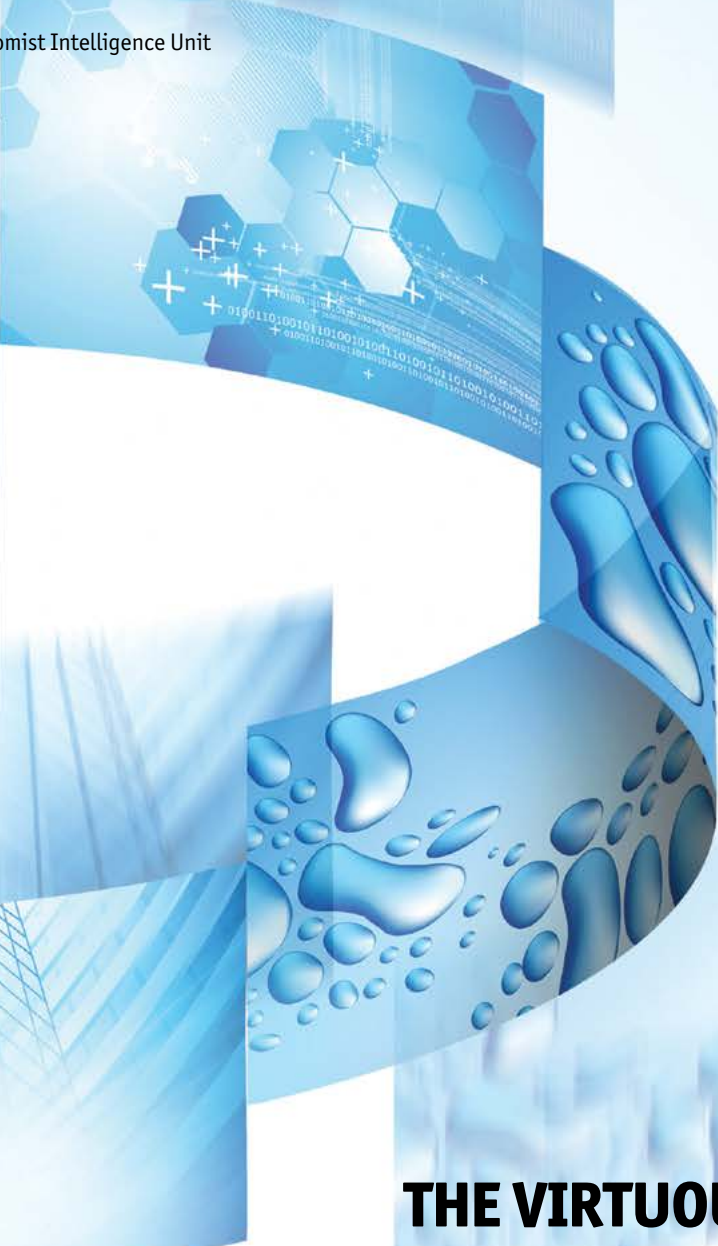


**The
Economist**

Intelligence
Unit

A report from The Economist Intelligence Unit



THE VIRTUOUS CIRCLE OF DATA Engaging employees in data and transforming your business

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About this report

Many companies have invested significantly in gathering vast amounts of data, yet they still struggle to extract insights, put them to work for the business and create truly data-driven organisations. *The virtuous circle of data* explores how organisations can spark a chain of events through top-down leadership and bottom-up employee engagement that creates a culture with data at the centre of decision-making.

As the basis of this research, The Economist Intelligence Unit conducted a global survey of 362 executives in September and October 2014, sponsored by Teradata. The findings and views expressed in this report do not necessarily reflect the views of the sponsor. The author was Peter Moustakerski. Riva Richmond edited the report, and Mike Kenny was responsible for the layout. We would like to thank all of the people who participated, whether on record or anonymously, for their valuable insights.

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Charles Thomas, chief data officer at Wells Fargo

Marshall Toplansky, managing director of KPMG's Data & Analytics Centre of Excellence

David Trimm, chief information officer at Hertz

Florian Zettelmeyer, professor of marketing and director of the programme on data analytics at Northwestern University's Kellogg School of Management ■

About the survey

The survey drew on 362 responses from executives around the world, 170 from North America, 94 from Asia-Pacific, 82 from Western Europe and 16 from Eastern Europe. Respondents represent a range of industries, with the largest number from healthcare, pharmaceuticals and biotechnology (12%), manufacturing (12%) and IT and

technology (11%). Nearly half (44%) are in the C-suite or on the board. Many are also from large companies, with 27% hailing from firms with more than \$5bn in annual revenue and 17% with \$1bn to \$5bn. Please see the appendix for full survey demographics.. ■

1

Executive summary

We must shift companies towards “making the distinction between ‘thinking’ and ‘knowing’ and training people to speak up and challenge what we think of as conventional wisdom.”

Florian Zettelmeyer, professor of marketing and director of the programme on data analytics at Northwestern University’s Kellogg School of Management

During the last five years, companies have invested significantly in gathering and analysing vast and increasingly complex data. Yet many still struggle to extract insights and put those insights to work for their business.

Part of the trouble is the speed and scale of information overload for executives today, and the rapid pace at which they must make decisions. The ability to rely on gut feel, which used to be their greatest business asset, is now greatly diminished.

