



# **POWER FROM BIG DATA**

## ARE EUROPE'S UTILITIES READY FOR THE AGE OF DATA?

A T-Systems report, written by the Economist Intelligence Unit.

# FOREWORD **POWER FROM BIG DATA**



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What does the hype around big data really mean to the utilities industry? Are utilities prepared to manage and make the most of this data ubiquity? This is what we set out to investigate in a comprehensive research programme conducted by the Economist Intelligence Unit (EIU).

Global volumes of data double or triple every few years and this upsurge is by no means slowing down: market research predicts global data levels will reach 40 zeta bytes by 2020. In the EU alone, more than 200 million intelligent meters are set to transmit user data at great speed by 2022. Likewise, social media data is exploding across a range of channels such as mobile Internet devices and applications. Key to unlocking the power of big data is leveraging both structured and unstructured data and drawing the right conclusions. Utilities will gain competitive advantage from intelligent interpretation of data.

The energy sector must become increasingly consumer-oriented and ensure flexible access to utility services – anytime, anywhere. Utilities are creating new business models to facilitate renewables and bi-directional production, pushing boundaries, re-shaping markets, intensifying competition. Utilities which truly leverage knowledge of their customer and usage patterns and swiftly implement adequate organisational structures and end-to-end digital processes will come out on top. A cornerstone of this transformation is IT-enablement.

New technologies such as in-memory and dynamic computing have enabled rapid analysis of very big structured and unstructured data. Big data does not only mean capturing data from intelligent meters or sensors, it also covers all information captured from mobile devices and applications, portals and social media channels.

So what is the potential of big data and how should utilities unlock its true business value? To investigate this and other questions we commissioned the EIU to conduct a survey over 250 executives in the utilities industry in Western Europe in Q1 2013. Half of the respondents are C-level executives, the rest being other senior managers. Around three-quarters are responsible for strategy and business development at their organisation. The EIU also conducted in-depth interviews with senior executives and industry experts.

The key findings reveal a significant need for action. Utilities are tapping into new data sources, yet only half are turning it into business value. Over 40% of respondents do not even have a data strategy in relation to smart meters and social media or are only starting to define one. Nonetheless utilities are concerned about the lack of qualified data specialists and reveal plans to invest in developing adequate skills. Other obstacles include data security and privacy concerns, while data analytics tools and software is the top investment priority for utilities. ►



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Utilities must improve their capture of customer usage patterns and network utilisation. Analysis of big data can help forecast new tariff plans as well as different contract models. Similarly, systematic analysis of social media may identify unsatisfied customers and the need for new products. Utilities can generate more business through new machine-to-machine data by using the data they are collecting.

However, utilities that try to overcome these hurdles simply through buying software and iteratively learning from their own mistakes are likely to fail or do less well than those who work closely with experienced partners and suppliers.

The utilities industry could draw upon the experience of the telecommunications industry. Many challenges have been overcome, even more mistakes made and significant lessons learned. At Deutsche Telekom over 600 professionals work on mass data management and analysis every day. From our mobile networks alone, we manage over 100 million data records per day. The German toll-road system generates 20 million data sets which we manage in our data centres. We have 90 data centres globally, including 60 in Europe and 30 in Germany.

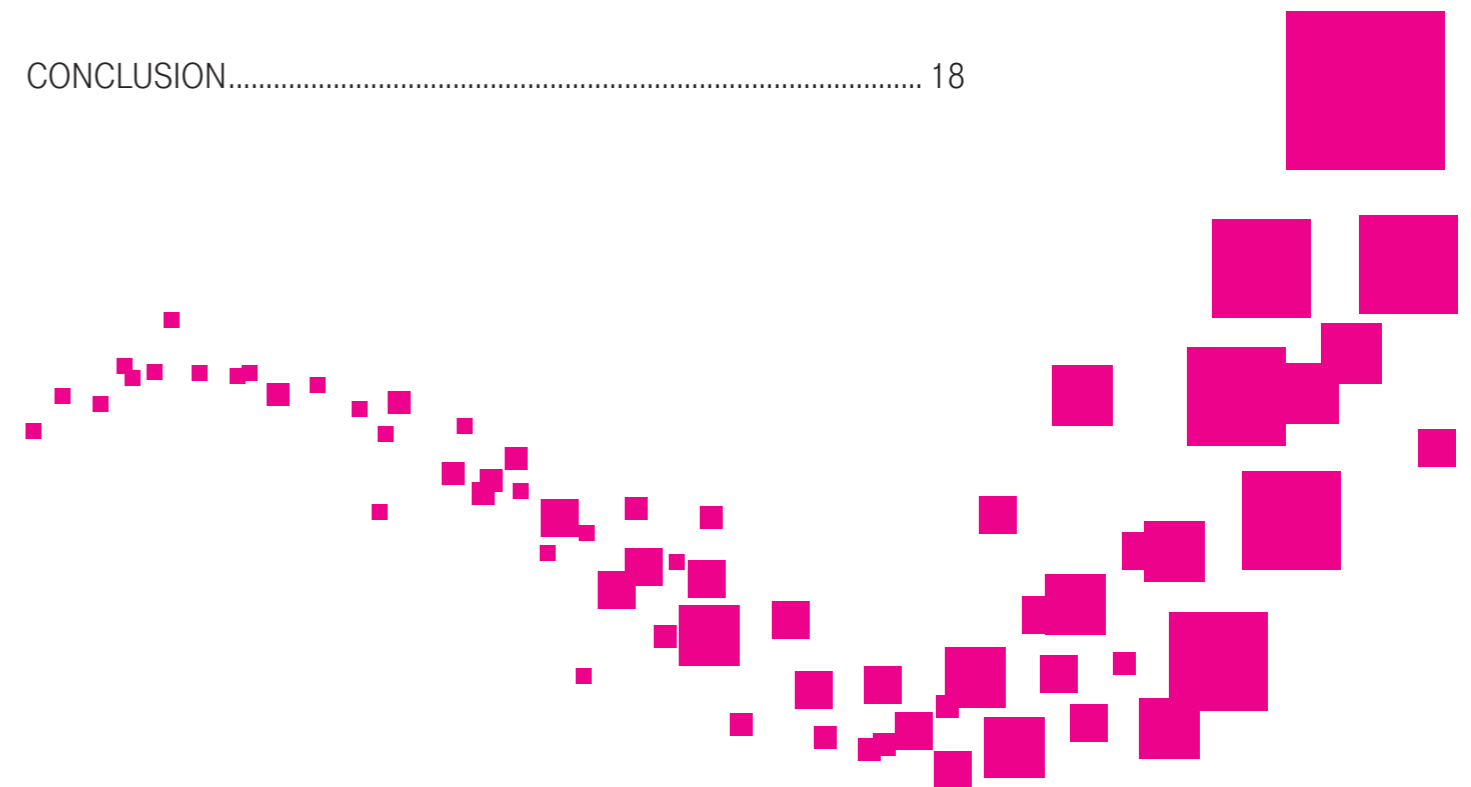
Understandably technology advancements also bring uncertainty to consumers, through a perceived loss of control over private information or profiles. Deutsche Telekom acknowledges and actively works to address these concerns. Decades of experience in data handling, security and privacy are reflected in our big data solutions.

