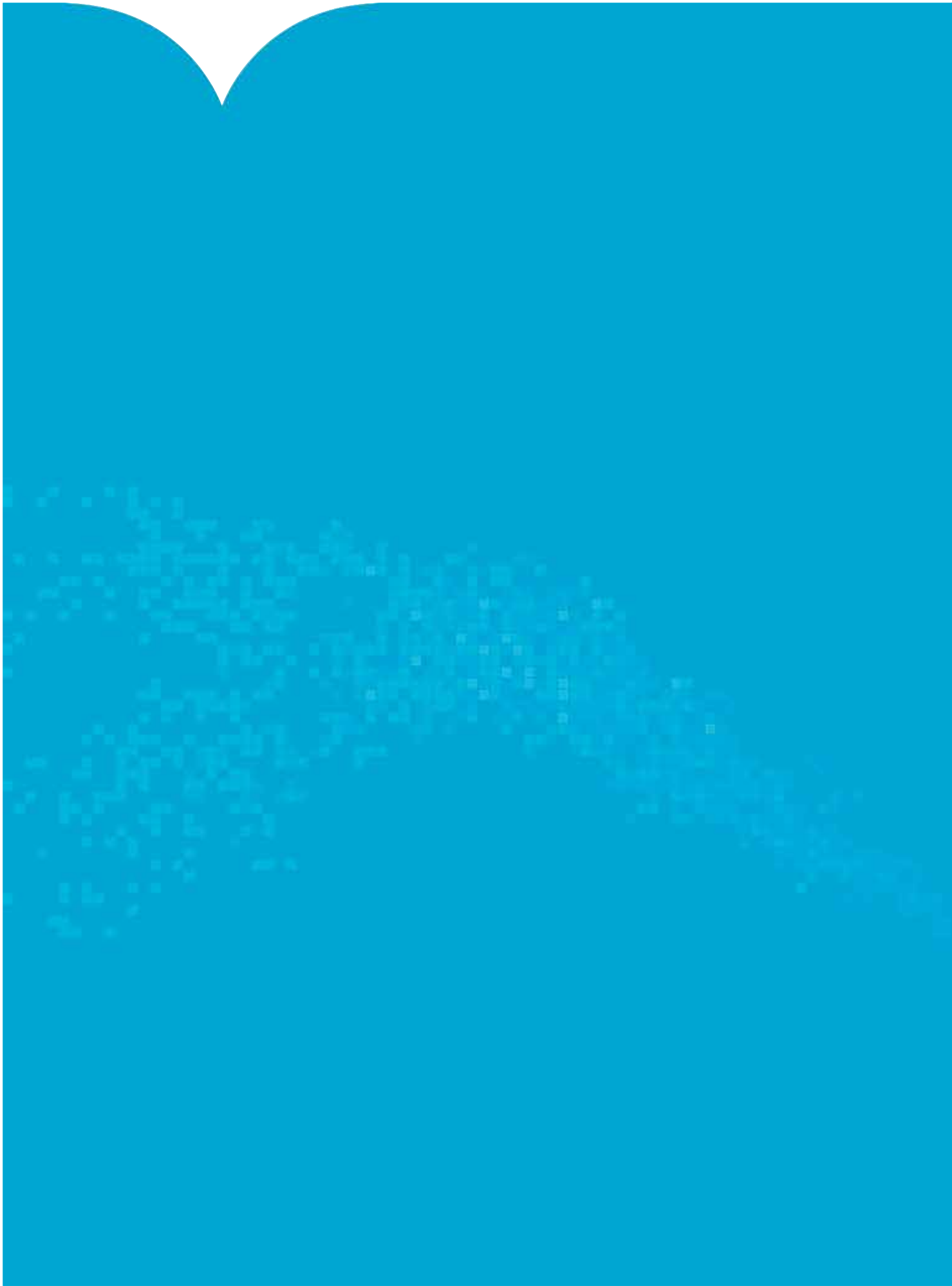


# Big & Fast Data: The Rise of Insight-Driven Business

Insights at the Point of Action will Redefine Competitiveness



INSIGHTS & DATA



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# Forewords

## John Brahim

Capgemini CEO Insights & Data



In our 2012 study with the Economist Intelligence Unit, *The Deciding Factor: Big Data & Decision Making*, we established that a rising tide of big data was being experienced across industry sectors. Since then, we have seen the dramatic impact of big data and analytics in our own client base, and we wanted to really understand whether this was reflected in the market at large, across regions and industry sectors. We also wanted to understand the impact on businesses, and how they were shaping up to address the challenges and opportunities that this change has presented.

In this new study, one of the surprising things we found was the level of disruption that new data sets are having, and how widespread this is. We are all familiar with the way Silicon Valley's data-centric businesses, such as Uber and Airbnb have used data to disrupt traditional markets. However, what we also found was that the impact of data-clever start-ups, and of competitors moving across from other industry sectors, is having an impact on virtually all types of business. Around 64% of executives said that they believe big data is changing traditional boundaries, and 24% were already experiencing ingress of competitors from adjacent sectors.

One encouraging finding was that organizations were taking steps to address this issue not only from the technology point-of-view but also through organizational change, with a third having already appointed a C-level executive.

The key finding, though, is the level of opportunity that people are seeing from harnessing this data, and the way real business insights are changing market dynamics today. However, this opportunity is a double-edged sword: There is a serious threat to the survival of organizations that do not act.

Our findings have helped us inform the strategic direction of Capgemini and we will expand our investment and focus on innovative "Insights & Data" propositions that help our clients accelerate their journey towards becoming modernized, digital, insight-driven businesses.

I would like to thank the team within Capgemini and our partner EMC, along with all the survey respondents and interviewees. I believe this research will provide a valuable signpost for clients seeking to create the right data landscape to generate insights that can shape their business.

## Paul Maritz

Pivotal Chief Executive Officer, EMC Federation



Businesses have been realizing that big data is more than a “nice to have”. It is critical to surviving and prospering in an increasingly digital world. As the findings of this study reflect, big data can be utilized to drive productivity, enhance existing revenue, and even create entire new lines of business, based on new business models.