“Nobody’s personal experience and intuition are enough,” said Florian Zettelmeyer, professor of marketing and director of the data-analytics programme at Northwestern University’s Kellogg School of Management, during a November 2014 online panel discussion hosted by The Economist Intelligence Unit and sponsored by Teradata. “The big shift for us is whether we can move companies towards actually making the distinction between ‘thinking’ and ‘knowing’ and training people to speak up and challenge what we think of as conventional wisdom and be very aggressive about seeking out what actual evidence exists for whatever positions we’re taking or whatever decisions we’re making.”

But executives cannot harness that asset alone. They are quickly finding that they must enlist the entirety of their workforces—and that doing so is fast becoming the central challenge for businesses that aspire to be truly data-driven.

Much work is to be done. Only one-quarter

(25%) of executives agree that employees at their companies are able to readily extract relevant insights from data that are captured and made available to them, according to a survey of 362 executives conducted in September and October 2014 by the EIU and also sponsored by Teradata.

Becoming a data-driven business generally happens in three stages, according to the experts interviewed for this report. As is often the case, what should be done first—establish a strong leadership focus on cultivating a data-centric culture—almost invariably happens last. Initially, organisations tend to focus primarily on technology and tools. Then they look to acquire the right talent and expertise. Real success, however, rests on tackling the most critical and difficult-to-execute stage: evolving the right corporate culture—one in which employees embrace data and apply them day-to-day. Companies that led the data and analytics revolution are now focusing their attention and resources on this third stage.

Cultural transformation depends on many factors, but two stand out as absolutely key:

Top-down leadership. A strong vision and momentum from the top of the organisation are critical to transforming a business’s culture into one that embraces data and facts as the primary basis for business decision-making. “The tone at the top is vital,” said David Trimm, chief information officer of Hertz, a US car-rental

“
There is no substitute for a corporate leader who has found religion in data and analytics.”

”

Russell Glass,
head of marketing products at
LinkedIn

company, during the webcast. Indeed, data initiatives are most commonly pushed from the top down into the rest of the organisation; 53% of respondents to the EIU survey say that is the case at their company.

“There is no substitute for a corporate leader who has found religion in data and analytics,” says Russell Glass, head of marketing products at LinkedIn and a serial entrepreneur who co-founded Bizo, a marketing platform recently acquired by LinkedIn. He says that it is critical that C-level leadership be open to being wrong and committed to discovering the truth through data and facts if they are to create a data-driven business and lead it to outperform the competition.

Bottom-up engagement. An even greater challenge—and one vital to overcome—arises in motivating and engaging employees across all

levels of the organisation to use data.

“A really excellent outreach, training and follow-up programme is imperative,” Mr Trimm said. “You’ve got to be out there continually reinforcing and reminding and retraining. ... Tone at the top, followed up with really excellent execution, those are probably the key factors in success.”

The best-performing and most data-centric companies understand the criticality of employee engagement. To drive more of it, they are making data universally available and easy to use; they are also linking data to day-to-day business goals and tasks. In addition, they are investing in employees by putting in place training and advancement programmes focused on data analytics, creating compensation incentives and competitive motivators, and even making data analytics fun and social. ■

2 Data-centricity: the key to future competitive advantage and success

As harnessing data becomes a requirement for survival, necessity will drive companies to reinvent their cultures to embrace data.

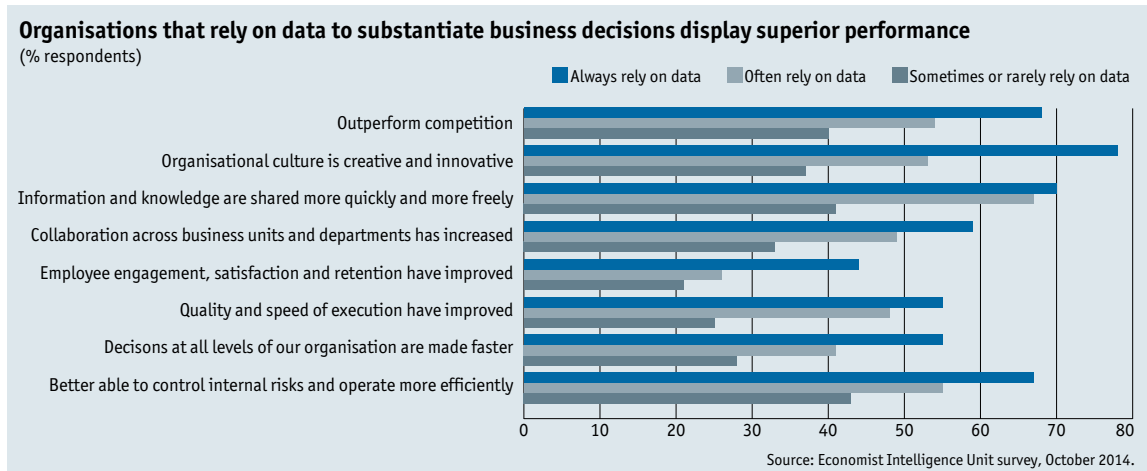
“The disparity between data forerunners and laggards will completely change the way businesses think and execute,” says Mr Glass of LinkedIn, “and will open a wide performance chasm between the two.”

The EIU survey reveals a strong relationship between data-centricity and superior performance. Companies in which managers and employees “always” rely on data to substantiate business decisions are much more likely to say they outperform their competitors (68% vs 40% of respondents from companies that are not data-driven, or only “sometimes” or “rarely” base decisions on data). They are also more likely to say their cultures are creative

and innovative (78% vs 37%).

