Turning big data into big ideas

You can have 'lots of data', or you can have 'Big Data' - but the two are very definitely not the same thing.

Today no organisation can be unaware that the prodigious use of smartphones, apps and websites, has led to businesses accumulating customer data at an unparalleled rate. However, making sense of it is another challenge entirely, relying on not just the power of the analytics you have to hand, but the strength of the relationship you hold with your customers.

This is particularly relevant for organisations needing to differentiate themselves via an exceptional customer experience – a requirement that's growing fast. Back in 2014 Gartner was reporting that 36% of businesses were aiming to compete on those grounds. Two years later the analysts put that figure at nearly 90%.

Increasingly organisations are realising that without some very smart analytical tools at their disposal, that data they have worked so hard to gather will lie supine on glum servers, generating precious few insights. And for that data to have integrity, there has to be a strong bond of trust between organisation and consumer. Without it customers may hold back vital elements, the picture will be incomplete, and the strategy constructed around it less useful, or even wholly wrong.

How important is Big Data?
Well, when Accenture surveyed a cross section of business leaders on the subject, 89% of them anticipated that Big Data would revolutionise their operations - to the same degree that the Internet did.

Meanwhile market intelligence researchers IDC predict that revenue from the sales of analytics applications, tools and services to mine that resource will increase more than 50% in just four years, from $122billion in 2015 to $187billion in 2019.

So the potential - and the need for help - are huge, and the importance of bringing clever and powerful analytics to these vast repositories of data cannot be underestimated. The smartness of your data science and the ingenuity of your analytical partners will be what differentiates your company's use of Big Data from that of competitors around you.

Who's using it?
Some industries have been quicker than others to see the possibilities. Telcos, for example. T-Mobile has already employed operational and social media analytics to incorporate the element of 'influence' into a subscriber's Net Present Value (NPV). Of two customers spending £100 and £50 a month, the former might look more important, but if the latter has

a weightier social media footprint, they are more likely to broadcast their dissatisfaction and cause others to churn along with them.

Telcos have also used Big Data analytics to predict periods of heavy network use, say due to video streaming. By taking steps to relieve congestion at those times they've saved on planned capital expenditure as a result. Or they've applied machine learning to a range of socio-demographic and touch point data to spot customers most likely to defect or those having trouble paying bills, consequently reducing churn and improving recovery of payments.

Banks are another area ripe for the application of Big Data analytics, but are hampered by an ironic Catch 22. While they are the sector that's been collecting customer data for longer than almost any other, that means it sits in legacy silos that require a cutting edge set of skills and technologies to access satisfactorily. They also live beneath the glare of a fierce regulatory spotlight.

Nonetheless, the boons of being able to offer more targetted and cost-effective marketing campaigns, designing products tailored to customer needs, and fashioning more accurate models for assessing creditworthiness and transaction fraud are self-evident. Even better, combining data sets in creative ways could surprise and delight customers, leading to retention, loyalty and a higher customer lifetime value. Though a tough nut to crack, the potential for Big Data in retail banking is endless.

Beyond the private sector
It's not just commerce that will benefit from the Big Data revolution. Capita is already supporting its public sector clients in analysing the data they hold and using it to address increasing demand and shrinking budgets.

For example, at Barnet Council, Capita has provided a dedicated Insight team whose work on data sources as varied as tax collections, parking permits and the school census has delivered a number of money saving improvements and initiatives. They include developing the council's information management systems, producing better focused customer service, introducing a new traffic information website that makes parking and restrictions less problematic for residents, and pinpointing the best ways to boost community projects.

What's holding organisations back?
While legacy issues may be the tide against which banks are swimming, for the mass of mainstream businesses it's the sheer complexity of the technology that is likely giving them pause. However technology analysts Ovum predict in their 2016 Big Data Trend Watch that this may soon end. Simpler appliance and cloud deployment should make Big Data easier to use for the next, less IT-sophisticated wave of adopters, and more popular. Analytics and the help to apply it will remain essential, but at least the technological step-up to put a business in that situation will be a shallower one.

Data consultancy EY has identified eight areas where organisations need to think carefully - and ask for help – in order to unearth genuine advantage from the potentially overwhelming data assets they hold.

1) Unknown destinations - you may know you have useful data, but without effective analytics, you don't know the questions to ask of it, or where it could be leading you.

2) Technology challenges - many organisations lack the means to cope with the sheer scale of the data they're harvesting, which can feel intimidating without the right tools.

3) The need for customer data - customers are thinking ever harder about why they might share their data with businesses, who can be trusted, and what's in it for them. Without adequate answers and a commitment to serving customers better, the data you need may never materialise

4) Lacking a holistic approach - the data is tackled too much on a project-by-project basis, without a global business vision.

5) Shortage of talent - developing the necessary data science, visualisation and analytical skills in-house can be extremely difficult and may simply take too long.

6) Cyber fears - as your dependence on data rises, so do your risks of attack and falling foul of complex regulatory legislation.

7) Building a business case - executives might accept the argument for Big Data initiatives, but want proof of the potential before signing off on projects. With few such projects completed, that can be hard.

8) Legal and regulatory compliance - while organisations may appreciate the importance of data security and privacy, the regulatory and legal risks are not always well understood and a misstep can wreck a company's finances and reputation, in perhaps a few short hours.