If you can obtain all the relevant data, analyze it quickly, surface actionable insights, and drive them back into operational systems, then you can affect events as they’re still unfolding. The ability to catch people or things “in the act”, and affect the outcome, can be extraordinarily important, valuable and disruptive. That’s what the pioneers in big data are aiming for: Stop the fraudulent credit card transactions in process, anticipate failure and shut down a machine before it gets damaged, reroute network or power grid traffic on the fly to avoid failed nodes and traffic jams, guide the choices of shoppers through timely and contextual information, etc. All of these sample use cases, and more, can unlock tremendous business value.

Disruption is a constant theme of the study findings – one that is a key agenda item from conversations with clients. Already we are seeing businesses using big data to disrupt markets, and even threaten others outside their traditional domain. To use big data in these ways, the businesses need not just to augment existing information landscapes but also to review them fundamentally and build new platform capabilities. The future is a platform-based, algorithmic and data-driven one delivered via a compelling end-user experience.

To achieve this, business leaders need to have an agreed corporate strategy, backed by an IT vision that can adapt and respond to big data’s opportunities. Agility is a prerequisite. This requires a common underlying platform and the culture and expertise to use it – which will allow projects the flexibility to be initiated and directed as the potential for disruption appears. It’s the ability to implement and scale rapidly across the business – in weeks or months – that can create clear water between you and the competition.

We believe these changes are profound. There is a deepening realization that change is not only possible but also essential.

# Big data is increasingly about business disruption

We live in a fast-moving, complex world of increasingly connected people and connected things that are creating vast new digital footprints. To thrive, organizations need to make sense of this big and fast-moving data, to gain real-time access to powerful insights and deliver them to the point of action.

It is no coincidence that new big data technologies and data science approaches have emerged at the same time as this need has made itself felt. As a result, organizations can now obtain the insights they need, and use them to drive new levels of performance. This gives them the ability to shape their markets and enter new ones.

Increasingly, this is a matter not just of success but also of survival – the survival of your organization and of you yourself as a senior stakeholder in that organization. We are already seeing leading businesses using big data to disrupt markets and threaten their competitors' traditional value propositions. In our study, a surprising 64% of respondents said that big data is changing traditional business boundaries and enabling non-traditional providers to move into their industry. Companies report a significant level of disruption from new competitors moving into their industry from adjacent industries (27%), and over half (53%) expect to face increased competition from start-ups enabled by data.

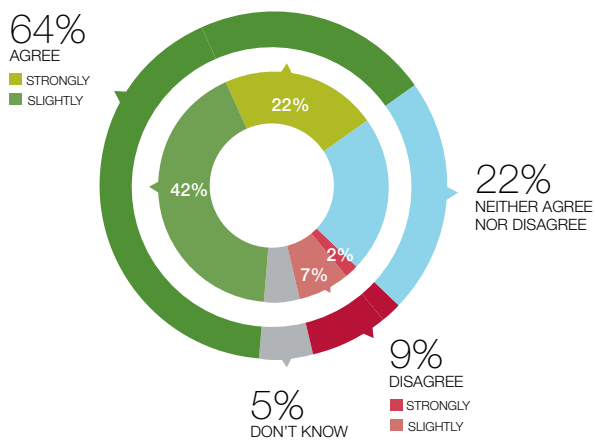
These findings reflect the fact that we are now at an inflexion point, where big data has created entire new ways of getting insight from data at a technology level. Organizations are finding their industries challenged by new data-empowered entrants. To win the battle for survival, you in turn need to rethink your own organization structures and processes in order to harness insights. You may need to fundamentally reconsider your market value proposition in light of these new players. And this has to happen alongside any initiatives that you may already have in hand to improve existing functions.



27% face competition from new players in adjacent industries



FIGURE 1: BIG DATA IS CHANGING TRADITIONAL BUSINESS BOUNDARIES AND ENABLING NON-TRADITIONAL PROVIDERS TO MOVE INTO OUR INDUSTRY



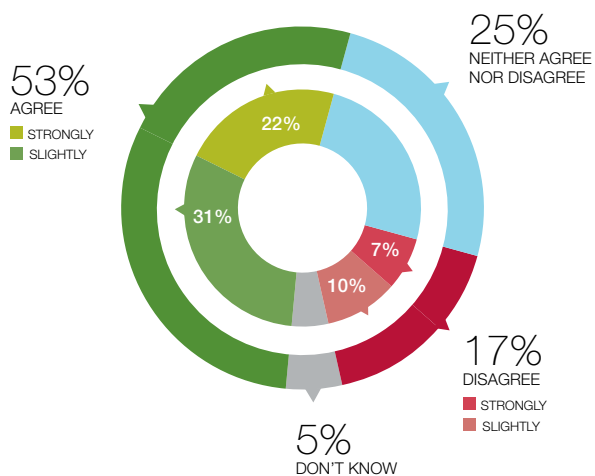
Big data...has become something that can deliver a competitive advantage to any company. Failure to harness it or take advantage of its usefulness will result in a company lagging behind its competitors and risking becoming irrelevant in its industry."

Canada, Financial Services

"We have data ponds out there which need to be pulled together to gain the full benefits from big data technologies."

United Kingdom, Engineering

FIGURE 2: WE ARE FACING INCREASED COMPETITION FROM DATA ENABLED START-UPS



# Four ways in which data-driven insights are changing businesses

Companies realize that they need these insights from big data and the use of data science, and are willing to spend to achieve them. Over half (56%) of our respondents believe their investment in big data over the next three years will outstrip past investment in information management: a finding borne out by our current client engagements.

