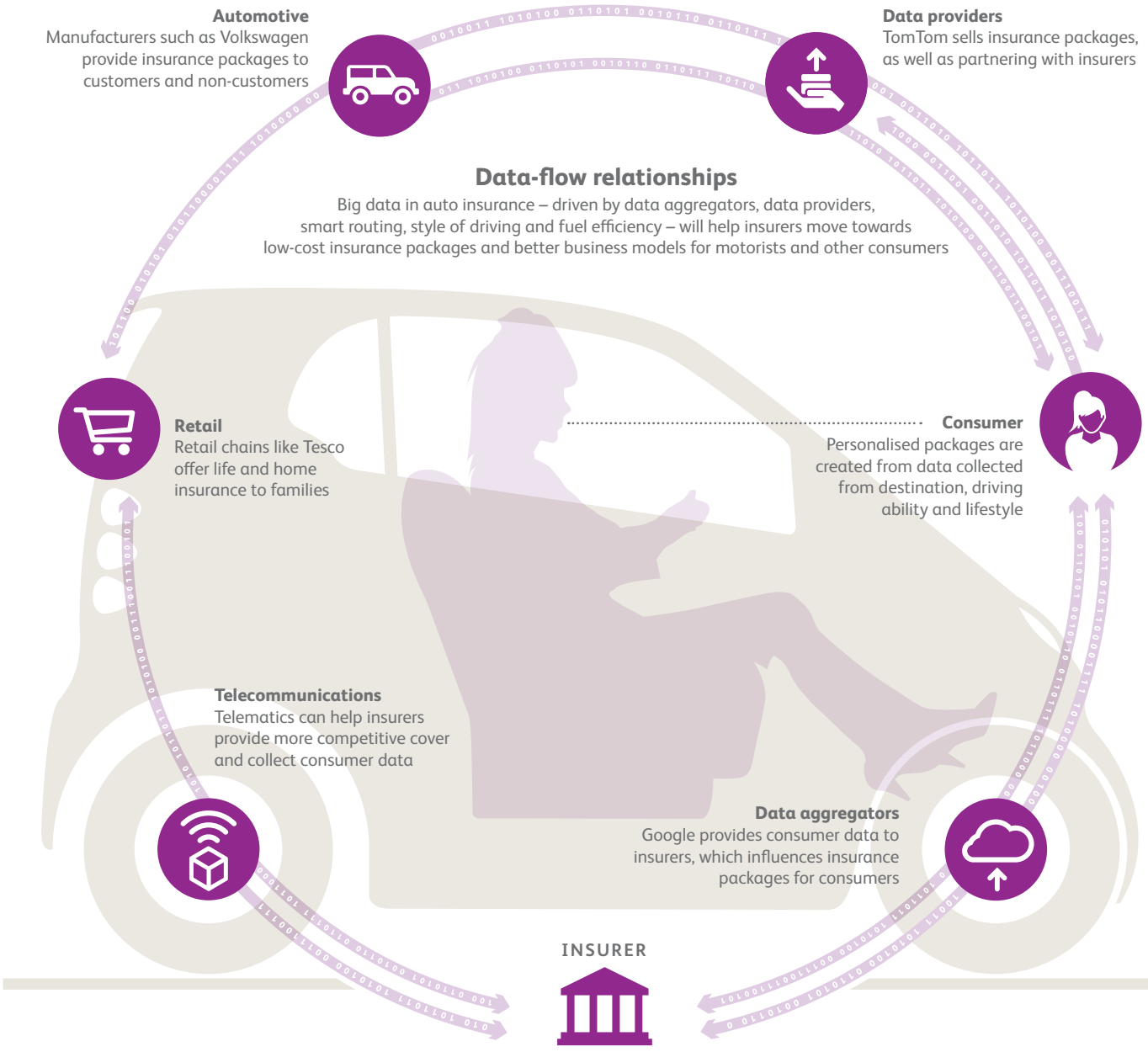
BearingPoint® Institute

The smart insurer: more than just big data

Adapting to the new information-centric world order isn't just about technology or skills: BearingPoint Institute's five pillars of big data offer a firmer foundation

Big data brings a host of new players to the insurance ecosystem

Telecommunications, retailers, automotive companies and data providers/aggregators are the new players innovating the insurance ecosystem



Personal data: abundant and affordable

Personal milestones in life, such as moving home, getting married or becoming a new parent, prompt major changes in buying patterns and generate valuable data for insurers at bargain prices

General information, such as age, gender and location is worth

€0.36

per 1,000 people

Car buyers are worth about €0.0015 per person, or

€1.53

per 1,000 people

To access a group of people with specific health conditions or taking certain prescriptions costs data buyers

€0.18

per person

Sources: BearingPoint, Financial Times, Telecom Engine, Volkswagen, Tesco, Google

Barely an hour goes by when each of us doesn't shed valuable data that can be collated to paint a picture of our lives, but more importantly, predict our futures. Being privy to such information brings great power and insurance companies should act quickly to build five pillars to rebuff threats from data aggregators such as Google.

Looking beyond big data – the view of the insurer

Faced with margin pressures coming from many angles, from natural disasters to increased lifespans, insurers are acutely aware of the value that can be offered by so-called 'big data' – the collation and advanced analysis of large volumes of data. For example, the total cost of insurance fraud, not including health insurance, is estimated to be more than USD 40 billion per year. A number of major insurers, including Allianz, AXA and AIG, are already harnessing the power of big data analytics to combat such challenges using technologies such as voice biometrics, call behaviour, and other metadata[1] against known fraudulent behaviours.

All the same, data is growing faster than organisations know what to do with it in terms of volumes and the variety of external sources now available. The promise that such data gives to the insurance industry is tantalising – Eric Schmidt, Executive Chairman, Google, comments that insurance is 'about to explode' with uses for big data.[2]

This stands to reason: after all, insurance is actuarial at its heart, based on the ability to assess risks and share the cost of their mitigation. The insurance sector has a long history of creating and leveraging mostly domain-specific, data-oriented models. Some of the first insurance schemes in Europe involved cooperative endeavours to protect against the threat of fire damage (notably, in the UK, following the Great Fire of London[3]). Further afield, data-driven micro-insurance schemes are today seen as a mainstay of improving health and wealth in developing countries[4].

IN 30 SECONDS

- Insurance industry 'set to explode' from big data advances
- Our research shows big data benefits are recognised at a strategic level, but activity on the ground lags behind ambition
- Digital companies with access to vast volumes of data are moving into the insurance market; insurers cannot afford to respond slowly
- We identify five pillars of emerging best practice which directly respond to the challenges faced across the industry

As the amount of data grows, the business has to progress with it. This implies allowing for dynamic data analysis, fast solutions and answers.

A SURVEY RESPONDENT

The still-recent big data explosion has created a new ecosystem of data sources, incorporating a diverse range of new players from telecommunications, retail and automotive companies, to domain-specific data providers and aggregators

The still-recent big data explosion has created a new ecosystem of data sources incorporating a diverse range of new players from telecommunications, retail and automotive companies, to domain-specific data providers and aggregators. As well as acting as valuable sources for insurers, such organisations are building their own capabilities with an aim to enter the insurance market, potentially with the benefits of less legacy baggage and a set of market-disrupting data assets.

For insurers, this ecosystem presents both opportunities and threats to the business model most insurance companies still have today. For example, some new players might address and approach only parts of the insurance value chain and offer potential partnership opportunities. Others will become direct competitors and will leverage areas of competitive advantage such as client intimacy and insights.