**Big data is available and growing every day. It simply needs to be used intelligently.**

**We wish you inspiring reading and hope we can trigger new ideas together.**

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## EXECUTIVE SUMMARY

Europe's power utilities have traditionally focussed on collecting consumption data to bill customers, providing financial and performance data for regulators, and using data to help make decisions to invest in power generation and network assets. Increasingly, however, the dynamics of the power sector are shifting towards an approach characterised by growing volumes of data – including real-time, spatial, and unstructured data – that are enabled by the rollout of intelligent networks, smart grids and smart meters, as well the increasing use of social media, mobility and new customer-service channels.

This is throwing up opportunities as well as challenges for utilities, which may not have the adequate resources to compete in this brave new world of "big data". Managing the technology deployments effectively is surely important for incumbent operators and new market entrants alike, but how they leverage the power of the data that the technologies generate is arguably mission-critical if they wish to remain competitive. Business leaders must overcome obstacles, which include a lack of standards (in some countries) governing data ownership, quality, structure and privacy, as well as thorny internal obstacles, such as organisational silos and talent and skills gaps.

This paper, based on a survey of over 250 senior executives in the utilities sector across Western Europe, assesses European utilities' readiness to manage expanding data flows, now and in the years ahead. The research examines why big data is moving up the agenda, how utilities plan to reap its benefits, and how they are tackling obstacles to becoming more data and customer-centric.

### The key findings of this research include the following:

#### European utilities expect to struggle with growing volumes of data.

Three out of every four respondents in the Economist Intelligence Unit survey expect the volume of data their company processes to increase by at least 25 % over the next three years. One out of four expects the volume to increase by 50 % or more over the same period. Yet utilities may be overestimating their ability to deal with the disruption brought about by big data. Although 77 % of firms say that they are good at collecting new types of data, they fall short in converting that data into business intelligence: nearly one-half (47 %) say that they do not maximise the value of the data they collect.

#### Strategies for unlocking the power of big data are at an early stage of development.

Just 16 % of survey respondents say that their data strategy in relation to smart meters is advanced. It is a similar story with their data strategy for social media. In the case of both smart meters and social media, a significant proportion of the sample (over 40 %) are either in the early stages or have yet to begin drafting strategies. This is partly because the sector's focus is on regulatory issues and on supply, say interviewees.

#### To keep ahead European utilities will require a change of mindset.

Industry experts interviewed for the study agree that utilities are not turning big data into a competitive advantage to drive the business – offering nimbler rivals opportunities to take market share. Unencumbered by heavy capital expenditure requirements, these smaller operators are seizing the chance to improve processes and customer experience.

#### Many utility executives are worried that talent shortages and organisational silos will hamper their exploitation of big data ...

Utilities are concerned with their ability to find the data specialists that they will need in future, with 48 % saying that they will need to undertake additional efforts to locate or develop such talent; in response, many are training staff in-house. Another 64 % say that their company is creating silos of data rather than ensuring its more consistent availability across the organisation. Other obstacles include a lack of Europe-wide industry standards and norms around data, as well as security and privacy concerns.

#### ... but they are starting to reap the benefits of growing data flows.

Utility executives report reaping numerous benefits from the increased collection and analysis of data in the past three years. Top of the list comes better coordination of activities across organisational units, followed closely by better prediction of maintenance requirements and better forecasting of energy demand from end-customers. Utilities are also using big data to communicate with customers in a more personalised way, thus increasing customer satisfaction. Enabling customers to manage energy costs and better data protection are cited as the main benefits that the increased use of data has delivered for customers.

#### Data analysis tools, social media and mobile technologies are rising up the agenda.

In thinking about investment priorities in data management over the next three years, data analytics tools are the top priority for survey respondents, followed closely by ensuring data accuracy and reliability, and building staff data management skills. Mobile devices and applications, social media and web data are the most frequently cited technologies among many to be deployed in pursuit of data collection objectives over the next three years.



## ABOUT THIS RESEARCH

**Power from big data** is a T-Systems report, written by the Economist Intelligence Unit (EIU). It investigates utilities' readiness to manage big data and the implications of this across their organisations. To shed light on this topic, the EIU conducted a survey of over 250 executives from utility companies in Western Europe in February 2013. Nearly one-half (48 %) of the respondents are C-level executives, the rest being other senior managers. Around three-quarters are responsible for strategy and business development at their organisation. One-half of the firms represented generate over US\$500m in annual revenue, while 10 % generate US\$10bn or more.