Based on our experience with clients going through this transition, Capgemini sees four distinct opportunity models emerging to address different needs:

1. **Efficiency and cost focus**
2. **Growth of existing business streams**
3. **Growth through market disruption from new revenue streams**
4. **Monetization of data itself, with the creation of new lines of business.**

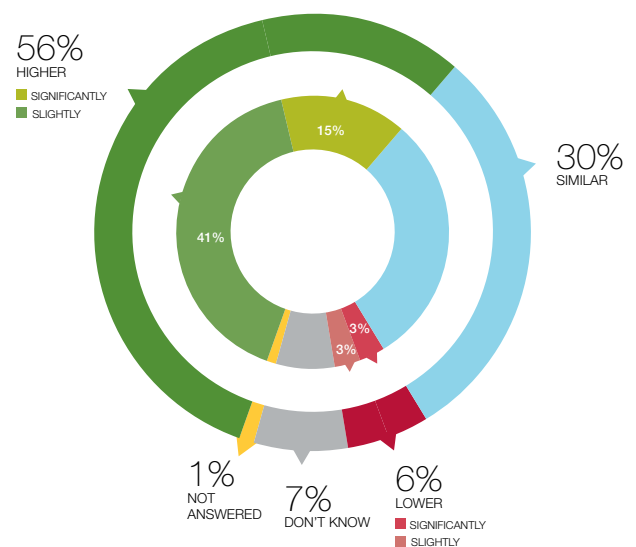
The common theme of all of these models is the creation and application of insights based on massive, often disparate data sets. While models 1 and 2 are often the immediate focus for many organizations, addressing common themes of cost saving and revenue generation, we believe that the bolder initiatives represented by models 3 and 4 will characterize the winners.

**Let's now look at each model in more detail.**

## 1) Using insights to drive efficiency and cost focus

In our study, 65% of respondents see big data as a key enabler of their organization's effectiveness/competitiveness. This could mean a variety of things but in practice, we find many organizations see big data's ability to help them identify opportunities for cost saving as a primary driver for adoption.

FIGURE 3: FUTURE INVESTMENT IN BIG DATA IN NEXT 3 YEARS



Innovation as a means of cost cutting is very important. Data can allow us greater efficiency in working out how and where to cut costs and also streamline marketing so as to not waste money. We can also save man hours in customer services by using big data to identify relevant data points.”

Sweden, Telco



The quest for cost reduction can take one or both of the following forms:

- Use of insights from big data to help identify potential operational efficiencies in the business and so reduce costs. For example, organizations may want to analyze supply chain, cost to serve, customer churn rates, and so on. We are also seeing many clients use big data analytics to reduce risk, better detect fraud, and ensure compliance. These can be big-ticket items in cost containment.
- IT cost reduction through modernization of the information landscape, with big data technology adoption. Many of the new big data technologies are open-source and use commodity hardware, a combination that is often 20-30 times cheaper per terabyte than traditional data warehousing technology.

## 2) Using insights to drive growth of existing business streams

While cost reduction approaches could “keep you in the game”, they don’t bring the differentiation that most companies need to thrive in highly competitive markets. Our study suggests that a significant proportion of organizations know that they need to do more. Around 61% of respondents state that big data is becoming a driver of current revenues in its own right. Insights from big data are being used to enhance existing market offers through better understanding of customers and consumers and of the effectiveness of marketing and sales activities. For many industries, this means developing a much more granular understanding of their customers by aggregating and analyzing all the relevant data per customer (from inside and outside the company, including social media) to achieve an accurate 360-degree customer view. Using the power of deep customer analytics and behavioral modeling, organizations can then create both innovative and relevant service offerings that customers actually want, all delivered through an integrated and seamless digital customer experience.<sup>1</sup>



As the insurance industry is very competitive and heavily regulated, big data will help to prevent bad data influencing decisions and reduce mis-sales. [It] will also allow greater ability to tailor products to market niches which will lead to greater differentiation between competitors.”

UK, Financial Services

“[Big data] is very important because in our business the more information we have about the market and the customer the easier it is to create action plans, innovate and continuously grow. And this will result in revenue growth, profits and other factors for future investment.”

Brazil, Financial Services

“In the automotive industry, consumers want more and more input into products. Being able to customize bespoke products is increasingly important to the consumer. Big data is vital if we are to be able to customize services and products for our customers. It’s important so that we can efficiently and quickly see what their needs are and how the products can best evolve.”

Germany, Engineering

<sup>1</sup> Capgemini, It's All About Them: Your Customers' All-Channel Experience, <http://www.capgemini.com/resources/its-all-about-them-your-customers-all-channel-experience>

### 3) Using insights to drive growth through market disruption from new revenue streams

One of the major findings of this survey was the level of disruption across industry boundaries, with 64% of respondents saying big data is changing traditional business boundaries. We are seeing consumer products companies becoming retailers through their increasing knowledge of their consumers, telcos using the data they have about their customers to develop new revenue streams such as geo-located marketing services, and utilities using smart meter data to provide household equipment monitoring and servicing offers. In fact, there are few sectors untouched by this trend. The survey showed that this disruption, while stronger in B2C businesses, was present in all (with levels varying from 53%-74% depending on industry sectors).

In our practice, we often observe that it's the companies experiencing the highest level of disruption which see the greatest opportunity to drive new revenue streams from big data.



We are already in the Internet-of-Things space. We already have revenue streams from monitoring products that we ship and we are trying to use big data analytics tools and solutions to see how we can create additional data servicing revenue streams. This part of the business can grow from \$3m to \$8-10m per annum within 12 months if we can get the analytics functioning properly.”

United States, Engineering

“There are pressures on prices and business (and getting more business) and big data is one of the ways to see how you can expand the business and get tighter prices. It is not just cost-cutting; it is about getting into other areas of business that you didn't think you could.”

United States, Financial Services

#### 4) Monetization of data itself, with the creation of new lines of business

In some industries, it is already apparent that the data organizations hold is becoming their major product. A simple example is provided by mapping companies, such as Ordnance Survey in the UK or Lantmäteriet in Sweden, where the selling of physical maps is fast being outstripped by digital services. Many financial services companies, too, have specific “information services divisions” whose prime aim is to monetize data. The transport sector is looking to monetize the data it has about its passengers through deals with retailers at station locations.

Among our respondents, 63% consider that the monetization of data could eventually become as valuable to their organizations as their existing products and services. While this belief varied across sector (from 55% in healthcare to 83% in telco), interestingly all sectors saw this as relevant.

#### Working with the models

You don't have to choose between the four models described above, or progress from one to the next: The four models do not constitute a maturity model. We expect most companies to create a mix of models that suits their industry, ambitions and current maturity.

As shown by our work with MIT, summarized in the book *Leading Digital*<sup>2</sup>, the key success factor is to have a clear strategy, driven from the center, to ensure you work towards the returns you're looking for.



