation"*. Both of these variables are said to be continuous and relate to similar entities but from a different angle (27).

Information Visualisation can be regarded as explanatory, where the presenter would be displaying a set of results or trends intended to prove/disprove a business hypothesis, of which a decision can be made on the appropriate next course of action.

Scientific Visualisation could be deemed as exploratory. Where a set of results are presented to again prove/disprove a hypothesis but enable the presenter to enter into a debate with their audience. Instead of aiming to reach a conclusion, a scientific/exploratory view would pave the way for further research in that subject area.

For the context of this project and BT in general, most visualisations will be/are based on Information, where trends are tracked against a certain performance metric or baseline.

To summarise, Smashing Magazine gives a wonderful description of how data and presentation - when brought together - can "*be beautiful, elegant and descriptive*". To convey a message to a reader effectively, sometimes it is crucial to consider the output prior to starting a piece of analysis as there are "*absolutely fascinating ways to visualise data*" (28).

8.0 Literature Review Summary

Having reached the point where all the primary and secondary research has been completed for this dissertation, it can be concluded that many findings were discussed along with identifying several key areas of interest to take in to account during the implementation stage of this project.

Customer Relationship Management is a set of principles, as opposed to one overarching definition. It is a business strategy that assesses IT, Databases, Internal and External Stakeholders and Customers to provide the business with an enterprise solution. It gives organisations a comprehensive and integrated view of its customers.

Customer relations are a critical element of a successful organisation. Due to the changing nature of industry, economies and markets businesses are becoming ever more competitive and as such more volatile.

Customers themselves are being overloaded with information by their suppliers and competitors. The business landscape is changing and with this perceived onslaught of information overload, customers are demanding more from their suppliers; a better deal on their contract, a free upgrade, higher data allowances to name but a few.

Companies are having to adapt and evolve to stay ahead of the game to maintain their share of the marketplace. There are five different 'schools of thought' that companies tend to adhere to when considering a CRM system. We've learned that whilst these schools are different and successful in their own right, each one has the customer at the heart. With each document reviewed, the customer is always discussed along with their importance.

Elements of a CRM system have also been discussed and how Customer Service is the number one priority. Having appropriately skilled advisors to deal with a

customer query is the staple for any organisation. Acquiring new customers along with keeping existing customers falls in to this category.

CRM has evolved over the past two decades, along with the evolution of new technologies and how data has played a pivotal role in providing organisations with the insight they need to achieve their business objectives.

From the early 1990s when customers would send a physical letter to a company, to the present day where a customer could tweet a message, customer interaction has grown exponentially and continues to do so today. Big Data is the new term for supermassive data-sets that can contain hundreds of millions of records.

Relating back to the initial problem statement in the introduction of this dissertation, we know that BT Consumer had an issue whereby a database of their own was not being used at all by any of its staff, which led to a huge insight opportunity that needed to be explored in finer detail. Part of the advantages of a CRM system is appreciating the value of employees, particularly front-line advisors. Any insight into how BT can be more efficient in enhancing the performance of their advisors will only seek to improve the experience their advisors deliver to its customers.

We know that recognising a data set as being 'Big Data' warrants a different approach and for extra consideration to be taken prior to starting a piece of analysis. Data visualisation is also a key consideration as without clearly presenting our findings, management may not have all the information they need to make the appropriate business decision.

In the next section of this dissertation, the methodology will be discussed. Using the learning from this literature review will enable sound decision making when evaluating the importance of the different stages of the project and therefore deliver a viable proposition as to how BT will overcome the problem of missed insight opportunities, which have derived from overlooking a database containing vast amounts of advisor-related performance data.

9.0 Methodology

This section will discuss the methodologies to be used as part of this project. Different approaches will be used and merged to support one another where necessary.

9.1 Approach - Action Research

As this project is reflective: based on a reporting need and subsequent change within a large scale organisation, action research will be used as the primary philosophical approach.

It is important to note action research is one of many different types of research methods. It is a generic term for any cyclical process whereby one would improve organisational practise and processes by systematically oscillating between taking actions in real-time and then inquiring them. Planning, implementing, describing and evaluating are the key cyclical principles of action research [1, p2]

See Figure 1 below:

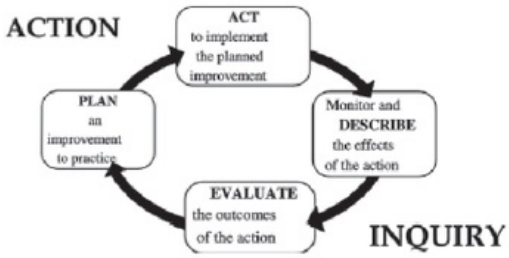


Figure 1: Action research (Source http://www.scielo.br)

Here we can see the cyclical process in action; planning leads to acting, acting leads to describing and so forth until the process revolves back to planning. It is obvious from the above that action research is a fluid process, where planning is not completed once at the beginning but each variable is consistently reviewed during the life of the project.

To simplify, action research is a disciplined inquiry process conducted by a person for a person or organisation. The main objective of action research is to assist the requestor in improving or resolving their problem [2].

In the context of this dissertation, the problem is that a large database containing advisors performance data is not being used and as such action needs to be taken to design and build a solution that will resolve this problem. The solution needs to meet the requirements of its intended customers (from senior management to advisors) so consideration must be taken at each point of the research and development journey (planning, acting, describing and evaluating) to ensure the requirements are refined and met.

9.2 Philosophy

Underpinning the action research methodology will be several philosophies:

- Positivism
- Interpretive
- Critical

Positivism depends on quantifiable observations that lead themselves to a renewed piece of statistical analysis. Positivist studies usually follow a deductive approach where the researcher needs to concentrate on the facts of the research objective [3]. An interpretive approach will build on the facts and take into account organisational factors [4], such as key performance metrics. Consideration will be given at this stage to feedback received from users during the trial stages, where the solution could be enhanced or tailored to better suit the needs of the organisation. Approaching this piece of work using a critical mind-set is crucial in that the approach will be critical towards changing current processes for the benefit of the organisation.

9.3 Advantages of Action Research

Action research is applied in order to improve specific practises. As mentioned above, action research based on planning, acting, describing and evaluating at each point of the journey. It is facilitated by participation and collaboration of a number of stakeholders, both locally and from the wider team within the organisation. Action research focusses on a specific situation and the context within an organisation [4]. Action research offers several advantages:

- High level of practical relevance of the research within a business context
- It can be used with quantitative and qualitative data, and;
- It is possible to gain high degree of knowledge about the business problem [4]

There are also several disadvantages to using action research:

- It may be difficult to distinguish action from research, whilst ensuring the application of both throughout
- It is not rare to encounter delays when carrying out a piece of action research
- Repeatability is potentially limited [4]

9.4 Research strategy

This project will conducted using the Kanban and 6Sigma DMAIC methodologies.

9.4.1 Understanding Kanban

Kanban is an approach by which the consequence is incremental and evolutionary process change, along with systems reform as required by an organisation. Furthermore:

- It is used as a way of removing the 'noise' within an organisation that surrounds business transformation teams by clearly recognising the importance of prioritisation.
- It is a way of uncovering issues with current processes so they can be changed to give the customer an improved level of service [5]

There are basic principles which will be adhered to whilst using the Kanban approach:

- **Begin with what is known**: clearly define and understand the problem statement
- **Agree incremental and evolutionary change**: using clear timescales and achievable milestones for delivery
- **Respect the current roles** and responsibilities of the stakeholders

- **Encourage acts of leadership:** regular reviews will be agreed and progress reports given whilst calling out where support is required.

To complement the use of Kanban, elements of 6Sigma will be used, particularly the DMAIC model.

9.4.2 Six Sigma DMAIC Roadmap

The 6Sigma DMAIC roadmap can be considered an alternative method for problem solving. It consists of:

1. Problem **Definition**
2. **Measuring** the Impact
3. **Analyse** the root cause
4. **Improve** by eliminating defects
5. **Control** future performance [6]

The DMAIC method above appears linear and systematic, which is the authors preferred method of structuring a design plan. By complementing Kanban with elements of 6Sigma the result is a clearly defined strategy that incorporates the best practises of several well-established strategies. The end strategy will be as follows:

- A clearly defined problem statement
- The impact of the problem will be known
- The root cause of the issue will be known
- Improvements will be made in line with a clearly structured incremental and evolutionary plan
- Future performance will be controlled through regular review calls with senior leaders

9.4.3 Time horizon

The solution must meet the requirements set by the organisation. These are to have had the solution designed, agreed and ready for launch within one month of acceptance into the project team. The report will then run for an initial period of ~6 months to monitor the uplift in performance.

9.4.4 Timeboxing

Time boxing is a process by which each development stage of the project will be completed iteratively [7]. That is to say, each timebox will be divided in to a sequence of fixed stages; each stage will perform a set of clearly defined aims and objectives that in themselves can be carried out in isolation, but when viewed holistically will form and complete the project.

Timeboxing requires each time stage be divided equally and that stages will overalp, so that the overall development and deployment time is reduced whilst not impacting on the quality of output.

The advantages and disadvantages of timeboxing are as follows:

Advantages:

1. Speeds up the development process whilst shortening the delivery time
2. Best suited to developing projects with a number of features/requirements in a short time period

Disadvantages

1. Project management could become more complex
2. Not suited to projects where the development iteration cannot be divided in to equal parts

The timeboxing model I will be using for this project is shown in Figure 2.