So, how can the insurance industry fully embrace the wealth of data now becoming available and translate it into business value? And how can insurance companies make sure they are not being left behind or locked out by new ecosystem players? We undertook a global research study of insurance companies to answer these questions and gain a deeper understanding of the challenges. This research encompassed their attitudes, strategies and activities with respect to big data and advanced analytics (BD&AA).

Insurers are still at the big data starting blocks

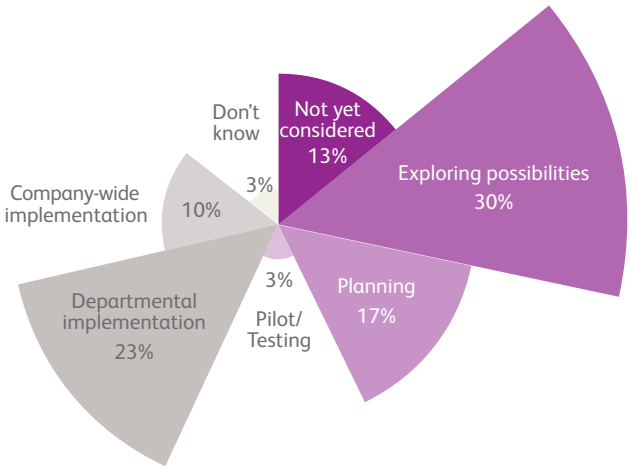
The research confirmed our main hypothesis derived from experiences on client projects: insurers are still at the starting blocks of exploiting the potential that big data can bring. The majority of organisations that we researched were highly positive about what big data might be able to do for their company, with over two-thirds of respondents confirming big data's place as a 'value driver' and having a highly important future role. However, less than a quarter felt that they were beyond the 'emerging' stage of experimenting with the capabilities, or had done anything beyond starting to explore opportunities.

How can insurers move beyond aspiration to exploitation? From analysis of the research and of our own client experiences, we believe the answer lies not in thinking about data as a mountain to be mined, but rather as a process to harness a growing number of powerful new sources of insight to the benefit of the insurer and its customers. While new areas of benefit may emerge, a more logical starting point is the existing areas of the business – as David Castellani, Business Information Officer, New York Life states: 'Insurance companies expect from big data a risk reduction and enhancement of underwriting.'

Indeed, whilst we asked 12 questions about potential target areas for big data, the results grouped into three clear categories, in order of priority:

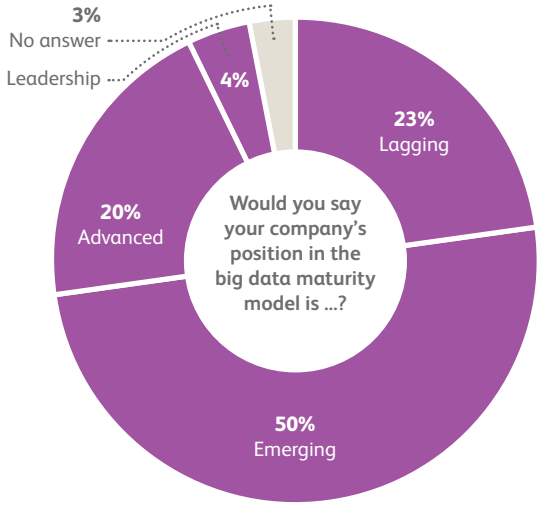
- Identifying new opportunities and delivering new services to customers
- Addressing internal efficiency and improving overall steering
- Offering a strategic overview of existing and new business domains

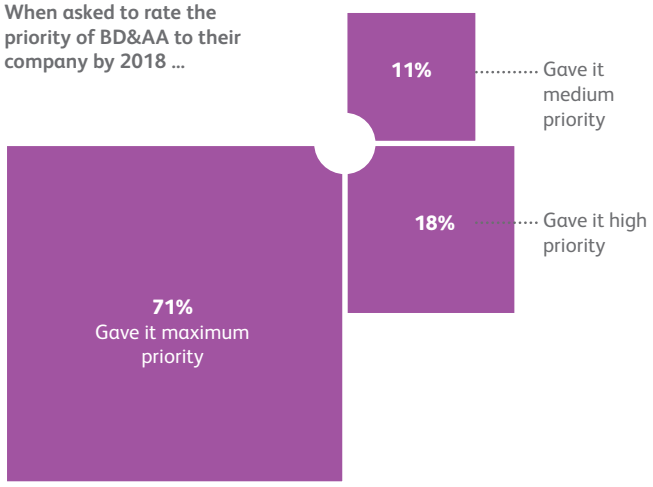
Figure 1: Most insurers are still in the starting blocks of exploiting the potential of big data
What stage is your company at in implementing a BD&AA strategy?



Source: BearingPoint Institute

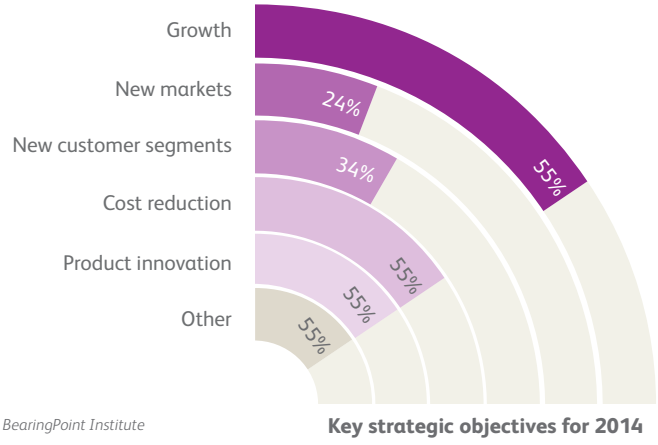
Figure 2: Although 73% of respondents admit their company has a long way to go in exploiting big data, a similar number (71%) said it is set to become a high priority by 2018





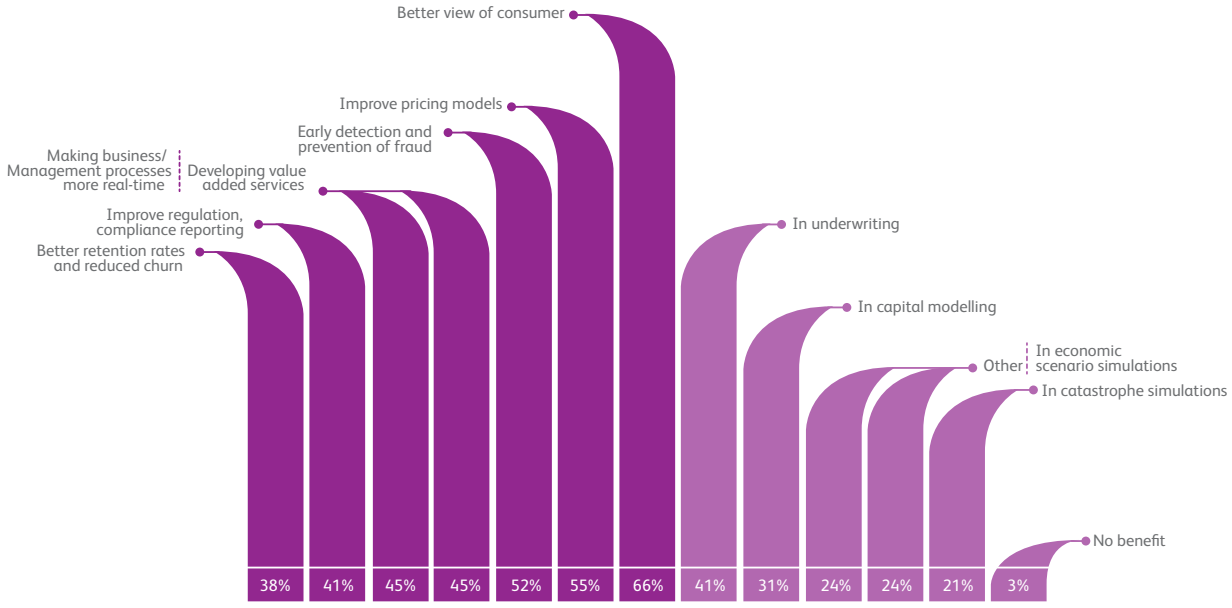
Source: BearingPoint Institute

Figure 3: BD&AA has the potential to play a leading role in meeting insurance companies' key objectives this year
What are your company's key strategic objectives for 2014?