Analysis of the vast collections of GIS data we have or have access to is not merely generating new exploration, it has become a saleable service in its own right.”

Australia, Oil & Gas

<sup>2</sup> George Westerman, Didier Bonnet and Andrew McAfee, *Leading Digital: Turning Technology into Digital Transformation*, Harvard Business Review Press, 2014

# Where organizations are today

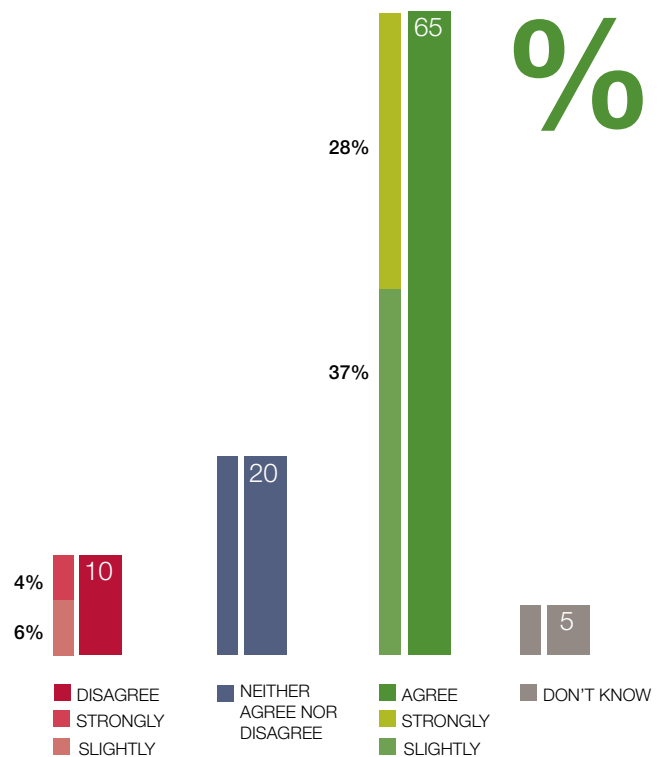
How far have companies got with their initiatives to gain and use insights from big data? Few companies have any questions left about the “if”, or even about the “when”: Everybody has realized it is time to move. The survey shows that about 50% of organizations have already implemented big data technology or are in the process of doing so, with a further 21% planning to begin implementation within the next 12 months.

## Recognizing the value of data

There really is no alternative: About 65% of respondents agree that they risk becoming irrelevant and/or uncompetitive if they do not embrace big data. In fact, well over half (59%) say that the data their organizations hold is becoming a core component of their market value. This implies that, for some, data is already becoming as important as their traditional products and services.

Most organizations recognize that adoption of big data is an integral part of the digital transformation agenda. To become a digital enterprise, organizations must harness the data within and around their business. Digital customer experience is all about understanding the customer, and that means harnessing all sources – not just analyzing all contacts with the organization, but also linking to external sources such as social media and commercially available data. For the digital supply chain, it is about collecting, analyzing and interpreting the data from the myriad connected devices.

FIGURE 4: IF WE DO NOT EMBRACE BIG DATA WE RISK BECOMING IRRELEVANT / UNCOMPETITIVE



## Big data as part of digital transformation

Capgemini has carried out a joint research program with the MIT Center for Digital Business to look at digital transformation in its broadest context. The research has reached out to over 1,500 businesses to understand the impact of digital technologies and how organizations are adapting to deal with the opportunities they present.

We define digital transformation as the use of new digital technologies (social media, mobile, analytics or embedded devices) to enable major business improvements such as enhancing customer experience, streamlining operations, or creating new business models.

Big data is a key part of the digital transformation phenomenon, underpinning most digitally enhanced processes, whether they relate to customer experience or operations. It is the analysis of big data sources that provides better understanding of customer behavior, operational activities, assets and organizational processes. And it is the application of that analysis at the point of action to improve the customer experience or the business process that is a key driver in the new digital world.

## The struggle to make data deliver value

Companies may no longer question the “if” and “when” of transformation, but they still have many questions about the “how”. In a recent paper<sup>3</sup>, we showed how hard it is to succeed with big data initiatives: Only 27% of the executives surveyed described their big data initiatives as successful.

Companies are realizing that current organizational structures and external relationships, all of which tend to be based around silos, make it very difficult to innovate in order to get and use insights from big data. This may be why some of the biggest threats in some sectors are coming from outside: either from start-ups or from existing companies in adjacent sectors that do not suffer from these artificial constraints. Our study found that telcos and utilities, in particular, are noticing high levels of disruption from new competitors moving in from other sectors. This issue was mentioned by over 35% of respondents in each of these industries, compared with an overall average of under 25%.

The organizations that are succeeding here are those that break down some of these barriers. In these successful organizations we see people coming together from across the enterprise – including various business functions plus IT – to engage with the big data agenda. In some sectors we are also seeing consortia of organizations coming together to share data across companies for the benefit of all. Inevitably this can be a delicate balance that sometimes needs an independent broker to hold and manage the data for all the parties concerned.

## Traditional IT infrastructure and processes are too slow

We found a high level of frustration with the existing IT infrastructure and processes. Over a third (36%) of the most senior non-IT decision-makers taking part in the survey (C-level/director-level) say that their business unit has circumvented IT in order to carry out the data analytics it requires.

Meeting the analytics needs of the organization of today is a significant challenge. A key element of this challenge relates to the tension that exists between corporate and local business needs. The corporate-level need is for consistency, governance and comparability across the organization, while line of business decision-makers require local views of information displayed in a local context. Many organizations

<sup>3</sup> Capgemini Consulting, *Cracking the Data Conundrum: How Successful Companies Make Big Data Operational* <http://www.capgemini-consulting.com/cracking-the-data-conundrum>

are failing to correctly account for these different needs – at the expense of line-of-business decision-makers. Almost half (47%) of survey respondents agree that their organizations' IT systems are not optimized to enable business decision-makers in all departments to effectively do their jobs.

This is borne out by the fact that decision-makers are much more likely to consider that there is good data provision for senior management than for decision-makers at other levels within the organization. Among those respondents whose organizations are yet to implement big data technology, 62% consider the data analytics provision to be either good or very good for senior management, while only 43% feel the same way about the provision for non-management employees.