To complement the survey findings, the EIU also conducted in-depth interviews with senior executives and industry experts on data management in utilities. We would like to thank all survey respondents, as well as the following executives (listed alphabetically) for their time and insights:

- **Andrew Bilecki**, chief information officer, UK Power Networks, UK
- **Stephen Fitzpatrick**, chief executive officer, Ovo Energy, UK
- **Ben van Gils**, leader, Global Power and Utilities Centre, Ernst & Young, Europe
- **Eirik Gundegjerde**, executive vice president, Smart Utility and Business Development, Lyse Energi, Norway
- **Olaf Köppe**, partner, KPMG, Germany
- **Philip Lowe**, director general for Energy, European Commission, Belgium
- **Andrew Richards**, severe risk analyst, National Grid, UK
- **Claes Wallnér**, head of information technology, Vattenfall, Sweden

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# BIG DATA MOVES UP THE AGENDA

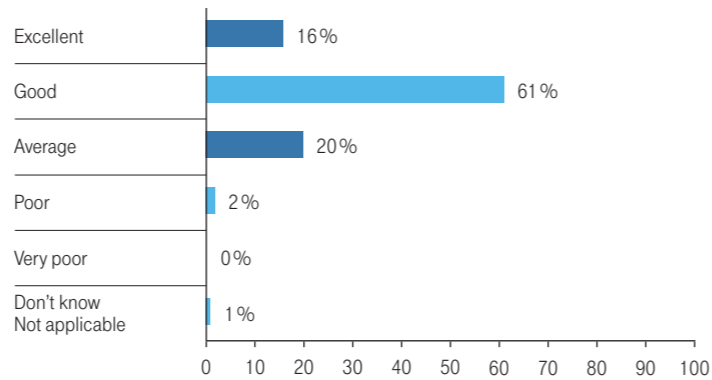
Power utilities have long been accustomed to handling data from industrial and residential consumers. But now utilities face fresh challenges. Power firms are under intense pressure to make their energy production more efficient, and less reliant on fossil fuels. At the same time, risks of new regulation and political interference appear to be on the rise, and continued weak demand for electricity is hampering revenue growth and raising a question mark in the sector over cash flows and balance sheet strength. Moreover, points out Philip Lowe, director general for energy at the European Commission, "there is a much greater emphasis on the empowerment of consumers, both through information and through consumers' participation in the market".

While utilities grapple with these intensifying pressures, they are also having to navigate their firms toward the era of big data. The explosion of social media and mobile devices, as well as the growth of cloud computing and smart grid deployments, are dramatically increasing the quantity of data and the speed with which it reaches organisations. The EU's Third Energy Package, adopted in 2009, calls for at least 80% of electricity customers to be equipped with smart meters by 2020. In time, intelligent networks and smart meters will have the potential to enable power producers, distributors, retailers and consumers to access more information than ever before. "Information makes markets work," says Mr Lowe. "This will not only allow for trade, but also produce growth in the market". As such, while big data throws up challenges for Europe's power utilities, it also presents enormous opportunities.

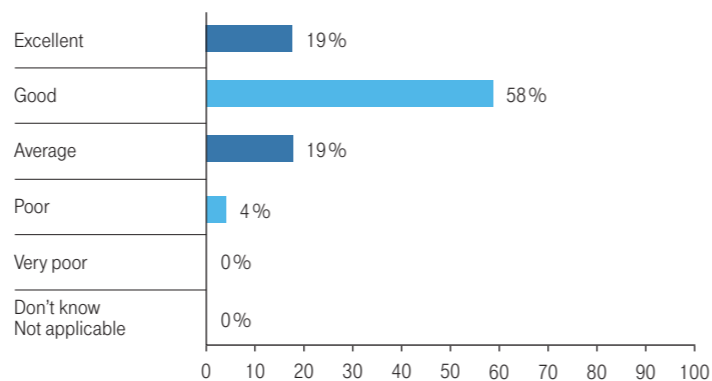
For the time being, Europe's utilities appear confident in their ability to handle data. Utility executives surveyed for this research give their organisations high marks when it comes to their ability to collect and manage data: 77% of respondents rate their organisations as "good", or "excellent" in collecting new types of data, while 76% say the same about their ability to analyse new types of data.



## How would you rate your company's overall ability to collect new types of data?



## How would you rate your company's ability to analyse new types of data?



Source: Economist Intelligence Unit  
Percentages were rounded up and may not add up to 100% for some charts.

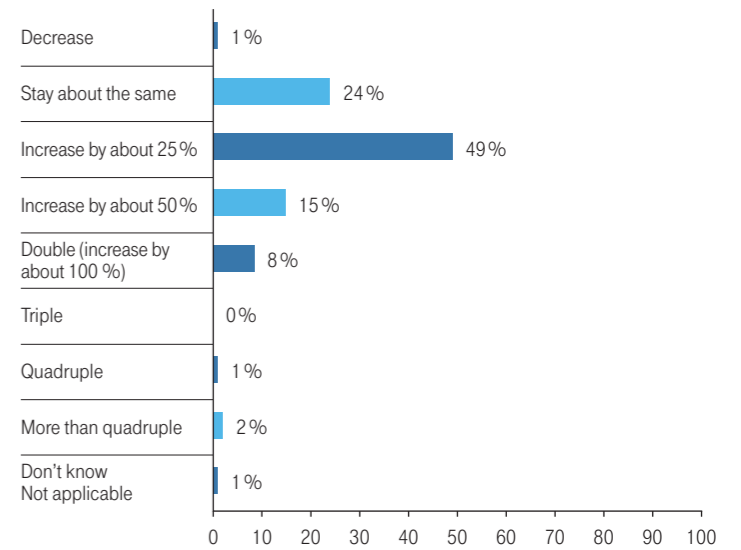
Is their confidence justified? For now, it appears that it is not being widely put to the test. Eirik Gundegjerde, head of Smart Utility and Business Development at Lyse Energi, a power company based in Norway, claims that most of the firm's meters are manually read on a monthly basis. "It's a very low number of values that we are collecting," he says. This is likely to drastically change in the near future, as firms deploy smart meters that generate automatic readings every 15 minutes.