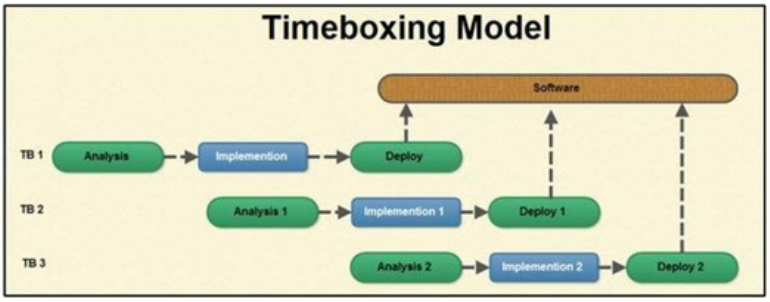


Figure 2: Timebox Model

9.4.5 Measuring success

The success of the report will be measured as follows:

1. Design, sign-off and launch achieved upon completion of Phase 4.

2. Regular reporting in place to support the Operations during the life of the report
3. Performance is uplifted and actionable insights are gathered.

9.4.6 Feedback Method

In order to support whether this project has been successful, a brief questionnaire will be used. The questionnaire will be tailored such that anyone within the organisation can complete it. The target audience will be a mix of team coaches, team leaders and operational managers. The aim here was to achieve a diverse set of responses from those who use the report to support their staff, to those who use it to support their strategic aims.

10.0 Project Development

This section will introduce each development stage of the research project; beginning with an overview of the development cycle itself and then stepping in to each phase/timebox. The project itself will consist of four phases; each phase will be assigned one timebox and each timebox will be given a period of seven working days each. Total development time will be 28 working days.

10.1 Phase One : Cleanse the Database

10.1.1 Timebox 1

Start date:	2nd February 2015
End date:	10th February 2015
Duration:	7 days (including two days for stakeholders to review)
Stakeholder Input:	Managers want to see the data relevant to Sales teams only. The report must also show information associated with identifying the advisor along with their site, manager and centre manager.
Supporting Note(s):	Breakdown the main data file in to its constituent parts, identify and remove all non-essential data; give Operations direct line of sight view.
Feedback Method:	Conference calls and face to face meetings.

Objective(s):

1.1 Understand the data contained within the main database

1.2 List the essential fields required for the report

1.3 Remove all non-Sales related advisors

1.4 Present each sub-function on a separate tab within Excel

1.5 Identify the average effort per order, expected effort per order along with the difference between the two.

1.6 Release the report on Day 5 and allow two days for management to review and provide their input for Phase Two.

10.1.2 Analysis

The table below shows a complete breakdown of all the fields stored in the database; forty-five in total. See Appendix A for a description of the fields with additional confirmation of whether this field is essential, as deemed by the requirement to only show non-Sales advisors along with their effort score.

It can be seen that by removing the non-essential data, ten fields remain; identified in **Error! Reference source not found.**1 below:

Area	Short Description	Essential?
SUB FUNCTION	Advisors low level function	Y
NAME	The advisors name	Y
SITE	Where the advisor is based	Y
FLM	The advisors manager name	Y
CCM	The centre managers name (level 2)	Y
ORDERS RAISED	How many orders the advisor raised	Y
OVERALL EFFORT PO	Average effort per order	Y
EFFORT BASELINE	Expected effort per order	Y
GAP5	Gap to baseline	Y
HEAT INDEX	How the advisor is performing amongst peer group	Y

Table 1: Normalised Fields

Three of the initial requirements are now confirmed:

1.1 Understand the data

1.2 List the essential fields

A simple filter to the main data was added to identify and remove all the non-Sales agents; leaving only those that sit under Acquisition, Easy Assist and Retention as shown in Figure 3

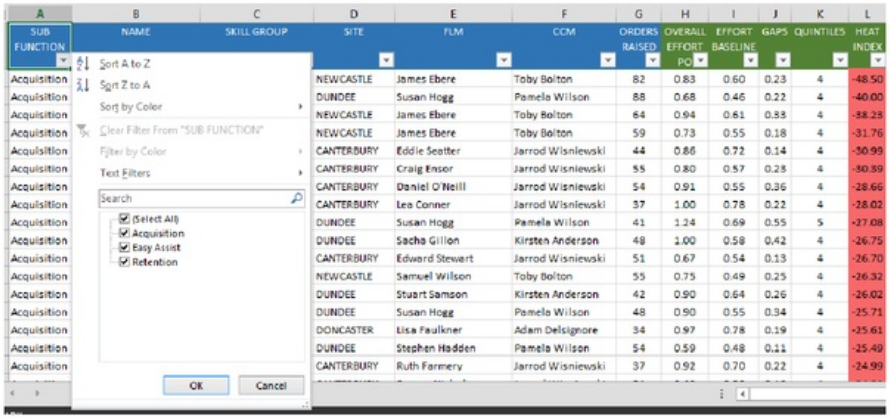


Figure 3: Applying a filter

Each sub-function was identified, copied and removed in to its own sheet on Excel, see Figure 4 below.

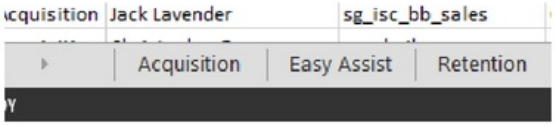
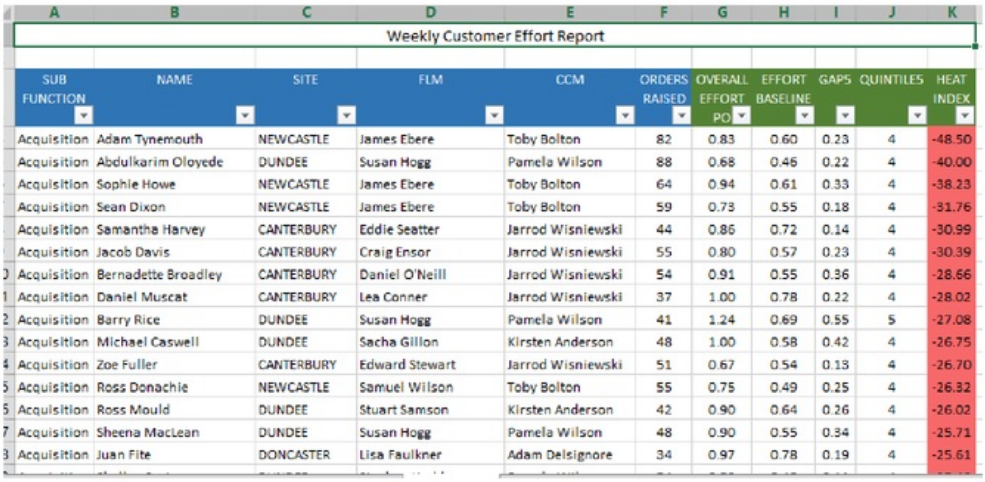


Figure 4: Location of Sub-Functions

10.1.3 Deployment

Figure 5 shows the Effort report in its first iteration:



Weekly Customer Effort Report

SUB FUNCTION	NAME	SITE	FLM	CCM	ORDERS RAISED	OVERALL EFFORT PO	EFFORT BASELINE	GAP5	QUINTILES	HEAT INDEX
Acquisition	Adam Tynemouth	NEWCASTLE	James Ebere	Toby Bolton	82	0.83	0.60	0.23	4	-48.50
Acquisition	Abdulkarim Oloyede	DUNDEE	Susan Hogg	Pamela Wilson	88	0.68	0.46	0.22	4	-40.00
Acquisition	Sophie Howe	NEWCASTLE	James Ebere	Toby Bolton	64	0.94	0.61	0.33	4	-38.23
Acquisition	Sean Dixon	NEWCASTLE	James Ebere	Toby Bolton	59	0.73	0.55	0.18	4	-31.76
Acquisition	Samantha Harvey	CANTERBURY	Eddie Seatter	Jarrod Wisniewski	44	0.86	0.72	0.14	4	-30.99
Acquisition	Jacob Davis	CANTERBURY	Craig Ensor	Jarrod Wisniewski	55	0.80	0.57	0.23	4	-30.39
Acquisition	Bernadette Broadley	CANTERBURY	Daniel O'Neill	Jarrod Wisniewski	54	0.91	0.55	0.36	4	-28.66
Acquisition	Daniel Muscat	CANTERBURY	Lea Conner	Jarrod Wisniewski	37	1.00	0.78	0.22	4	-28.02
Acquisition	Barry Rice	DUNDEE	Susan Hogg	Pamela Wilson	41	1.24	0.69	0.55	5	-27.08
Acquisition	Michael Caswell	DUNDEE	Sacha Gillon	Kirsten Anderson	48	1.00	0.58	0.42	4	-26.75
Acquisition	Zoe Fuller	CANTERBURY	Edward Stewart	Jarrod Wisniewski	51	0.67	0.54	0.13	4	-26.70
Acquisition	Ross Donachie	NEWCASTLE	Samuel Wilson	Toby Bolton	55	0.75	0.49	0.25	4	-26.32
Acquisition	Ross Mould	DUNDEE	Stuart Samson	Kirsten Anderson	42	0.90	0.64	0.26	4	-26.02
Acquisition	Sheena MacLean	DUNDEE	Susan Hogg	Pamela Wilson	48	0.90	0.55	0.34	4	-25.71
Acquisition	Juan Fite	DONCASTER	Lisa Faulkner	Adam Delsignore	34	0.97	0.78	0.19	4	-25.61

Figure 5: First Iteration of Effort Report

The report was released to the management community for review and feedback – with emphasis on how to enhance the report. The report was released on Day 5 as planned.

10.1.4 Review of Timebox 1

Start date:	2nd February 2015
End date:	10th February 2015
Duration:	7 days
Objectives achieved:	Yes
Confirmation method:	Conference calls and meetings

10.1.5 Evaluation

All remaining objectives were achieved during phase one, but the output was too simplistic in light of essentially copying and pasting data on to a new Excel tab.

Feedback from the stakeholders from conference call reviews during the two day review period suggested the following:

- The report itself is much easier to view than the main data base
- Data is now relevant
- There is still too much information contained on each of the tabs; management would like me to identify a way of reducing the overall volume of advisors on each of the sheets whilst not losing sight of the goal objective: identifying those advisors who drive highest effort across the Sales teams.