As has been highlighted, the speed of change that organizations face today means that decision-makers increasingly require insight faster. However, almost half (45%) of respondents consider the current development cycle for new analytics to be too long and not matching their business requirements. Over half (52%) consider the speed of their organization's insight generation to be constrained by its IT development process.

FIGURE 5: THE COMPANY'S IT SYSTEM IS NOT OPTIMIZED TO ENABLE BUSINESS DECISION MAKERS IN ALL DEPARTMENTS TO EFFECTIVELY DO THEIR JOBS

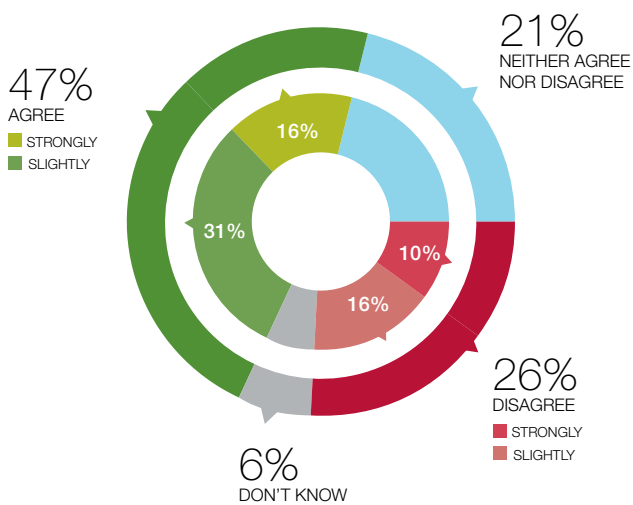


FIGURE 6: THE CURRENT DEVELOPMENT CYCLE FOR NEW ANALYTIC INSIGHTS IS TOO LONG AND DOES NOT MATCH MY BUSINESS REQUIREMENTS

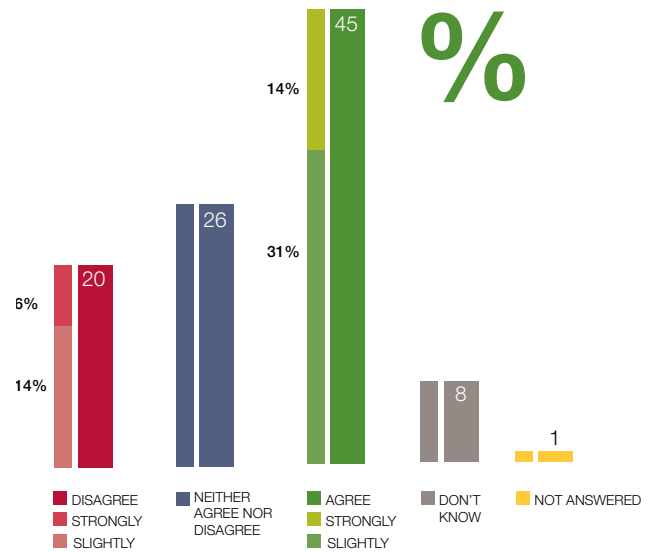
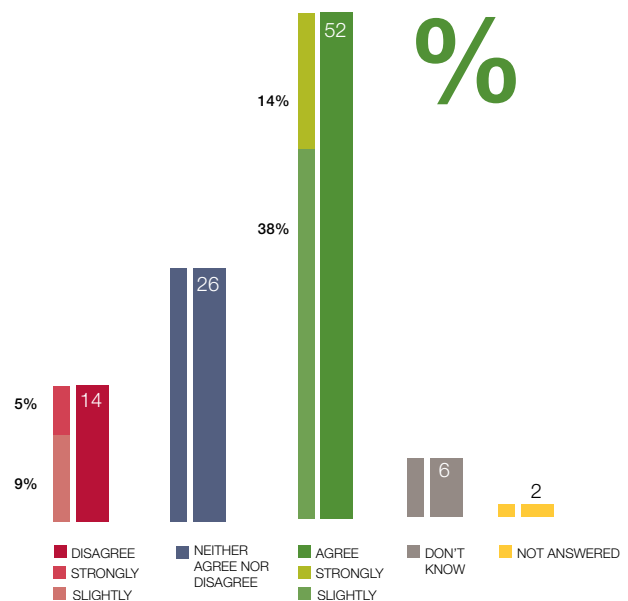


FIGURE 7: THE CONSTRAINTS TO DEVELOPING INSIGHTS MORE QUICKLY ARE DUE TO THE IT DEVELOPMENT PROCESS





## Recognizing business transformation is as important as technology implementation

In our work with MIT on digital transformation, one of the clear findings was that organization, governance and leadership are at least as important as technology. As Leading Digital puts it, “Digital Masters excel in two critical dimensions: the what of technology...and the how of leading change.” Leadership is vital in overcoming the complex business challenges that digital transformation presents.

What is interesting is that we saw a significant proportion of our survey respondents doing just this. Around 43% of organizations say they are already engaged in organizational restructuring in order to exploit data opportunities, and a third are appointing senior big data roles, reflecting their recognition that the data opportunities span the whole business.

GE is an example of an organization that is already using big data both to improve existing revenue streams and create new ones (models 3 and 4 in the previous section)<sup>5</sup>. Predix™ is its “software platform for the industrial internet”. GE is harnessing the data generated by its increasingly intelligent equipment to improve performance and customer experience through preventive maintenance. In this way, it is also reducing unplanned downtime, increasing productivity, lowering fuel costs, and reducing emissions. The platform will also be able to offer new services such as remote monitoring and customer behavior analysis that will represent new revenue streams.

“Big data technology is absolutely vital for the simple reason that everyone is going to take it up.”

United Kingdom, Financial Services

## Setting the strategic direction but delivering incrementally

New technologies inevitably bring new risks. Also, in the world of data and insights you often don't know how valuable those insights will be until you have found them. For these reasons, Capgemini is finding that the majority of clients are adopting an incremental approach to moving from idea to enterprise adoption. A new mindset is emerging that involves quickly building proof of concepts, “failing fast”, and then, where value is found, scaling rapidly – in weeks and months – rather than launching multi-year programs.