## FROM COLLECTION TO ANALYSIS AND INSIGHT

Collecting and managing meter readings and network data is one thing. But utilities appear to be less effective at converting that data into business intelligence. For example, nearly one-half (47%) of utilities surveyed say that they currently collect a large amount of data, but do not consistently maximise its value. A significant proportion (43%) estimates that less than one-half of the data their company collects is used by the business. This problem could be exacerbated as data volumes rise. Indeed, looking ahead over the next three years, nearly one-half (47%) of respondents say that they fear that the increase in data volumes over the next three years will be overwhelming for their companies. "We know that we will be able to collect a lot more data in the coming years but don't yet know how we will make use of it all," admits Andrew Bilecki, chief information officer at UK Power Networks, a distribution network operator.

As the rollout of smart networks and smart meters gathers pace, volumes of data indeed look set to balloon. "We have more and more ability to capture information as to what is going on at any point in time across the electricity network," says Mr Bilecki. "With the advent of smart metering and other evolutions around sensor data, the volume of data that we will have available to use over the next few years will grow exponentially". His peers agree: Nearly three-quarters (74%) of survey respondents expect the volumes of data they process to expand by at least 25% over the next three years, while one out of four expect volumes to increase by 50% or more.

## Over the next three years, data volumes will ...



Source: Economist Intelligence Unit

It is not just that the volumes of data will grow; the nature of the data is also likely to shift. For example, the proportion of real-time data is likely to rise. Experts also anticipate growth in the volume of spatial data – this is linked to geographic location that enables, for example, comparison of consumption habits among neighbours. And volumes of unstructured data – data that does not come in a traditional database or spreadsheet, such as information included in the text of web pages, tweets or Facebook posts – are likely to expand as well, including from social media. "Taking all the unstructured data into account – that's a real challenge for the future," says Olaf Köppe, a partner at KPMG, a consultancy firm, in Germany.

Data storage by itself will be a tough challenge, points out Mr Bilecki. The concern from an IT perspective, he says, is knowing what to keep and what not to keep – a challenge made all the more tricky by not knowing how to extract business value from that data.

Looking ahead, says Mr Köppe, the companies that will excel are those that have data management systems that allow fast access to the most relevant data. Where utilities have traditionally had a long-term approach, he says, "they [will] need to look at a much shorter time frame and move faster in data management".

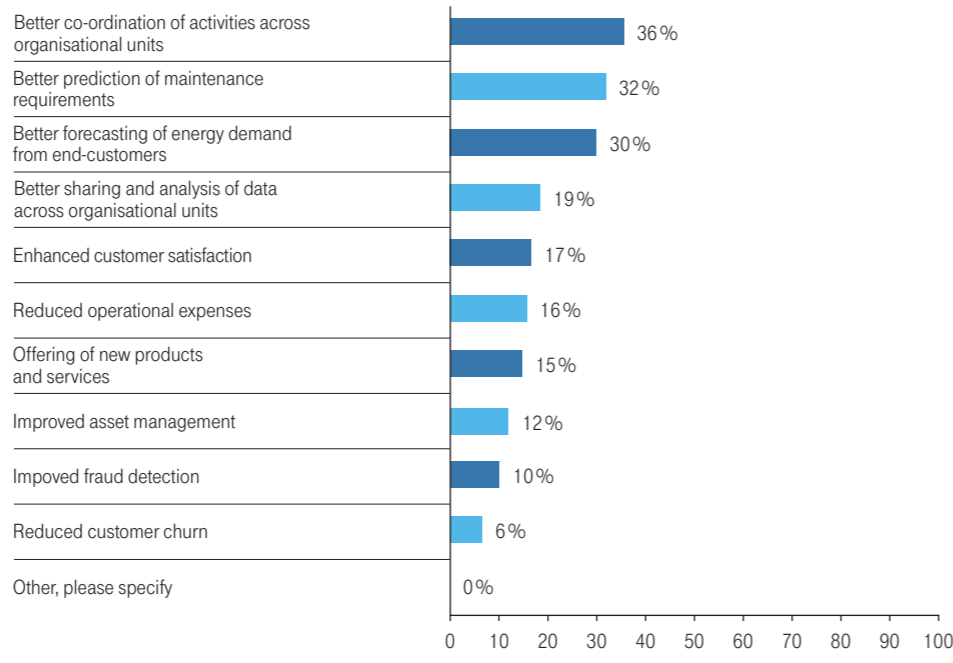
# UNLOCKING THE POWER OF BIG DATA

For those power utilities that seize the opportunity of big data, significant potential lies ahead. When asked about the two most significant benefits they have already seen from the increased collection and analysis of data in the past three years, utility executives cite better coordination of activities across organisational units (36% of respondents) and better prediction of maintenance requirements (32%). Our interviewees confirm that better data may help to ensure stability and safety in the power networks, predict possible failures, schedule equipment maintenance and plan investment in capacity.

When asked about the benefits that increased use of data has delivered for their customers, respondents say above all that new tariffs offer consumers the means to better manage their energy costs. "The primary benefit that is passed on is the ability for consumers to see, with a level of granularity, the impact of what they consume and adjust their behaviours accordingly," says Mr Bilecki. There remains room for improvement: among the list of benefits from the increased collection and analysis of data in the past three years, for example, reduced churn appears last, quoted by just 6% of respondents.



## Where has your company most benefited from the increased collection and analysis of data in the past three years?



Source: Economist Intelligence Unit  
Percentages may not add up to 100% as respondents were allowed to select more than one option.

The potential of big data in the sector clearly remains only lightly tapped. In the future, some executives point out, there is scope for European utilities to turn data into a competitive advantage and drive better business performance. "Many power utility companies are still rather traditional in their thinking," says Ben van Gils, leader of the Global Power and Utilities Centre of Ernst & Young, a professional services firm, in Europe. All too often, it appears, utilities are satisfied with collecting data to comply with regulation or providing insight into the asset base that is so closely linked to company funding requirements.