The greater availability and utilisation of data at these companies result in better knowledge-sharing (70% vs 41%), superior risk management (67% vs 43%) and a more collaborative organisation (59% vs 33%). Data-driven companies also report increased quality and speed of execution (55% vs 24%), faster decision-making (55% vs 28%) and higher employee satisfaction (44% vs 21%).

“For us, data is a key strategic asset,” says Rod Morris, former senior vice-president of marketing and operations at Opower, a cloud-based software provider to the utility industry. “We use it for everything—to drive better performance and superior customer service, to optimise operations and processes, to motivate and retain talent.” ■



3

Building a data-driven business: a three-stage journey

The journey to building a data-driven business involves building a spectrum of new corporate capabilities aimed at capturing and organising vast amounts of data, making sense of the data, linking them to the business objectives and rallying the entire company to embrace and execute the data strategy developed by top leadership.

This journey, which all companies go through, tends to progress in three distinct stages: a focus on technology and tools, then talent and expertise, followed by culture and leadership. In an ideal world, these stages would happen in the opposite order—starting with leadership and culture and ending with the right tools and technology—but the reality is typically different. The most successful companies push through each stage decisively and focus on cultivating a data-centric culture early in the process.

Stage 1: Technology and tools. Data are coming into organisations from a wide range of sources—whether customer transactions, sensor streams or social-media content and interactions. So, initially, corporate leaders zero in on putting in place the right technology and tools to allow them to gather, process, organise and visualise the right data in the most useful and effective way. This area has seen plenty of focus by technology providers, industry thought leaders and corporate C-suites—and many companies have now made significant investments.

Stage 2: Talent and expertise. Once the technological foundation is laid, corporate leadership teams turn their attention to attracting and enabling the right talent and expertise to manipulate and understand their data. Technology and tools alone cannot do the job. A common, critical missing link is having the ability to think about the data in new and scientific ways, to connect data insights with the goals of the business and evolving needs of the customers, and to illustrate and communicate to the broader organisation the meaning and impact data can, and will, have on their day-to-day work and performance. Making these links requires skilled personnel.

Most firms are still working their way through this stage, though it, too, has received much attention and investment. A host of academic programmes now focus on incubating the next generation of corporate data scientists and business analysts. Many companies have created “chief data officers” to guide their approach. Others have created centralised data and analytics capabilities in units that work across company functions.

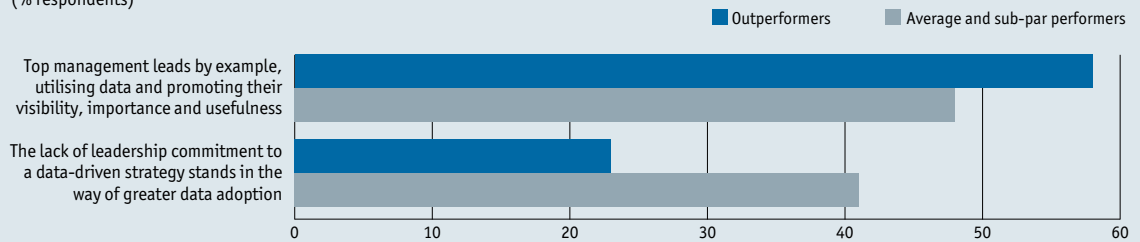
Stage 3: Culture and leadership. Despite having the technology and key talent in place, many companies still struggle to extract business value from their investments in data and analytics. These firms face the most challenging stage of the journey: creating and fostering a culture that

“The biggest problem facing companies who are trying to innovate and transform themselves with data is a culture of ‘we’ve always done it this way’.”

Gabie Boko,
North America executive
vice-president and chief
marketing officer at Sage

Organisations that outperform competitors are more likely to have strong leadership

(% respondents)



Source: Economist Intelligence Unit survey, October 2014.

embraces data and facts and applies them to everyday business. This is an area that is now attracting the attention of thought-leaders and corporate executives—one that even the most forward-thinking businesses are still struggling to master.

Many intricate ingredients go into building a culture in which data and facts form the foundation of every business decision, while intuition and experience play a secondary role. At the heart of the recipe are two critical ingredients: top-down leadership and bottom-up engagement.

There is no replacement for a CEO with a vision and a personal mission to inspire and instil a culture that looks for data-driven insights and works on facts-based decision-making, as Mr Glass of LinkedIn pointed out. It is an absolutely necessary condition for building a data-driven business. Our survey supports this concept very clearly: Companies that outperform the competition are much more likely to have leaders who spearhead data initiatives and lead by example (58% of them agreed vs 49% of average and

sub-par performers), and they are less likely to be challenged by a lack of leadership commitment to the data strategy (23% vs 41%).

But strong visionary leadership at and from the top is not sufficient to create a data-centric culture. The trickier and perhaps more critical element is engaging and motivating employees across the organisation to embrace the spirit, thinking and practices of a truly data-driven business—and to do so in a consistent, unwavering manner day in and day out.

That is difficult—no one has yet solved this puzzle completely. “Old habits die hard,” says Gabie Boko, North America executive vice-president and chief marketing officer of Sage, a software provider to small and midsize businesses. “The biggest problem facing companies who are trying to innovate and transform themselves with data is a culture of ‘we’ve always done it this way’.”

But how, exactly, do companies create strong bottom-up buy-in, enthusiasm and engagement among rank-and-file employees and develop a data-centric culture? ■

4

Engaging and empowering employees to create a data-centric culture

“You have to make the data visual, make it shocking, so that it forces people to ask the right questions.”

