KPMG

Clarity on Data & Analytics

Data is more than the new oil

Clarity on

—

Data & Analytics

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Data is more than the new oil

Chances are that your biggest opportunity to outperform your peers is in the domain of Data & Analytics (hereafter: D&A). The question is: how do you realize your potential?

Data has been called "the new oil". This exciting time indeed reminds of the era when young and daring entrepreneurs took their chances drilling new oil wells and developing new business opportunities. In many way, oil was the fuel for innovations and paved the way for higher levels of welfare in the 20th century. And in the early years of the 21st century, the exponential growth of data promises to do just the same. Data & Analytics may help us better understand individual customer needs, increase sales, find better ways to organize processes, predict criminal behavior, reduce traffic congestion or even lead to better focused cancer treatments. We seem to be at the start of a great journey towards the data driven society.

Please don't misunderstand us. Like many others, we are convinced of the potential of data to transform society. However, there are some essential differences between oil and data. For starters, oil reserves are limited while the growth of data has no limits. Data can be produced, copied and distributed endlessly at almost no cost. Another key difference: data becomes more valuable when combined and shared with others. This is definitely not the case with oil. Moreover, the data driven society offers plentiful opportunities for bright entrepreneurs, even if they don't own the data themselves. This is also quite different from

how it was with the emergence of the oil industry, where a happy few landowners were dominant. Finally, one more difference: oil can be stored indefinitely while insights are more valuable if based on recent data.

One thing is for sure: the transformation towards a data driven society offers opportunities to business leaders in nearly all sectors. Their challenge is to anticipate new developments in these times of accelerated change. A further key difference with the oil industry stands out: starting a serious business in the oil industry required large investments and other resources. In the digital domain, greenfield companies may be started with just a few smart people and a handful of laptops in a basement. This forces companies to be more flexible and agile than ever before.

Ergo: data is more than the new oil. The supply is unlimited and you don't have to own it to explore business opportunities. In this publication, you will find some interesting insights from a global KPMG survey in this domain. You'll also find our views on the dynamics of Data & Analytics in the Swiss economy. We are convinced that many Swiss companies and institutions have a golden opportunity to turn the potential of data analysis into solid and tangible results in the coming years.

We are happy to share views and perspectives on this topic and are also open to learning from others.

A FUTURE PERSPECTIVE ON THE DATA DRIVEN SOCIETY
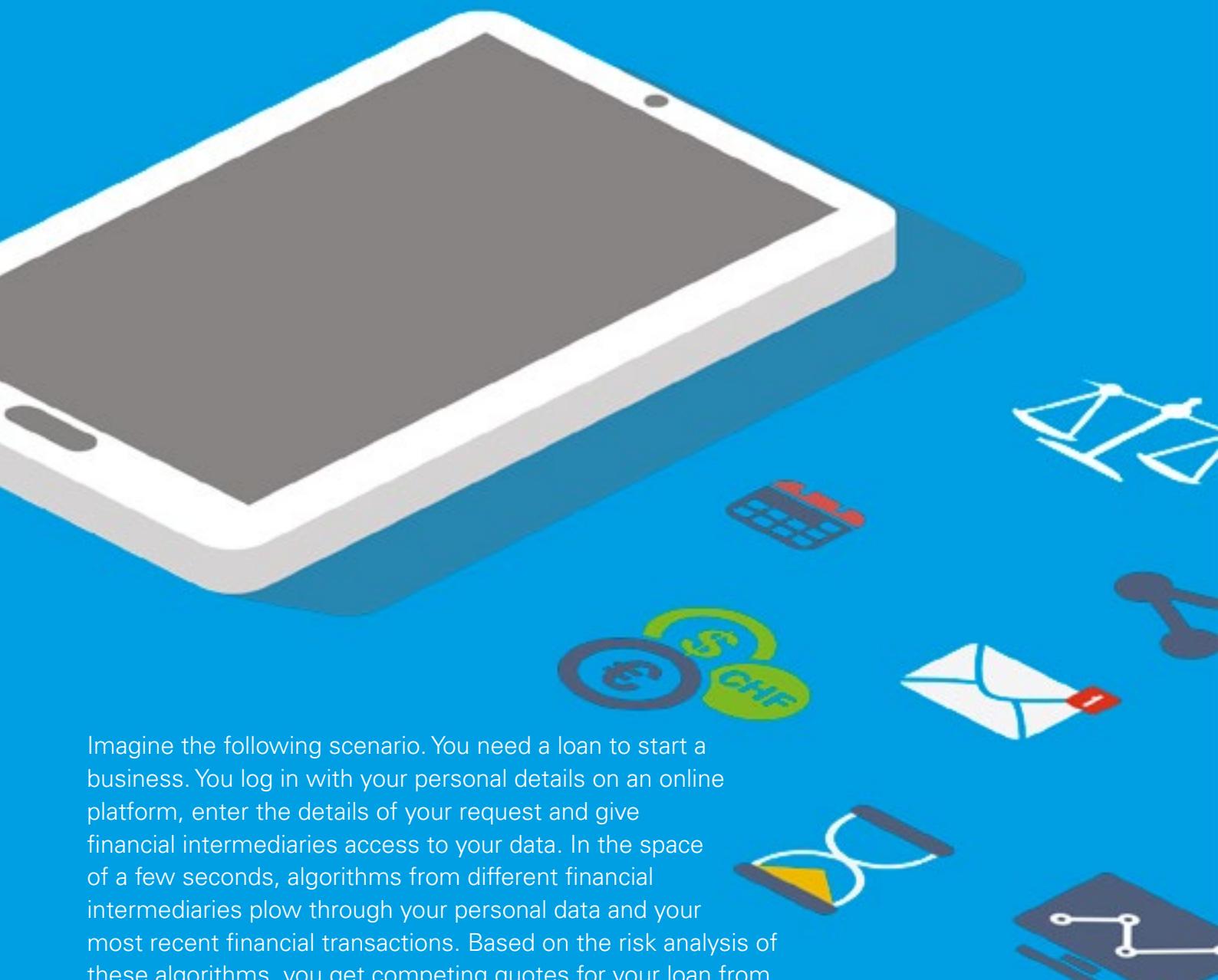
Imagine the following scenario. You need a loan to start a business. You log in with your personal details on an online platform, enter the details of your request and give financial intermediaries access to your data. In the space of a few seconds, algorithms from different financial intermediaries plow through your personal data and your most recent financial transactions. Based on the risk analysis of these algorithms, you get competing quotes for your loan from different competitors. Fully automated, no human intervention. After choosing the best alternative and digitally agreeing to the terms and conditions, you have the money in your account within just a few minutes.

It is hard to make predictions, especially about the future. But scenarios like the one above are almost certain to become reality. In the case of the financial industry this is not only because of the vast possibilities of Data & Analytics but also because new European legislation will kick-start these innovations. The European Payment Services Directive (PSD 2) will inevitably shake up the financial landscape and pave the way for innovations, both from incumbents and newcomers in the market. One of the provisions in PSD is that banks will be obligated to grant access to payment data to other parties (non-banks) which enables new products and services. Through the use of APIs (Application Programming Interfaces), third parties can open up the Pandora's box of the banks and offer customers a range of options to interact with their bank, provided that their customers explicitly agree to this.

Other industries have similar challenges. The healthcare industry is another good example. In Switzerland a new federal law on electronic patient records will be implemented in 2017. Hospitals and care homes will need to apply the law, actively driving the digitalization of the healthcare industry. We expect patients having easier access to their own patient records will enable more self treatment and a higher level of patient initiatives. This offers opportunities for new care provider operating models and products and services in related industries such as pharma. In addition, it could influence how insurance providers interact with customers and process claims. We expect that this will enable more real-time predictive analysis in life sciences.

Across many industries, interpreting data patterns will be a key differentiator and chances are that new types of data will be used. A clear indicator of this is provided by recent scientific research into bank data. Data scientists found that they could achieve almost 50 percent more accurate credit scoring than the bank could because they were looking at external data sources and thereby analyzing the new workfield of social physics – the behaviour of the people – rather than traditional bank data such as age, income or repayment history. This implies great opportunities for realizing competitive advantage.

A bit of imagination leads to numerous new possibilities. Real time lending could be integrated in commerce transactions, based on automated data analysis. And software companies could integrate payment platforms in their software suites.

Examples like this will of course not only take place in the financial industry, as a new data driven society is rapidly emerging. It is a world in which everything is measurable and in which people, and almost every device you can think of, are connected 24/7 through the internet. That network of connections and sensors – sometimes coined "the internet of everything" – provides a phenomenal amount of data, and offers fascinating new possibilities which, together, are often called Big Data.

All industries that are based on information will be transformed. Change may come from within an industry but also from other domains. We've seen challengers leapfrogging industry borders and introducing disruptive new business models. Think of the travel industry, the music industry, the insurance industry, the taxi business and even the automotive sector, where greenfield companies offer disruptive new propositions based on the smart use of data. Twenty years ago, no one considered these sectors to be data-rich. Nowadays, data is at the heart of business strategies.

Where will this lead us to?
Many areas are unexplored today. While companies and institutions are taking the first steps towards a data driven society, it is hard to imagine the possibilities. It reminds us of the early days of the Internet back in the nineties: we all knew that the Internet would change the world but could hardly imagine how.
We also know that the laws of digital Darwinism imply that it is not the strongest companies - the market leaders - that will be tomorrow's winners, but rather those companies that are able to adapt to change better and faster. The consequence is that many established enterprises have to change quickly to stay ahead and thereby safeguard a viable business model for the future.

