A Beginners Guide
to Big Data

How big data can drive marketing innovation

Many businesses have fundamentally changed their approach to marketing in recent years, moving away from targeting a mass audience towards engaging with small, niche groups or even just specific individuals.

One of the main drivers of this change has been the emergence of digital marketing platforms, such as mobile apps and social networking sites, as they have helped organisations gain unprecedented insights into people's tastes, habits and behaviour.

As a result, businesses can tailor their promotional campaigns accordingly and engage with people in a much more targeted and relevant way.

However, some organisations are daunted by the sheer amount of information on their customers - known as big data - that is available to them, as they do not know how to extract meaningful insights from it or how to use it effectively.

It might therefore be tempting simply to pretend the big data revolution hasn't happened, but companies should realise that harnessing this information can be a significant driver of growth that can enable a brand to make huge strides forward.

This Blue Paper will examine what big data actually is, what benefits it can offer and how companies of all sizes can use it to innovate their own marketing processes.

Part 1: What is big data?

The term 'big data' is extremely wide-ranging and consequently, there are many different definitions as to what it actually means.

One widely accepted interpretation comes from Gartner, which describes big data as "high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making."[1]

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1 "IT Glossary, Big Data" Gartner. Web 29 Sept 2014. http://www.gartner.com/it-glossary/big-data/

Microsoft, meanwhile, describe it as "the increasingly large and complex data that is now challenging traditional database systems,"[2] while market research specialist International Data Corporation categorises it as a "new generation of technologies and architectures, designed to economically extract value from very large volumes of a wide variety of data."[3]

Perhaps to summarise, it is therefore reasonable to say that big data is a set of information that is so large that standard software tools would have trouble handling it in a reasonable amount of time, so special resources need to be put towards extracting value from it.

Even so, the sheer pace of technological advancement has led to some questioning whether or not these definitions are fit for purpose right now. Fatemeh Khatibloo, Senior Analyst at Forrester Research, for instance, has argued that the "old way of defining big data just doesn't cut it anymore," as other key issues also need to considered.[4]

Specifically, she believes brands must focus on the "how and why" of data, which means "mastering context, changing your organisational culture, developing the right capabilities, and yes, acquiring the capacity to transform your data into insight."[5]

Where does big data come from?

Since there are many sources of information available to organisations, they need to ensure they use a wide array in order to get the best insights.

A 2012 report by IBM noted that most firms are limiting themselves to internal data sources, such as transactions, log data and emails in order to learn about their customers. However, it pointed out that many are therefore overlooking other useful sources of data outside their firewalls, such as posts on social media platforms.[6]

Companies that are keen to embrace the big data revolution and leverage the

2 "Server and Cloud Platform." Microsoft. Web 29 Sept 2014. http://www.microsoft.com/en-us/server-cloud/solutions/big-data.aspx

3 "Big Data: What It Is and Why You Should Care." IDC. Web 29 Sept 2014. http://sites.amd.com/us/Documents/IDC_AMD_Big_Data_Whitepaper.pdf

4 "Big Data's Big Meaning." Forbes. Web 29 Sept 2014. http://www.forbes.com/sites/forrester/2014/05/29/big-datas-big-meaning-for-marketing/

5 "Big Data's Big Meaning." Forbes. Web 29 Sept 2014. http://www.forbes.com/sites/forrester/2014/05/29/big-datas-big-meaning-for-marketing/

6 "Where does big data come from?" IBM. Web 29 Sept 2014. http://www.ibmbigdatahub.com/infographic/where-does-big-data-come

information that is available should look at a whole range of sources in order to get the best possible indications of how to engage with their target audience.

Every time a customer makes an online transaction, they potentially make information about themselves known to the vendor, such as - for instance - their age, postcode and the value of their purchase.

This kind of information can help firms draw up a clear picture of their customers' tastes and habits, so they can anticipate their future needs and work out what marketing messages are most likely to be effective.