Gabie Boko, North America executive vice-president and chief marketing officer at Sage

A number of lessons can be gleaned from examining tactics, obvious and not, that the most data-driven companies use to persuade their employees to embrace the power of data. They include:

Make data available—and visual. Survey respondents from data-driven companies are much more likely to agree that all their employees have access to the data they need (41% vs 9% of the rest of respondents), that all employees have access to user-friendly tools to conduct relevant data analyses (26% vs 5%, and that customisable data feeds and dashboards are available to all employees who need them (29% vs 7%). As a result, data-driven businesses are much better at conquering the ultimate challenge: extracting relevant insights from data and applying them to their daily business (36% vs 11%).

Leaders in the data cultural revolution not only

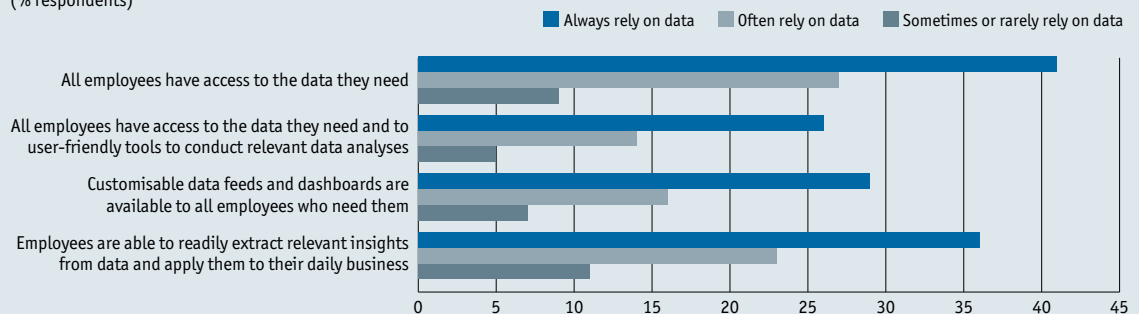
make data easily accessible, they also make sure that data are presented to employees in simple, relevant and impactful formats, in particular via data visualisations. “You have to make the data visual, make it shocking, so that it forces people to ask the right questions,” says Ms Boko of Sage. The ability to view data in stark visual terms strongly improves employee engagement with and adoption of data tools and initiatives.

Link the data to the goals of the business—and of individuals. Even when employees look at data and think “wow, that’s interesting”, it can be a leap for them to think: “I can use that.”

Indeed, starting with data and then trying to figure out how to use them is a daunting way to tackle the issue. “There’s a big challenge in moving analytics from tactics to strategy. How do we integrate this with a larger strategic vision of the company?” Mr Zettelmeyer said during the EIU

Data-driven organisations are more likely to democratise data access and use

(% respondents)



Source: Economist Intelligence Unit survey, October 2014.

webcast. “Good companies start with business problems” and then figure out what data they need to collect to solve those problems.

Moving from novel to relevant is critical to engaging employees and realising long-term benefits from data. Getting there requires showing people how data help the company—and help them, individually, to be successful. At Opower, employees set individual goals based on the quantitative metrics that the company already measures centrally in a transparent and independent way.

“Every employee posts their own business objectives [in individual dashboards] on a corporate wiki,” Mr Morris says, “progress against these goals is transparently tracked, and individual performance is measured by these metrics.”

Data-driven businesses ensure that employees apply the most relevant data to business activities that most affect the bottom line. Data that reveal insights about customer needs are universally recognised as important, even by companies that are still far from being data-centric. Data-driven companies go beyond the obvious and access other important data pools, such as external and internal transaction data and external feeds and databases, and use them to identify new markets and growth opportunities and optimise business processes.

“The ability to serve information on new platforms, such as iPads, to provide context, to present decision-making options and, most importantly, to track day-to-day the performance of your decisions is key to giving data real meaning and driving engagement and adoption,” says Brad Fisher, a partner at KPMG and leader of the advisory firm’s US data and analytics team.

Train and retrain employees. The data revolution is accelerating the development of data science as a corporate discipline. New ways of thinking about and organising data are emerging quickly, as are new methods of analysing and visualising insights and new approaches to extracting meaning and applying it to business goals.

Because employees’ data skills and knowledge become outdated quickly, the best-performing and most data-centric companies focus keenly on training—and retraining—their employees to keep up with changes in both technology and best practice in leveraging data for business results.

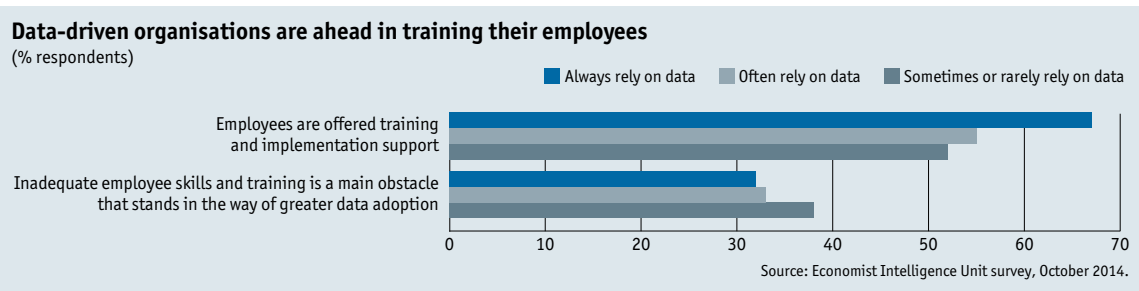
“How many astronauts did we have in the US before 1957? None. We had to retrain Air Force test pilots for a new mission,” says Charles Thomas, chief data officer at Wells Fargo, a large US bank. Corporations today face a similar challenge, he argues. They must turn legacy analysts into data scientists who also speak the language of business.