Feedback received was positive and a good indication of buy-in from the management community; the idea of reducing the overall volume of advisors is worth exploring in greater detail during Phase Two.

10.1.6 Potential benefits from Phase Two

- Further reduction of 'noise' within the report i.e. focus only on the advisors who have a high effort score, whilst removing from the report those advisors who are performing to target.

- The message will be stronger as managers will only have visibility of those advisors who require training.

A factor which also needs to be considered is performance baselining, this enables threshold setting and as such could further assist in the reduction of advisor volumes.

10.2 Phase Two: Performance Baselining

10.2.1 Timebox 2

Start date:	6th February 2015
End date:	16th February 2015
Duration:	7 days (including two days for stakeholders to review)
Stakeholder Input:	Feedback from Phase One was positive, the report itself is an improvement on the original data file and front-line managers can easily identify their sub-function and search for the advisors in their team.
Supporting Note(s):	Phase Two to review performance baselining and highlight only the advisors who drive high effort. Simple navigation should be added.
Feedback Method:	Conference calls and management workshops.

Objective(s

2.1 Analyse the performance reporting currently available from the source data
2.2 Test whether this reporting is sufficient to identify low performing advisors
2.3 Investigate whether a new approach to performance thresholds is required
2.4 Build a simple navigation and summary system

10.2.2 Analysis

Understanding the current performance reporting within the main database is achieved by reviewing a number of essential fields identified during Phase One. Table 2 refers:

Area	Short Description	Essential?
ORDERS RAISED	How many orders the advisor raised	Y
OVERALL EFFORT PO	Average effort per order	Y
EFFORT BASELINE	Expected effort per order	Y
GAP5	Gap to baseline	Y
HEAT INDEX	How the advisor is performing amongst peer group	Y

Table 2: Attributes for Performance Baselining

Analysing the above fields presents two hypotheses:

- Advisors with a high customer effort score may not have necessarily placed many orders
- Advisors who have a high 'gap to baseline' should be reflected as a poor performer within the Heat Index (peer comparison)

These hypotheses were tested by using the Effort Report to prove their validity.

10.2.2.1 Hypothesis One – Those with high effort may not have placed many orders

Referring to the Phase One Effort Report, Figure 6 below shows a clear variation in the effort score; advisors can take up to one extra touch to progress an order even though they could be perceived as being more experienced.

Quintile performance ratings reflect all the advisors in the lower two quintiles: four and five. This test did not prove the validity of hypotheses one, as many 'experienced' advisors (those that place a high number of orders, still had a high effort score.

SUB FUNCTION	NAME	SITE	FLM	CCM	ORDERS RAIS	OVERAL L EFFO	EFFORT BASELIN E	GAPS	QUINTILE S	HEAT INDEX
Retention	Reece Cameron	TRURO	Liam Hicks	Amy Caldwell	131	0.98	0.44	0.53	5	-57.19
Retention	Ruth Wallbridge	TRURO	Laura Burton	Amy Caldwell	106	0.75	0.42	0.33	4	-43.32
Retention	Anthony Lean	TRURO	Liam Hicks	Amy Caldwell	102	0.70	0.46	0.23	4	-46.42
Retention	James Collingwood	LANCASTER	Sarah Gardener	Andrew Coldwell	102	0.69	0.37	0.32	4	-37.07
Retention	Kirsty Taylor	GLASGOW	Katie Kerr	Ahdeel Mahboob	100	0.66	0.45	0.21	4	-44.15
Retention	Ross Warnes	WARRINGTON	Michelle Tobin	Rachael Rooney	100	0.60	0.40	0.20	4	-39.74
Retention	Aaron Bertram	NEWCASTLE	Helen Turner	Michael Batcheldo	99	0.75	0.46	0.29	4	-44.61
Easy Assist	Teresa Booth	WARRINGTON	Rebecca Courage	Kate Smith	97	0.86	0.50	0.36	4	-47.33
Retention	Sarah Taylor	WARRINGTON	Andy Scarborough	Rachael Rooney	96	0.75	0.47	0.28	4	-44.06
Retention	Richard Mason	DONCASTER	Suzanne Guest	Marc Potter	94	0.78	0.42	0.36	4	-38.68
Retention	Nyall Bartley	WARRINGTON	Jake Barras	Rachael Rooney	93	0.61	0.40	0.22	4	-36.15
Retention	Dayne Muir	ACCRINGTON	Imran Mulla	Patrick Friel	91	0.58	0.37	0.21	4	-33.21
Retention	Kelly Paris	TRURO	Daniel Jupp	Amy Caldwell	89	0.60	0.39	0.20	4	-34.53
Acquisitior	Abdulkarim Oloyede	DUNDEE	Susan Hogg	Pamela Wilson	88	0.68	0.46	0.22	4	-40.00
Retention	Philip Bowman	NEWCASTLE	Nick Brown	Michael Batcheldo	88	0.70	0.49	0.21	4	-42.54
Retention	Sophia Khan	ACCRINGTON	Jonathon Ward	Patrick Friel	86	0.62	0.39	0.23	4	-32.50
Retention	Rashpal Singh	DONCASTER	Richard Brooks	Scott Johnson	86	0.62	0.38	0.24	4	-31.84
Retention	Saheera Bhatti	ACCRINGTON	Donna Duckworth	Patrick Friel	86	1.13	0.37	0.75	5	-31.11

Figure 6: First Iteration of Effort Report

10.2.2.2 Hypothesis Two – A higher gap to baseline should be reflected in the heat index

Figure 7 shows the heat index was not indicative of a low performing advisor. Given the previous test resulted in all advisors being 'red' (indicating a high degree of risk) by focussing only on the advisors with a high gap to their expected performance, the heat index is varied. As per the first test, this hypothesis cannot be proven.

SUB FUNCTION	NAME	SITE	FLM	CCM	ORDERS RAIS	OVERAL L EFFO	EFFORT BASELIN E	GAPS	QUINTILE S	HEAT INDEX
Easy Assist	Janet Silverwood	LANCASTER	Shana Allen	Andrew Coldwell	15	2.33	0.57	1.76	5	-6.21
Retention	Lyndsey Allen	WARRINGTON	Kate Smith	Kate Smith	13	1.85	0.31	1.53	5	-2.21
Acquisitior	Nichola McCuloch	SOUTH SHIELD	Emma Briggs	Kirsti McKernan	20	1.80	0.48	1.32	5	-7.78
Easy Assist	David Drew	TRURO	Philip Spavins	Amy Caldwell	36	1.61	0.50	1.11	5	-16.45
Easy Assist	Jacqueline Kenny	LANCASTER	David Clingain	Andrew Coldwell	19	1.58	0.52	1.06	5	-8.33
Retention	Ashleigh Evans	TRURO	Amy Caldwell	Amy Caldwell	17	1.35	0.36	1.00	5	-4.72
Retention	Sara Malloy	NEWCASTLE	Benjamin McFarlane	Gemma Wilson	29	1.38	0.40	0.98	5	-10.28
Retention	Qaiser Beg	GLASGOW	Ahdeel Mahboob	Ahdeel Mahboob	17	1.24	0.28	0.95	5	-3.61
Retention	Ben Jordan	NEWCASTLE	Tracy Edmundson	Gemma Wilson	20	1.35	0.42	0.93	5	-7.13
Retention	MJ Robson	NEWCASTLE	Heather Wood	Gemma Wilson	35	1.40	0.48	0.92	5	-15.49

Figure 7: Heat Index Review

Both hypotheses tests showed fundamental gaps with the performance reporting of the Effort Report; the results did not show enough reliability to pursue as a meaningful way of reporting.

This was due to the way the main data source is set up. The quintile reporting and heat index were calculated against all advisors, including non-Sales. This meant a

fair and equal comparison of advisors within each sub-function was difficult to complete.

A new approach to performance reporting was required. Three new metrics were created, and agreed with management during an impromptu review call.

- Total number of touches
- Expected number of touches
- Additional touches created

Manual calculations were required; the advisors total number of touches along with the relevant effort measures. This gave a true figure of performance that is also cross-metric.

The calculation for total number of touches:

Total touches = Orders Raised * Overall Effort

The calculation for expected number of touches:

Expected touches = Orders Raised * GAP5

The calculation for the impact:

Impact = Total touches – Expected touches

These calculations built an accurate picture of performance, compared what was previously found during the hypotheses testing.

10.2.3 Implementation

The three additional metrics were added to the first iteration from Phase One. Figure 8 shows the second iteration of the Effort Report. Format changes were also made; gridlines were removed to make the report more aesthetically pleasing.

Advisor Name	Site	FLM Name	CCM Name	Volume of Orders	Average Effort	Expected Effo	Gap	Touches	Target Touches	Impact
Adam Tynemouth	NEWCASTLE	James Ebere	Toby Bolton	82	0.83	0.60	0.23	68	49	19
Abdulkarim Olayede	DUNDEE	Susan Hogg	Pamela Wilson	88	0.68	0.46	0.22	60	41	19
Sophie Howe	NEWCASTLE	James Ebere	Toby Bolton	64	0.94	0.61	0.33	60	39	21
Sean Dixon	NEWCASTLE	James Ebere	Toby Bolton	59	0.73	0.55	0.18	43	32	11
Samantha Harvey	CANTERBURY	Eddie Seatter	Jarrod Wisniewski	44	0.86	0.72	0.14	38	32	6
Jacob Davis	CANTERBURY	Craig Enser	Jarrod Wisniewski	55	0.80	0.57	0.23	44	31	13
Bernadette Broadley	CANTERBURY	Daniel O'Neill	Jarrod Wisniewski	54	0.91	0.55	0.36	49	30	19
Daniel Muscat	CANTERBURY	Lea Conner	Jarrod Wisniewski	37	1.00	0.78	0.22	37	29	8
Barry Rice	DUNDEE	Susan Hogg	Pamela Wilson	41	1.24	0.69	0.55	51	28	23
Michael Caswell	DUNDEE	Sacha Gillon	Kirsten Anderson	48	1.00	0.58	0.42	48	28	20
Zoe Fuller	CANTERBURY	Edward Stewart	Jarrod Wisniewski	51	0.67	0.54	0.13	34	27	7

Figure 8: Second iteration of Effort Report

The management team were shown the second iteration, with the advent of an advisors number of orders, their effort per order along with the impact of any unnecessary touches that advisor has created.