Source: BearingPoint Institute

Figure 4: Identifying new opportunities and delivering new services are considered the key benefits of BD&AA
What do you perceive as the most important benefits of BD&AA?



Source: BearingPoint Institute

Life insurance hopes to have long-term [use of big data] in place within two years so that, for example, a childhood injury could be related to a claim in later life.

STEFAN LINDQVIST, TEAM LEADER, FOLKSAM

Reaching the customer insights of Google? New opportunities and new services to customers

The relative priority of our research findings is in some ways counter-intuitive, in particular that respondents saw big data more as a driver for growth than for cost control. The top-ranked answers to questions posed by our research were: gaining a better view of the customer; improving pricing models; early fraud detection; and development of value-added service. All these answers relate to how insurers could increase their business effectiveness and improve top-line and bottom-line performance. Given that our survey found that companies overall saw business growth as about equal in importance to cost reduction in business strategies, this finding offers a strong insight into how insurers are looking to move beyond the resource-constrained downturn and into business growth.

The following examples show specific areas that insurers are looking to address with BD&AA:

- ACE has implemented a 'global mapping tool' (called ACE Cat Web) to help clients evaluate their catastrophe and supply chain exposure[5]
- AON offers a 'big data toolbox' platform for clients to visualise and quantify their global exposure to risk and hence drive insightful business decisions[6]
- MetLife has produced the MetLife Wall to serve as a one-stop platform for staff to access a comprehensive view of customer history of engagement with the company, including past interactions, transactions, accounts and cross-selling information[7]

Organisations are also looking at how big data can drive development of new products, such as those based on longer-term policies (e.g. life assurance, consumer healthcare) and smart technology provision (e.g. car insurance). When research respondents were asked to state their most important building blocks for success, more mature insurance companies said that 'understanding the customer' and 'integration of information' were key factors when identifying new opportunities and delivering new services to customers.

Whilst the majority of organisations researched were highly positive about what big data might be able to do for their businesses, less than a quarter felt that they were beyond the 'emerging' stage of experimenting with the capabilities, or had done anything beyond exploring opportunities

Improved steering? Addressing internal efficiency and improving corporate governance

The second tier of ranked answers to our survey relates to addressing issues facing the company internally and externally, such as: reducing internal overheads; ensuring governance constraints are met; covering real-time business/management processes; refining the terms covered by underwriting; and improving regulation and compliance reporting. 'Big data can also help to improve risk management, for example Solvency II', notes Stefano Biondi, Head, Risk Management, Gruppo Mediolanum, a view corroborated recently by Michel Liès, CEO, Swiss Re, in the French newspaper, *Le Temps*, when he remarked: 'Big data helps us to better understand the risks we cover, by collating information about them.'[8]

Insurance companies are clearly looking for tangible insights that impact the bottom line directly. However, our experience with clients shows that data leveraged for performance management purposes can create further insights and enable improved decision-making at a management level, bringing even more value to insurance companies.

10% of surveyed insurers have implemented a company-wide big data strategy

Consider the following examples:

- Generali Hellas is using BD&AA in their actuarial department to monitor portfolio performance and improve the company's motor-product rating engine. Groups within the organisation responsible for billing and collection use BD&AA to measure and improve call-centre performance.[9]
- By implementing a centralised risk-management platform equipped with advanced analytics, Allianz not only improved its ability to comply with Solvency II regulations but also gained greater visibility into its equity on a day-to-day basis.[10]
- AIG is using data science to manage intermediaries (such as brokers) by benchmarking them according to criteria such as the quality of customers they attract and their margins.[11]

The answer lies not in thinking about data as a mountain to be mined, but in harnessing a growing number of powerful, new sources of insight to the benefit of both the insurer and its customers

New market opportunities? Offering a strategic overview of existing and new business domains

In our survey, respondents saw the use of big data to give visibility on more forward-looking business opportunities as less important. Examples of these uses of big data include capital modelling and economic scenario and catastrophe simulations. Whilst this may come as no surprise to insurers that want to address the core parts of the business first, we are still seeing increased levels of activity and interest in this area. 'As an insurer, those of us who are more core have decided to support research on risks that we are or may be covering in the future, such as socio-economic risks of big data,' one respondent told us.

Examples found across the industry include:

- Across an 18-month period, AIG used a data-driven 'quantitative risk model' (QRM) solution to target USD 14 million at its new, executive liability business, representing 100% growth in that segment. The tool also helped avoid potential losses of USD 75 million from executive liability accounts over a year.[12]
- AIG also uses advanced analytics for strategic financial planning and is thus able to reduce the amount of funds it must keep in reserve to cover discrepancies related to unreconciled payments.[13]
- A global reinsurance company is using a tool to identify business opportunities and target clients arising from events reported in the news.

A vicious cycle is preventing insurers from exploiting big data

To summarise the research findings above, insurers are interested in how big data can be used in the following order of priority: first, to deliver business effectiveness; second, to improve business efficiency; and, third, to gain a more strategic overview. Whilst we are seeing an increasing number of initiatives, these are still quite isolated, taking place at a local level. The more general adoption of big data to meet concrete business needs is still rare.

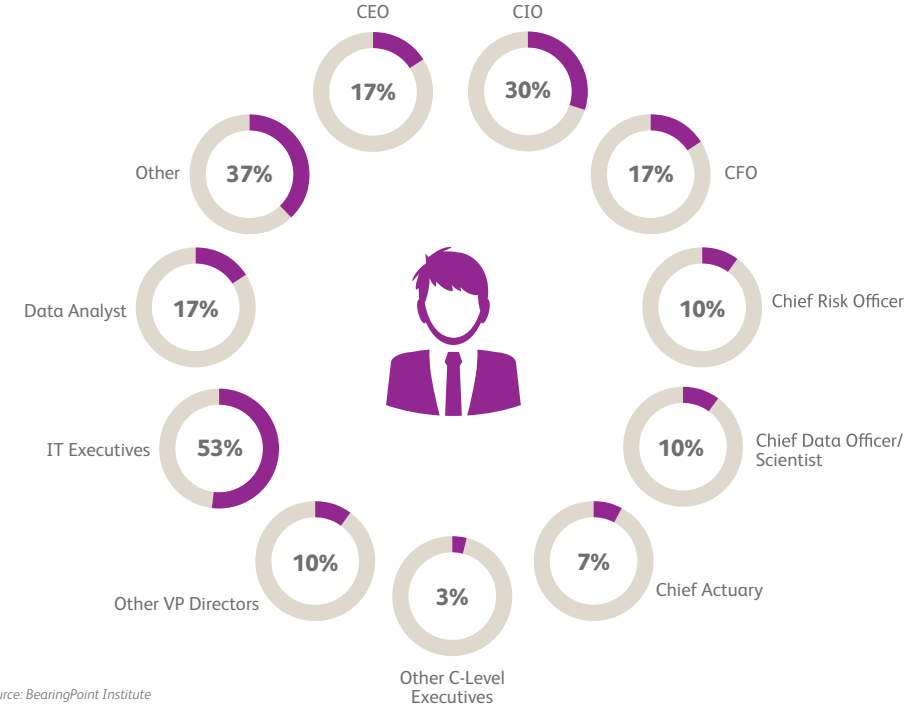
This begs the question: 'What is preventing insurers from moving ahead more quickly?' Our research suggests that no single issue is putting the brakes on the

are to be ready to implement new ideas in connection to big data **37%**

use of big data. Rather, the interaction of a number of challenges is resulting in a vicious cycle, which has the overall effect of slowing down progress. In turn:

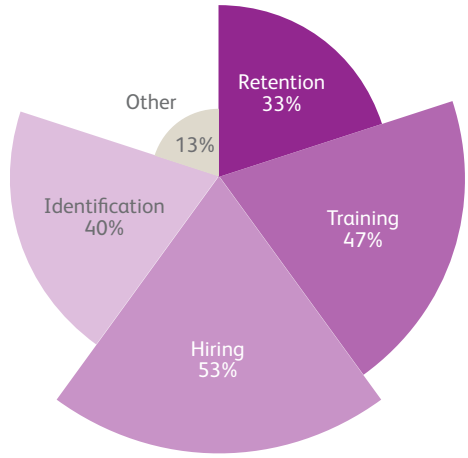
- A lack of understanding still exists. The fact that very few respondents were able to clearly cite reasons why they could not move forward is a good indicator of inadequate experience and expertise: 16% of respondents said they simply 'don't know enough'.
- This limited understanding leads to a lack of common strategy across the business, resulting in plans being developed at a more tactical level within individual departments. Only 10% of respondents have implemented a company-wide big data strategy.
- As a result of the above, a lack of business ownership means that IT executives are left to tackle the opportunities of big data. Over half of respondents said their data strategy was owned by IT; the inevitable consequence of this attitude is that work in this area focuses on technical aspects more than business benefits.
- Insufficient business buy-in results in a low-risk threshold when it comes to big data initiatives, as business stakeholders are less able to balance the potential benefits with the risks. Only 37% of survey respondents judge their company to be ready to implement new ideas in connection to big data.
- Finally, the lack of business generated from the use of big data can result in insufficient skills and competencies – as illustrated by 53% of respondents, insurers face difficulties identifying, recruiting and training appropriate people in ways to make the most of what big data can offer their businesses.

Figure 5: BD&AA suffers from a lack of clear responsibilities and ownership, with many respondents citing multiple answers
Who owns your company data strategy?



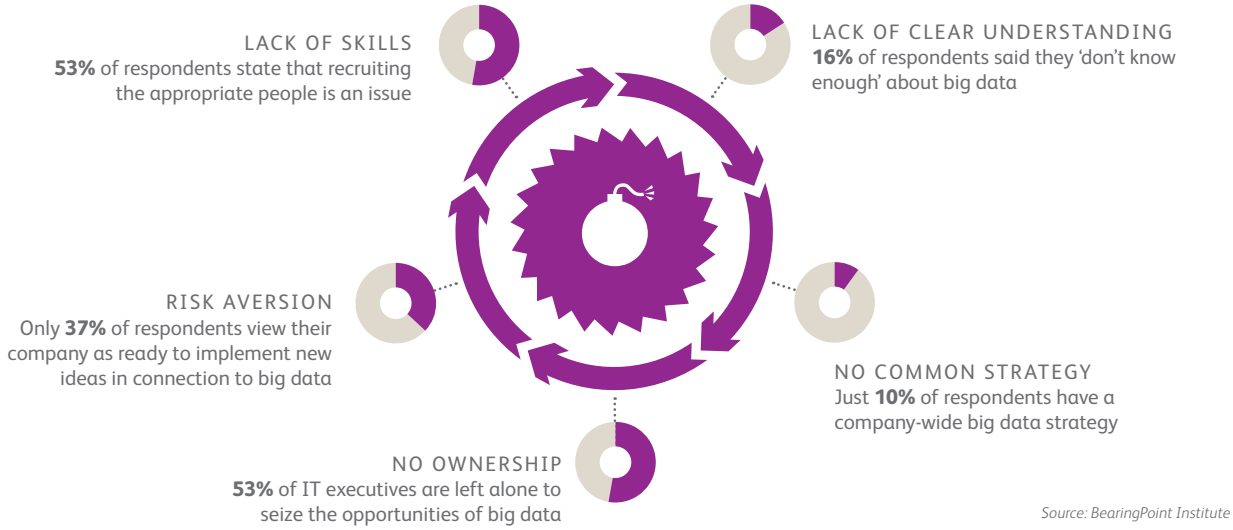
Source: BearingPoint Institute

Figure 6: Hiring and training skilled personnel is seen as the biggest barrier to building the right competencies to execute a BD&AA strategy
What are the biggest challenges to building BD&AA skills?



Source: BearingPoint Institute

Figure 7: The vicious circle of BD&AA in insurance
Why might insurers miss out on the BD&AA opportunity?



Source: BearingPoint Institute

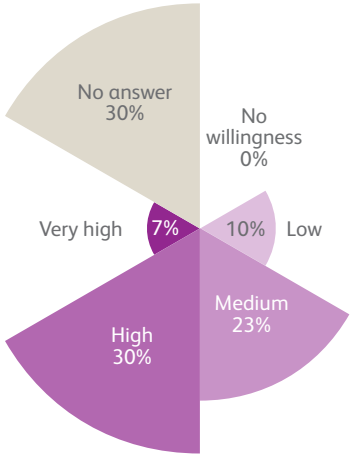
Insurers surveyed stating IT is in sole charge of big data **53%**

The overall consequence of this sequence of steps is that initiatives happen less often and with less energy – meaning that a lack of understanding remains. And so, the cycle continues.

What is driving this cycle? No doubt typical reasons for slow technology adoption apply, such as the technical debt caused by existing systems, the quality and integrity of existing data, or the overheads of managing larger-scale change. We highlight a specific, extra factor that is adding to the backward inertia – the slower-moving nature of insurance sector and existing operational models within the industry. As one respondent commented, 'Everything is based on the experience of local decision-making authority. This means that we do not know much about big data.'

Insurers see big data more as a driver for growth than for cost control, as they look to move beyond the resource-constrained downturn

Figure 8: 30% said their company had a high willingness to take risks with BD&AA, but tellingly another 30% gave no answer
How high is your company's willingness to take risk and speedily implement new ideas?



Source: BearingPoint Institute

Five pillars of successful big data and advanced analytics (BD&AA)

Most insurance executives mentioned skills capabilities and partner ecosystems as the top 'pillars' for successful BD&AA implementation. This was followed by external data sources and speed, then ethics and data privacy the least important.