The EIU survey confirms the importance of employee training and support; respondents rank it as the second-most-effective tactic for driving employee engagement and adoption of data analytics (48%), after the CEO and the C-suite leading by example.

Unsurprisingly, data-driven companies are ahead of their more gut-driven peers in offering employee training and implementation support as part of data initiatives (67% vs 52%). As a result, inadequate employee skills and training are less of an issue at data-driven businesses (32% of them see that as a top-three challenge vs 38% at less data-reliant companies). The ability to be retrained and to advance as a data culture-carrier within the organisation is a strong motivator for employees to

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Charles Thomas, chief data officer at Wells Fargo



Systematised employee incentives are a powerful driver for lasting culture change with a powerful and lasting effect.

be more engaged in executing the corporate data strategy.

Link data to incentives and advancement.

Training and education are important enablers and motivators, but the most sophisticated players go much further. According to our survey, compensation and performance incentives that encourage employees to utilise data are the third-most-effective tactic for winning employees over (43%). Yet offering incentives, whether direct compensation or other indirect benefits, is still a fairly novel notion in the corporate world.

The forerunners of data-centricity are leading the way in this area, too: 25% of executives at data-driven companies say their firms offer compensation and performance incentives to employees who embrace data, as compared with 17% of respondents from less data-focused companies.

At Sage, Ms Boko has implemented dashboards for each of her team members that follow the same format as her own. They have weekly discussions centred on the key data metrics. “They provide both a stick and a carrot,” she says, “they can show the value of their efforts, and employees can see what they are doing well and where they lag behind.”

Both success and failure are difficult to dispute when they are determined by clear, objective and mutually agreed-upon performance metrics—which makes systematised employee incentives a powerful driver for lasting culture change and

ongoing engagement. They are not driven top-down but, instead, create a bottom-up self-motivation among employees, thus generating a much more powerful and lasting effect than one-time initiatives and management directives.

Make data use competitive—and fun. This sounds almost counterintuitive to more traditional management thinking, but the final touch, the “cherry on top” for fostering an enduring culture of data-centricity, is to link data with the basic instincts and needs all employees share to compete, to shine and to feel happy and fulfilled at work.

“Our sales teams compete with each other on their metrics, and the winners receive a trophy and an extra day of vacation,” says Mr Morris of Opower. “This kind of engagement drives employee happiness, which we track in a regular survey.”

Marshall Toplansky, managing director of KPMG’s Data & Analytics Centre of Excellence, says his firm has experimented successfully with harnessing social media and gamification to improve employee engagement. “There is a demographic shift—a younger generation of employees who are comfortable with social sharing and identifies with gamification,” he says. So the firm created an internal knowledge-sharing platform where employees can earn “badges” for their knowledge and proactive participation and can be ranked by the ratings of their peers. Tapping into these natural human impulses has proven a powerful, organic way to drive employee engagement. ■

5

Looking forward

“The key to future success is to build an organisation that can innovate with data.”

Rod Morris, former senior vice-president of marketing and operations at Opower

The importance of data as a corporate asset cannot be overstated. Companies are increasingly closing the technology and expertise gaps, and many of them are deeply engrossed in the third stage—the cultural stage—of transforming themselves into truly data-driven businesses.

But what does the future of this evolution hold? What is the next frontier that companies will have to conquer to stay ahead of the pack once they have created sustainable data-centric cultures?

In all likelihood, the fourth stage of the data centricity evolution cycle that companies will face is learning to be creative and innovative with data—to not only consistently use the tools that

they have built and apply methods that they have learned, but to invent and create new ones all the time and to drive change without the need for top-down initiatives.

This stage can only be reached if employee engagement has become truly bottom-up and, therefore, has taken on its own independent life that continues even when the leadership is not looking.

“The key to future success is to build an organisation that can innovate with data,” says Mr Morris of Opower, “to disperse the data, democratise the tools and unleash the creativity of individual employees.” ■

Appendix: Survey results

Percentages may not add to 100% owing to rounding or the ability of respondents to choose multiple responses.

In the past 12 months, how has your company's profitability compared to that of your competitors? (% respondents)



How would you rate the level of creativity and innovation within your organisation? (% respondents)