Execution takes place in three phases:

- 1. Proving value:** We find the most successful programs start by addressing a few real business use-case opportunities. This creates a much stronger dialogue between IT and business. Even at this point it is important to understand the path to scaling out the capability for the business, otherwise these become dead-end initiatives. (Some programs try to short-cut this phase by performing a technology evaluation. In our experience this approach actually increases time to value, as the business is less engaged and cannot attach real business value to the outcome.)
- 2. Expansion to pilot:** Companies often choose an entire line of business for migration to the new environment, with a focus on ensuring scalability, performance and adoption.
- 3. Enterprise adoption and uptake:** Some companies start to migrate specific business units or functional areas, with a focus on expanding use cases and enhancing platform capabilities.

What sets the successful programs apart, though, is that they take this incremental approach within the framework of a clear strategy, ensuring investments are aligned with long-term business objectives.

4 *Leading Digital*, Chapter 1.

5 <https://www.gesoftware.com/platform>

# Where organizations are going

In this section, we look at some of the barriers to big data adoption, and the steps that organizations are now taking to address them. We go on to explain how these steps can evolve into a set of guiding principles that can shape an effective transformation into an insights-led organization.

## A clear business objective

The fact that big data was not being viewed strategically was identified as the top barrier to success by many respondents. Experience shows that big data initiatives need to be based on a clear understanding of what you are trying to achieve. This may or may not be immediately apparent; if not, it is important to take the time to explore fully how big data can benefit

the business. This means really understanding how your customers behave and how they will evolve. It also means understanding your operations, and where the potential opportunities are to improve, as well as your market and the seismic changes happening to it.

Only with this clear understanding can you set the right direction for the program. A “fail-fast” approach is often adopted for big data initiatives, exploring new data sets and usage rapidly to see if they add value. By setting these objectives early, it will be possible to measure the success of each stage.

## People

Another top item identified as a barrier to big data adoption was the shortage of skilled people to analyze the data properly (mentioned as a top three issue by 37% of respondents). You need to augment, hire, reskill and upskill – ideally building a common team that serves the whole business. This team

FIGURE 8: THE BARRIERS TO BIG DATA IMPLEMENTATION



requires a combination of skills: both pure analytical and data science skills, but also the skills of people from the business who understand the data and its relevance to decision-making and process.

### Technology

The high cost of storing and manipulating large data sets was mentioned by 33% of respondents. Fortunately, big data technologies are already making it possible to “store everything” with a very low cost for both structured and unstructured data. The technologies have matured significantly and many can now be considered “enterprise ready”. They now support the necessary integration, governance and data management. It is worth noting, though, that they are evolving rapidly, and so any investment needs continuous review of market developments.

Another issue highlighted by our study was the time taken to analyze large data sets (mentioned by 32% of respondents). Here again big data technologies help. Traditional database technology uses a model-on-write paradigm. Big data technology uses model-on-read. This is much more agile in storing complex data sets and delivering insights to the business rapidly.

### Platform

Some organizations are finding it useful to adopt Analytics-as-a-Service platforms as a way to accelerate their investment. These platforms offer a flexible analytical engine that makes it possible to build solutions rapidly and then provision them according to business demand.

### Organization, collaboration, governance and leadership

As you evaluate your organization in the dimensions just described, you are likely to identify various capability gaps that need to be closed. To tackle these, it is not enough to look at each gap in isolation. Instead, take a wider view of what is needed to modernize your business data landscape. Experience shows that organization, collaboration, governance and leadership are key aspects to making big data work for you.

One of the most encouraging findings from the study was that we are seeing the organizational changes happening. 43% of organizations are restructuring and a third have appointed C-level roles in order to exploit data opportunities.

FIGURE 9: RESTRUCTURE / REORGANIZE THE ORGANIZATION TO EXPLOIT DATA OPPORTUNITIES

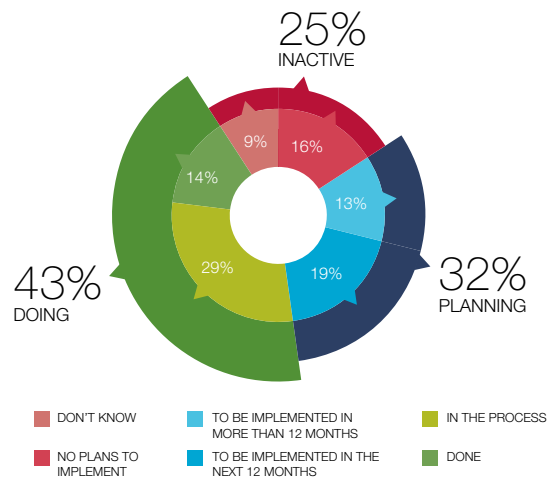
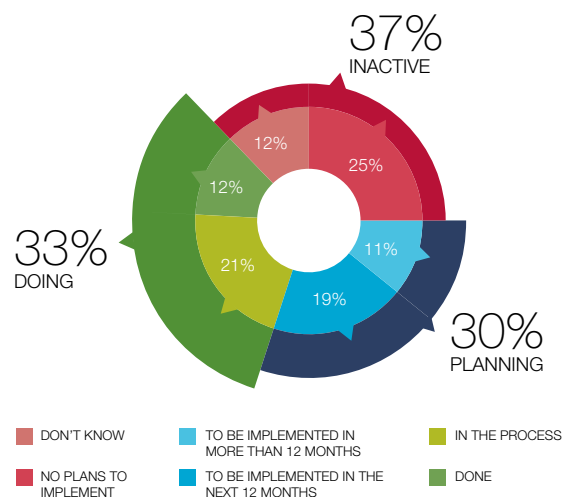


FIGURE 10: INTRODUCE NEW C-LEVEL ROLES (E.G. CHIEF DATA OFFICER)



# Guiding principles for realizing big data value and becoming an insight-led organization

As can be seen, there are many aspects to consider in harnessing big data and becoming an insight-led organization. As a result of the findings of this study and our work with clients, we have established seven guiding principles for not only driving value from big data but also putting insights at the heart of the enterprise.

If an organization is able to rapidly assimilate, integrate and analyze its data and turn that data into insights to inform every decision it makes, that organization will be able to set the agenda for its market. Achieving this is about harnessing data, both your own internal business data and the growing stream of big data from new internal and external sources. But this is not easy.