Many people also volunteer information through market research or perhaps on feedback forms, while analytics of how well a company's website is performing can also be a useful mine of data.

- What specific products are people searching for?

- What keywords and related terms are they searching for online?

- What questions are they asking and what are they talking about on social media platforms such as Facebook and Twitter?

- Is online activity largely coming from desktop PCs or web-connected smartphones and tablets?

- Are people who favour particular channels in a certain demographic group or geographical area?
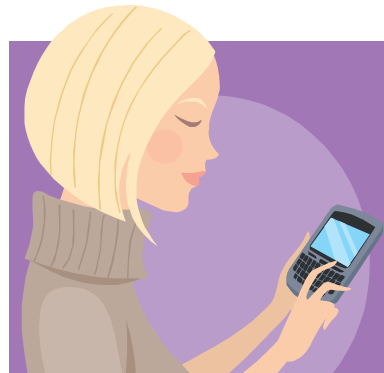
It's surprising how much information customers disclose about themselves when they engage with a brand, but perhaps even more surprising is that firms have the capability to track all this activity.

As we've already noted, this information by itself is useless unless companies have some means of processing it in a way that is both cost-effective and quick, in order to identify notable patterns and trends in customer behaviour.

Once firms have garnered these insights, they can use them to determine how they go about marketing to their audience(s).

Part 2: How can big data be useful to businesses?

So now we've established exactly what big data is and where it comes from, what needs to be done to ensure it is genuinely useful to an organisation?

After all, data only has value if it can have a practical application to businesses and influence their strategies in a positive and substantial way.

According to a study by market research specialist GfK commissioned by the Guardian, 86 per cent of marketing professionals believe big data will change the function of marketing. Meanwhile, 62 per cent said their role has already changed fundamentally thanks to big data.[7]

So, it's clear that marketers who wish to stay ahead of their peers can't simply look the other way and ignore the availability of big data.

Of course, the notion of companies collecting information on their customers is not particularly new. But as Kurt Kendall, Business Lead of McKinsey's Consumer and Marketing Analytics Centre points out, the key change is the fact that so many new sources of data have emerged and are there to be tapped into.[8]

"With the right capabilities, you can take a whole array of new data sources - web browsing data, social data and geotracking data - and develop a much more complete profile and with this information, segment better. When a customer is standing in the store, a retailer can mine their databases and determine whether this is someone they want to keep and what it will take to keep them." Mr Kendall noted that retailers can also combine the information they have about a person's past purchases with details gathered via social media and other sources, so they can "determine exactly what price to sell the item and if it is right to negotiate."

Of course, investing in tools to interpret big data costs money and a marketing department might not always have the budget to get everything they'd like. But, this might be a case in which the Board needs to consider moving with the times and examine the likely payback from big data for the organisation as a whole

7 "Big data – a marketer's dream or dilemma?" The Guardian. Web 29 Sept 2014. http://www.theguardian.com/media/2013/oct/07/big-data-marketing-dream-or-dilemma

8 "Big data: Embracing the elephant in the room." Marketing Week. Web 29 Sept 2014. http://www.marketingweek.co.uk/big-data-embracing-the-elephant-in-the-room/3030939.article

rather than view it as a request solely from the marketing team.

James Parker, Customer Relationship Management Consultant at GlaxoSmithKline, commented: "Although consumer behaviour is best monitored by the marketing department, the benefits are to the rest of the business."[9]

Once a business has decided to embrace big data and invest in the right resources, there are a few more issues it needs to bear in mind. Specifically, it must have a clear strategy regarding what data it wants to collect or use and how it can be used to compete with its rivals.

EPOS the electronic point of sale specialist offers three useful tips for firms to follow in order to make the most of this valuable asset.[10]

1. **Pick the right data**
    A marketing strategy is designed with a clear objective in mind, so firms must be specific about the business problem(s) and opportunities they wish to address and source data accordingly.