DATA & ANALYTICS NEEDS INNOVATION AND TRUST
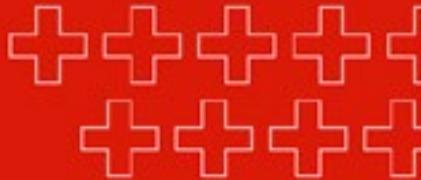
THE SWISS D&A POTENTIAL

Probably you have read about scenarios and predictions like this before. And you may wonder how the bright and promising future of Data & Analytics relates to the current state of affairs.
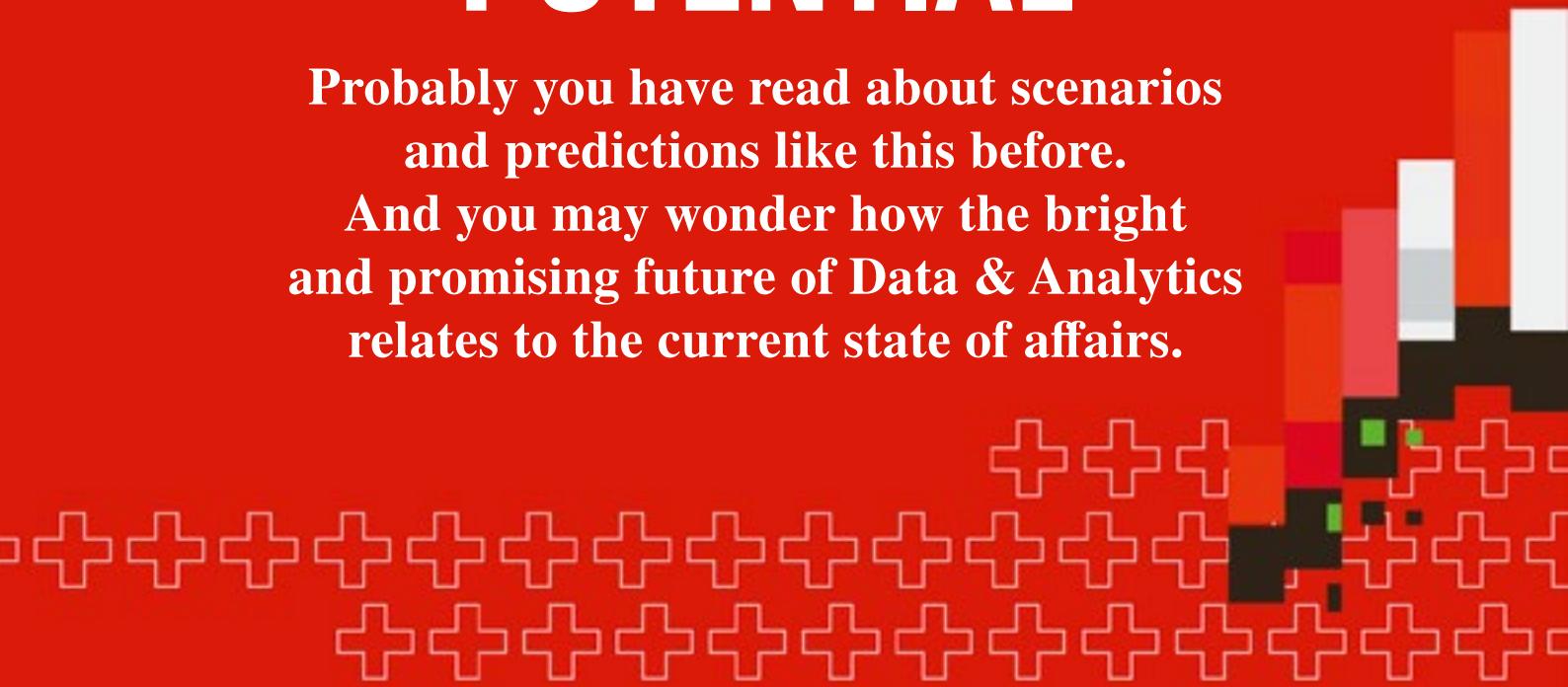
The questions is: how are Swiss companies and institutions performing in this area? Based on our insights from Swiss based companies we conclude that many organizations are active in exploring new opportunities and also that their focus is mainly on getting more out of Business Intelligence approaches.

We expect that Swiss companies will be challenged in this domain in the next five years, as we are convinced that Data & Analytics offer opportunities to grow and increase profit margins. Swiss companies will be faced by international competitors who will use Data & Analytics to introduce new business models and better products. We already mentioned new concepts in the financial industry where Swiss banks simply cannot afford to lag behind. This is also true for the pharmaceutical industry and healthcare providers, where the wealth of personal and healthcare data is leading to better medicine and diagnostic approaches that are better tailored to individuals.

More importantly, we think that Switzerland has an excellent starting position.

Swiss companies have a strong historic track record when it comes to innovation.

First of all, the Swiss business landscape has a strong international orientation, yet has a condensed structure. As a consequence, Swiss companies have a tendency to interconnect and work together. This strong integration is an advantage in the digital landscape. The distances between companies are small, both geographically and in terms of personal networks. On top of that, the Swiss government has a stake in a number of key players. This all contributes to opening up sources of data and joint exploration of new concepts.

Secondly, Swiss companies have a strong historical track record where it comes to innovation. In many cases, Swiss companies have had a hard time competing on price (of labor), thus being forced to focus leading the way with innovations in products and services. Without a doubt, this attitude will be very helpful in embracing the data driven society and its new characteristics.

Thirdly, the brand "Switzerland" is known globally and associated with discretion and reliability. This in turn helps Swiss companies get a better standing in a global market where reputation is key to gain the trust of customers.

Finally, large companies (which Switzerland has plenty of) face a challenge when trying to enable change and alter their business models as they are much less agile than startups due to their size and legacy. There are ways to overcome this disadvantage, however, such as setting up incubators to allow innovations to happen in separate domains outside the established business, or partnering with (e.g. through joint ventures) or buying innovative start-ups to leverage their innovations.

DATA SCIENTISTS AND BUSINESS PROFESSIONALS SHOULD EMBARK ON A JOINT JOURNEY

We need data scientists to handle massive amounts of data and the business for the context as well as the understanding of customer needs.
A seamless cooperation between them to imagine new opportunities and to create additional value is required.