The analysis phase identified the need to reduce the number of advisors that appeared in the report. It was not appropriate to filter those advisors with the highest impact score in order of highest to smallest as this would paint a misleading picture of performance (as touched upon during the hypotheses testing).

Ensuring accuracy and fairness of reporting meant baselining performance was needed.

10.2.3.1 Baselining advisor effort: ensuring fairness

In order to achieve a lower advisor volume, performance baselining was required in order to set an appropriate threshold by which to track and monitor effort performance.

A list of advisors from the Retention sub-function was used as the basis for investigation. Given the need to identify an advisor cohort that has high effort, the 'Gap5' measure was used (as this showed the advisors performance to target, those advisors with the highest gap to target were identified as the required cohort).

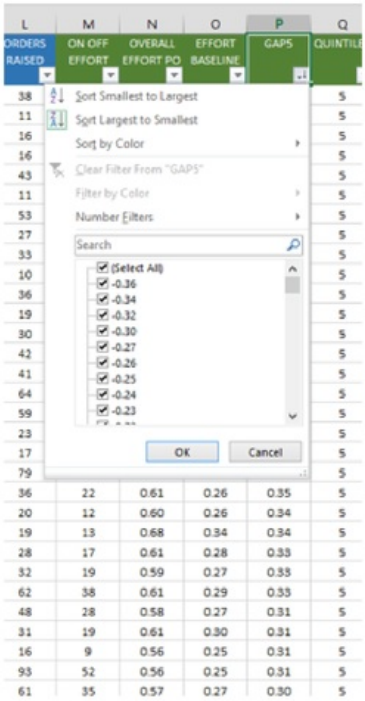


Figure 9: 'GAP5' Analysis

Figure 9 above shows the variance of performance within the GAP5 column, where a negative result was viewed as 'good' (as the advisor is performing below their target), conversely a positive number is where the advisor is performing beyond their target.

A PivotTable was added to carry out field analysis. Figure 10 shows the Pivot Table structure.

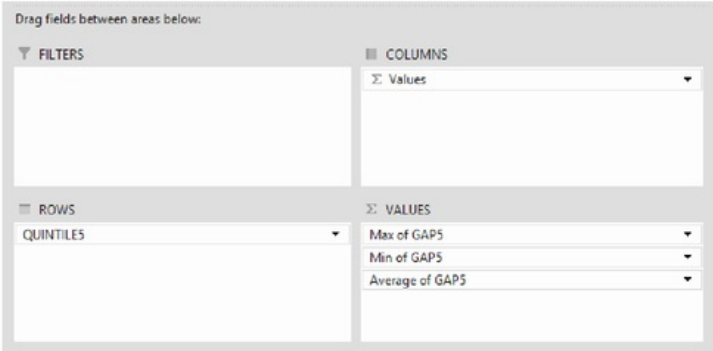


Figure 10: Pivot Table Field Analysis

The structure consisted of:

- FILTERS field remain blank
- ROWS contained the Quintile5 data (advisor performance as previously measured)
- COLUMNS contained standard values
- VALUES contained:
    - GAP5 – set to MAX (to view the upper performance limit)
    - GAP5 – set to MIN (to view the lower performance limit)
    - GAP5 – set to AVERAGE (to view the average of MAX and MIN)

Setting the GAP5 field to MAX, MIN and AVERAGE showed the variance levels of performance against each of the five quintiles. The Pivot Table results are shown in Figure 11.

Quintile	Max of GAP5	Min of GAP5	Average of GAP5
1	-0.25	-0.36	-0.29
2	-0.17	-0.25	-0.20
3	-0.03	-0.17	-0.10
4	0.20	-0.03	0.05
5	0.90	0.21	0.33
Grand Total	**0.90**	**-0.36**	**-0.03**

Figure 11: Pivot Table Output

It was evident those advisors listed in Quintile 1 perform at a far better rate than those in Quintiles 4 and 5. The change in performance appeared to occur between Quintile 3 and Quintile 4 where the average performance of advisors in Quintile 3 was -0.19 worse than Quintile 1 but 0.15 better than those in Quintile 4.

Pivot Table analyses proved the value of removing advisors in Quintiles 1-3 from the end report and focussing only on those within Quintiles 4 and 5. In doing so, advisor volumes were significantly reduced.

The next step was to understand the total volume of advisors within Retention and how many were reported in each of the quintiles. The Pivot Table previously used was reformatted, keeping Quintile in the ROW field but now placing EIN in the VALUES field (set to COUNT, not SUM). Figure 12 refers.

Quintile	Count of EIN
1	17
2	107
3	505
4	392
5	67
Grand Total	**1088**

Figure 12: Total Retention Advisors

This showed there were 1,088 advisors within Retention, 392 fall under Quintile 4 and 67 fall within Quintile 5. In total there are 459 advisors between Quintiles 4 and 5 which equated to 42% of the Retention population.

Removing Quintiles 1-3 reduced the number of advisors, however 42% still remained at this stage. A 42% sample size was still too great to be considered a sufficiently low enough number.

The process was replicated using the above methodology for Acquisition and Easy Assist.

10.2.3.2 Acquisition Output

Quintile	Count of EIN	Average of GAP5	Max of GAP5_2	Min of GAP5_3
1	50	-0.38	-0.28	-0.52
2	89	-0.19	-0.12	-0.28
3	121	-0.03	0.07	-0.12
4	72	0.20	0.42	0.07
5	10	0.66	1.32	0.51
Grand Total	**342**	**-0.05**	**1.32**	**-0.52**

Figure 13: Acquisition Output

- Figure 13 shows similar trends to Retention; performance shift occured between Quintile 3 and 4
- 82 advisors sit in Quintiles 4 and 5 out of 342 in total, 23% of the sample

10.2.3.3 Easy Assist Output

Row Labels	Count of EIN	Average of GAP5	Max of GAP5_2	Min of GAP5_3
1	8	-0.37	-0.28	-0.54
2	31	-0.19	-0.12	-0.28
3	49	-0.02	0.07	-0.12
4	101	0.22	0.44	0.07
5	28	0.65	1.76	0.44
Grand Total	**217**	**0.14**	**1.76**	**-0.54**

Figure 14: Easy Assist Output

- Figure 14 shows performance shift is similar to Retention and Acquisition
- 129 advisors sit within Quintiles 4 and 5 out of 217, 59% of the sample

Test review

The same tests across Acquisition, Easy Assist and Retention showed a diverse set of results in terms of volumes of advisors performing within quintile 4 and 5. Table 3 refers.

Sub Function	*Volume of Advisors*	*% of Sample*
Acquisition	82	23%
Easy Assist	129	59%
Retention	392	42%

Table 3: Test results across sub-functions

A stakeholder review session was held to discuss these findings.

10.2.3.4 Feedback from Stakeholders

Feedback suggested the sample percentages were too high for each of the sub-functions and too varied. Therefore the requirement was to then concentrate on identifying the 10% worst performing advisors per sub-function. Collectively agreement was met to set different thresholds for each of the sub-functions. It was also agreed that a blanket performance limit will not have returned the results required for this report to be successful.

10.2.4 Identifying the 10% advisor cohort

To achieve this, first understanding how many advisors account for 10% of the respective samples was required. This was achieved by simply manually calculating 10% of the respective number. Table 4 refers.

Sub Function	*Total Advisors*	*Volume*
Acquisition	342	34
Easy Assist	217	21
Retention	1088	108

Table 4: Identifying absolute values

The volumes identified above were used to calculate the threshold. This involved referring to the main data sheet and sorting the GAP5 column largest to smallest and counting downwards for each of the three sub-functions and note the appropriate GAP5 result. Table 5 refers.

Sub Function	*Proposed effort baseline*
Acquisition	0.10
Easy Assist	0.33
Retention	0.18

Table 5: GAP5 Output

The thresholds were identified and could be used for each of the three sub-functions. These were shared with the stakeholder community and agreed.

The following requirements of Phase 2 were achieved at this stage:

2.1 Analysed the performance reporting currently available from the source data
2.2 Tested whether this reporting is sufficient to identify low performing advisors
2.3 Investigated and agreed a new approach to performance thresholds

The final step for Phase 2 was to use the data gathered and build a simple navigation system, making appropriate formatting changes where required and adding a summary to each section.

Acquisition Main Menu

Number of Advisors	342
Effort Threshold	0.10
No. of advisors beyond threshold	69
Advisors achieving threshold	273
%age advisors above threshold	20.18%

Overall Quintile Variance	0.67

CCM	Number of advisors off threshold
Jarrod Wisniewski	24
Toby Bolton	11
Adam Delsignore	10
Pamela Wilson	9
Kirsten Anderson	8
Kirsti McKernan	7

Advisor Detail

Advisor Name	CCM Name	Touches	Target Touches	Impact
Adam Tynemouth	Toby Bolton	68	49	19
Abdulkarim Oloyede	Pamela Wilson	60	41	19
Sophie Howe	Toby Bolton	60	39	21
Sean Dixon	Toby Bolton	43	32	11
Samantha Harvey	Jarrod Wisniewski	38	32	6
Jacob Davis	Jarrod Wisniewski	44	31	13
Bernadette Broadley	Jarrod Wisniewski	49	30	19
Daniel Muscat	Jarrod Wisniewski	37	29	8
Barry Rice	Pamela Wilson	51	28	23
Michael Caswell	Kirsten Anderson	48	28	20
Zoe Fuller	Jarrod Wisniewski	34	27	7
Ross Donachie	Toby Bolton	41	27	14
Ross Mould	Kirsten Anderson	38	27	11
Sheena MacLean	Pamela Wilson	43	27	16
Juan Fite	Adam Delsignore	33	27	6
Shelley Craig	Pamela Wilson	32	26	6

Figure 15: Acquisition tab post-formatting

Figure 15 above shows several formatting changes; adding colour with cell formatting to a thick box border – to make the report more aesthetically pleasing and easier to read than its predecessor (the format was replicated for Easy Assist and Retention).