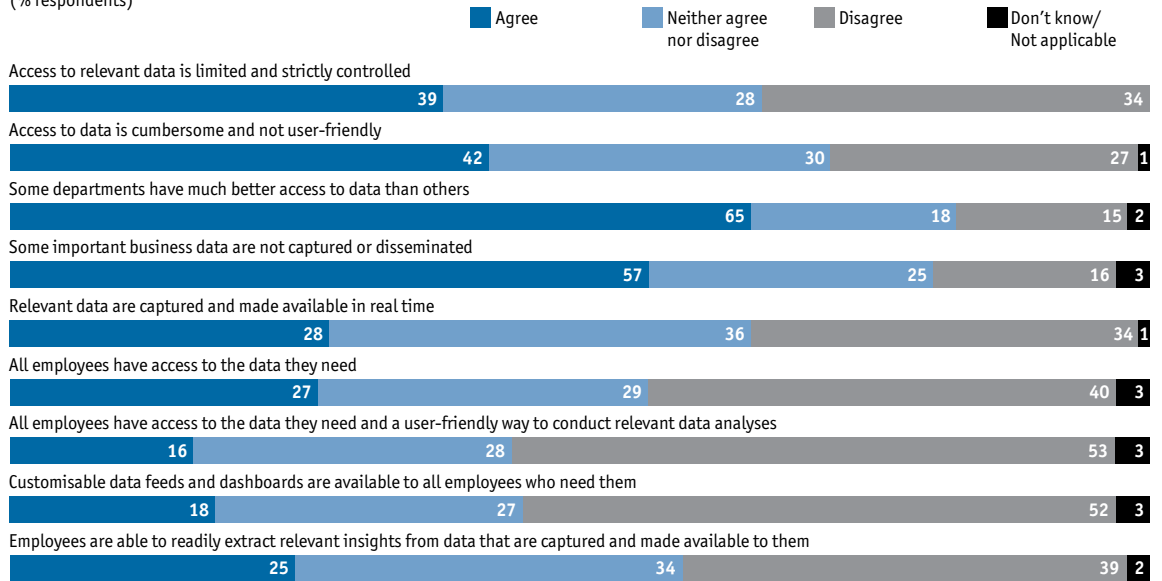
To what extent do managers and employees at your organisation rely on data to make decisions to manage and grow the business? (% respondents)



Do you agree or disagree with the following statements about availability of and access to data throughout your organisation?

Please select one in each row.

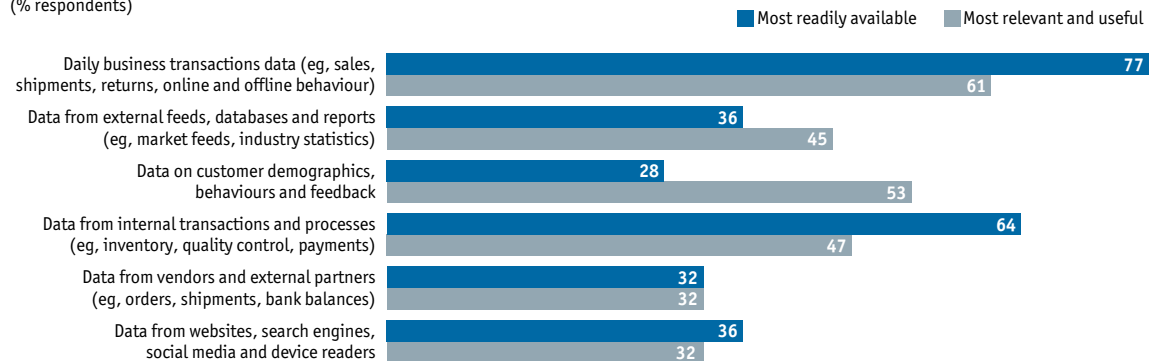
(% respondents)



Which of the following data types are most readily available to the people in your organisation who need to use them? Which of the following types of data, whether or not they are available within your organisation, are, or could be, most relevant and useful to your business?

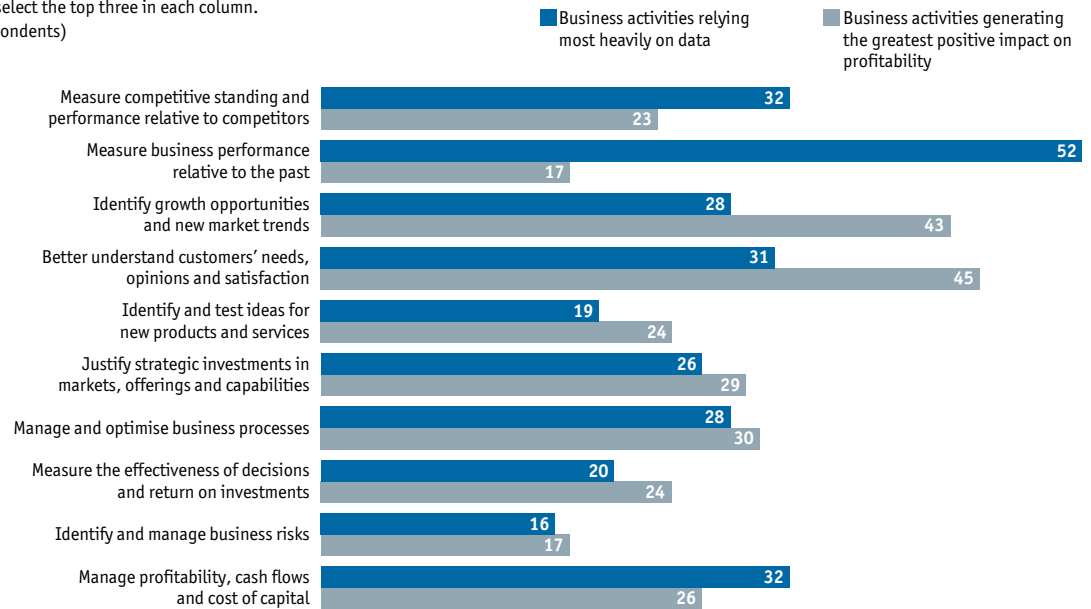
Please select the top three in each column.