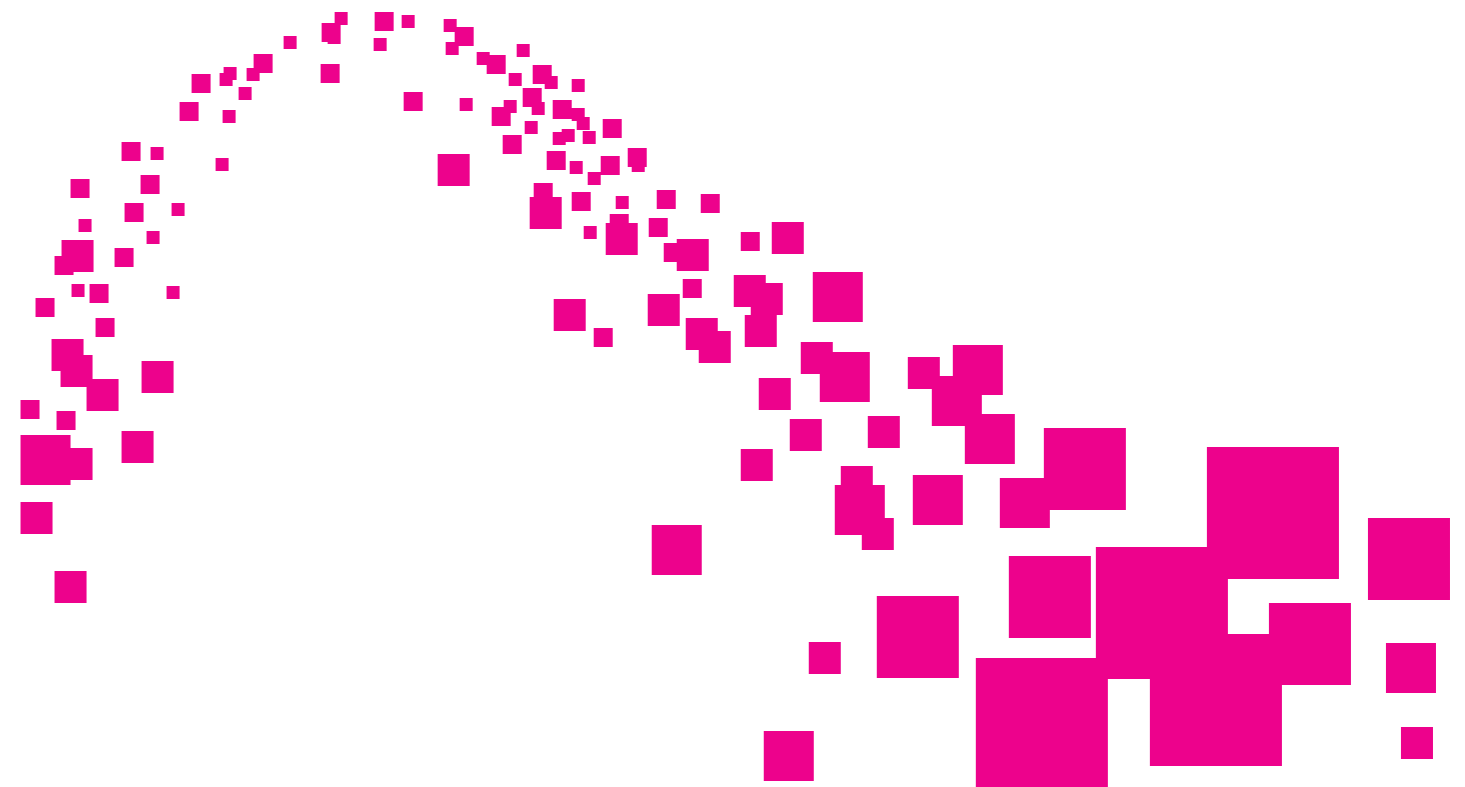
This may spell opportunity for nimble firms with a sharp focus on using data to win customers and drive revenue. Consider Lyse Energi of Norway, which is using better data management to drive its business performance in two ways. The first is process improvement. As Mr Gundegjerde describes it: "we have looked at changing working processes to improve the customer experience and optimise the time they spend on various tasks". The second is through opportunities for new revenue streams. One example, says Mr Gundegjerde, could be home automation systems to control heating and cooling, ventilation, lighting and more (see Case study: Lyse Energi upgrades to smart sensors and meters).

### CASE STUDY: LYSE ENERGI UPGRADES TO SMART SENSORS AND METERS

Lyse Energi, a small power utility in south-western Norway, has been working on a plan since early 2011 to upgrade its meter data management systems and in parallel look for new revenue streams. The new operation will enable more storage of the sensor data that will increase in volume as smart sensors and meters expand in the coming years.

The business plan was presented to the company board in 2012, as part of a comprehensive IT investment plan for the years leading up to 2020. Included were strategies to turn insights from the data into revenue streams. Management approved. Now, Eirik Gundegjerde, head of smart utility and business development at the firm, will set about selecting the new platform providers.

In addition to handling meter data, says Mr Gundegjerde, the new data management platform will enable use of real-time data and allow storage of time series data. "Within the next few years we are going to roll out a lot of sensors and we will have a lot of sensor data that can be used for generating customer value or changing work processes," he says.



Ovo Energy, a UK power retailer founded in 2009, is taking a similar approach. The founder and CEO, Stephen Fitzpatrick, says: “there’s a huge amount of disengagement from the general population about energy. The big challenge is what you do with the data and how you create value for customers”. His firm is exploring ways to communicate with customers, giving them real-time data about electricity pricing, for example, and offering discounts to turn off appliances or reduce peak consumption (see Case study: Ovo Energy engages with its customers).

Notwithstanding these examples, there is more evidence that Europe’s utilities have only just begun to gear themselves up for big data. For example, just 36% of survey respondents say that their firm has a unified data management strategy, fewer than one-fifth say that their organisation’s data management strategy in relation to smart meters is advanced, and only 24% have advanced data management strategies for social media. “Right now our data strategy is relatively short term and not as forward thinking as I would like,” says Mr Bilecki.