SCALE OR FAIL

Data & Analytics offers tremendous opportunities for both newcomers and incumbents. In the digital domain, a new proposition can quickly be scaled up based on superb algorithms and best in class customer experiences. Companies that cannot keep up risk being thrown out of business.
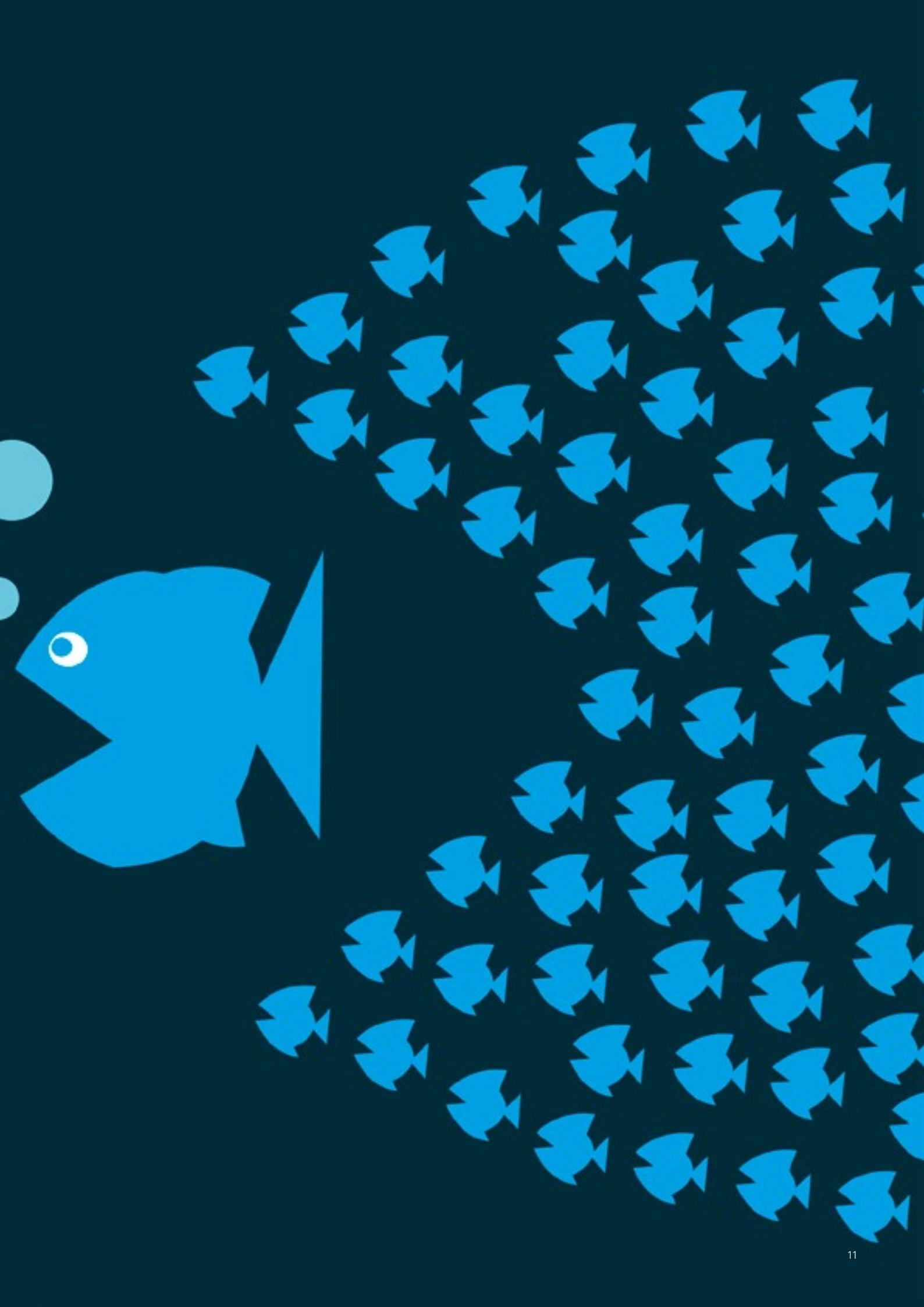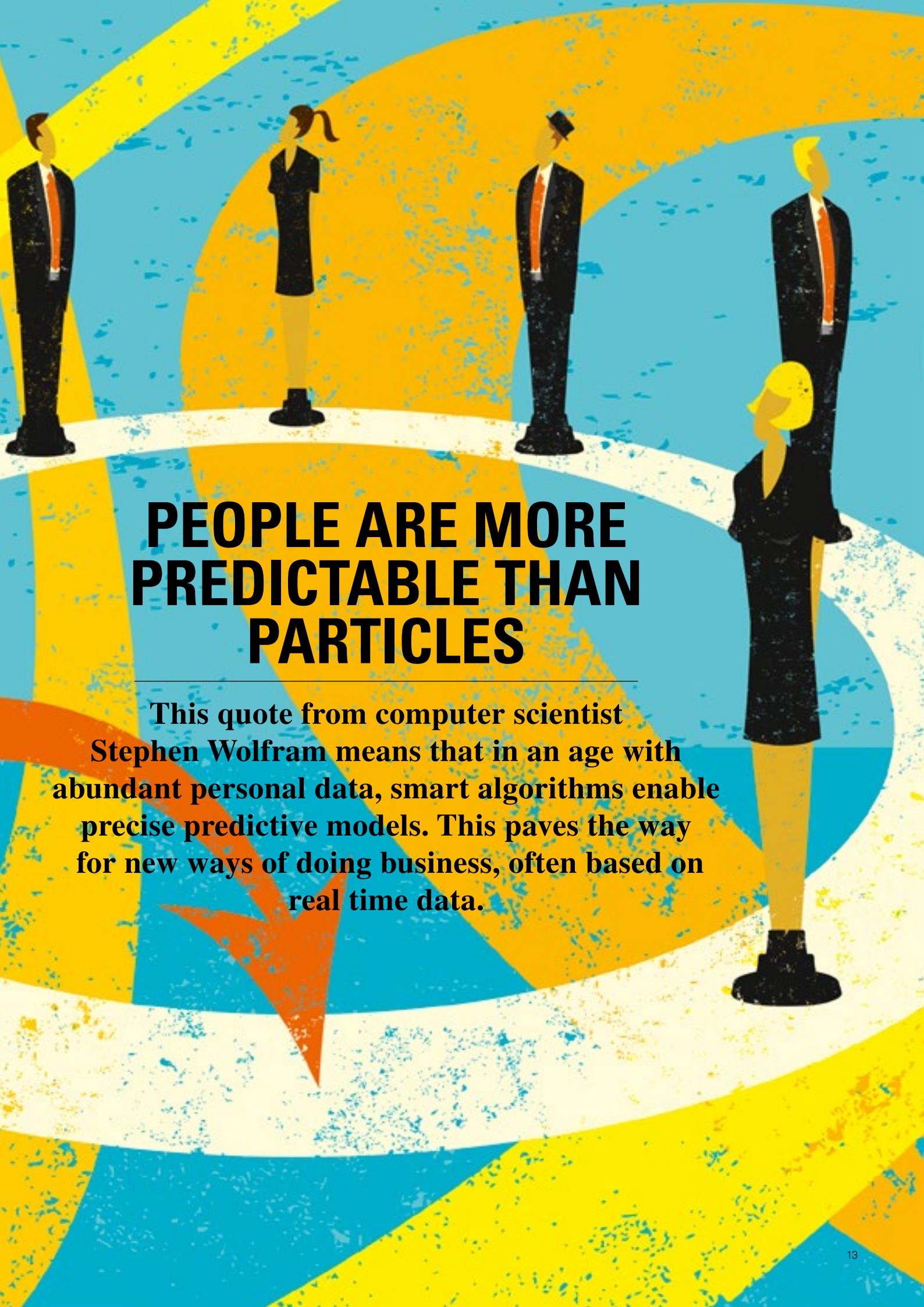
PEOPLE ARE MORE PREDICTABLE THAN PARTICLES

This quote from computer scientist Stephen Wolfram means that in an age with abundant personal data, smart algorithms enable precise predictive models. This paves the way for new ways of doing business, often based on real time data.

IT'S NOT ONLY ABOUT COLLECTING DATA, IT'S ALSO ABOUT COMBINING IT SMARTLY

The disruptive value of Data & Analytics lies not in isolated data sources, but in the combination of data sources. Interlinking data from public transport with location data from telecom providers serves as an example where additional customer value is unlocked with more accurate travel advice.

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KEY FINDINGS
GLOBAL SURVEY

D&A HAS ENTERED THE MAINSTREAM

92% use D&A for marketing purposes. **81%** said D&A has improved their understanding of customers

FAST ADOPTION
97%

of organizations say they are already using D&A in some area of the business

EARLY ADVANTAGES ARE ALREADY BEING ENJOYED

86% of respondents say they are already making faster decisions

80% of respondents say they are already making more accurate decisions

67% of respondents say they are already reducing business risk

STRUGGLING FOR SUFFICIENT SKILLS

BUT BIG CHALLENGES STILL REMAIN

87% have avoided a significant risk as a result of using D&A

only
14%

think they have all the talent and capabilities they need to fully leverage D&A

GETTING INSIGHTS
MISSING VALUE

MISSING THE MARK

only
19%

say they are already "very satisfied" with the insights their D&A tools provide

OPPORTUNITY LOST

81%

41%

of respondents have improved their understanding of customers but only
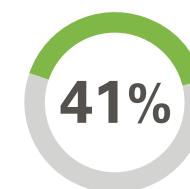
have created more tailored offers to prospective customers

GROWING GAPS
BETWEEN
GOOD AND GREAT

KEY AREAS OF OPPORTUNITY REMAIN UNEXPLORED

Less than a quarter say they currently use D&A to identify new revenue streams

only
31%

of respondents say they have used D&A to drive individualized marketing

only
16%

say they use D&A to predict future trends

17

Louis Gisler is Head of Data Management, Data Warehouse and Business Intelligence at health insurance company CSS. In this role, he is at the forefront of getting more value out of data and has a clear vision on how Data & Analytics may change the health sector.

Data analysis at CSS Insurance: igniting the business while managing expectations

The potential of Data & Analytics is completely unlimited in the health (insurance) sector. It is possible to imagine a world where health providers, insurance companies and other organizations share data to vastly improve customer experience, process efficiency and – perhaps most importantly – the quality of diagnoses and treatments. Gisler is fully aware of this potential and eager to put a great deal of effort into realizing scenarios

like this. However, he is also a realist and knows that right now one of the key challenges is to build an organization that has a positive attitude towards the use of data.

"In recent years, we have laid a strong foundation for the use of data in our processes, with a good platform for the storage and analysis of data in place. Our vision is to be best in class in customer service and by integrating

insights from our data in the interface with our customers, we improve the quality of the services and the customer satisfaction. In contact with the customer, our representatives have a wealth of customer information as a basis for superb interaction."

The results of this effort are very satisfying and this paves the way for more innovative applications of data. Examples are diverse. CSS can integrate data from social media to enrich their customer data; data scientists can track errors in (financial) processes by doing probability analysis on data; integrating data from hospitals can contribute to better health care for (groups of) CSS customers; and a smart analysis of the internal CSS customer data may give professionals surprising new perspectives on their customer portfolio.

"Technologically, the possibilities have become both immense and affordable. We are now exploring the potential step by step. One of the key preconditions is to be fully aware of the sensitive nature of personal data in the health domain. We can and should restrict ourselves to using the data in such a way that our customers feel comfortable. The use of data from social media is an example of

this: although this information is out in the open, we should be cautious in using it. Data protection will and has always been a key success factor of our business and comes from the heart of our business. Being an insurance company, our success is strongly dependent on the trust we earn from our customers."

Gisler stresses the importance of good governance: "To succeed, one must ensure that Data & Analytics is represented in a senior position in the company. Data & Analytics is not a support function to the business; it should actually take the lead in transforming the business. This can only be the case with strong sponsorship from the top. At CSS, we have full support from our leadership. What helps

in this respect is that the role of the CIO and CMO is combined in one person."

Another important precondition is that the use of data analysis should be a joint effort of data scientists and business professionals. "Recently, we've started quite a few new projects to discover new possibilities. Typically, this is done in short sprints, with people from the business and our data scientists working together in integrated teams. The approach is in many ways similar to the agile software development. Adopting this approach helps in building the right culture in the business. Ultimately, the business should pull the application of data analysis."