The summary section consisted of the following basic information as shown in Table 6.

Title (Acquisition)

Number of advisors	Total number of advisors
Effort threshold	Effort threshold for the sub-function
No. of advisors beyond threshold	Volume of advisors performing above threshold
Advisors achieving threshold	Volume of advisors performing below threshold

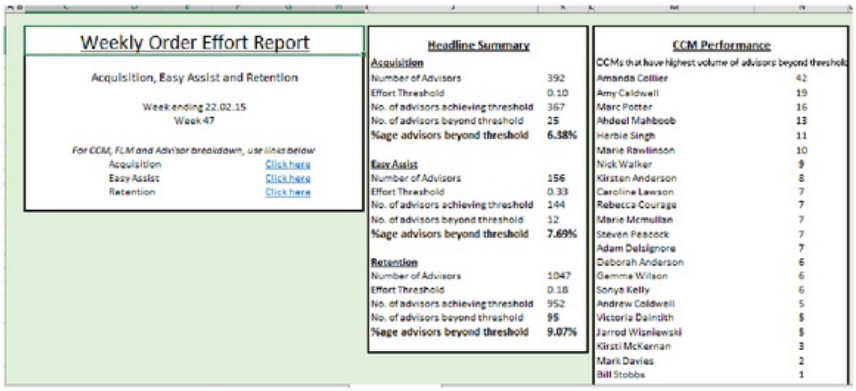
%age advisors above threshold	Percentage calculation (advisors beyond/total number)
Overall quintile variance	Effort difference between Quintiles 1 and 5

Table 6: Summary section overview

The CCM (Centre Manager) section consists of a breakdown of all the Centre Managers along with the volume of advisors performing beyond threshold within their Operational area.

Filtering was also added below the 'Advisor Detail' section to allow the user to filter data to enable them to carry out their own analyses.

Navigation option was added to each of the pages for 'Main Menu' that takes the user to the home page, which is shown in Figure 16.



Weekly Order Effort Report

Acquisition, Easy Assist and Retention

Week ending 22.02.15
Week 47

For CCM, FLM and Advisor Breakdown, use links below

Acquisition	Click here
Easy Assist	Click here
Retention	Click here

Headline Summary

Acquisition	
Number of Advisors	392
Effort Threshold	0.10
No. of advisors achieving threshold	367
No. of advisors beyond threshold	25
%age advisors beyond threshold	**6.38%**
Easy Assist	
Number of Advisors	156
Effort Threshold	0.33
No. of advisors achieving threshold	144
No. of advisors beyond threshold	12
%age advisors beyond threshold	**7.69%**
Retention	
Number of Advisors	1047
Effort Threshold	0.18
No. of advisors achieving threshold	952
No. of advisors beyond threshold	95
%age advisors beyond threshold	**9.07%**

CCM Performance

CCMs that have highest volume of advisors beyond threshold	
Amanda Collier	42
Amy Caldwell	19
Marc Potter	16
Ahdeel Mahboob	13
Herbie Singh	11
Marie Rawlinson	10
Nick Walker	9
Kirsten Anderson	8
Caroline Lawson	7
Rebecca Courage	7
Marie Mcmullan	7
Steven Peacock	7
Adam Delsignore	7
Deborah Anderson	6
Gemma Wilson	6
Sonya Kelly	6
Andrew Caldwell	5
Victoria Dalridth	5
Jarrod Wisniewski	5
Kirsti McKernan	3
Mark Davies	2
Bill Stobbs	1

Figure 16: Home Page Navigation

Basic navigation was also added to each of the sub-functions, along with a replication of the summary sections and Centre Manager breakdown. Note: this was placed on a new excel workbook so the raw data was stored separately.

10.2.5 Deployment

The report was in its second phase and ready for deployment, having achieved the requirements of Phase 2. It was re-launched within the organisation five days after

Phase 2 commenced. As per the format of Phase 1, two days was allowed for the stakeholders to review and feedback.

10.2.6 Timebox 2 Recap

Start date:	6th February 2015
End date:	16th February 2015
Duration:	7 days (including two days for stakeholders to review)
Objectives achieved:	Yes
Feedback Method:	Conference call

10.2.7 Evaluation

Phase 2 delivered to the operations teams enhanced reporting features, along with new methods of performance reporting; individually tailored to each of the three sub-functions. All remaining objectives were met.

Phase 2 was analysed during the deployment stage of Phase 1 and implemented on schedule.
Feedback from the operational stakeholders was again positive. The potential benefits identified during Phase One were realised; removing 'noise' from the report and delivering a stronger message through presenting more succinct data.

Looking ahead at Phase 3, the stakeholders wanted performance tracking added to the front page. The database was previously sent weekly as a 'snapshot' view of performance, tracking would enable trend monitoring over an extended period of time – allowing managers to recognise whether performance is on an improving or worsening trend.

Management also requested a 'Size of the prize' section which identifies the total number of unnecessary touches created by the advisors.

10.3 Phase Three: Performance Tracking

10.3.1 Timebox 3

Start date:	13th February 2015
End date:	23rd February 2015
Duration:	7 days (including two days for stakeholders to review)
Stakeholder Input:	Phase 2 was a success, the report continued to garner a lot of attention with Operations prior to full launch.
Supporting Note(s):	None

Objective(s):

3.1 Add weekly performance tracking

3.2 Add 'Size of the Prize' section to front-page

3.3 Understand what other performance measures could be added to the front-end

3.4 Add additional data to commence the tracking

10.3.2 Analysis

Performance tracking needed to be built in to the report; to enable the users to see a weekly view of advisor performance vs threshold and understand whether there are any performance issues developing.

From a senior management perspective, they could use this visibility to get an at-a-glance view of performance.

10.3.3 Implementation

A line graph was used to build the performance tracker. The Y axis was set as the percentage of advisors performing beyond threshold; the X axis was set to the date/week number (incrementing weekly) with the data (lines) being the actual weekly output of percentage of advisors performing beyond threshold, for each of the three sub-functions.

The graph was constructed by adding a new sheet to the workbook (titled 'WoW Movement'). Figure 17 refers.

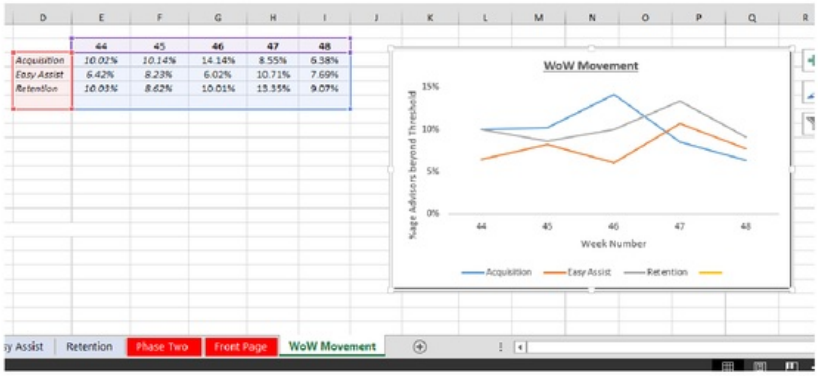


Figure 17: Graph construction

The graph was built and the next stage was to copy and paste to the front page. Figure 18 refers (the WoW Movement tab was hidden upon completion).

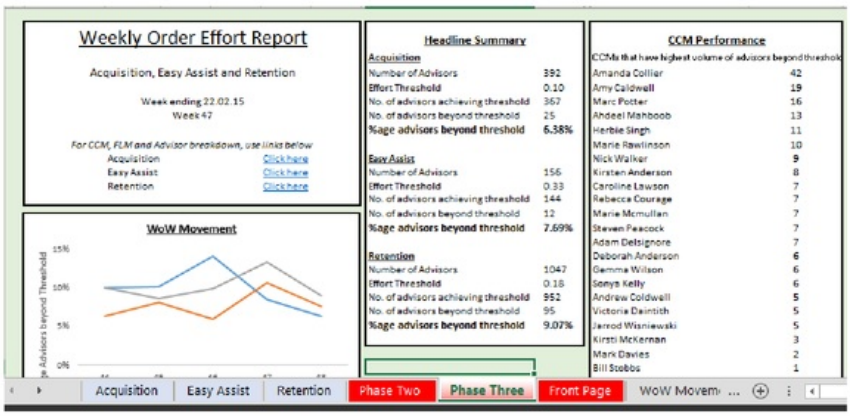


Figure 18: Front page with graph addition

The performance monitoring graph was added along with data to build a trend prior to full launch of the report.

The 'size of the prize' element, showing the total number of unnecessary touches generated by an advisor each week involved taking the 'Impact' data from each of the respective sheets (Acquisition, Easy Assist and Retention) and displaying this on the front page. A 'total' is also displayed which consisted of a sum of the three figures. Figure 19 shows the Effort report in its third iteration.