2. **Build models that support business targets**
    Once they know what they want to achieve, companies must build a model and have the IT infrastructure in place that helps to facilitate this outcome. EPOS points out that data alone is "not advantageous - what's needed is an analytics model that can predict and optimise performance improvements and competitive advantage."

3. **Embrace organisational change**
    Company processes need to be designed to support any big data analytics, so the two can work comfortably alongside each other and be mutually beneficial. In short, businesses must know what goal they wish to attain, so their data mining and processing model can be designed with this firmly in mind.

Big data has transformed customer segmentation

In recent years, brands have increasingly moved away from treating their audience as a homogenous whole and started tailoring their marketing content towards the various subsets of consumers. For example, people were divided up

9 "Big data: Embracing the elephant in the room." Marketing Week. Web 29 Sept 2014. http://www. marketingweek.co.uk/big-data-embracing-the-elephant-in-the-room/3030939.article
10 "3 steps to harnessing big data in retail." EPOS. Web 29 Sept 2014. http://www.epos.co.uk/news/3-steps-harnessing-big-data-retail/

according to where they lived, their age or their socio-economic group or were grouped together because they had similar needs and priorities. This approach has enabled firms to run specific marketing campaigns for each segment, with promotional material designed with their unique circumstances in mind.

However, when big data enters the equation, it can have a more far-reaching impact. Organisations can process their data to get a clear idea of other variables such as the growth potential of each group and their likely impact on profitability.

According to strategic consulting company FullSurge, this allows them to "better align and meet client and customer needs," which can in turn give them a competitive advantage over their rivals.[11]

This means they can reduce the need to take risks and use the information they possess about each group to inform their future business strategy.

The knock-on effects of this are extensive. For instance, firms can use their marketing budgets far more effectively and limit their investment in areas that are less likely to yield a positive return.

It also enables organisations to act in a far more focused manner in functions beyond marketing, as having clear idea of which customer segment is or has the potential to be highly lucrative could impact on how much money is invested in other areas. For example, a firm might be more willing to invest in researching and developing products (R&D) aimed at a particular market if it has data showing the potential returns this group could generate.

Li Hong, Senior Partner & President of PR specialist FleishmanHillard International Communications in China, has been among those to make this point, stating: "Data analytics doesn't stop within a pure marketing sense. It expands across multiple areas from R&D to customer service. In logistics and distribution, geographical data can show us so much more about people's consumption habits.

Market segmentation allows us to both target and position ourselves in a market. In the past doing this would give very little insight into how the online world is reshaping consumption habits. However, because of a world of data analytics we can measure huge amounts of data in a short space of time, establishing a fusion between online habits and how this correlates to geographic, demographic,
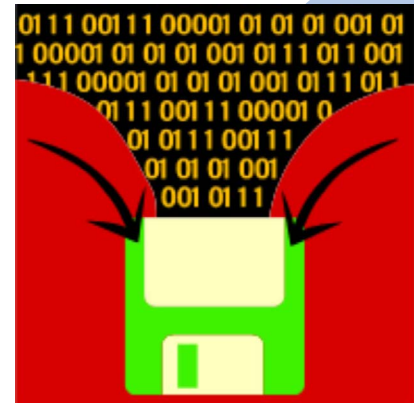
11 "Customer Segmentation in the Age of Big Data." FullSurge. Web 29 Sept 2014. http://www.fullsurge.com/perspectives/articles/marketing/customer-segmentation-age-big-data

psychographic and behavioural patterns and differences."[12]

FullSurge make a similar observation, noting that with big data analytics guiding their marketing and wider business strategy, businesses can be much more "effective in the way they service customers, go to market and educate employees about customer needs."[13]

With the ability to measure and interpret large quantities of information about their consumer base in a short space of time, organisations can transform and improve how they go about their business, with money and resources being deployed in a more focused and targeted way.