Summing up

IDC's programme director for Customer Insights and Analysis, Jessica Goepfert, says there is "little question that Big Data can have a considerable impact on just about every industry"... *if* it is analysed intelligently, innovatively and effectively. "Its promise speaks to the pressure to improve margins and performance while simultaneously enhancing responsiveness and delighting customers and prospects. Forward thinking organisations turn to this technology for better and faster data-driven decisions."

How your organisation's data can do more in '3D'

3D Data is Capita's take on the next step in Big Data analysis. It's a methodology specifically shaped for clients who need ever-deeper insights into their customers, how they behave, and the products they buy.

"It's not just a tool or a process, it's about the *way* we assimilate data and what we can do with it," explains Capita Insight, Analytics and Improvement Director, Alan Linter.

3D Data - as the name might imply - is supported by three separate streams of information:

- customer contacts
- customer data itself (an order, an account, a bill)
- and importantly, data shared by a client from its own CRMs and systems, enabling Capita's Insight and Analytics team to study the events or triggers that instigated those contacts.

"Once all that data is stitched together we can segment it in as many dimensions as we want and begin to do really interesting things with it," says Alan. "That could be looking at customers by profitability or cost, at processes, at channels, at product holdings and more. It can generate a huge amount of insight to drive business improvements.

"Those improvements could be around efficiency, ie driving cost out of the contact centre. They could be around effectiveness with better outcomes such as simply selling more or collecting more cash. Or they could focus on improving the customer experience by making it more effortless.

"For clients it means we can bring them some incredibly powerful insights *for not much more effort than simply sharing their data with us.*"

One dimensional analysis will tell you how many customers are ringing in about a product. In two dimensions you'll learn something about the customer themselves, such as where they live. But in three dimensions, when that shared data reveals *all* the orders a client taken, "then it gets really interesting," says Alan.

"A three dimensional view can tell you whether some products or customers are truly as profitable as you think. It can give you gross sale and net margin figures to an accuracy historically unachievable.

"We can tell you how many people are ringing about this one product compared to all the others. We can tell you how many people buying it are ringing the contact centre about it. If that number is high, it implies you've got a systemic failure going on.

"In fact we can write a business case that essentially says there's £10 million worth of cost associated with this process, it's broken, this is why... and here's how to fix it."

The legal minefield of personal data

Most legal and ethical challenges will come from the position of data protection, but the issue is more complex than simply keeping customer data safe.

• **Consumers** are increasingly concerned about the security of their data, so compliance with regulations is not only about adhering to the law, but about demonstrating your ethical and social commitment.

• **Define and manage personal data carefully**. Where is it stored, how, which individuals have access, what can they do with it, can they recover it, how much is with you, how much is in the cloud…?

• **How much data do you hold?** Without an accurate, up-to-date record of data volumes, you cannot know if you are complying with the law. As data comes flooding in, ensuring that personal data is anonymised to meet regulatory requirements can be an uphill battle.

• **Changing legislation.** Regulators across numerous markets are constantly updating legislation to keep track of organisations' efforts to exploit the data they possess. Today's rules may not be tomorrow's.

• **Protecting your company's own data**. While cyber-attacks may have customer data in their sights, confidential business information can get caught up in the trawl. It's also arguable that the legal instruments to recover such data do not reflect its true value in today's business world.

• **The data backlash.** It may come as consumers grow ever choosier about who they share data with; a few bad examples can change many minds. Companies may need to offer incentives to overcome those reservations.

What is Big Data?

"Big Data" is the catch-all term for very large sets of unstructured data that are reluctant to give up their secrets to traditional methods of analysis. It's defined by the "4 Vs" - volume, variety, velocity and veracity.

> **Volume** - almost runaway growth as organisations used to dealing in terabytes of data (1,000 gigabytes) now needing to handle pedabytes (*1,000,000* gigabytes).

> **Variety** - not just the simple text that can be easily interpreted within traditional databases, but images, audio, video, social media and who knows, soon VR. Unstructured data embraces all digital data made by people *and* machines, hence cameras, sensors, web feeds, networks, service platforms and more.

> **Velocity** - is about harnessing data in motion and in real time so organisations can make on-the-fly decisions. Eg, texting an offer for an ice-cold latte in the few seconds that a customer is walking past the door of the café, and the temperature has just peaked.

> **Veracity** - is about trust and confidence in the data and the decisions made on it. That requires the right capabilities to manage data quality, maintain master data across multiple sources, and optimise the use of information across the entire organisation, while protecting privacy and security.

Say hello to your 'Cognitive Expert Adviser'

One emerging technology currently exciting Big Data scientists is the Cognitive Expert Adviser (CEA) that uses a mix of algorithms, machine learning and natural language processing to turn Big Data sets into recommendations – ultimately replacing human advisors. Gartner currently calls hype (well "overinflated expectations" anyway), but could see how mainstream adoption might occur in five to ten years. While CEA has the potential to look deep into a mass of constant customer interactions and generate some useful strategies, it's presently on the 'twitchy' side, needing frequent troubleshooting and retraining.

But, once dependable it could be particularly useful for complex customer service situations with the ability to lower costs, raise retention and boost brand equity, says Gartner.