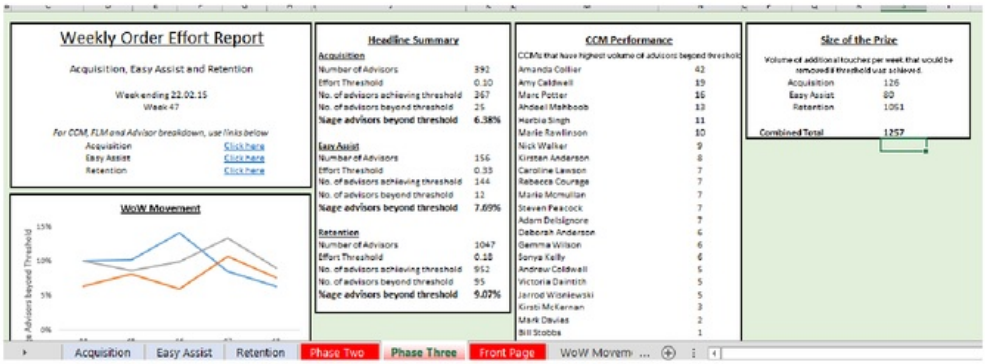


Figure 19: Third iteration of Effort Report

Performance monitoring and size of the prize were added successfully.

The final addition to the report was to add a further performance measure. Average quintile performance was chosen, across each of the sub-functions. This complimented the Size of the Prize section by showing the Operations the 'art of the possible'.

Essentially, by removing unnecessary touches managers could now see what good performance looks like by cross referencing those performing in the upper quintiles.

This involved using the raw data file which includes all the advisor data from the three sub-functions.

A Pivot table was applied to the raw data (using a similar method previously used). The data used was as follows:

- ROWS will be QUINTILE5
- COLUMNS will be Sub-Function (prefiltered to Acquisition, Easy Assist and Retention)
- VALUES will be GAP5 (set to average)

The data from the pivot was added to the front page and edited (with colour) to highlight good performance. Green showed positive performance whilst red was negative. Figure 20 refers.

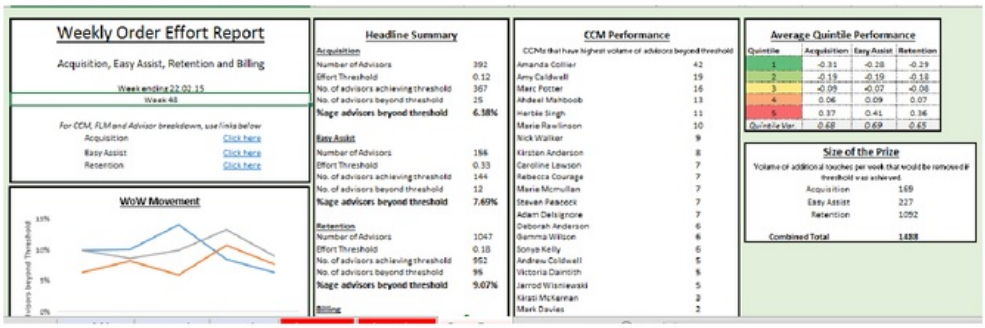


Figure 20: Dashboard with Quintile Performance

The front page was built as a performance dashboard; managers are able to look at-a-glance and understand the following:

- Weekly performance trend of their advisors (using the WoW Movement graph)
- Headline summary of performance for the week
- Centre manager performance
- Average quintile performance
- Size of the prize

10.3.4 Deployment

The appropriate changes were made as requested by the stakeholders during Phase 2. Phase 3 was ready for deployment for final testing prior to the launch date at the completion of Phase 4.

Timebox 3 Recap

Start date:	13th February 2015
End date:	23rd February 2015
Duration:	7 days (including two days for stakeholders to review)
Objectives met:	Yes

10.3.5 Evaluation

Phase 3 was a success and a real step-change in the development of the report:

- Phase 2 involved the most work in terms of calculating a new performance metric
- Phase 3 involved more tracking and trending by adding graphs along with additional performance features (quintile variance and size of the prize) (Objectives 3.1, 3.2, 3.3 and 3.4 all met)
- The third iteration of the report shows a clear difference to what was deployed during Phase 1.
- Stakeholder feedback from Phase 3 proved a significant improvement in the messaging from the report. The dashboard sent a strong signal to Operations and is clear and succinct.
- No major changes were required during the fourth and final phase, other than the addition of a link to the main database – so users could access the source data that sits behind this report.

10.4 Phase Four: Final Changes

10.4.1 Timebox 4

Start date:	20th February 2015
End date:	27th February 2015
Duration:	7 days (including two days for stakeholders to review)
Stakeholder Input:	Phase 3 was successful and no further changes were required, other than a link to main data source. Report was nearly ready for launch, however a training pack was required to upskill the wider community on what Effort reporting involved and how to use the report.
Supporting Note(s):	None

Objective(s):

4.1 Add link to main data source on each page

4.2 Compile a training pack (to be included within Appendix)

10.4.2 Analysis

A link to the main data source was added which enabled users to drill down to lower level detail. The ethos of the effort report was for it to be used as a vehicle that enables Operations to identify those advisors that require additional training.

A training pack was built (see Appendix 1) enabling the Operational teams to be upskilled quickly in how to use and interpret the report; keeping the training material for future reference. A by-product of providing training material meant users could self-serve in future.

10.4.3 Implementation

The link to main data source was completed by adding a section to each of the reports pages along with inserting a hyperlink to the source location (which is an BT intranet page so not accessible externally). Figure 21 refers.

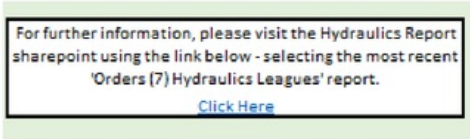


Figure 21: Hyperlink to main data source

All of the pages contained the above navigational box so users did not need to keep switching pages to access raw data.

10.4.4 Designing the training pack

The training pack is included within the appendix of this document. The objective was to create a set of PowerPoint slides that explained the following:

- ✓ Definition of Order Effort
- ✓ Why focus on Order Effort
- ✓ Ensuring fairness by comparing advisors equally

- ✓ Overview of the report itself
- ✓ What will be tracked
- ✓ What the user needs to do
- ✓ How the effort calculation works

The training pack was completed on schedule and completed at the end of Phase 4.

10.4.5 Timebox 4

Start date:	20th February 2015
End date:	27th February 2015
Duration:	7 days (including two days for stakeholders to review)
Objectives met:	Yes

Timebox objectives:

4.1 Achieved

4.2 Achieved

Looking holistically:

1 Three iterations of the Customer Effort report
2 Final iteration is a performance dashboard with supporting data along with links to main database
3 Performance tracking added during Phase 3
4 A new measure created to understand impact of unnecessary touches during Phase 2
5 Training pack designed, signed off and ready for delivery.

10.4.6 Evaluation

All four phases were completed. Phase 4 involved minor tweaks and no major changes were made. Completing Phase 4 showcased the report work through the construction of a training pack; complementing the report and can be used again in future.

All phases were successful and delivered on schedule. The final iteration, along with training material was ready on the 27th February. The launch date was to be March 2nd, two days after completion of these tasks.

The report was designed, analysed, implemented, reviewed and changed several times over the period of the four phases – however it was now ready for launch. The report would run for a period of around 7-8 months where performance would be monitored very closely. The results will be described in the next section along with the project evaluation. See Appendix B for the training pack which was created.

11.0 Questionnaire Feedback

As touched upon briefly during the methodology section, a questionnaire was used in order to understand whether users of the final report were indeed happy with the final product and for them to provide feedback on any future development opportunities.

11.1 Prototyping the questionnaire

In order to achieve the desired responses, a prototype questionnaire was constructed to test the question set. The questions used were:

1. Are you regularly using the report?
    a. *This was intended to understand how often the report is used by the individual*
2. How is it used?
    a. *This was intended to understand how the report is used and interpreted*
3. Is it useful?
    a. *This was intended to understand whether the individual finds the report useful for their needs*
4. Is it an improvement on what you previously had?
    a. *This hoped to confirm whether the new report is an improvement on what was previously used*
5. Could any further changes be made?
    a. *This question looked to identify any future development opportunities*

An issue arose when testing the questionnaire with a colleague, who provided feedback on the question-set. The feedback suggested the questions were too generic and can be open to interpretation, for example: question one could have led to answers where a user is not regularly (but should be) using the report and question two is too open to interpretation, the person completion the questionnaire could interpret it as anyone within the operation – not the person being interviewed.

To counteract this, the questions were amended and the refreshed set are below:

1. Why do you use the report?
    a. *Intended to find out why the report is used by the individual*
2. How do you use it?

   a. *Looked to understand how it is used by the individual*
3. Do you find it useful?
   a. *Looked for clarification on whether the report was useful to them*
4. Has it been beneficial to you?
   a. *Intended to understand whether the new report was beneficial to the user*
5. Is it an improvement on what you previously had?
   a. *Looked to understand whether the new format was an improvement on the previous version*
6. Could any further changes be made?
   a. *Looked to understand and identify any future development opportunities*

These questions are more specific to the person being questioned. The questionnaire responses were gathered from three different methods: interview, telephone and face to face.

11.2 Results

The questionnaire results were positive. All of the answers showed good results, particularly on how the report is more beneficial to the user, its usefulness and the improvements from its predecessor.

It is clear the uses differ dependent on who the actual user is; a team manager uses it to manage their team, an operational manager uses it to manage their part of the operations.

The bottom line is the respondents all agreed the report is a vast and significant improvement from how it was previously displayed. It is much easier to use and review and the trended graph shows exactly what is needed: a trended view of outlier performance.

What is interesting however is some respondents wanted the report built using Tableau software. Which – it has to be said – was not originally part of the development plan. This assists the action research method as this request shows opportunity areas for future expansion or development.

In summary, the results of the questionnaire were expected given the discussions during the phased development all showed signs of positivity as the report evolved, which is a clear indicator of success.

See Appendix C for scanned copies of the questionnaire results.

12.0 Evaluation

The final version of the report was delivered to schedule and was widely received with positive feedback from the organisation, as can be seen from the responses to the questionnaire, which will be discussed in this section.

Underpinning the project was to ensure this report met the requirements and standards necessary for successfully implementing a Customer Relationship Management System (1) (2) (3) (4). The report supports this aim.