This is not to say that utilities aren’t taking any steps at all to prepare for “the age of data”. Some 53% of respondents say that their organisation’s data management strategy in relation to smart meters and social media is in development, while 45% say that it is in the early stages of drafting. “In a real-time world, the amount of data will grow exponentially, and if we’re good at it, our customer base will grow,” says Mr Fitzpatrick. Still, he is the first to admit that the future direction of data management in the utilities sector is uncertain. “We’ve got a fair idea of how the market is going to evolve, but we’re not entirely sure what customers will really engage with on a large scale,” he says. “So we try to collect as much data as we can and try new things. Some of it will stick and some won’t”.

**CASE STUDY: OVO ENERGY ENGAGES WITH ITS CUSTOMERS**

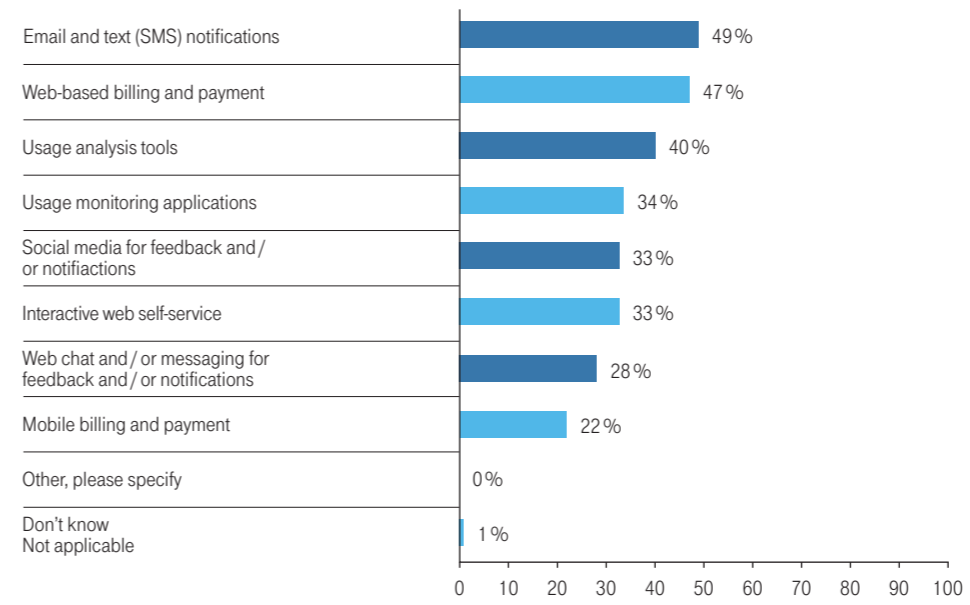
For an example of how data can provide a competitive advantage, take Ovo Energy, a start-up company that entered the UK power market in 2009. “As an energy supplier, we’re essentially in retail,” explains Stephen Fitzpatrick, the firm’s founder and CEO. “So we started off from the customer’s point of view”.

“One of the things we’ve tried to focus on is using the data we collect to communicate with customers in a more personalised way,” says Mr Fitzpatrick. At the outset, the firm tried to explain to customers how to calculate their monthly bills through mathematical formulas. It didn’t work.

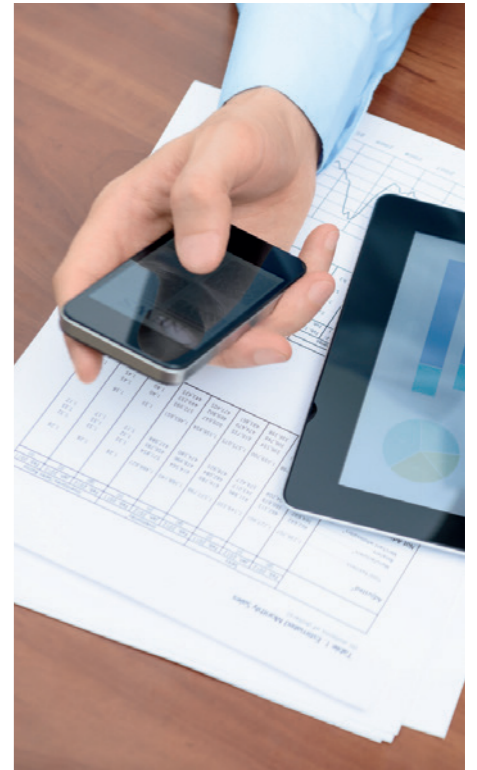
Then Ovo Energy changed tack. “When we can provide them a personalised calculation and show them where on the bill they can find the data that we’re using, then it starts to become much more interesting to them,” he says. “So they can understand why we’re suggesting their direct debit should be £88 per month instead of the £62 per month that they think it should be”.

The result, he says, has been positive. “Once you can answer those questions with real data personalised to individual customers, then you find people are much more willing to listen”. In turn, he points out, “you can have a much more constructive dialogue, whether it’s about energy efficiency, the cost of energy or the price that they pay”.

**Which of the following tools do you plan to use to deliver an improved customer experience in the next three years?**



Source: Economist Intelligence Unit



**THE RIGHT TOOLS**

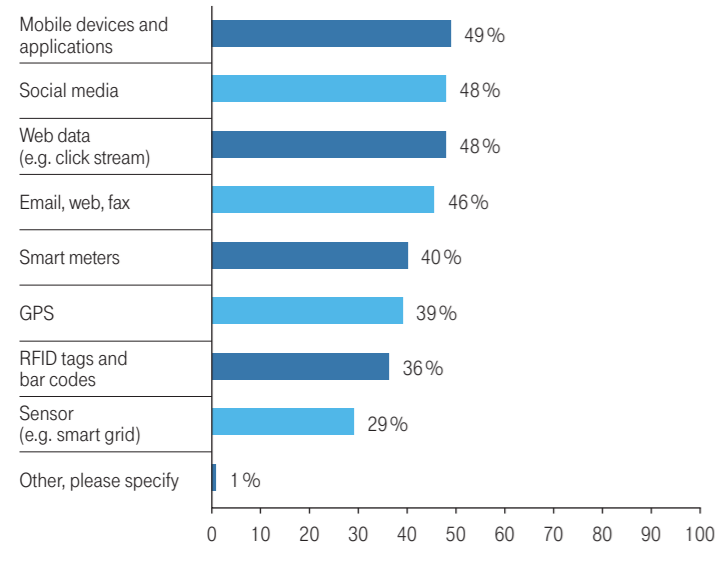
Analytics tools are rising up the list of utility companies’ data-related investment priorities, followed closely by ensuring data accuracy and reliability, and building staff data management skills. When asked which tools they plan to use to deliver an improved customer experience in the next three years, 49% of respondents highlight email and SMS notifications, and 47% cite web-based billing and payment. When it comes to collecting data, mobile devices and applications, social media and web data are the most frequently cited among numerous technologies to be deployed over the next three years.