So to summarise, using big data for customer segmentation means firms could

- Establish a competitive advantage over their rivals by offering tailored, relevant and timely marketing campaigns for different consumer subsets

- Align themselves better to meet client and customer needs, so they can bring relevant products and services to the market faster

- React more quickly to customers' needs and circumstances and tailor communications to reflect this evolving understanding of what they want

- Operate more efficiently, with resources devoted to areas likely to generate the highest returns, rather than be risked on projects that might be less successful

- Spend money more appropriately across the business, particularly in areas such as marketing and R&D

Such decisions could be the decisive factor in enabling a business to stand head and shoulders above other firms in the same industry.

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12 *"The evolution of segmentation: how 'Big Data' can help us understand the 'new' consumer." IPRA. Web.29 Sept 2014. http://www.ipra.org/itl/07/2013/the-evolution-of-segmentation-how-big-data-can-help-us-understand-the-new-consumer*

13 *"Customer Segmentation in the Age of Big Data." FullSurge. Web 29 Sept 2014. http://www.fullsurge.com/perspectives/articles/marketing/customer-segmentation-age-big-data*

Part 3: Big data success stories

Perhaps the best way to show how big data can innovate marketing processes is to look at a few examples of well-known brands that have generated positive results from this approach.

Avis

Car rental giant Avis was becoming increasingly concerned that it was struggling to stand out in the car rental market. Indeed, Vice President of CRM and Marketing Science Tim Doolittle said that since rental companies offer similar vehicles in similar locations at similar rates, the market has become very competitive. As a result, he concluded that customer service and customer experience are the factors that make a firm distinctive from another. Avis therefore used big data in order to better understand who its customers actually are, so they could offer them better value, understand their needs and make the overall customer experience across each channel more cohesive.[14]

This effort paid off handsomely and customer engagement has been placed firmly at the heart of its business strategy, with different segments targeted in unique and relevant ways. "We've added 'win-back' and 'peer prospecting' to make six segments, and that's how we organise our contact strategy group. That approach has increased the effectiveness of our contact strategy, in many cases above 30 per cent over control," Mr Doolittle added.[15]

Macy's

As one of the best-known department stores in the world, Macy's is capable of collecting large quantities of information on its customers every single day. Group Vice President of Customer Centricity, Direct Marketing and Loyalty Julie Bernard believes this enables it to tailor its messaging and offers to them "appropriately by channel."[16]

Customer data is used to "inform content relevancy," with the consumer insights used to "ensure that the relevancy is coupled with a sense of discovery and inspiration." Ms Bernard thinks the company's approach to marketing has been transformed by its use of data in recent years.

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14 *"How Avis Budget Uses Big Data in Marketing." CSC. Web 29 Sept 2014.* http://www.csc.com/big_data_insights/97741-how_avis_budget_uses_big_data_in_marketing

15 *"How Avis Budget Uses Big Data in Marketing." CSC. Web 29 Sept 2014.* http://www.csc.com/big_data/insights/97741-how_avis_budget_uses_big_data_in_marketing

16 *"From the Marketing Trenches: Data Analysis Success Stories." Spotfire. Web 29 Sept 2014.* http://spotfire.tibco.com/blog/?p=19275

"Marketing has always been positioned as the advocate of the consumer - now, we're much more responsible for the entire customer experience. When we advocate on behalf of the customer, using advanced behavioural analytics to inform the experience, we still leverage our traditional marketing skills of storytelling to deliver those insights in a way that can be understood, embraced, and acted on quickly."

JPMorgan Chase

When the financial services provider began to look at how people interact with their banks, it was able to identify which platforms were used the most and act accordingly.

Steve Ireland, Executive Director and Head of Advertising Strategy and Platforms, said when JPMorgan Chase spotted that many customers were accessing its online forms via mobile devices, it prompted the firm to focus on creating better and more secure apps that could handle the amount of mobile traffic it was receiving. It was incredibly shocking to us on the number of loan applications from devices. That led us to improve the interaction with consumers, and improve our opportunity," he commented.