"It's all about learning to think in possibilities, not in limitations", says

Gisler, "It's all about learning to think in possibilities, not in limitations," says Gisler, "and enabling the business to explore this potential themselves, as our resources are limited. Once the business starts to experience the value of the new initiatives, more and more people will jump on the bandwagon. The business will then embrace data analysis as a vital tool and may even become addicted to it. Recent projects have shown some surprising insights and that ignites enthusiasm in the business. Of course, that's good. At the same time, we can't perform miracles or expect data analysis to solve every problem."

What is the future potential? Gisler has no fixed ideas on the future of data analysis in the health sector, as he believes it's a matter of a step by step discovery. "As of now, there's ample room for improving our own processes by adding more data intelligence and a tailor-made approach, even if we restrict ourselves to the use of anonymous data. But in the end, data analysis will lead to tailor-made advice on your personal health. As of now, it's uncertain what the killer app will be and who will take the lead. It's definitely a matter of earning the trust of the customer to use the data."

Integration of data across organizations and the value chain is key

"The data revolution in healthcare has been building for a while, driven by an explosion of information about the human genome, digitization of medical records and access to healthcare databases. This on its own does not really tell you anything, though - it is data in the most classical sense.

The exciting next step for Roche is applying our comprehensive knowledge of biology and medicine as Molecular Information. This is the interesting part as it is all about identifying and characterizing diseases. So you look at the mutations, build the correlation to the disease and finally build a correlation to the treatment. Combining pharma and diagnostics with information technology has the potential to bring Personalized Healthcare to a new level, accelerating R&D and improving patient care."

Hippe is aware that the revolution will need a persistent and consistent attitude, as there are quite a few obstacles to overcome. He points out that standardization and integration are essential on the road to success.

"For the healthcare industry, the challenge is to standardize and manage this data in order to gain new insights for fighting cancer and other serious diseases. The ability to integrate data across organizations and the value chain is key, from discovery to real-world use after regulatory approval. This requires standards for consolidating, characterizing, validating and processing data. Roche has a long history of investing in data and analytics. We have already addressed a lot of the technology challenges posed by big data in a very pro-active way.

To help with some of these challenges over the last two years, we acquired 11 companies, adding key capabilities to efficiently aggregate and analyze molecular information.

The use of sophisticated tests and analytical tools such as those from Foundation Medicine are already helping oncologists today by providing a characterization of the tumor and matching it with treatment options."

Predicting the future is impossible. Nevertheless, can you share some insights on the future potential of D&A for Life Sciences and how the access to better information and D&A will impact the industry in the next five years?

Dr. Alan Hippe is Chief Financial and IT Officer at Roche, a company operating at the forefront of the data revolution in pharma. He elaborates on the use of D&A and the future prospects for improving the lives of patients.

"There are clear benefits for patients. One element is smarter R&D, the other is better and targeted patient care. In R&D what is already tangible is the ability to move towards more targeted prospective studies based on retrospective analysis. Where we can predict how certain patient populations will respond to a disease and a particular treatment. This is an area where we are already seeing an impact.

What will be completely new is that we will be able to monitor patients over time. Molecular signals change over time and being able to get a clear understanding of how mutations in DNA and alterations in proteins develop will give us clear insights into how a treatment can be adapted to meet those changes. On the patient care side, when you have the data and the analytics in place together, we can really follow how a patient progresses based on the molecular signature. For example, you understand the genome of a patient, treat them with a certain medicine and then monitor how they respond over time and how the mutations change over the same time period."

To conclude: Information and D&A in Life Sciences offers a range of new possibilities in the marketplace. Innovations are rapidly changing the business landscape and fuelling customers' extreme expectations. How do you systematically explore these trends and how can you anticipate what patients need next?

"There are huge possibilities in these areas and we are anticipating and hoping for significant improvements for patients. For example, by using Data & Analytics across the value chain, our vision is that we will begin to be able to predict if and when a patient might relapse in the future. This could mean that hopefully patients can be brought on to new treatments proactively before a relapse.

As the amount and complexity of data and the opportunities described above increase, information management in our organization becomes more important. We are already working to implement advances in information technology, data storage and information sharing.

Nevertheless, all of these developments are still in their early days, and there are still many questions related to the standardization and compatibility of data from different sources. It is also essential to ensure data privacy and the appropriate regulatory oversight in these areas."

Do you know what you're looking for?

Most Google users will have noticed that the company has developed its search capabilities tremendously over the years. One of the major improvements is that Google is now doing a better job at "guessing" what you are actually looking for when typing a simple search string. It can do this because it has information about you: Google may know your current whereabouts, your profession, your expertise domains, your schedule for this week and so on. This context is very helpful in delivering results that really matter to you as a user: Google provides you with tailor-made answers instead of a list of results that are 99% meaningless. Or at least, it tries to.

Now let's jump to a business environment. And ask yourself the question: do your employees have this kind of contextual information in their professional work? Very likely the answer is no, and that is exactly why Dorian Selz started Squirro to fill in this niche area. When developing local.ch – Selz was the founder – he experienced how people used search strings – "an average of 1.23 keywords as search input is not being very precise in describing what they are looking for" – and concluded that a novel approach is needed to actually figure out what users want.

The classic problem of search: if you want to find something, you need to know precisely what you are looking for. Often, this is not the case.
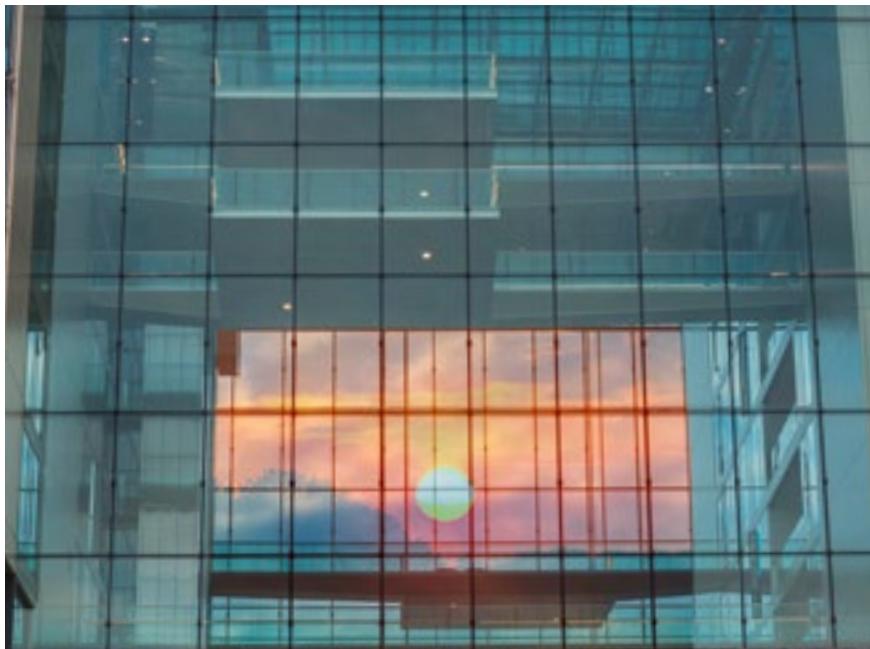
The mission of Squirro is simple: Get the right information at the right time in the context of your work. Turning this into everyday practice is a lot more complicated. Selz can slice it into 3 steps. "The first one to crack is the context. An example is an employee who has contact with a customer. In this case: the relationship with this client is the context. The second one is getting access to and

Dorian Selz is CEO of Squirro, a Swiss company that enables context based search to solve this problem in business environments. He explains why this is important and shares his view on D&A in Switzerland: "Opportunities are plentiful; a 'wait and see' attitude is dangerous."

understanding of the data. This data is often available in lots of different structures and databases – internal and external - and with a variety of definitions. The third one is to offer a coherent user experience. Using this context intelligence should be intuitive. It should be so easy that you don't even need to train people."

Successfully dealing with these three challenges will make sure that – for instance – an employee who is calling a client has all the relevant insights of this client at his disposal – without even typing key words in a search box. This is enabled by a system that collates and analyses data across multiple systems both internal and external to the company. The system learns patterns that we would normally miss and also learns from human behavior to improve the "search results".

This contextual intelligence – aimed at more efficiency and more effectiveness – is of course just one of the domains where D&A has potential. How does Selz perceive the Swiss business landscape in the perspective of D&A? "Switzerland has a number of strong industries where D&A has potential. Take the pharma sector, where a wealth of data is being used to develop new drugs. And take the banking industry. Banks basically thrive on data. In a way, the financial crisis has been a blessing in disguise as it has pushed them into making better use of the data, thereby delivering better value to the customer. Laws and regulations have forced them into getting their data in order and many banks are changing their business models and starting experiments. I sincerely hope that they are doing so out of a desire to discover new frontiers, rather than as a reactive response to the laws and regulations that are transforming the financial industry. More generally I see that as a danger for Switzerland: a culture of 'wait and see' instead of eagerness to discover new worlds."

To conclude: Does Selz have any generic advice for companies with respect to D&A? "Start small. You will be surprised to see what comes up when you sit around with some people in a workshop to look at the data landscape and the corresponding opportunities. These discussion may lead to cases of more concrete use, and successful implementation sparks enthusiasm to explore more potential. On the other hand, starting with big hairy goals has a risk: if you don't succeed, it will be harder to jump on the bandwagon of D&A a second time."