(% respondents)



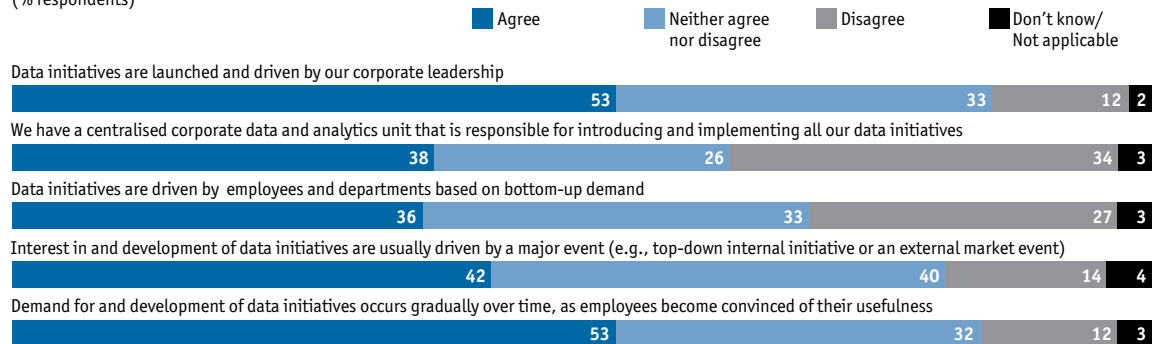
**In your organisation, which of the following business activities rely most heavily on data?
Applying data to which of the following business activities generates, or could generate, the greatest positive impact on your profitability?**

Please select the top three in each column.
(% respondents)



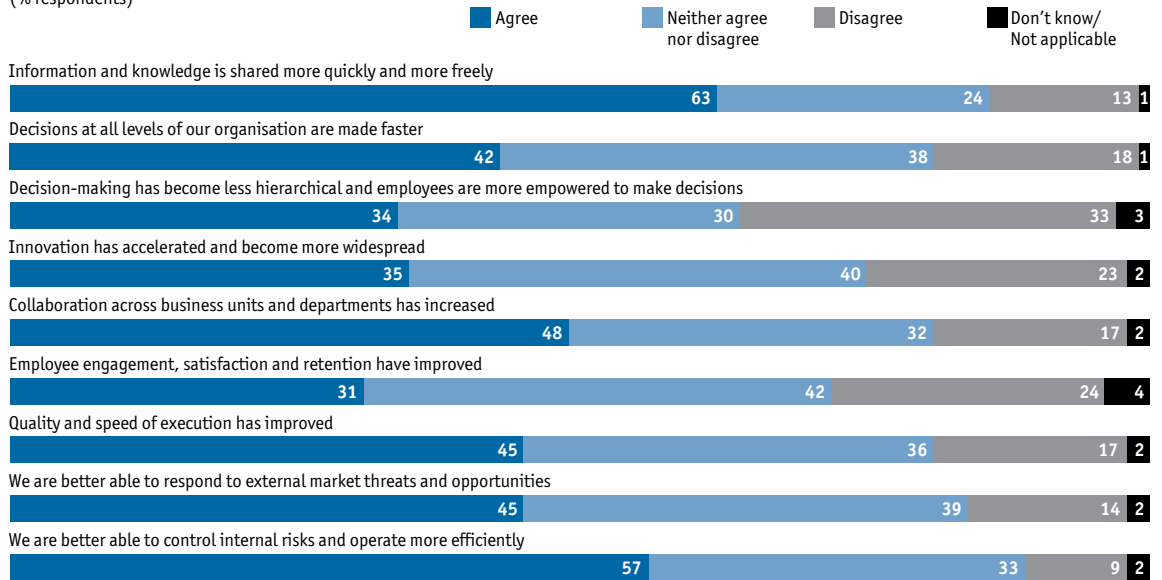
Do you agree or disagree with the following statements about the ways data initiatives are introduced and implemented in your organisation?

(% respondents)



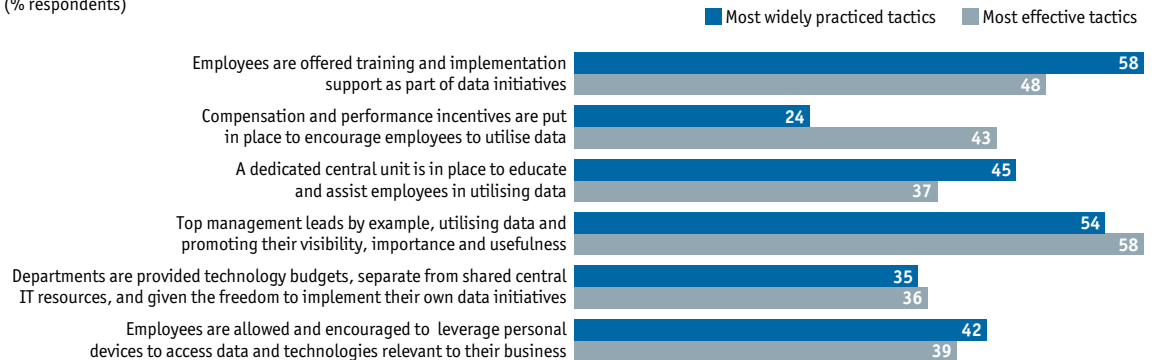
How has your organisation changed due to the greater availability and utilisation of data?

Please select one in each row.
(% respondents)



In your organisation, which are the most widely practiced tactics aimed at encouraging employees to apply data to their business activities? Which are the most effective tactics for encouraging employees to apply data to their business activities?