Executives were asked to rate the importance of these five pillars to successfully implement BD&AA in their company:

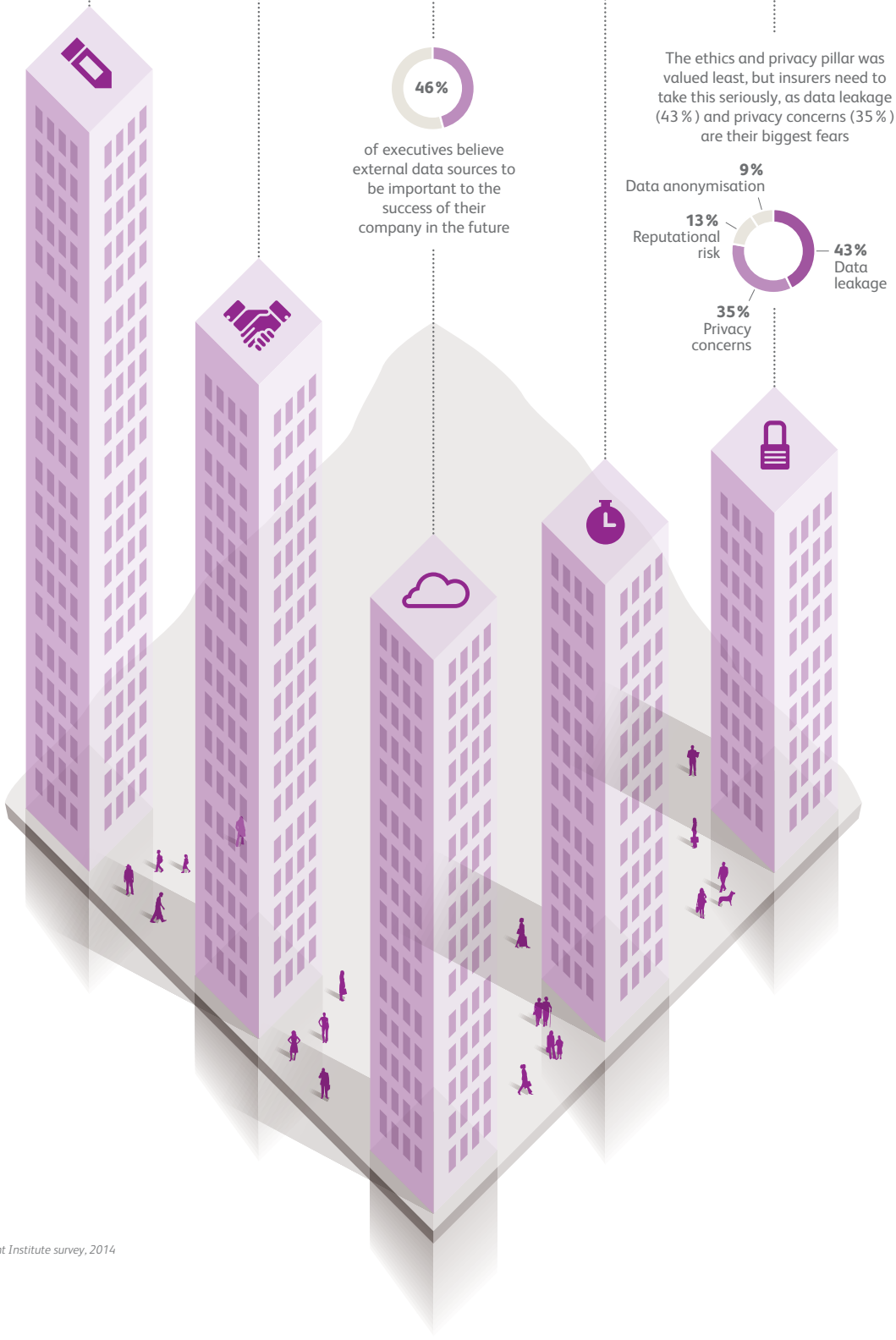
PILLAR 1
Skills capabilities
66%

PILLAR 2
Partner ecosystems
59%

PILLAR 3
External data sources
52%

PILLAR 4
Speed
45%

PILLAR 5
Ethics / data privacy
37%



Source: BearingPoint Institute survey, 2014

The five pillars of big data respond to the vicious cycle

Despite the lack of progress, insurers remain upbeat about how they can make more of big data: respondents told us how they were reviewing elements of company structure that were getting in the way of progress. For example, one respondent said: 'Our company approach is integrating departments to improve the lines of communication; business analysts and software coders interact to break down departmental barriers.'

This being the case, how can organisations break out of the cycle and turn good intentions into action? Just as the world is becoming more data-driven and ecosystem-based, so data needs to be treated not at arm's length, but as a dynamically changing resource that can be applied across the business. Building on the research findings and our own experience, we believe that big data success comes from pushing forward on five pillars: partnerships, data sources, speed, ethics and skills.

Ecosystem partnerships and alliances

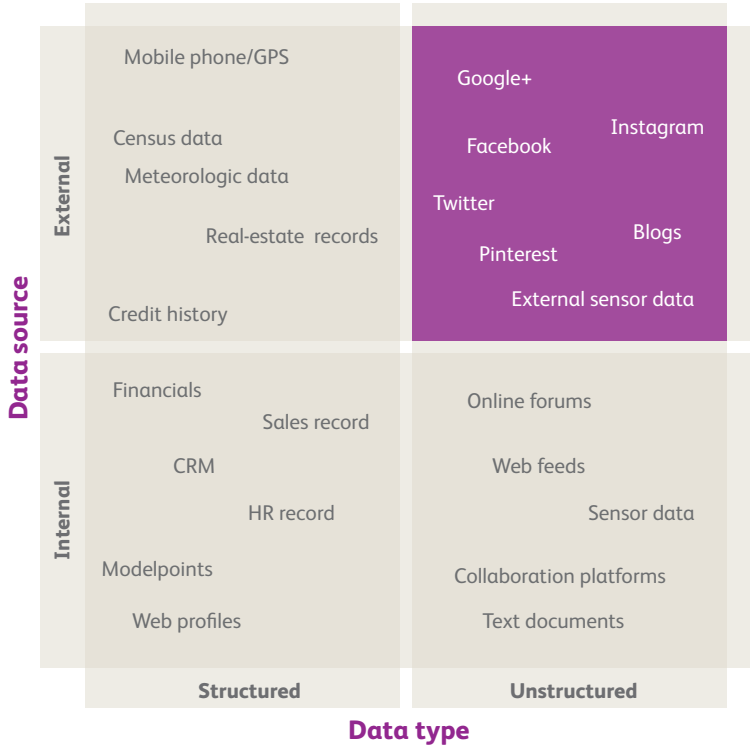
First and foremost, insurers need to engage with a broadening pool of data and solution providers across the ecosystem; not only information companies, such as Google, but also telecom companies, automotive industry players and retailers. Supplier capabilities and services need to be assessed and harnessed with minimal lead time – a factor recognised by survey respondents, who rated partnering with data providers as the second highest priority, particularly for data capture and analysis. 'Whoever's got best data will have an edge,' commented one interviewee. Just one respondent felt that their company has a 'strong alliance network' and 25% felt they had single alliances in place.

As well as examples of emerging partnerships in the automotive space (see box-out), insurers are developing relationships with universities and research institutions. For instance, AXA is engaging with the HEC School of Management in Paris to develop big data and advanced analytics capabilities to improve big data knowledge levels on both sides.

Whilst these are positive steps, we should strike a warning: given the emerging state of the market, insurers risk being locked out if they do not act quickly enough. For example, if one insurance company gains exclusive access to on-board unit data from a car manufacturer, other companies will be less able to compete on equal terms. Without acting, insurers open themselves up to new competition, such as the data giant Google, which could use its enormous knowledge base to enter the insurance market. From analysing the research we know that more advanced insurers have already established alliances with data providers, whereas laggards are still exploring engagements and so risk being left behind.