GLOBAL
SURVEY

VAL·UE

/'valyoo/

Noun:
The achievement of an outcome that
has importance, worth or usefulness
to an organization.

About this research

> At KPMG, we help to deliver value from D&A by helping clients create solutions to their business problems in a way that allows them to achieve measurable improvements across the three key areas of cost, growth and risk.
>
> **Christian Rast, Global Head of Data & Analytics**

This report is based on survey data collected from 830 senior business executives across more than 15 countries. The survey was conducted on behalf of KPMG International by an independent research partner between August 2014 and January 2015 and was augmented by one-on-one interviews conducted in May 2015 with sector leaders and KPMG subject matter experts.

The survey represents a wide variety of the following:
- Job titles, including Chief Financial Officers, Chief Marketing Officers, Chief Human Resources Officers, Chief Information Officers, Chief Analytics Officers and Chief Executive Officers
- Industries, including Telecommunications, Healthcare & Life Sciences, Retail, Insurance, Banking and Industrials & Chemicals
- Markets, including Australia, Brazil, Canada, China, France, Germany, India, Japan, Mexico, the Netherlands, Singapore, Spain, Switzerland, the UK and the US
- Viewpoints, including comments, analysis and insights from global organizations, international services organizations and KPMG's own network of experienced professionals around the world

Thanks to our contributors:
Nova Spivack, CEO and Co-founder of Bottlenose. Mr. Spivack is a serial technology industry entrepreneur and recognized thought leader on search, Big Data, cognitive computing and the future of the Internet.

Dr. Mark Kennedy, Director of the KPMG Centre for Advanced Business Analytics and Associate Professor in the Department of Management, Imperial College Business School, London. Dr. Kennedy's research focuses on the emergence of new markets and industries and the more basic building blocks of organizing – categories, identities, forms, strategies, practices and reputation.

D&A enters the mainstream
Address the issues you are facing

Most clients do not ask for a D&A solution; they ask for a solution to a specific business problem. Understanding your biggest issues will direct you to where you can best focus D&A to address them.

Back in 2013, almost seven out of every ten senior executives agreed that they needed to do something about D&A. But a staggering 96 percent also admitted they were not using D&A effectively.

Today, evidence points to the fact that D&A is enjoying widespread adoption across the enterprise and around the world. And while certain markets and sectors may seem further ahead, it is clear that industry sectors now understand that D&A will be a game changer.

Ask business leaders if their organization uses D&A and you will hear a resounding "yes". According to our survey, 97 percent of business leaders say they already use D&A to manage risk (two of the remaining three percent say they will adopt D&A for risk within the next two years). More than nine out of ten say they already use D&A for sales and marketing purposes.

Current uses of D&A

CURRENTLY USING

RISK		97%
SALES AND MARKETING		92%
FINANCIAL MANAGEMENT		87%
RESEARCH AND DEVELOPMENT		80%
FINANCIAL STATEMENT AUDIT		77%
SUPPLY CHAIN		77%
TAX MANAGEMENT		75%
HUMAN RESOURCES		75%
CAPITAL ALLOCATION		74%

D&A enters the mainstream
Understand that the insights do not come from data alone

They come from analyzing the data and working across silos to map this back to the issues and challenges the business is addressing.

Our data also shows that D&A adoption is starting to spread across the organization. In fact, more than three-quarters of respondents said they already use D&A in areas such as Research & Development, Supply Chain, Human Resources and Finance. Most of the rest say they plan to adopt D&A in these areas within the next two years.

At the same time, the motivation and drivers for adopting D&A are also starting to shift towards value creation. Almost half (47 percent) of respondents said that improving productivity is the primary driver of their D&A activities, while 37 percent said that sales growth drives D&A

activity. Only one in six cited cost reduction as their prime motivation.

"Finding areas of potential cost reduction is about looking at historical data and benchmarking your cost structure to find savings and anomalies, whereas identifying new growth opportunities and productivity improvements requires organizations to be more predictive in the way they use and interpret their data," notes Christian Rast, Global Head of Data & Analytics at KPMG. "At the end of the day, growth and productivity are about adding value to the organization, something that D&A excels at."

Greatest motivation for D&A

- Reducing costs — 16%
- Generating sales growth — 37%
- Improving productivity — 47%
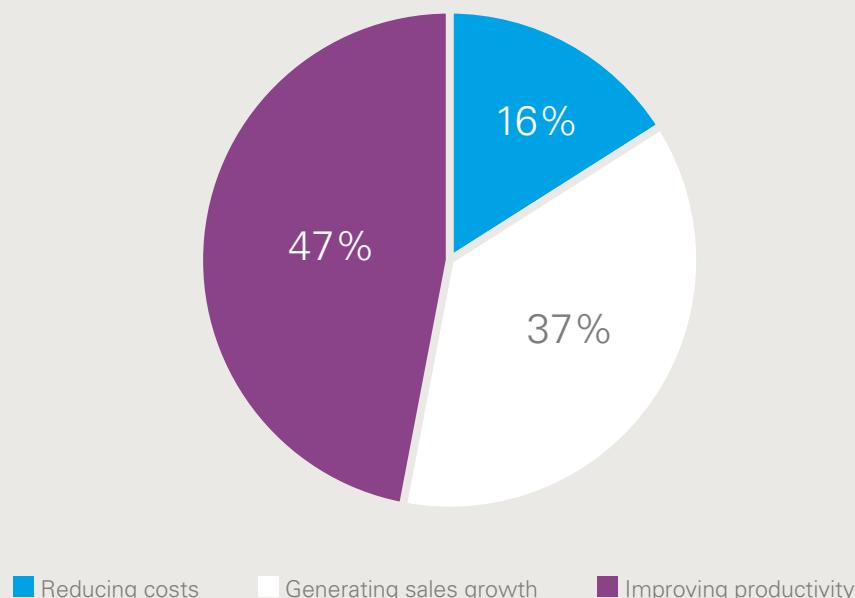
D&A enters the mainstream
Go beyond point solutions

Transcend individual projects to move towards an overarching enterprise-wise D&A strategy that underpins investment decisions.

D&A implementation varies by region
Interestingly, respondents from Germany seem more focused on reducing costs than their peers, while those from China were most focused on improving productivity. However, looking across markets it seems that most are focused primarily on either improving productivity or generating sales growth.

Similarly, retailers were the least likely to say their D&A initiatives were focused on cost reductions and were most likely to cite sales growth as the top motivator. Respondents from the Telecommunications, Insurance and Banking sectors all suggested that improved productivity was the top driver behind D&A.

As Torsten Duwenhorst, Lead Partner of Data & Analytics for KPMG in China, says, "We have seen rapid take-up of D&A strategy in the China market, where homegrown platforms underpinning the rise of online transactions are of particular interest, as well as the increasingly important roles of social media and mobile devices. These trends are fundamentally reshaping the way consumers in China purchase goods and services, and how businesses operate online. We have therefore seen a significant increase in the volume of customer data through transactions and social media in China, as well as new mobile and targeting technologies that enable companies to understand and predict customer preferences."

However, while reported adoption rates seem very high, questions remain as to how advanced these capabilities are.

Understand that the insights do not come from data alone. They come from analyzing the data and working across silos to map this back to the issues and challenges the business is addressing.

Many organizations are certainly using D&A-type solutions to generate insights from their enterprise data; the real question is to what extent this is really advanced analytics or just marginally more sophisticated management reporting. D&A increasingly means combining the right tools, capabilities, algorithms and technology to analyze multiple sources of information in near-real-time. Without that, organizations may never be able to reach a stage of maturity where they can conduct more advanced activities such as predictive analytics, pattern recognition, anomaly detection and so on.