“We invest on a regular basis in storage and particularly in analytical tools to understand what’s going on across our electrical engineering assets,” reports Mr Bilecki. “The storage of all that, and the ability to process it in ever-growing volumes and extract intelligence from it, is a big challenge.”

As smart grids and smart meters spread, the power sector is likely to be driven more by data management and less by power generation capacity than it is today. Philip Lowe comments that, “most energy policies and energy regulation are linked to physical hardware, yet the future of competitive energy systems relies on intelligent software”. This may explain why some firms are still in early stages with their data management strategies. According to Mr van Gils, the investment demands in the industry are so huge that the necessary investment in IT systems is not the number one priority. Changing management mindsets is what is needed for big data to become a serious priority, he believes.



Which of the following technologies does your company plan to deploy to collect data in the next three years?



Source: Economist Intelligence Unit

### LOCAL DIFFERENCES IN BIG DATA READINESS

Applying a country microscope to the survey results reveals some telling differences in utilities' readiness to manage expanding data flows. For example, German utility executives seem more concerned than their European peers about their ability to convert data into business intelligence. Nearly two-fifths (37%) fear that the data they collect over the next three years will be severely underutilised, compared with only 13% and 23%, respectively, of Italian and Spanish respondents.

Concerns about access to skills and talent to utilise big data are also deeper in some countries than in others. Three-fifths of utility executives from the UK are concerned with the shortage of available data specialists and will need to undertake efforts to locate or develop such talent, compared with only 39% of French respondents who say the same. Organisational silos are a particularly serious obstacle to effective big data use for French and Spanish respondents, with 76% and 74%, respectively, saying that their company is creating silos of data rather than making more consistent availability of the data across the organisation. This compares with 56% and 55% of German and UK respondents, respectively.

German and Spanish utilities seem particularly eager to embrace mobile technologies for data collection. Over three-fifths of firms from those countries plan to deploy mobile devices and applications to collect data in the next three years, compared with only 32% and 40% of UK and French firms, respectively. While investing in data analytics is a top priority for respondents from all countries, German utilities will also focus on expanding infrastructure to handle more data, and Italian firms will invest in building staff data management skills. Spanish respondents cite ensuring data accuracy and reliability as another top priority, while UK respondents point to integrating data across the organisation.



## OVERCOMING OBSTACLES TO TAPPING BIG DATA

As European utilities formulate and implement plans for data management, they face myriad challenges. Asked about their two most significant data management concerns, 37% of utility executives point to high costs. Given utilities' heavy capital expenditure requirements and the widespread scarcity of funding, this finding may be unsurprising. But respondents may also have been thinking of the aforementioned investments in software, hardware and skills development. Other obstacles to improving data management that are a concern for managers include technical complexity (36% of respondents pointed to this) and organisational and time impediments.

In interviews conducted for this research, industry executives highlight a number of other issues. These include the lack of Europe-wide industry standards around data from smart grids and meters (which leads to concerns about sharing data with competitors), worries around data ownership, and concerns about data accuracy. "Who owns quality in the new industry data?" asks Mr Bilecki, for example. Such concerns are also recognised by Philip Lowe. "We are anxious to see guidelines, standards, and interoperability protocols established, but not necessarily rush in to yet more regulation," he notes. A further worry for utility executives is the issue of compliance, which involves data privacy and data protection. "You don't see it [publicly], but there is a lot of discussion

going on about confidentiality of customer data, and in some parts of Europe that's a very big problem," says Mr van Gils. Indeed, almost one-quarter of executives highlight compliance as one of their top two concerns with regard to managing big data. This high level of concern is especially striking, given that 83% of survey respondents assess their ability to meet data privacy requirements as "good" or "excellent".

One reason why executives remain concerned about data privacy issues appears to be the potential for negative public reaction to the availability of data regarding household power consumption. Mr van Gils says that this is one reason why European utilities have not yet exploited the full potential of data. "If [utilities turn data] too much to competitive advantage, there will be a [consumer] backlash," he explains. "The rules are being carefully constructed to avoid us running into any specific privacy issues," adds Mr Bilecki. "I think it's reassuring for us, as well as for the consumer".



## SKILLS GAPS

Access to skills and talent is a critical success factor for better data management. For now, utility executives appear satisfied with the existing skill sets among their colleagues to collect data, with 76% of respondents saying that the skills within their organisation are either “adequate” or “very good”. A similar proportion say the same about the existing skill sets of company employees to analyse data. Only 30% of executives say that the lack of qualified data specialists within the organisation is inhibiting them from taking full advantage of data.

