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A little less conversation, a lot more action – tactics to get satisfaction from data analytics EMEA Insurance data analytics study

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Foreword

The world is experiencing the fastest pace of data expansion and technological change in history. Our work with the World Economic Forum in 2015 identified that, within financial services, insurance is the industry which is most ripe for disruption from innovation owing to the significant pressure across the value chain.

To build on this work, our report 'Turbulence ahead – The future of general insurance', set out various innovations transforming the industry and subsequent scenarios for the future. It identified that innovation within the insurance industry is no longer led by insurers themselves. The enormous momentum gained by start-ups in this decade alone has fuelled the exponential growth of disruptive innovations in the insurance market.

Data, and making sense of it through analytics, is at the heart of extracting value from these innovations. It is in the DNA of start-ups and that is why they continue to grow and develop game changing propositions. But are insurers tipped to be at the top of the league?

We have certainly seen insurers take positive steps forward over the last 10-15 years, but we are yet to see a truly insight-driven insurer emerge. For the majority, data analytics remains fragmented across departments with very few advancing to build enterprise-wide capabilities in an organised and tactical fashion. Organisations in other industries, such as aviation and consumer goods, have embraced the analytics challenge more quickly and effectively, enabling a new level of sophistication in how they run their businesses.

So why are insurers struggling? We conducted a survey of 68 insurance companies across the EMEA region to find out. Based on our findings, in this publication we set out how insurers can tackle the obstacles preventing them from realising the value of their data.

Whilst the results illustrate that no insurer has yet perfected the game plan, important lessons are already emerging and we hope that these will be useful to you in developing your strategy around data analytics, as well as your broader innovation agenda. The time is now for incumbents to take big steps forward and put the spotlight on their analytics capabilities – it is imperative if they want to stand a chance at defending their market share in the immediate future.

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David Rush Partner, AuditEMEA Insurance co-leader



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Insurers and data analytics – less conversation, more action

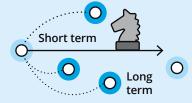
The current state of play

For over 90% the analytics strategy does not align with the business strategy today.









70% focus on short term tactical initiatives as opposed to long term strategically aligned projects.

Analytics is not embedded into strategic decision making for over 60%.









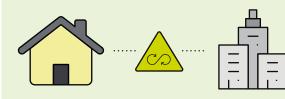
Almost 90% cannot identify and link the value back to the investment made.



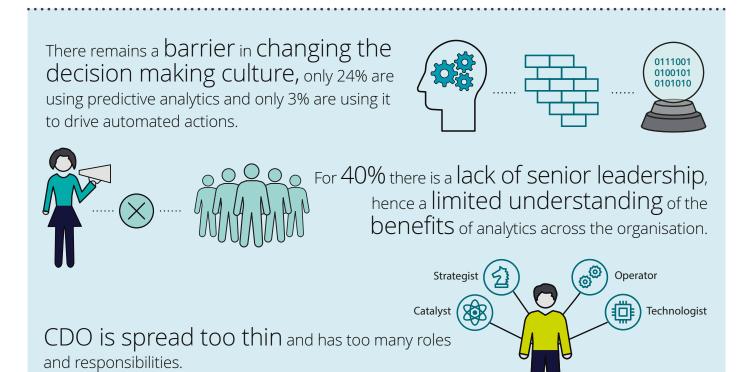
Data models do not exist or are unable to deliver business wide value for 75%.

For 40% data is undefined and of very poor quality, a disproportionate effort is spent on correcting internal data.

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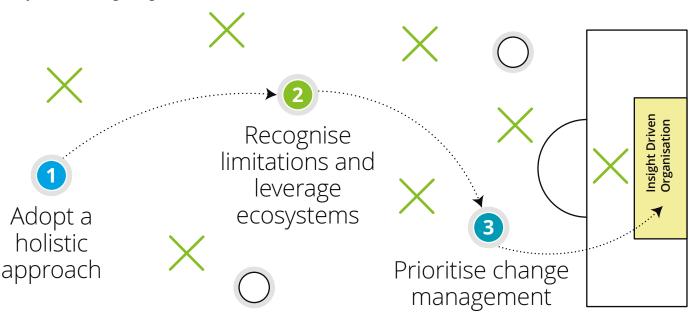


Insurers tend to focus on building in-house capability and are at risk of compromising on agility.



Recommendations to become an Insight Driven Organisation

3 key tactics to change the game



Introduction from the authors

Analytics [an-l-it-iks]

The process of transforming data into insight that can be acted upon.

Historically, insurers have managed gathering, storing and interpreting data using their own infrastructure situated across various different departments. However, whilst data and analytics have been at the heart of insurance in the traditional discipline of actuarial analysis, the extent to which they are actually used is limited to a core few processes (such as reserving and pricing). This has given rise to many insurers, perhaps prematurely, considering themselves as data-driven organisations for some time.

In recent years, much noise (and rightly so) has been made about the value of data analytics across a wide spectrum of functions including; enhancing risk assessment in underwriting, reducing the cost of claims, identifying new sources of profitability and improving the customer experience.

And yet in spite of this, almost 90% of those surveyed struggled to articulate the return on investments made in analytics capabilities.

Furthermore, we found that on average, investment in non-technology related analytics is only planned to grow between 10-20% pa over the next three years. This slow, linear increase is in stark contrast with the boost being received by insurance start-ups from investors. Incumbents should be concerned about these investments, as they provide competing start-ups with the freedom and agility to explore, innovate and exploit new routes at an alarming pace. On top of this, they are able to do so without incurring the high operating costs that incumbents have.