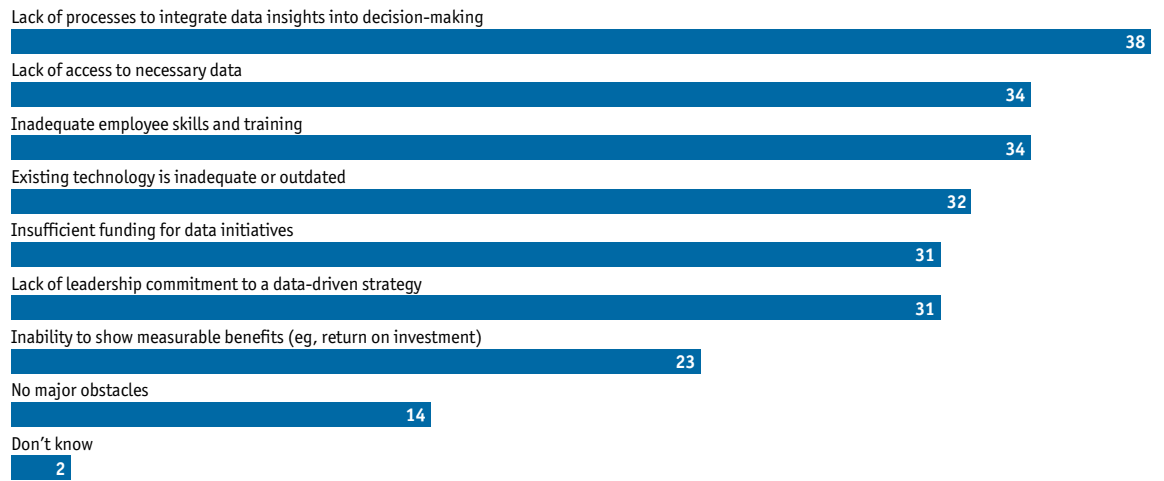
Please select the top three in each column.
(% respondents)



In your organisation, what are the main obstacles that stand in the way of greater data adoption and utilisation?

Please select the top three.

(% respondents)



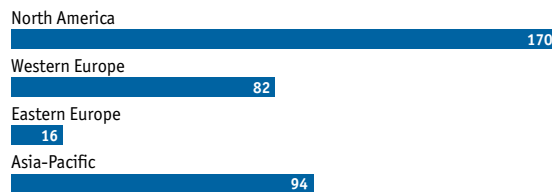
What are your organisation's global annual revenues in US dollars?

(% respondents)



In which region are you personally located?

(Number of respondents)



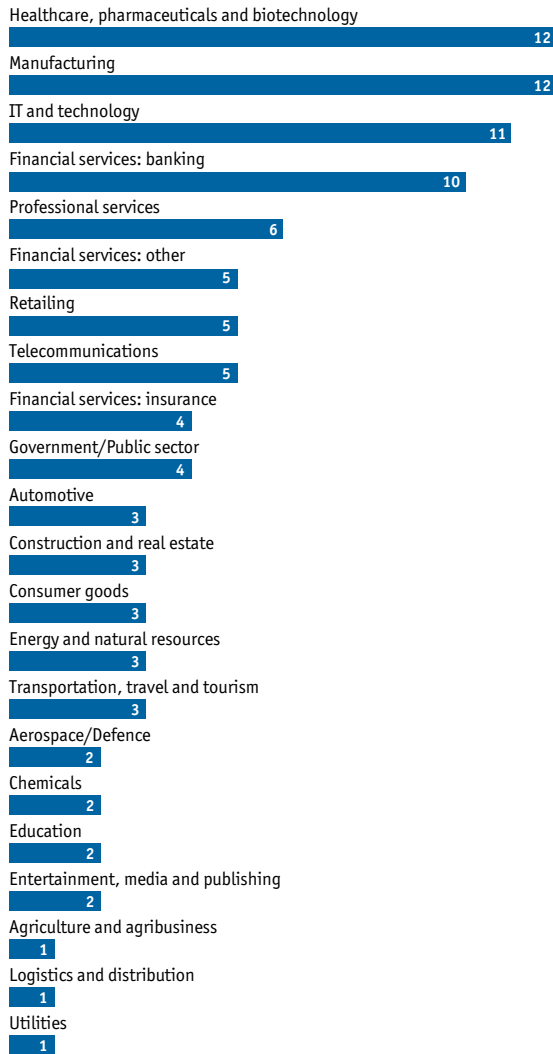
What is your main functional role?

(% respondents)



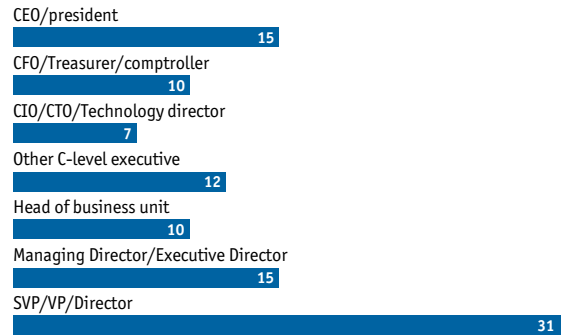
What is your primary industry?

(% respondents)



Which of the following best describes your title?

(% respondents)



Are you familiar with your company's efforts to utilise data for business decisions?

(% respondents)



Whilst every effort has been taken to verify the accuracy of this information, neither The Economist Intelligence Unit Ltd. nor the sponsor of this report can accept any responsibility or liability for reliance by any person on this white paper or any of the information, opinions or conclusions set out in the white paper.

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