12.1 Supporting the CRM Principles

The final report underlined the reasons for why an approach such as threshold monitoring and dashboard presentations are critical to succinctly identifying performance across an organisation. For example, by adding weekly tracking, managers at all levels are able to quickly view longer-term performance, not just a snapshot view (23) (24) (25) (26). This is reflected in the questionnaire feedback.

It is this approach that supports Customer Relationship Management theorem within an Organisation (9). As previously touched upon, CRM is a set of principles: enabling clear strategic aims and objectives through assessing internal and external stakeholders, in this case advisors and customers (10). This report shows the areas that negatively impact the customer experience by not providing the optimum levels of service customers are demanding from us.

12.2 An Information Provider

Whilst the report focusses on advisor performance, through deeper analysis of the 'outliers' – and linking these with the original data-set – we can see which products and order journeys lie behind the problem. The information gained is now useful (7).

It is this analysis that helped identify ~£2.5 million of opportunity to BT through problem order journeys that were in part to blame for advisor performance. Looking

at the report holistically, we now have a comprehensive view of performance that will be used as a key enabler of business improvement activities. The information gained from this report supports the CRM principles:

1. **Maximise profit** – through resolving opportunity areas.
2. **Retain current customers** – by developing the performance of advisors and delivering improved levels of customer service, customers are more likely to stay.
3. **Measuring the happiness of customers** – intrinsically linked to the above, better service means happier customers (7).

The project has several advantages, chiefly its simplicity and ease-of-use. These will ultimately support the customer by achieving the CRM building blocks:

1. Providing a better customer experience
2. Improved collaboration across the workplace (11)
3. Enable more efficient contact centres
4. Simplify sales and marketing processes (10)

12.3 Strategic Vision and Customer Experience

The literature presented the notion of companies having to adapt and evolve to maintain market share it is imperative that insights are clear, directive and actionable. In addition, the five 'schools of thought' (1) as touched upon previously all had differing approaches when considering a CRM, but all agreed that customer service should always be an organisations number one priority and form the basis of any strategic objective; recognising the importance of the customer journey and their experience.

The report supports these beliefs by providing clear, actionable insight. By identifying and tracking advisors performance, key decision makers within the organisation can use the output to support their own strategic initiatives (10), whether they be training or operational needs. This is supported in the questionnaire feedback.

12.4 Organisational Collaboration

Front and back-office teams (10) can use this report independently, or collaboratively depending on the requirement (11). The presentation of the

dashboard is not tailored to a specific business unit and as such can be used, and understood, by anyone in the organisation.

The use of the Big Data principles and condensing the data in to more manageable (and readable) information will improve operational efficiency (20) (21).

12.5 Metrics

During the deployment phase of the report, it was noted additional metrics were required to enhance the insight opportunities this report would provide. These metrics were built specifically for this report and fitted seamlessly with the initial requirements; whilst recognising the importance of ensuring the metrics themselves were meaningful.

12.6 Questionnaire

Primarily, the objective was to gain an understanding of how the report is used at different managerial levels of the organisation. The feedback group included a first-line manager, a 'channel' manager (support function), an operations General Manager and a Performance and Insights General Manager. The differentiator here was to get a view point from an Operational and non-Operational person.

The results of the questionnaire were positive and as expected the report was being widely used, at all levels. The most positive comment was that the dashboard design had a profound change on how future reports were to be developed and deployed. This can be attributed to knowledge gained from the literature review. Appendix C contains scanned copies of the responses.

12.7 Project Limitations

Whilst the report was new and quoted as having a profound impact on how future reports are generated, there were limitations that needed to be overcome. Namely:

1. Failed implementation if the report didn't meet the business objective

2. Potentially seen as 'yet another report' and as such employees may not have used it

To overcome this, training material was designed and implemented. The training material consisted of a 'cheat sheet' along with a more in-depth PowerPoint pack. The cheat sheet was designed to be a one-stop-shop quick reference guide whereas the PowerPoint pack laid out the structure of the report along with additional supporting information and a clear view of what the report will deliver (in line with business objectives). In doing this, this supports the need to ensure staff are appropriately trained in order to deliver the service demanded by customers. See Appendix B for the training material.

12.8 Did the project solve the main aim?

Taking in to account what has been written thus far in the evaluation section, it is clear this project has been a success. The literature review documented many different viewpoints and gave a clear understanding of CRM methodologies, Big Data, Dashboards to name a few and these have been used as the backbone of this project.

Looking back to the beginning of Phase One, the operations were barely using the massive data-set that was originally sent to them. By the end of Phase Four, they had a brand-new bespoke reporting solution, which essentially contained the same data – but cut and presented in a much more clear and succinct way. The feedback from the questionnaire proves its value in the organisation.

As the volume of outliers decreased each week along with a reduction of repeat calls, the performance thresholds were altered – thus increasing the pressure on Operations to continue to improve. Whilst the performance graphs on the report are not indicative of improvement at first glance – instead appearing to 'flatline' - this is not necessarily true due to the threshold changes, which as previously stated continued the drive for operational Excellency.

12.9 Changes that could be made for future developments

As with any technological product, there is the potential for it to become quickly outdated. This can be said for the Customer Effort Report. The organisation is starting to lean towards using Tableau more often in its reporting. Given the effort report is produced using Excel, this could present a problem in the future. To overcome this, a prototype view of the effort report has been constructed for this project can be found in the appendix. In transferring the report to Tableau, it will ensure futureproofing in line with the companies change to Tableau reporting.

13.0 Reflection

I have enjoyed every minute of working towards completing this dissertation. From the initial planning stages with my project supervisor; working out what sections needed to be completed and by when, to getting stuck in with the literature review and action research.

Putting the success of the project aside and looking at its component parts and their requirements, I found the development to be the most time-consuming. This was because I had already completed the development of the report and needed to document the steps I had previously taken to deliver the end result. As I already have an intimate knowledge of the reporting structure - from its inception to creation – I did find it somewhat difficult to clearly document to the reader my steps, this needed regular review sessions with my supervisor who helped ensure the project content was relevant and understandable at all stages. Getting across a point that I know I fully understand to an audience who does not is a skill that I have no doubt developed throughout the life of this project.

The literature review proved itself to be the most enjoyable for me. Getting to expand my knowledge of CRM, Big Data, Dashboards amongst others proved to be an exciting experience. Given my professional background of insights management and delivery, I believed myself to be quite well-versed in certain subjects. But taking a step back to read journals, books and blogs written by experts in their field proved I had only scratched the surface of what is out there. I had learned so much more about a subject that I am already passionate about.

I also learned a few extra skills with Microsoft Word, again considering myself to already be a competent user I quickly realised there were so many time-saving tools available to me, and I just had not come across them before. Timeboxes proved to be a fantastic approach and one that will be used in future.

What really struck me however was the end-to-end project journey and physically seeing my project grow with each passing week. When I look at the supervisor

session forms at the beginning of the project, faced with a mountain of work to get through I now feel immense pride in myself that with each week that passed, the amount of work required got less and less.
I started this university course six years ago as a twenty-one year old who had little professional experience and a handful of secondary school qualifications along with an NVQ. I wanted to do something radical to improve myself both personally and professionally to obtain better job prospects. Over the course of the degree, I have been lucky enough to have been recognised as putting myself through a degree course and as such gained promotion opportunities within BT.

The journey from being out of academia to throwing myself in to a degree course was by no means easy. I have learned so many skills through being at university, along with making a bunch of new friends. Completing this course has shown me that with a serious amount of determination, time and lots of effort – I really can turn my hand to anything.

14.0 Appendix

14.1 Appendix A

Area	Short Description	Essential?
WEEKEND	Date field showing week ending date	N
FINAL		
FUNCTION	The advisors high level function	N
SUB FUNCTION	Advisors low level function	Y
OUC	The advisors team unique identifier	N
EIN	The unique identifier of the advisor	N
NAME	The advisors name	Y
SITE	Where the advisor is based	Y
FLM	The advisors manager name	Y
CCM	The centre managers name (level 2)	Y
GM	The general managers name (level 3)	N
ORDERS RAISED	How many orders the advisor raised	Y
EL CALLS	How many Early Life calls the advisor handled	N
EL CPO	How many Early Life Calls Per Order	N
EL BASELINE	Early life baseline target	N
GAP1	Unused	N
QUINTILE1	The advisors EL quintile performance	N
IL CALLS	How many In-Life calls the advisor dealt with	N
IL CPO	How many In-Life calls per order	N
IL BASELINE	In Life baseline target	N
GAP2	Unused	N
QUINTILE2	The advisors In Life quintile performance	N
SALES CALLS	How many sales calls the advisor handled	N
SALES CPO	How many Calls Per Order for Sales	N
SALES BASELINE	Sales baseline	N

GAP3	Unused	N
QUINTILE3	Unused	N
REJECTS	How many orders were rejected	N
REJECT RATE	Reject volume vs Total number of Calls	N
DELAYS	How many orders were delayed	N
DELAY RATE	Delayed rate vs Total number of Calls	N
SRS	How many 'tickets' were opened against each call	N
SR RATE	Ticket rate vs Total Calls handled	N
ADV Q	How many customer queries were handled	N
ADV Q RATE	Query vs Total number of Calls	N
TOTAL OFFLINE TOUCHES	How many offline touches were created	N
TOUCHES PO	How many touches per order	N
TOUCHES BASELINE	Baseline of touches vs total calls	N
GAP4	Unused	N
QUINTILE4	Unused	N
ON OFF EFFORT	Unused	N
OVERALL EFFORT PO	Average effort per order	Y
EFFORT BASELINE	Expected effort per order	Y
GAP5	Gap to baseline	Y
QUINTILE5	Unused	N
HEAT INDEX	How the advisor is performing amongst peer group	Y

14.2 Appendix B

Consumer
Sales & Service

1

ORDER EFFORT REPORT & OUTLIERS

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Agenda

Consumer
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2

- What is it?
- Why are we looking at it?
- How can I use it?
- When will I get it?