**We see the following seven principles as central to making the necessary transformation:**

## **Principle 1: Embark on an insights journey within your business and technology context**

The starting point must be your business objectives. Design your roadmap to harness new data sources based on how they will help achieve these objectives. Equally importantly, your journey must be dictated by where you start, in terms of data maturity but also technology.

## **Principle 2: Enable your data landscape for the flood from connected people and connected things**

There are many new technologies that enable the capture and management of the data flood. Your new data landscape should be a mixture of these technologies, chosen to provide the right solution in terms of cost, flexibility and speed to suit each specific data set and to meet the insight needs of the business.

## **Principle 3: Create a data science and analytics culture**

Data science unlocks the insights. It needs to become part of the culture of the organization. Only by embedding it throughout the enterprise, and systematically making all decisions better informed, can organizations achieve the transformation to becoming insight-led.



### Principle 4: Unleash data- and Insights-as-a-Service

The demand from business users for information and data-driven insights is ever increasing in virtually all organizations. To harness this, business users must feel that they can rapidly access the information they need where and when they need it.

### Principle 5: Make insight-driven value a crucial business KPI

Measure your measurement: apply data science to your data science to see where you are adding value and where you are not. If data is becoming one of your most valuable assets then treat it as such – include it in KPIs and business reviews.

### Principle 6: Master the governance, security and privacy of your data assets

Insights from unreliable data are worse than no insights at all. Equally, programs fail and businesses leave themselves exposed if data is not handled securely and with consideration of relevant privacy issues.

### Principle 7: Empower your people with insights at the point of action

Ultimately all organizations are a series of decision points, both at the macro and micro level. Empowering your people with timely insights that make each of those decisions just 5-10% better will transform your business.

Through the application of these principles, we are seeing organizations start to generate real value. In our study with MIT<sup>6</sup>, we demonstrated that only when technology adoption is accompanied by transformation management (including vision, business engagement, and organizational change) do businesses realize tangible benefits in terms of profitability and market valuation. This is as true for big data technology implementation as it is for any other technology.

<sup>6</sup> *The Digital Advantage: How digital leaders outperform their peers in every industry*, <http://www.capgemini.com/resources/the-digital-advantage-how-digital-leaders-outperform-their-peers-in-every-industry>

# Conclusion

Today, big data is about business disruption. Organizations are embarking on a battle not just for success but for survival. If you want to survive it's time to act. Over two thirds (70%) of respondents consider their organization's ability to exploit value from big data to be important to their future success.

It is clear why data is crucial to business. In a world of connected people and connected things, organizations need a better view of what's happening on the outside and a faster view of what's happening on the inside. Data must be the foundation of every decision.

The real battle, however, is for the data that can create the most relevant and pertinent insight: the combination of data sets that allow effective and more rapid monetization of data. (The range of possible data sets is virtually limitless: internally held customer data, social media, machine data from the Internet of Things, weather metrics and predictions and so on.) Your data could ultimately become more valuable than your traditional product or services. Big data technologies are the enabler for developing new business models to make that happen.

Your ability to compete with new entrants to your industry, and perhaps to enter new ones yourself, depends heavily on a business-led approach. You need the technology but you also need a cohesive, organization-wide strategy that encompasses everyone. If you want proof of this, it's that today the only organizations seen to be realizing growth from data are those that combine digital technology with transformational management .

The other essential is to ensure that you have the organizational structure and data governance to deliver, which means taking a view that's based on an ecosystem rather than silos or sectors.

Clearly, profiting from big data is at least as much about organizational integration, change and evolution as it is about the underlying technology. Organizations in our study are already implementing the technology. Now they need to drive the organizational changes needed to make it effective<sup>7</sup>.

<sup>7</sup> See the account of Burberry's experience in *Leading Digital*, chapter 2, for example



Semi-structured and unstructured data is becoming increasingly important. Much of it is data that is not actually owned by our organization (it's owned by third parties and customers). Being able to combine this with data collated by ourselves gives far greater opportunities than just trying to bring all of our data into one data warehouse."

United Kingdom, Engineering

"Data changes so significantly and so quickly you need to have the most accurate and up to date information on hand... Because of the nature of the field I'm in fast data is much more important as you need the data then and there to make the right decision."

United Kingdom, Engineering

"[Big data is] absolutely business critical... it's already very important but if you look three or four years out, I don't think we can even be competitive without managing big data."

Sweden, Telecoms



## Big data versus fast data – size isn't everything

While big data has received significant attention in recent years, the need for speed is sometimes overlooked. In increasingly competitive environments and with rising customer expectations, however, this need is actually more acute than ever before.

For many data use types, the time that data points remain relevant for is minimal. Cross-selling to customers at an online checkout requires near-instant data feeds. The half-life of social media data is estimated to be just three hours. In examples such as these, decision-makers now need analytics solutions to deliver insight faster and increasingly at the point of action. In our study, 77% of respondents agreed that decision-makers increasingly require data in real-time.

Depending on use types, the speed at which organizations can convert data into insight and then to action is considered just as critical as the ability to leverage big data, if not more so. In fact, more than half (54%) of respondents stated that they consider leveraging fast data to be more important than leveraging big data.

Uber is a good example of big and fast data in action. The service depends on fast data – the ability to take a request from anywhere in the world and map that to available drivers and calculate the route cost and link that back to the customer. This requirement may seem simple but it is actually a complex problem to solve, and a response is needed in just a few seconds in order to differentiate Uber from the wider market.