Big data can drive development of new products, such as those based longer-term views on life assurance, smarter provision of car insurance and consumer healthcare

Figure 9: There is a diverse range of both structured and unstructured data sources available



Source: BearingPoint Institute

PARTNERSHIPS IN AUTOMOTIVE INSURANCE

Insurers are collaborating with telematics companies to offer auto insurance policies where premiums are determined on a pay-as-you-drive basis. A device installed in the vehicle assesses the car's computer, collecting data on the distance driven and recording movements through a GPS device. The device transmits the data over a mobile connection, providing relevant data points for insurance coverage and, potentially, claims situations. Examples include:

- Generali Italy launched a telematics-based auto insurance program in 2006. Today the company has several hundred thousand 'usage-based insurance' (UBI) drivers in Italy alone. Generali's UBI customers want to know not just about their behavioural tendencies behind the wheel, but also about the safety of the roads on which they are driving. These customers request suggestions for the 'correct way of driving' on any particular road[14]
- Vodafone is partnering with professional services company Towers Watson to develop usage-based insurance offerings for insurers outside North America[15]
- Progressive (in the US) and Tesco Bank (in the UK) are each looking to convince drivers that such 'monitoring' is a good thing, as it reduces their auto insurance premiums[16]

Although we already know a lot about our customers from conventional, structured data warehouses, we acknowledge that we can achieve significantly better insights from unstructured data with existing customer information.

A SURVEY RESPONDENT

Access to external data sources

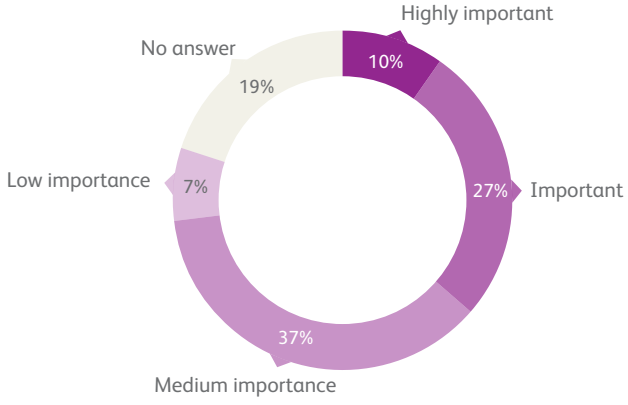
Once partnerships are in place, insurers can gain new insights by combining their own data with data owned by others and publicly accessible sources – as analyst firm Gartner points out, the value comes not just from accessing new datasets, but also from connecting the datasets together.[17] Figure 9 shows the diverse range of both structured and unstructured data sources becoming available.

Combining data sources offers a rich vein of opportunities. For example, AXA is using internal and external customer data to create predictive propensity models, helping to determine future product and service priorities for customer segments. As a result, participating financial advisors saw their sales averages increase by 40%.[18] Meanwhile, AIG has been using social networking data to detect fraud – for example, asking why a patient would go to a medical service provider located in another part of the country.

Despite these examples, most organisations are still working mainly with internal data, rarely supplemented by external data. While insurance-specific and customer data are currently seen as more important, 59% of respondents viewed social media data as promising for the future, followed by 52% citing financial market data. Neither geospatial nor sensory data were seen as important (yet), reinforcing the importance of being flexible as new data types become available.

No single issue is putting the brakes on big data, rather the interaction of a number of challenges is resulting in a vicious cycle, with the overall effect of slowing progress

Figure 10: The benefit of external data is not yet realised by many companies, but we expect this to gain significance
How would you rate the importance of external data to your company in the future?



Source: BearingPoint Institute

What is getting in the way of external data use? Many factors are influential, but a crucial area is data quality, making it hard to deal with internal sources alone, never mind integrate them with external sources. 'Information integrity is crucial for informed decision-making,' said Kalpana Shah, Chief Actuary, Hiscox. Areas that are already challenging – such as quality, reliability and integrity – will become increasingly important as data is 'multi-sourced' and delivered in different formats.

Big data opportunities have been identified particularly in risk selection and assessment. However, transforming technology developments into business value requires a holistic view, considering also ethical and compliance aspects.

PETER MÜNZEMAYER, HEAD BIG DATA AND SMART ANALYTICS CENTRE, SWISS RE

Whilst insurers agree that the future of insurance will be increasingly information-centric and are making positive steps, no easy route exists to some big data 'nirvana'

Speed of access and failing fast

The new opportunities created by big data are fast moving and rapidly changing, meaning that organisations need to move quickly to exploit them. 'Ever tried. Ever failed. No matter. Try again. Fail again. Fail better,'wrote 20th-century Irish novelist, poet, and avant-garde playwright, Samuel Beckett,[19] offering an apt metaphor for the disruption and resulting innovation that big data is bringing to traditional approaches.

According to our research, 71% of 'more advanced' companies believe speed to be an important criterion, compared to 51% of 'less advanced' companies. Whilst this is a chicken and egg scenario, we recognise that the former group have not been proven wrong. To enable such speed, organisations need to change their cultures to allow failures to occur, for example by encouraging pilot studies. Whilst these will not always succeed, it is important to make sure that if initiatives fail, they fail fast so that lessons can be learned and fed into new projects.

Speed goes hand in hand with risk attitude: organisations more likely to take risks will be better able to leverage new data sources faster than risk-averse insurers. A positive 60% of respondents indicated a medium or high willingness to take risks and adopt new thinking, opening the door to big data opportunities.

In terms of approach, a number of insurers have chosen to create a dedicated lab or innovation centre to help initiate and carry out BD&AA pilots:

- AXA is running an innovation lab in Silicon Valley, aimed at fostering innovation and furthering the spirit of entrepreneurship across the AXA Group[20]
- Aetna has also set up an innovation lab, consisting of a dedicated team that will leverage data and best practices through the use of rapid prototyping[21]
- MetLife has set up a new office with a 'start-up mentality', bringing in employees with expertise in areas such as social media, mobile and big data[22]

Ethics and governance

The need for new insights and speedier decisions has to be balanced against good governance, to assure compliance and to mitigate reputational risk. Furthermore, big data and the resulting light this shines on risk selection could endanger the principles on which insurance is based. 'Whether an insurer looks to social media for fraud purposes or collects other data, they must consider how they use it and whether this is ethically right,' remarks Stephen Lathrope, Managing Director, SSP Insurer Division. SSP, the international software house, is a technological player in the insurance sector.

Insurers know how to walk the talk on ethics. 'The company's reputation is built on trust,' said one respondent. 'Customers are the most important people we know, so we must protect their data,' said another, at a global insurance and financial services company. However the pervading attitude is not reflected much in current

Of insurers surveyed are not recruiting data scientists **47%**

actions. Whilst data leakage (at 43%), followed by privacy (at 35%) were seen as the biggest governance risks, only 23% of organisations confirmed they had big data or advanced analytics governance processes in place.