This wasn't a fundamental change in the business and its operations, but it's a great example of how examining big data helped to bring about a positive change that improved its ability to engage successfully with its customers.

Part 3: Assure customers their data is safe

Data security and privacy is a key concern to customers, particularly after some embarrassing and high-profile lapses that have hit the headlines in recent years. This was highlighted in the Consumer Confidence Index from TRUSTe which showed that in January 2014 [17]

- 60 per cent of internet users were more concerned about their privacy online than a year earlier

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17 *"Three Times as Many Consumers Concerned About Companies Sharing Data Than Government Surveillance Programmes." TRUSTe. Web 29 Sept 2014. http://www.truste.com/about-TRUSTe/press-room/news_uk_truste_ reveals_consumers_more_concerned_about_data_collection*

- While 55 per cent trust most companies with their personal information online, 89 per cent avoid those they believe are unable to safeguard their privacy

Businesses that want to embrace the big data revolution therefore need to focus on assuring their customers that their details are safe and secure, so they continue to be happy to volunteer their details.

Mike Lordan of the Direct Marketing Association (DMA) has been among those to urge marketers to be aware of the risks that can come with handling large data sets and to follow best practice recommendations in order to stay on the right side of [Data Protection] law. "We've seen high-profile cases of companies losing data or experiencing data breaches. If brands are to profit from using big data, they must build trust. If they don't, the size of the data sets will be eroded."[18]

Ken Parnham, European Managing Director of TRUSTe, added that his organisation's findings must be seen as a "wake-up call" for businesses that wish to collect and share data for commercial purposes. "Lack of trust can starve businesses of valuable data and sales, restricting the lifeblood of the digital economy as people are less likely to click on ads, use apps or enable location tracking on their smartphones. Success is no longer just about innovation, companies need to take decisive action to address online privacy concerns to stay ahead of the competition, minimise risk and build online trust."[19]

Part 4: The future for big data

This Blue Paper has covered what big data is, why it can be valuable and a considerations for firms to take part in this change in approach. But how is the market likely to evolve in the future and why could changes be significant for companies' efforts to engage with their target audience?

According to market researcher International Data Corporation, big data technology and services is set to grow at a compound annual growth rate of 27 per cent through to 2017 - which works out to six times the growth rate of the overall information and communication technology market.[20]

18 "Big data: Embracing the elephant in the room." Marketing Week. Web 29 Sept 2014. http://www.marketingweek.co.uk/big-data-embracing-the-elephant-in-the-room/3030939.article
19 "Three Times as Many Consumers Concerned About Companies Sharing Data Than Government Surveillance Programmes." TRUSTe. Web 29 Sept 2014. http://www.truste.com/about-TRUSTe/press-room/news_uk_truste_reveals_consumers_more_concerned_about_data_collection
20 "New IDC Worldwide Big Data Technology and Services Forecast Shows Market Expected to Grow to $32.4 Billion in 2017." IDC. Web 29 Sept 2014. http://www.idc.com/getdoc.jsp?containerId=prUS24542113

This is supported by a report from Infogroup Targeting Solutions, who specialise in helping business make sense of big data, which found that more than 60 per cent of firms expect their big data marketing budgets to go up over the next year.[21]

It therefore appears the big data revolution is set to continue, so it is more important than ever for firms not to be daunted by the masses of information available and concentrate on gathering and using data that will help them achieve their goals.

Natalie Henty, Head of CRM at DIY retailer Wickes, comments: "You must be focused on what you want to get out of big data or you can spend too much time analysing it. Rather than trying to make use of every single piece of information it is possible to gather, you must get actionable insight."[22]

Of course, retailers in particular realise that customers shop around and research the market more than ever, which has forced some to lower their prices. But if big data is leading to marketing spend being more focused, personalised and targeted, this can only be a good thing, partly because they are increasing their chances of delivering results from their promotional efforts.