Nadia Zahawi, Director, Global Data & Analytics

**MOST IMPORTANT DRIVERS OF D&A**

TELECOMMUNICATIONS

23%
17%
60%

INSURANCE

15%
25%
60%

RETAIL

7%
20%
73%

HEALTHCARE & LIFE SCIENCES

14%
36%
50%

BANKING

15%
27%
58%
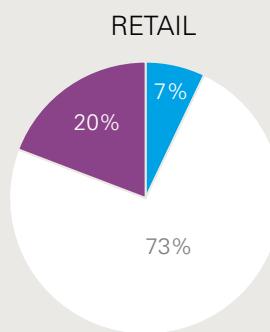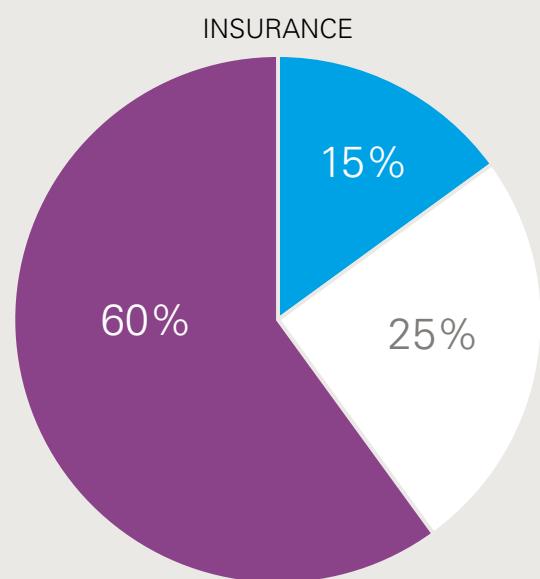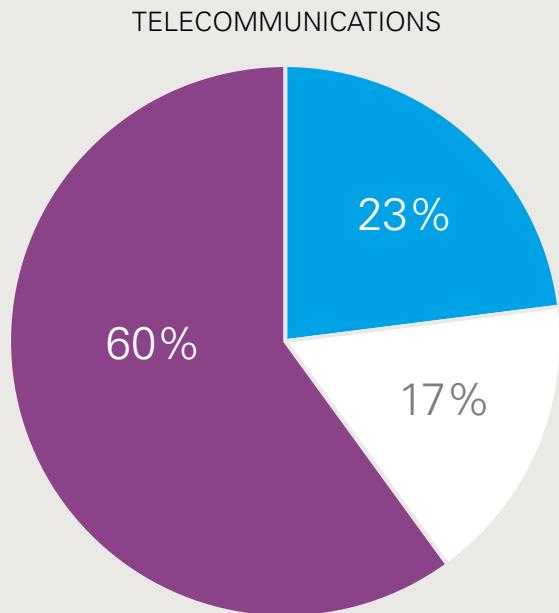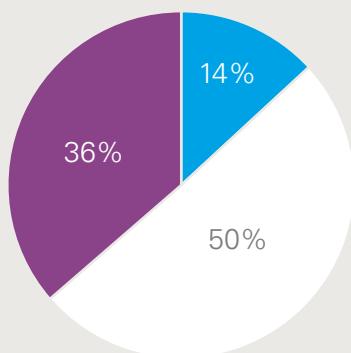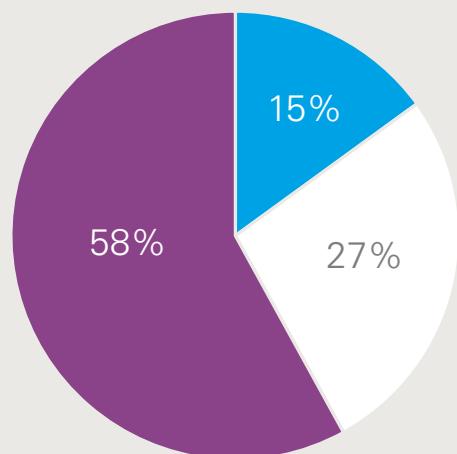
■ Reducing costs   ■ Generating sales growth   ■ Improving productivity

FOCUS

on customers

92% use D&A for marketing purposes

72% say they are regular or heavy users of social media data to improve customer relationships

81% say D&A has improved their understanding of customers

41% say D&A has helped them create more targeted offerings to prospective customers

Delivering actionable insights
Define what value you are looking for

What is it you want to achieve? Is it reduced cost? Better risk management? Improved customer experience? The truth is that "value" differs depending on the issue you are dealing with.

As organizations improve the sophistication of their D&A capabilities and activities, many are starting to find that their greatest challenge lies not in uncovering insights from their data, but rather in creating actionable, business-driven insights that ultimately lead to tangible and sustainable value for the business.

As Gartner noted when they first published the Hype Cycle Model[2], most organizations tend to set out on a technology journey with somewhat inflated expectations, often followed by what Gartner termed the "Trough of Disillusionment" as expectations are missed and value is questioned.

Are the necessary building blocks in place to turn insights into value?
Our data indicates that, while adoption may be widespread, most organizations continue to struggle with some of the fundamental building blocks required to move from data to insights, such as improving the reliability and accessibility of data. Indeed, more than half of all respondents said they are still experiencing difficulties evaluating the quality and reliability of their data.

In most organizations, customer data is often fragmented across almost every function in the organization – from finance and risk through sales and customer service – and this data needs to be brought together to achieve a richer understanding of the customer. But organizations can't just see this as a data or technology issue – driving real value from customer data requires multiple stakeholders to come together to agree on what they want to achieve together and, therefore, what questions to ask the data.

**Anthony Coops, Partner, KPMG in Australia.**

[2] http://www.gartner.com/technology/research/hype-cycles/

Delivering actionable insights
Current and future benefits to competitiveness

Operations

	CURRENT BENEFIT	POTENTIAL FUTURE BENEFIT
FASTER DECISION MAKING	86%	9%
IMPROVED DIALOGUE WITH CUSTOMERS	81%	13%
MORE ACCURATE DECISION MAKING	80%	18%
INDIVIDUALIZED MARKETING	31%	62%
IDENTIFICATION OF NEW REVENUE STREAMS	24%	73%
PREDICTION OF FUTURE MARKET TRENDS	16%	80%

Strategic

	CURRENT BENEFIT	POTENTIAL FUTURE BENEFIT
GREATER EMPLOYEE SATISFACTION	77%	13%
ENTERPRISE-WIDE ACTIONABLE INSIGHTS	72%	23%
BETTER-TARGETED PRODUCTS	70%	25%
REDUCED BUSINESS RISKS	67%	30%

FOCUS

on risk

97% say they currently use D&A for risk management

87% have avoided a significant risk as a result of using D&A

36% face challenges translating data into actionable risk management insights

63% use D&A on a monthly basis for decision making

7% use it daily

"From the early detection of new risks to the ongoing monitoring of controls and systems, D&A can help organizations and their boards significantly reduce their risk profile," noted Paul Tombleson, Partner, KPMG in the UK. "In the Financial Services sector, for example, organizations are using advanced analytics to not only monitor conduct risk, but also to predict – and then avoid – potential misselling situations. The more advanced organizations are then using the same data to develop new products, identify new markets and improve their customer experience."

Turning insights into value
Measure your success

What is it you want to achieve? Is it reduced cost? Improved risk management? Improved customer experience? The reality is that "value" differs depending on the issue you are dealing with.

Capturing value from your D&A initiatives requires three ingredients: actionable insights, strong change management processes and executive support. But more than anything, it requires organizations to take a fundamentally different approach to D&A that starts with understanding what the business wants to achieve and then aligning the D&A tools, capabilities and data to support that.

As our survey suggests, organizations around the world (and their boards and investors) are increasingly looking to connect the insights they are creating from their D&A programs to value generation. Many are finding that much value remains untapped and – while insights may be flowing from the data – very few seem to have figured out how to drive value from that information.

"The truth is that an insight is nothing more than information until you use it to actually change something; maybe it's a new process or an improved control, or maybe it's a new product strategy or a tailored offering to an individual customer – the trick is in knowing what you want to change and then applying the right D&A tools and algorithms to get there," notes Anthony Coops.

Interestingly, while respondents cited challenges related to talent, data quality and education as barriers to adoption, they were far more likely to suggest that improved analytics techniques will be the key to unlocking new revenue from their D&A capabilities.

Better alignment
While improving analytics techniques will certainly be important as the business becomes an increasingly sophisticated consumer of D&A,

particular focus will first need to be placed on creating better alignment between the business and the analytics process, which will allow IT and business leaders to better understand what improvements and capabilities might be required to better support the business.

According to Dr. Mark Kennedy with Imperial College, London, "Many people seem to be doing a pretty good job at gathering reliable data together and doing some analysis on it. The challenge is that there is often a disconnect between the people who are doing the analytics work and the people who actually have to make the decisions based on those insights and then implement them."

"Very rapid change is a challenge for any organization, and with D&A, it is particularly acute. Organizations now see three drivers of a big gap between the vision and the reality of D&A: the gap between early adopters and laggards (both within and between organizations), the gap between data-savvy and non-data people, and the gap between those at the peak and those in the trough of Gartner's Hype Cycle," observes Nadia Zahawi. "These gaps become a particular challenge when organizations try to take the leap from insight to value because it becomes hard to align expectations and build a common understanding of what needs to be done to deliver maximum value."