Clearly, more needs to be done in this area. A number of initiatives are underway to catalyse progress across the industry, not least:

- In collaboration with the National Science Foundation, the 'Council for Big Data, Ethics, and Society' is scheduled to launch in the US in early 2014 'to provide critical social and cultural perspectives on big data initiatives'[23]
- In 2012, the White House released a blueprint for a 'Consumer Privacy Bill of Rights' to protect the rights of consumers in the age of digital marketing.[24] More recently, the founder of the World Wide Web, Sir Tim Berners-Lee, reiterated this call for a bill of online rights[25]

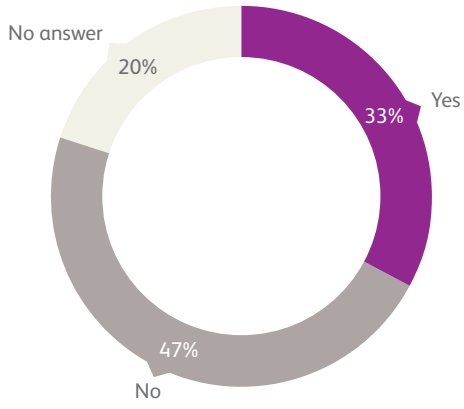
Skills and capabilities

Creating value from data requires a wide range of skills and expertise: from data integration and preparation, to architecting specialised computing environments, to data mining and intelligent algorithms.[26] Moreover, data analysis needs to take into account the broader context of business strategy, data scientists have to understand what business problems they are solving and how their work advances the company's goals. In consequence, a data scientist needs an assortment of technical, business and people skills. It is a unique combination that partly explains the shortage of high-quality data science professionals that is predicted for a few years' time.[27]

Front-line skills also need to be supplemented by general experience of working with data suppliers, overseen by senior strategists that fully appreciate the vital role of data to the organisation.

Early pilot studies are vital for less advanced organisations to gain critical experience and build the skills needed to successfully implement big data and advanced analytics projects

Figure 11: Data scientists are currently viewed by insurance companies as too specific a skill and suffers from a lack of specialists
Are you recruiting and/or training data scientists?



Source: BearingPoint Institute

7% Insurers claiming to be on top of big data and advanced analytics

Data is growing faster than insurers know what to do with it, in terms of both volumes and the variety of external sources now available

To quote Peter Johnson, Vice-President, Enterprise Data and Application Services, MetLife, 'We've got tech people, quantitative data analyst types, as well as business stakeholders who have ideas around product development and customer service. That diversity is really how you get those "A-Ha" moments. Being able to understand how to do the analytics and the maths is one thing; understanding how it's really going to interact with your business is a whole other game.'[28]

From the research, while over 40% of organisations felt they had some advanced capability in terms of data skills, only a small proportion (6–7%) felt they were really on top of big data and advanced analytics. 'We have some employees with specific skills, but not enough,' said a typical respondent. Many employees may already appreciate the value of data, but need to be empowered to do anything about it.

Given that the industry currently finds itself at an early stage of development regarding big data, it is important to start building skills and experience as soon as possible as an investment for the future.

The leaders will separate from the laggards

While the insurers we spoke to agree that the future of insurance will be increasingly information-centric, no easy route exists to reach some big data 'nirvana' – rather, the data ecosystem is only going to become more complex. As our research shows, most insurers are still at the beginning of the big data journey: searching for business cases, putting operational models in place and building the required foundation of capabilities.

No organisation can expect to turn on the head of a pin and some insurers will be able to act faster than others. We expect to see groups of 'big data leaders' emerge based on their ability to adopt and learn faster than the competition. Whereas leading-edge adopters will fully embrace the potential of big data at a strategic level, even if they are not getting everything right, laggard organisations will continue to look at big data tactically, consequently remaining behind the curve of opportunity.

A crucial question is: 'How can laggard insurers move towards more of a leading position?' The starting point is to recognise the nature of the problem that needs solving – or the type of opportunity that needs to be taken to transform the business. This implies that big data is recognised as a key value driver by top-level management and hence receives sufficient budget to start exploring the data universe for opportunities. We can consider recommendations in terms of the five pillars of big data success.

We are moving through the emerging stage, from both an underwriting and a retail perspective. The art of the possible continues to evolve at pace and our strategy reflects progressing must-do actions, such as continuing to invest in our capabilities, managing the data we have and are accumulating, whilst also testing and learning, as new data and insights become available internally and externally.

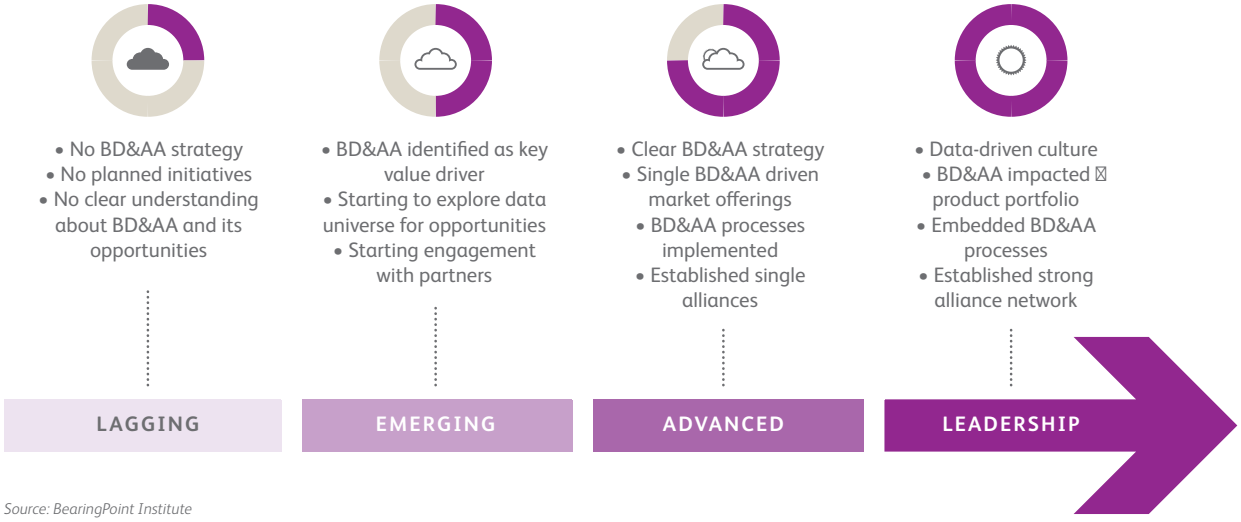
MATTHEW THOMAS, STRATEGY AND PLANNING DIRECTOR, AGEAS UK

The main driver will be the generation of new insights along the length of the business value chain – as confirmed by Marc Schreiner, Head, Innovation, Generali: 'The use of big data should focus on business value.' Figure 13 shows the value chain of insurers and highlights the functions that have a high potential for big data and advanced analytics application, based on BearingPoint's project experience and related research. Especially in the areas of new product development, risk assessment and pricing strategy, new customer acquisition, cross-selling, churn prevention, campaign management, fraud detection and claims mitigation, insurers can leverage internal and external data to create significant business value.

Such moves should take place in parallel with addressing potential ethics and data privacy issues, through the appropriate use of standards and governance mechanisms. Laggards need to make sure they explicitly address such issues, defining how they wish to deal with these topics in advance. Otherwise they risk leaving themselves open to future exposure (see also pillar 4).

In terms of operating model, as we have already noted, it is crucial to use pilots to start working in this way and learn by doing, so laggards should put in place a lean big data and advanced analytics centre function, enabling the centralised coordination of initiatives and pilots. To get closer to a leading position, the company needs to develop a more data-driven culture, which also implies allowing pilots to fail (see also pillar 5).