The DMA agrees that both parties are able to benefit if big data puts downward pressure on prices. Chairman Scott Logie noted that if people are allowing their data to be used in marketing, it is only right they get something in return, such as loyalty bonuses and special offers. "This has been happening for years with loyalty cards, but with big data it is just not so explicit."[23]

An interesting indication that attitudes to big data are changing came in a 2013 report by Econsultancy and Lynchpin, which found attitudes towards big data were fairly ambivalent throughout the business community. Indeed, one in ten respondents dismissed it as a pointless marketing term, while many believed it had not had any effect on the web analysts within their companies.[24]

21 "Survey: Big Data Marketing Budgets Rise Again in 2014, But Hiring Slows." Infogroup Targeting. Web 29 Sept 2014. http://www.infogrouptargeting.com/about/news/survey-big-data-marketing-budgets-rise-again-in-2014-but-hiring-slows

22 "Big data: Embracing the elephant in the room." Marketing Week. Web 29 Sept 2014. http://www.marketingweek.co.uk/big-data-embracing-the-elephant-in-the-room/3030939.article

23 Big data: Embracing the elephant in the room." Marketing Week. Web 29 Sept 2014. http://www.marketingweek.co.uk/big-data-embracing-the-elephant-in-the-room/3030939.article

24 Measurement and Analytics Report 2014. Econsultancy. Web 29 Sept 2014, https://econsultancy.com/reports/measurement-and-analytics-report-2014

Yet their 2014 follow-up study revealed more than three-quarters of respondents agreed that big data uncovers optimisation opportunities that are not possible with traditional methods, while just six per cent disagreed with this view. Meanwhile, nearly half of those polled said they regard big data as the best way of bringing online and offline data together.

It is clear that attitudes towards big data are changing throughout the business sector and that more and more management teams are beginning to understand its true value. As a result many companies have created specialist analytical positions for so-called 'Data Scientists' who are responsible for programming, modelling, analytics and statistical analysis. These employees go beyond gathering and mining data and are tasked with analysing and interpreting it effectively.

Finally...

All indications are that global spending on big data is set to rise - meaning consumers are likely to become increasingly used to targeted and relevant communications that are tailored to their unique tastes, circumstances and preferences.
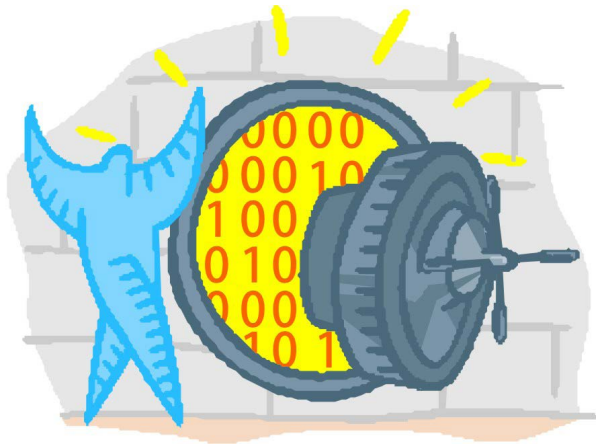
This will only serve to make consumers more intolerant of firms that cannot engage with them in such a way, which means firms that fail to invest in big data could quickly get left behind.

Now isn't the time to be daunted by the idea of big data - in fact, it offers a great opportunity for companies of all sizes to embrace it and put themselves in a great position to grow.

The benefits of gathering and interpreting big data are extensive and wide-ranging. From coming up with relevant and engaging promotional material to making the most of every penny in a marketing budget by communicating in a targeted rather than scatter-gun way, big data can deliver financial and reputational advantages.

As such, embracing the big data revolution and using it to innovate marketing processes could underpin the success of many businesses in the coming years.