Top priorities to drive revenue from D&A

84% IMPROVE DATA ANALYSIS TECHNIQUES

66% INCREASE ADOPTION ACROSS THE BUSINESS

66% IMPROVE DATA CAPTURE

52% BUILD UNDERSTANDING OF HOW TO USE D&A

HIRE TALENT TO DEVELOP D&A CAPABILITIES **28%**
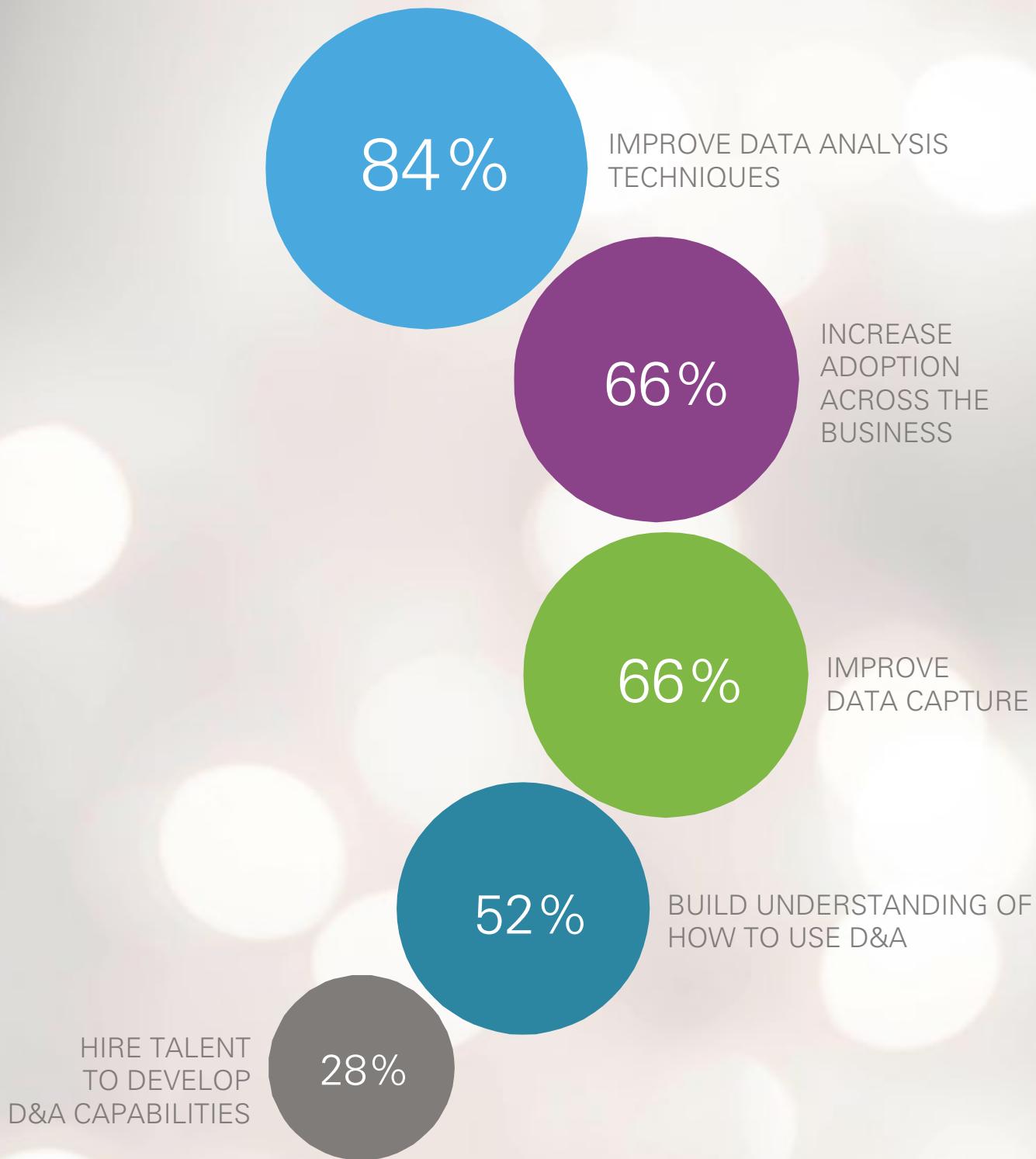
Note: respondents were able to select more than one answer.

KPMG POINT OF VIEW

FOCUS TOPICS

KPMG point of view
How to outsmart your peers: a heel-and-toe strategy

A good Data & Analytics strategy has the potential to improve the financial performance of your company. We can distinguish three domains for creating value: realizing growth, controlling risk and optimizing performance.

The question is: how can executives outsmart their competitors in (a combination of) these domains? One basic condition is that companies must be able to adapt to changes to be tomorrow's winners.

Therefore, business leaders need a profound understanding of what's happening in the field of Data & Analytics in order to have a clear outlook on their options.

Every Data & Analytics strategy is in fact a balancing act. On the one hand, it is about imagining new opportunities, and some of these can only be lighted upon when the business strategy does not smother unorthodox or even weird ideas. However, a fully experimental journey is rarely very rewarding for the business. That is why, on the other hand, the problems in the business should always be the start of a journey into the possibilities of Data & Analytics. The challenge is to empower the business while at the same time having the flexibility to profit from new opportunities that are uncovered during the journey.

We can draw an analogy with moonshots versus incremental wins. Moonshots are disruptive innovations that create radically novel products and new markets. To explore this domain, business leaders should not grant their employees an unlimited license to experiment. Rather, they should facilitate experiments under strict governance. This is comparable to the heel-and-toe technique used by professional racing drivers, which involves operating the throttle and brake pedal simultaneously with the right foot in order to raise the engine speed and smoothly engage the lower gear.

At the same time, being successful in the age of Big Data depends not only on moonshot projects but also on incremental improvements. Combined, these improvements act as an important factor in competing with other companies. The good news is that with the continuously decreasing costs of storing, handling and analyzing data, it is becoming more and more attractive to put small wins into practice. Therefore, it is essential that companies develop capabilities in this domain.

Furthermore, good governance is essential to make sure that Data & Analytics projects live up to expectations and that their potential is more than "vaporware": applications that are announced to the general public but never actually manufactured or officially canceled. Executives are in the position to make sure that Data & Analytics projects and departments get the power and the resources that are needed to succeed. Data & Analytics should not be considered as a support function to the business. It deserves to be in the driver's seat to be able to transform the business in the aforementioned three domains. Strong sponsorship from the top is an important prerequisite.

To conclude, we refer to the analogy of the oil industry again. In the early days of the oil industry, many "gold-diggers" were eager to find new oil fields, but had no idea if the land offered more than a promise. Drilling was a gamble that involved hoping for the best. This need not be the case when it comes to Data & Analytics: armed with proper insights into the potential results, the presence of data scientists and good governance, executives can remain in control of their Data & Analytics efforts. Succeeding with Data & Analytics is not a matter of luck. It is a matter of preparation.

Realising growth

A smart use of Data & Analytics may uncover new potential to grow current business or to start new business. Companies can develop new revenue streams, expand existing revenue streams, and gain greater customer insights.

Controlling risk

Data & Analytics may also offer very efficient and effective approaches for risk management and compliance requirements. These approaches are often cheaper than established ways of working. Moreover, it offers new ways for monitoring the abuse of authorizations and the detection of fraud.

Optimizing performance

Data & Analytics also offers room for improvement in the domains of process analysis, resource allocations and cost efficiency.

KPMG point of view
Are companies really going beyond the data?

In our opinion, executives need more than a D&A plan. They need an execution strategy to follow through on their D&A visions and reap the greatest benefits from D&A applications.

D&A is rising up the agenda – for executives, for business managers, for customers and for equity markets and investors, as explained in KPMG International's upcoming report Data and analytics: a new driver of performance and valuation. Nobody should doubt the progress that has been made over the past two years – most organizations should be fairly pleased with how quickly they have adapted to this new data-driven world.

Today's leading D&A organizations are now focusing on key topics such as how to bring Data & Analytics closer to the business, how to break down silos and encourage cross-functional approaches, how to refocus their activity around strategic imperatives, and how to prioritize what can be done by leveraging D&A.

However, this year's survey suggests that most organizations have not yet realized the full strategic importance of D&A. Clearly, most are now running D&A projects and the vast majority know that success depends on the ability to both tap into data and build the required analytics capabilities. Given the massive potential of D&A, it is not surprising that most also say they are already seeing value flow from some of the internal returns that come from cost cutting or greater productivity.

Our experience suggests that while some organizations are already making good progress gaining value from insights, it is limited to particular cases. The retail sector, for example, tends to demonstrate amazing sophistication when it comes to focusing on customers. Banks often shine when using D&A to look at risk. And a host of other sectors seems to understand how to extract value from insights when trying to improve productivity.

Those that are leading the pack, however, show that they increasingly understand the inherent value that insights can deliver across the organization. They are breaking down the internal silos and bringing the best of their data, people and technologies together across the enterprise. They are experimenting, innovating and being fast to fail. They are prioritizing efforts to make the most out of their limited resources, but, most importantly, they are acting on the insights they find.

We are convinced that most organizations do not yet see how D&A could transform their ability to serve customers and generate revenue in new ways. Many are simply following with blind faith the idea that D&A will eventually lead to improved growth or competitive advantage. And they are being driven by highly visible examples of companies that are successfully using D&A to innovate and create new value. But most do not yet have a clear vision of what is truly possible with D&A.

BIG DATA
ALONE ISN'T VERY SMART,
BUT THE APPLICATION OF EXPERT ANALYSIS?
BRILLIANT.

Management reinvented:
Say goodbye to intuition and experience

Management can be drastically improved by the use of Data & Analytics as it offers us better insights as input for decisions. But to do so, we must drastically reinvent the way we make decisions.

In the words of Ian Ayres, in his book Supercrunchers: "Instead of having the statistics as a servant to expert choice, the expert becomes a servant of the statistical machine." Nowadays, management is considered an "art": decisions are largely based on experience in combination with gut feeling. It is our human nature to interpret the past and use this as the basis for our judgments of the future. Most managers believe they're pretty good at making decisions and sometimes even ignore hard facts. They are convinced that their judgment and intuition are better than an algorithm. The reality is: it's not. Computer algorithms are already better than humans at diagnosing cancer, predicting supplier reliability, general election results and many other areas abundant with data. However, it will probably take a few decades for boardrooms to accept this.

D&A – A NEW DRIVER OF PERFORMANCE AND VALUATION

In the next several years investors and equity analysts believe Data & Analytics will have a substantive and dramatic impact on the companies and sectors they cover. D&A will alter the competitive landscape, rewarding some companies and punishing others - especially in the longer term. "Across all industries, there's no escaping it," says a buy side analyst focused on the technology industry. In response, investors and analysts anticipate that companies' strategic use of Data & Analytics will play a greater role in both investment decision making and valuation.