Figure 12: Strategy, operating model and capabilities of the BD&AA maturity model



Source: BearingPoint Institute

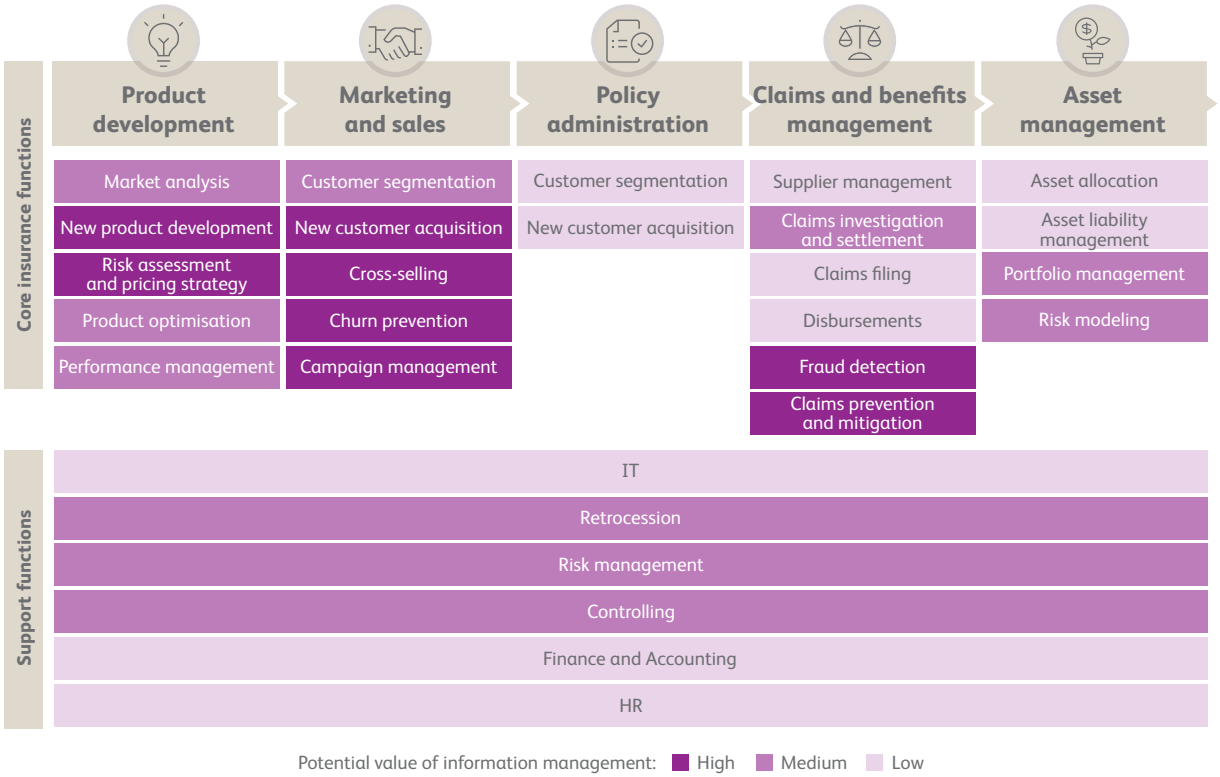
The future, most analysts agree, is to create a continuous feedback loop between insurers and consumers, so that consumers will react to the big data analyses that insurers do on them and change their behaviour accordingly.[29]
KIM GITTLESON, BBC NEWS

Furthermore, laggards will need to start thinking about partnerships with data aggregators, universities or other stakeholders to boost their capabilities (see also pillar 2). Partnerships and strategic alliances enable access to data that is not publicly available (for example, data from telcos, on-board devices, etc.) and to harness the analytical capabilities of others. Moreover, as there is the potential threat of being locked out of opportunities (due to the fact that some players are asking for exclusive partnerships) laggards need to start now initiating talks with potential partners.

Regarding skills and capabilities, laggards need either to develop their data specialists and actuaries into data scientists through external training, or to start hiring data scientists. In the short term, external capabilities might help jump-start big data skills and experience and catalyse a learn-by-doing culture within the business. There are numerous start-ups in this arena, whose skills and capabilities could also be leveraged to address specific business opportunities (see also pillar 1).

Finally, laggard insurers should ensure they include external data sources more systematically, as these offer highly valuable sources of insight and competitive advantage (see also pillar 3). Organisations should look outside their own boundaries rather than trying to do it all themselves, particularly when considering IT infrastructure for BD&AA which, by its nature, requires a highly scalable infrastructure. In many cases (particularly for pilots) it may be more

Figure 13: Insurance value chain – where to apply BD&AA for maximum value



Source: BearingPoint Institute

appropriate to consider, say, cloud-based infrastructure or software-as-a-service rather than attempting to build infrastructure entirely in-house.

To conclude, BearingPoint recommends that insurers reflect without delay on their strategic positioning and overall capabilities regarding the five pillars of BD&AA (data sources, speed, ethics and skills). Insurers should define to what extent they would like to become a BD&AA leader, setting clear objectives to address the following:

- Offering a strategic overview of existing and new business domains
- Identifying new opportunities and delivering new services to customers
- Addressing internal efficiency and improving overall steering

We believe that early pilot projects are vital for less advanced organisations to gain critical experience and build the skills needed to successfully implement BD&AA projects. Alongside this do-and-learn approach, it is crucial to develop a strategic view on big data and develop and implement a multi-year roadmap to improve the capabilities along the five pillars.

The journey to big data success is a marathon, not a sprint. Along the length of the journey, insurers can equip stakeholders across the organisation to look outside their traditional domains and incrementally embed data and insights into their everyday decision-making. Over time, the integration of insight into the day-to-day business processes and decisions will create a willingness to accept bigger decisions and greater change.

Those players that lay the groundwork for implementing big data will be best positioned to make bold moves as big data solutions evolve.

KEY TAKE-AWAYS

- 'Big data' is having a fundamental impact on a range of industries in markets across the globe. Defined in terms of variety, velocity and variability, it enables access to a much wider set of insights.
- While insurers have a long history of creating and leveraging data-oriented models, this has tended to be domain-specific. The opportunity is to go more broadly, taking advantage of a wider pool of data sources and analytics capabilities.
- Insurers are not the only organisations looking to exploit this information, however. They also risk being slower than others, ironically due to their risk-averse attitudes and backward inertia.
- New market entrants might have an optimal data access, more mature data analytics capabilities and accelerated opportunities to go to market
- Capabilities defining best practice revolve around speed, partnerships, data, skills and ethics. These pillars are at play across and outside the industry.
- Organisations that adopt the right combination of capabilities have the potential to become far more efficient (for example, through faster reaction times), and define new value propositions.
- However the market is not going to wait for players that maintain old positions, as it evolves beyond the ability of traditional insurance models to deliver effectively.

About the author

Patrick Maeder is a Partner at BearingPoint responsible for the firm-wide Insurance Segment and member of the Global Leadership Team. His focus is on finance, business and IT transformation projects in the Financial Services industry, in particular in insurance. For many years he has advised clients in the United States, the United Kingdom and Continental Europe. He is a recognised thought leader, with publications and interviews in a variety of newspapers and magazines. He holds a degree in Business Administration at the University of Applied Sciences, St Gallen, Switzerland, and attended the Executive Program at the Loyola University of Chicago.
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About the research

This article provides insights and shows trends in the domain of big data and advanced analytics in the insurance industry. It discusses the current state of practices in this area and considers the evidence for emerging best practice, building a picture of the facets insurers can adopt to remain competitive in a data-rich, smart future.

The findings of the article are based on a survey with respondents covering 30 insurance companies in Europe and the US, undertaken between January and February 2014. The survey was conducted in close collaboration with TekPlus, a consultancy focused on providing solutions for business transformation and strategic direction with deep experience of the insurance industry and big data topics.

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