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3

What is Order Effort?

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**A touch can be an Inbound Call or Offline activity*

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4

Why focus on Effort?

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5

How can you compare all the advisors fairly?

- We've compared each individual order type against every other order of the same type
- We've calculated what the highest and lowest number of touches and CHT per order is along with the average
- We've then set a baseline based on the effort score that each order type has
- Taking any advisor we can compare their individual effort score per order against the average effort score for that same order type
- We can also do this as a bundle looking at the combination of orders and what this means effort could be vs what it is
- This gives us a clear vision of who is performing above and below the average level

GTM & Channel

What does the report look like

Consumer Sales & Service

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Acquisition Main Menu

Number of Advisors	392
Effort Threshold	0.12
No. of advisors beyond threshold	25
Advisors achieving threshold	367
%age advisors above threshold	**6.38%**

Overall Quintile Variance	0.68

CCM

	Number of advisors off threshold
Maurice Roche	8
Aleksandra Hertelendi	7
Luke Lakin	5
Karen Adamson	3
David Mound	1

Advisor Detail

Advisor Name	CCM Name	Touches	Target Touches	Impact
Alice Hunt	Maurice Roche	48	35	13
Dan Hawkes	Maurice Roche	36	27	9
Louise Jones	Maurice Roche	34	23	11

- The report is an xl which will be sent out by Wednesday morning each week to the GMs
- The xl names any advisor performing at a higher effort score than the threshold
- The xl also shows you how many extra touches this caused in the Impact column.

GTM & Channel

What will you be tracking?

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Size of the Prize

Volume of additional touches per week that would be removed if threshold was achieved.

Acquisition	169
Easy Assist	227
Retention	1092
Billing	526
Combined Total	**2014**

Headline Summary

Acquisition	
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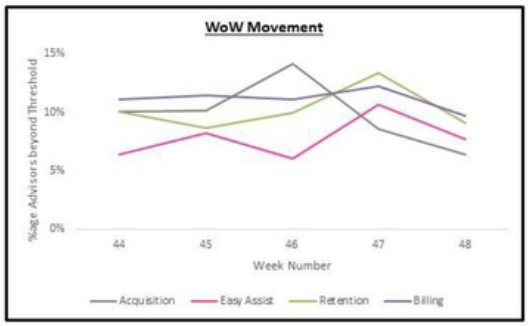

- We will track the number of advisors under threshold each week
- The threshold was set at the bottom 10% advisors, we will review the threshold at the end of March and keep on moving the threshold until we get all advisors performing to Q3 level.

GTM & Channel

What do I need to do?

Consumer Sales & Service

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Acquisition Main Menu

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Louise Jones	Maurice Roche	34	23	11

- Utilise the report, focusing on the advisors highlighted and the behaviours increasing the customers effort.
- Focus on order types with high Effort and CHT, examples - Triple Fibre and Sport and CTFU. Copper Broadband with PSTN (Dual) average CHT 1300. Solus TV – average CHT 1400
- Coach the advisor using the new 6 point plan, uplifting their performance to threshold.

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Here's how the calculation works...

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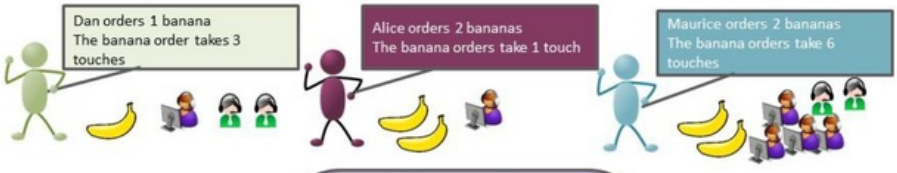
Each Advisor has a bespoke target based on their order mix, with each order type having its own baseline based on the average performance.

Outliers are determined by their "gap" between actual and Target effort per order versus their Peers

Three advisors place orders for one item...



Total banana orders = 5
Total touches = 10

Baseline touches per order = 10/5 = 2

	Average touches per banana order	Baseline	'Gap'
Dan	3	2	+1
Alice	0.5	2	-1.5
Maurice	3	2	+1

GTM & Channel

What about when ordering more than one type of product?

Consumer Sales & Service

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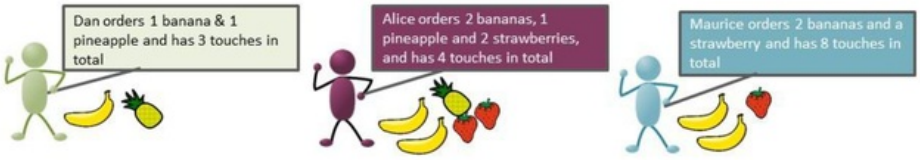
Every order type has a baseline set in exactly the same way as you have just seen.
When you place multiple types of orders these baselines are combined to give you a baseline set according to the combination.

Alice might have had the best effort score with bananas but what about when we add pineapples and strawberries to the mix?



First we need to set the baseline for each product

	Total Touches	Total Orders	Baseline / Target
	10	5	10/2 = **2**
	2	2	2/2 = 1
	3	3	3/3 = 1

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What about when ordering more than one type of product?

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Once you have the target baseline and the actual number of touches you can compare the two either against the same product or as a combined bundle.

	Order type	Number of touches	Touches per order	Baseline for order type	Gap	Combined Target/Baseline	Actual touches	Impact (actual touches – target)
Dan	1 x Banana	2	2	2	0	(1x2)+(1x1) = 2	(1x2)+(1x1) =2	2-2= **0**
	1 x Pineapple	1	1	1	0			
Alice	2 x Banana	1	0.5	2	-1.5	(2x2)+(1x1)+(2x1) = 7	(1x0.5)+(1x1)+(2x1) = 3.5	3.5-7= **-3.5**
	1x Pineapple	1	1	1	0			
	2 x Strawberry	2	1	1	0			
Maurice	2 x Banana	6	3	2	+1	(2x2)+(1x1) =3	(2x3)+(1x1) = 7	7-3= **4**
	1 x Strawberry	1	1	1	0			

	Baseline / Target
	2
	1
	1

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How does the effort score work?

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12

Advisor Effort = Total number of touches / Total Number of Orders
Target Effort = Target number of touches / Total number of orders

	Advisor Effort	Target Effort	Gap
Dan	3/2 =1.5	2/2 = 1	1.5-1 = 0.5
Alice	4/5 = 0.8	7/5 = 1.4	0.8 – 1.4 = -0.6
Maurice	8/3 = 2.6	5/3 = 1.6	2.6 – 1.6= 1

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QUESTIONS?

What does the report look like

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What will you be tracking?

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15

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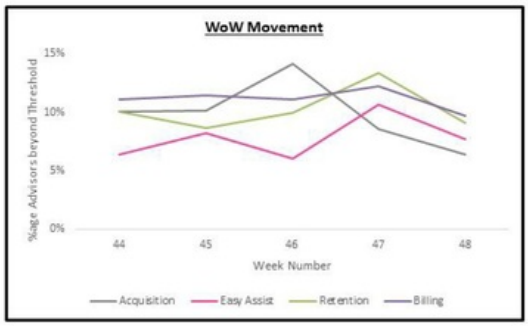

- We will track the number of advisors under threshold each week
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What do I need to do?

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Acquisition Main Menu

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- Coach the advisor using the new 6 point plan, uplifting their performance to threshold.

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Objective:	
Person being interviewed:	Team coach - Acquisition
Questions:	
1	*Why do you use the report?* I use it to support my team. My role as a coach means I'm responsible for supporting the team and helping develop them.
2	*How do you use it?* I use it regularly as part of my daily action plans. If someone is listed as an outlier then I work closer with them to improve their performance.
3	*Do you find it useful?* It's a lot better than what we used to get!
4	*Has it been beneficial to you?* Anything that's simple to read and understand is beneficial.
5	*Is it an improvement on what you previously had?* Definitely. Saves me so much time.
6	*Could any further changes be made?* I can't think of any at the moment.

	Objective:
	Person being interviewed: Team leader/Manager - Sales
	Questions:
1	*Why do you use the report?* To track the performance of my team and make sure we are improving weekly.
2	*How do you use it?* I look at whether any of my team are 'outliers'; then work with my coach/ SME to support their development.
3	*Do you find it useful?* It's particularly useful because it's so easy to use.
4	*Has it been beneficial to you?* Very much so, because I can see how teams (not just mine) are performing at-a-glance.
5	*Is it an improvement on what you previously had?* Anything is better than that excel report!
6	*Could any further changes be made?* Could any of the other reports look like this!

	Objective:
	Person being interviewed: Operations Manager (Channel)
	Questions:
1	*Why do you use the report?* To track the performance of my Channel. I'm responsible for the Sales channel so look at all three areas.
2	*How do you use it?* Performance meetings, weekly huddles and director level reviews.
3	*Do you find it useful?* Yes, I can copy and paste sections on to my review slides. Also, the performance metrics show clearly how my area is performing.
4	*Has it been beneficial to you?* Yes definately.
5	*Is it an improvement on what you previously had?* Again, yes. It shows so much on so few pages.
6	*Could any further changes be made?* Tableau?

	Objective:
	Person being interviewed: Team coach - Easy Assist
	Questions:
1	*Why do you use the report?* To support my team.
2	*How do you use it?* As part of my daily plan where I sit with each person on the team to support and develop them.
3	*Do you find it useful?* The weekly performance shows how we as a unit are performing, which is good. I like how easy it is to use and present on.
4	*Has it been beneficial to you?* Being with my team all day every day means I need access to reports quickly and easily. This is definitely beneficial.
5	*Is it an improvement on what you previously had?* 100%. I particularly like the 'size of the prize' section
6	*Could any further changes be made?* Could this be put on to tableau?

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