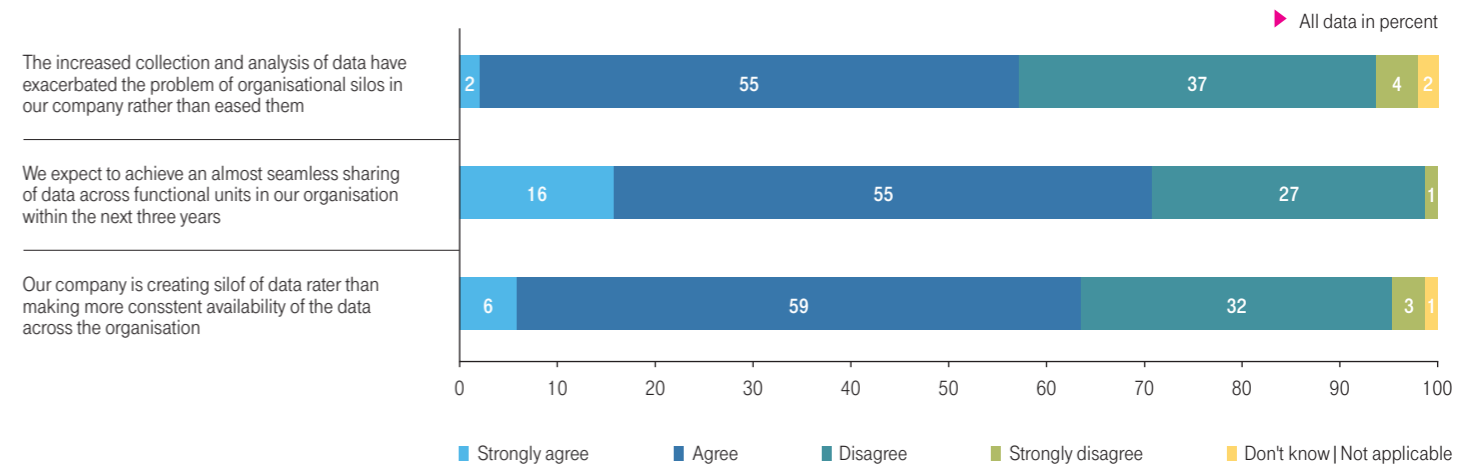
However, interviewees report difficulties in hiring skilled data analysts. One is Mr Gundegjerde, whose firm is based in the Stavanger region in western Norway. “In this geographical area, it’s very difficult to obtain skilled human resources to do the physical job,” he says. Nearly one-half (48%) of survey respondents say that they are worried about the shortage of available data specialists and will need to undertake efforts to locate or develop such talent in the years ahead. To ensure a continued supply of skills in the future, in-house training is the most likely route that firms say they will follow (cited by 59% of respondents), along with providing external training (49%). Recruiting data specialists from other companies is another option, favoured by 31% of respondents.

Executives agree that it is advantageous to build expertise in-house. “Having developed skills in-house, we’re finding that we’re learning much faster than [if we were to use] an outsourced partner,” comments Mr Fitzpatrick. “That has given us an advantage”. In turn, he says, “as we’ve become better at articulating what we do, we have found that we are attracting some really great candidates away from other opportunities”. Ovo Energy, based 155 km outside London, has now opened an office in the city itself, to ensure that it will continue to attract the best staff in the future. “We’ve got a very international feel to the London office,” says Mr Fitzpatrick.

## THE BANE OF SILOS

Besides skills, there are difficult organisational obstacles that managers will need to address in the future, as big data management comes to the fore. Organisational silos are one. Already today, 57% of utility executives state that the more they collect and analyse data, the more the problem of organisational silos is being exacerbated. Even more (almost two-thirds) believe that their firm is creating silos of data rather than ensuring consistent availability of data across the organisation. This does not bode well for the coming years, when volumes of data will continue to expand.

Please indicate whether you agree or disagree with the following statements. – Our company is creating silos of data rather than making more consistent availability of the data across the organisation.



Source: Economist Intelligence Unit  
Percentages may not add up to 100% as respondents were allowed to select more than one option.

Silos, of course, get in the way of turning data insights into better business performance. “Data gathering is an issue that is of major concern because it demands an automatic flow in the information from one part of the company to the other,” says Mr van Gils. “That has always been a weakness of the power utility company”. Confident of overcoming this, 71% of respondents say that they expect to achieve an almost seamless sharing of data across functional units in the next three years.

If they are to succeed in doing this, much better horizontal collaboration will be needed. Currently, when it comes to collaboration on data management, respondents rate their network teams as the least effective among various key functions. Much higher marks are given in this regard to marketing, operations, IT and sales.

At Ovo Energy, management has succeeded in promoting communication horizontally across the organisation by establishing a platform called Ideas Labs – a cross-functional meeting place within the company. Staff meet at Ideas Labs once a month, spending four or five hours talking through new ideas. “It’s well represented from all the guys in the back-end stuff and the business analysts and the marketeers and customer communications experts,” says Mr Fitzpatrick. “That’s the nexus where a lot of the insights that we’ve gleaned from the data get turned into [new service offerings for our customers]”.

## CONCLUSION

While Europe's power utilities recognise the benefits of big data, many are still using data primarily to manage maintenance of generation, transmission and distribution capacity – priorities on the capital agenda. This somewhat defensive position may reflect the pressures that the sector finds itself under, such as the growing need to make production greener and more efficient, and the increasing risk of new regulation and political interference. Many European utilities still have some way to go in preparing themselves to exploit the full potential of big data.



With small, nimble rivals snapping at their heels – exemplified, perhaps, by the likes of Ovo Energy and Lyse Energi – Europe's utilities need to position themselves to gain advantage from the roll-out of smart technologies in the next decade. Survey results and in-depth interviews conducted for this research provide a number of insights for those navigating their firms towards the era of big data:

- **Make big data a strategic priority:**

Those European power firms that are not fully exploiting the potential of big data are missing a clear opportunity. To avoid losing out to smaller firms that are unencumbered by heavy capital expenditure requirements, senior management at European utilities needs to make big data a strategic priority.

- **Use data to drive operational performance and customer focus:**

If they are to make the most of big data, European utilities need to focus on turning the data that they collect into business intelligence; and in turn, they need to act on this business intelligence to improve processes and customer experience. Ensuring they have the adequate tools to collect and analyse data, such as data analysis software, social media and mobile technologies will be key to gain yet more ground.

- **Tackle organisational challenges:**

To succeed in exploiting the potential of big data, power firms need to promote better collaboration across the organisation and invest in the skills they will need in future. This will help eliminate silos and ensure that data is used among business units to drive company performance. Among management, a change of mindset may be needed in order to fully embrace the era of big data.

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