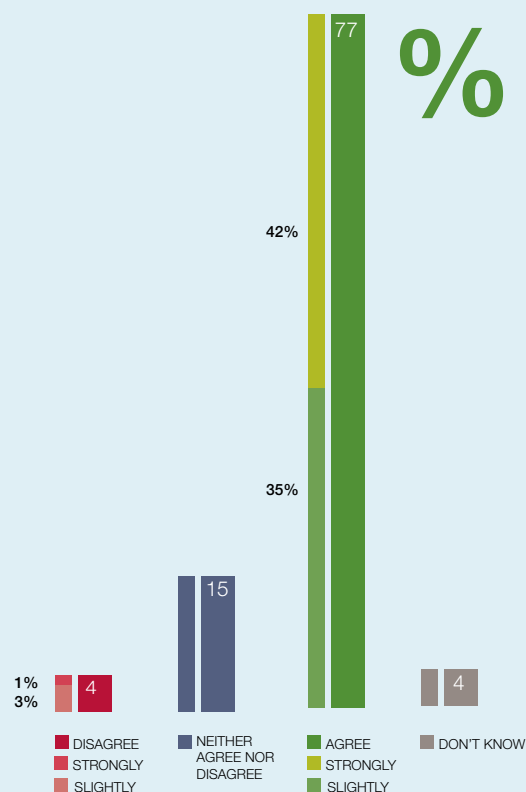
As one survey respondent put it: “The world of supermarket token offers and promotions is almost dead. It is being replaced by real-time in-store mobile offers, to be redeemed instantly. To run something like that you need to match up customer segmentation, the stock, the discounting policy, the offer in a digital context and the ability to then redeem via mobile in real time. That is a heavy data and analytics play. This is the way the world is going, and fast data is everything.”

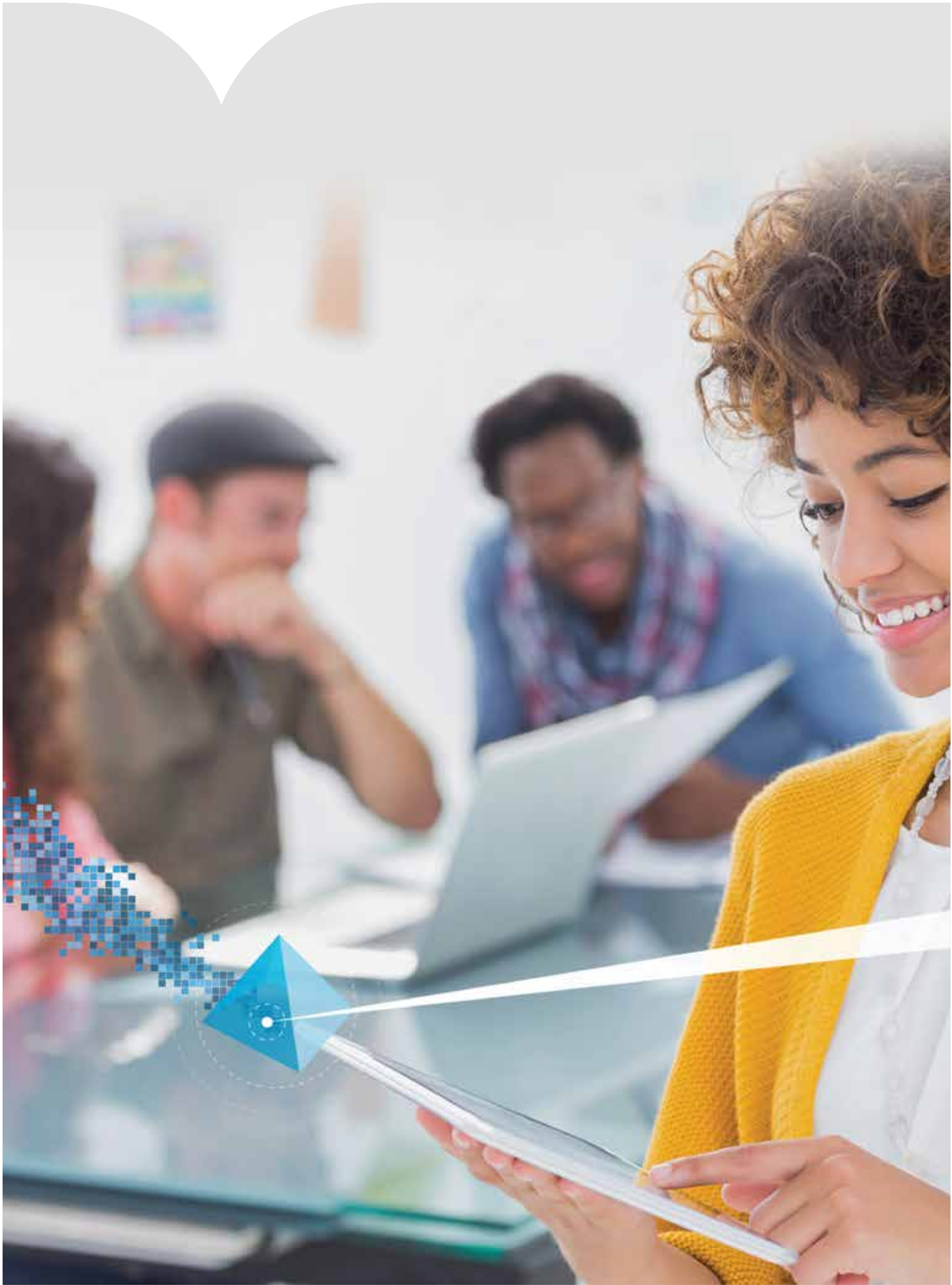


I feel like it is an underdone piece of the puzzle. When I had a consultancy team develop our architecture I kept asking them ‘where is our streaming data?’ A lot of providers of big data solutions think it is about data at rest (deep analytics), and they forget that for most businesses getting into this it is all about real-time analytics. As I get deeper into the Internet of Things I am seeing that every presentation I have to put together has to have two parts: (a) data at rest, (b) data in motion (fast data).

United States, Engineering

FIGURE 11: DECISION MAKERS INCREASINGLY REQUIRE DATA IN REAL TIME





### About the study

This study draws on research conducted by FreshMinds on behalf of Capgemini and EMC. It combines the results from a quantitative online survey and supplementary in-depth qualitative interviews. About 1,000 senior decision-makers from across nine industries and 10 countries worldwide took part in the online survey. We would like to take this opportunity to thank all respondents for their valuable time and contributions.

FreshMinds is an award-winning insight and innovation consultancy. FreshMinds helps global organizations drive growth by discovering market opportunities, developing game-changing products and services, and creating captivating launch campaigns. Driven by a belief that businesses need to become more agile in the face of digital disruption, FreshMinds delivers agile insight that helps organizations get further, faster, with confidence.

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