The KPMG International report Data and analytics – a new driver of performance and valuation confirms that D&A strategies have moved beyond boardroom discussions and now impact the capital markets. Investors are more likely to reward those who can effectively showcase their D&A strategy and its results with higher evaluations and more favorable investments. More than half (54 percent) of investors and equity analysts participating said that they expect companies' D&A strategies to cause a disruption in sector dynamics over the next three years, with many commenting on the appeal of data-driven organizations to their investment portfolio.

Today, most companies are not doing a satisfactory job of explaining either their D&A strategy or the results that will accrue from it. We believe that telling that story effectively will be a major focus for companies in the next decade.

IT HAS BEEN SAID THAT
NUMBERS DON'T LIE.
WITHOUT EXPERT ANALYSIS HOWEVER, THEY DO **OCCASIONALLY.**

The talent battle

Organizations that take Data & Analytics seriously should invest in this domain, as it is more than crunching data with the off-the-shelf tools. The basic capabilities are of course in the domain of statistics in combination with the use of specialized tooling.

However, this is really just the basics. Data scientists must also be able to fully understand the business context as this is essential for spotting new sources of value and imagining new products, services and business models. Seamless cooperation with business professionals is also called for, along with the willingness to conquer potential cultural clashes between the "hoodies" in the world of the data scientists and the "suits" in the business context. Ergo: you need highly educated professionals that are smart, collaborative, curious, social and creative. And we know that there is a shortage in talent…

A recent article in The Wall Street Journal said data scientists are a hot commodity. They are called "unicorns" because of the combination of skills they must possess. The ideal candidate "must have more than traditional market-research skills: the ability to find patterns in millions of pieces of data streaming in from different sources, to infer from those patterns how customers behave and to write statistical models that pinpoint behavorial triggers." It is a fact that we can't do without highly skilled data scientists to make sure we don't jump to wrong conclusions in the data driven society.

Skilled data scientists that are fully aware of the risks of misinterpreting data. In scientific lingo we talk about the Simpon's paradox, an example of which is given by statistics on the use of life jackets. These show that people not wearing life jackets survive more often in case of an emergency. Although this is counterintuitive, it does make sense on closer examination: sailors wearing life jackets are more likely to be experiencing bad weather conditions, which is a dominant factor in survival. A good data scientist would notice this sampling bias - would be able to look beyond the obvious. This is the main argument why D&A is much more than number crunching by fast computers.

WAR FOR TALENT – TIME TO CHANGE DIRECTION

In the fifteen or so years since The War for Talent changed how companies manage talent worldwide, HR approaches that overly focus on high performers have become deeply entrenched. Now, after the economic crisis, the war for talent appears to be back in full force – and companies that take a fresh look at their tactics stand to gain more competitive ground as a result.

Source: KPMG's HR Center of Excellence Survey 2014

WHERE SOME SEE
ONES AND ZEROS,
WE SEE
OPPORTUNITY.

KPMG point of view
Ask the right questions

Don't do D&A just for the sake of doing it. Prioritize your insights and understand their potential value, not only in terms of the "size of the prize", but also in terms of speed and complexity.

Companies using D&A in marketing said the greatest impact of D&A has been on improving information about customers (arguably a passive activity) versus using that information to create more tailored customer offers or to decide which services to launch.

Largely because of the gap between insights and value, many organizations said the greatest benefits from D&A stem from achieving faster, more accurate or better-informed decision making rather than the discovery and application of new growth opportunities or risks. As a result, many seem to be missing out on some areas of enormous potential, such as individualized marketing, the identification of new revenue streams and the prediction of future market trends.

"Companies are getting really good at collecting data, but they are having big problems connecting it. Analyzing a single source of data will never drive real value; it takes multiple streams of data to get real insight," says Nova Spivack, CEO, Bottlenose.

KEY QUESTIONS

Receive a lot of data, but little or no insights?

Trust the data to make decisions?

Utilize information to predict future behaviors at specific levels of confidence?

Have the ability to analyze/combine information from across functional areas to gain full process insights?

Know how the business is doing against its goals?

THE GENIUS OF
BIG DATA
IS NOT THE MOUNTAINS YOU BUILD.
IT'S THE VIEW YOU GET
FROM THE TOP.

EIGHT KEY TA

1
ADDRESS THE ISSUES YOU ARE FACING

Most clients we work with do not ask for a D&A solution; they ask for a solution to a specific business problem. Understanding your biggest issues will direct you to where you can best focus your D&A capabilities.

2
UNDERSTAND THAT THE INSIGHTS DO NOT COME FROM DATA ALONE.

They come from analyzing the data and working across silos to map back to the issues and challenges the business is addressing. D&A is a team game.

3
GO BEYOND POINT SOLUTIONS

Transcend individual projects to move towards an overarching enterprise-wise data-driven culture that underpins investment decisions.

4
DEFINE WHAT VALUE YOU ARE LOOKING FOR

What is it you want to achieve? Is it reduced cost? Better management of risk? Improved customer experience? The reality is that "value" differs depending on the issue you are dealing with and its relative importance to the business.

KE-AWAYS

5
FOCUS ON CUSTOMERS

Ask yourself how to use new forms of data and algorithms to automate decision making in order to bring greater customer service and expand your capacity to transact profitably with customers.

ASK THE RIGHT QUESTIONS

Don't do D&A just for the sake of doing it. Prioritize your insights and understand their potential value (not only in terms of the "size of the prize", but also speed and complexity).

6

7
MEASURE YOUR SUCCESS

Use your successes and evidence of the value created to fund more projects and share your expertise and knowledge across the organization.

8
ENGAGE EARLY WITH STAKEHOLDERS

Articulate the value of D&A to the business and to investors who increasingly see D&A as a transformative strategy, not simply as a way to bring greater insight to your existing business problems.

About D&A and KPMG

D&A, at its core, is a new way of solving problems with insights and innovation. Data sources are exploding, and businesses need to turn data into insights and value. Our D&A strategy focuses on understanding the overall data landscape and getting to the heart of your problems so that our member firm professionals can help solve your most pressing growth, risk and cost concerns.

KPMG has taken a number of steps to develop innovative solutions that help clients unlock the value of their data:

- KPMG Capital is an investment fund focused on accelerating innovation in D&A services and solutions to help clients of member firms unlock tangible value from their data. KPMG Capital is focusing its investments on solutions that address the client issues of risk, cost and growth. For example, KPMG Capital recently invested in Bottlenose, a company that provides stream intelligence to enable enterprises to identify, anticipate and monitor the trends that drive their businesses.

- In March 2015, KPMG announced an expansion of its strategic relationship with Microsoft to include a global collaboration to jointly deliver

new suites of innovative solutions and services in D&A, cloud compliance and transformation, and business solutions.

- KPMG member firms have announced a number of acquisitions and partnerships that are designed to offer D&A and digital solutions to clients helping manage risk and cost, and drive growth.

Across sectors and countries, through our Tax, Audit and Advisory services, we can help you gain new insights to remain competitive and relevant. With 4,300 KPMG specialists across the globe focused on delivering D&A capabilities, we believe that KPMG member firms are uniquely placed to solve your biggest business issues and generate real value for you, your company and your shareholders.
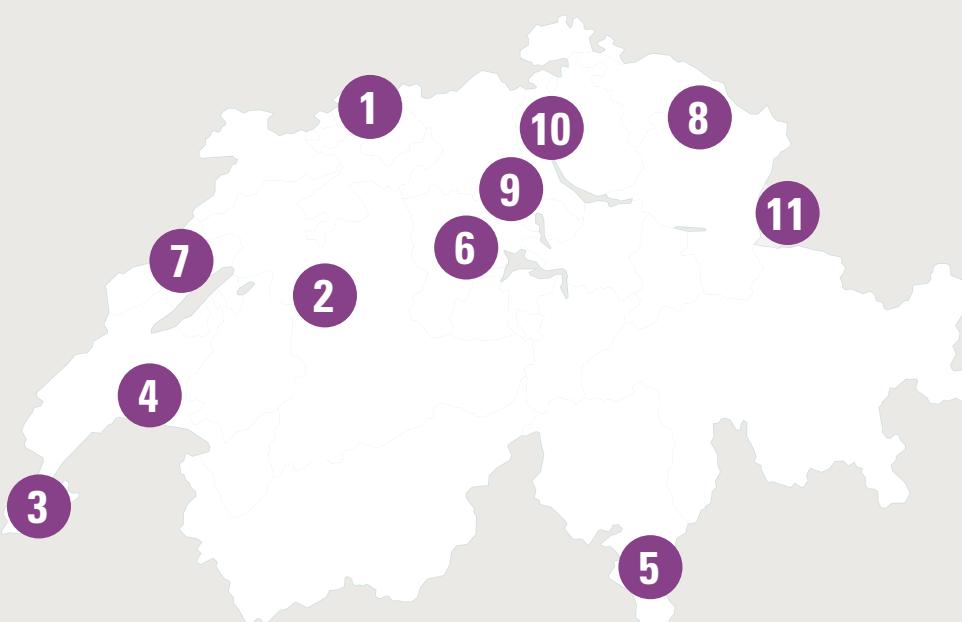
LOCATIONS

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LUZERN 6
NEUCHÂTEL 7
ST GALLEN 8
ZUG 9
ZURICH 10
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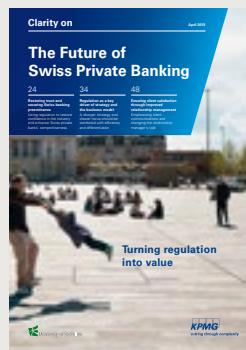
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