Since 2011, insurance tech companies have raised \$5.67billion across 464 deals globally¹. These organisations are using data analytics to offer cost-effective, tailored products to their consumers and are disrupting the market, overtaking traditional insurers. For example, Oscar Health, an online American health insurance start-up founded in 2012, received an equity stake of \$400m in 2016 which valued the company at \$2.7bn within 4 years². This demonstrates just how quickly incumbents can, and will, be left behind if they do not recognise the integral role that data analytics needs to play in their organisations.

With only 3% of our survey respondents stating that forward looking insights are being used to drive automated decisions and actions, the race for competitive advantage in the insurance industry has just started.

It is time for insurers to face the music and truly embrace the potential of data analytics by recognising it as a core capability within their organisations, and making the required investments. In order to do this, three things fundamentally need to change:

- Adopt a holistic approach insurers continue to suffer from 'cottage industries' – pockets of tactical point analytics solutions operating in siloes. The focus must move away from this and towards building sustainable analytics capabilities which serve the organisation as a whole.
- 2. **Leverage ecosystems** there is an obvious benefit in having direct access to data and being able to make sense of it yourself. However, as both sources and volumes of data continue to grow exponentially, and technology rapidly advances further, the industry needs to look at other ways of getting the most out of this asset. There is a vast ecosystem of data, technology and talent providers, and a multitude of partnering options. These can allow insurers to move forward in a faster, more cost-effective and less risky fashion than if they operate in isolation.
- 3. **Prioritise change management** becoming truly insight-driven requires a lot more than just data, data scientists and insights. Based on our experience, change management is rarely prioritised in analytics initiatives in insurance companies. The cultural shift required to make analytics a success needs to be more thoroughly addressed.

The remainder of this report sets out the issues which we found to be most pertinent for the insurance industry based on our survey, categorised into three key themes:



establishing a vision and strategy,



building assets and capability, and



operationalising and driving change.

We hope that what your peers and competitors have said resonates with your own experience, and we would be delighted to discuss this report and our findings with you in more detail.



Alex Poracchia Partner, Consulting



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Vision and strategy



Establishing a clear, coherent data analytics vision and strategy

Insurers – and organisations in other industries – often fail to recognise the true potential of analytics due to the assumption that successful analytics is an IT-driven process, gathering data from source systems into an analytics solution. This mind-set can lead to a disconnect between the decision making process, business value and analytical insight. An analytics vision needs to support the overarching business strategy, embedding insight into the underlying drivers which move an insurer towards its goals. Moreover, it needs to help an organisation find areas in which to gain competitive advantage or innovate services.

Our study revealed that more often than not, vision is overlooked or not implemented holistically. Other challenges relating to vision and strategy were found to be around quantifying the benefits of analytics, balancing tactical and strategic requirements, and having the right leadership to drive the analytics agenda. The sections below detail our findings and recommendations.

A disconnect between analytics and business strategies

With no respondents stating that there is little or no link between their analytics and business strategies, it is reassuring to see that the industry is moving in the right direction (see Figure 1). Almost 60% of respondents stated that senior management are taking steps towards linking the business and analytics strategies.

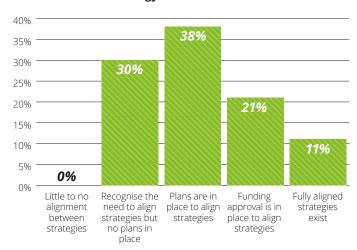
However, only 11% of respondents felt that the analytics and business strategies are fully aligned today.

With the shifting quicksand that characterises today's insurance landscape, it perhaps comes as no surprise that organisations are struggling to articulate the type of insurer they want to be in the future, and their resulting business and analytics strategies.

Many analytics strategies have grown organically over time and have been developed in a piecemeal fashion. A concerted effort, driven by senior leadership, to refresh the vision and reignite support in insight-driven transformation of services, products and operations, is required to drive alignment across the organisation.

Almost a third of respondents felt that whilst senior management recognised the need to align the business and analytics strategies, no plans were in place to do so.

Figure 1. To what extent does the analytics strategy align with the business strategy?

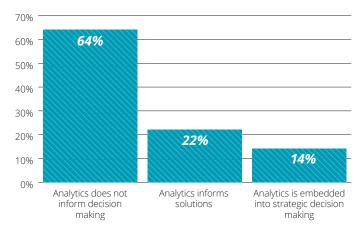


Over 60% of respondents stated that analytics is not embedded into strategic decision making, hence decision making at senior levels remains driven primarily by informed judgement, rather than being buoyed by clear and comprehensive analysis (see Figure 2).

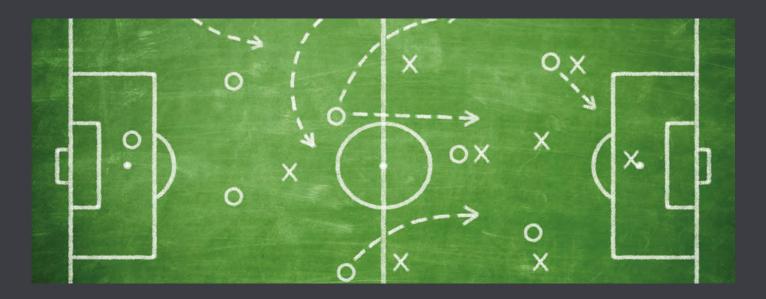
The disconnect between setting the right strategy and seeing considerable behavioural change in the way leaders are making decisions in business as usual is indicative of:

- a lack of in-depth understanding at senior levels of how to leverage analytics to drive results; and/or
- the absence of a structured way to measure the impact of analytics and to use this to embed data-driven decision making.

Figure 2. To what extent is analytics embedded into strategic decision making?



Case study: Creating an insight-driven strategy, roadmap and operating model



The challenge

The client had established a large scale technology and information management programme, with the intention of developing an Enterprise Data Warehouse. They were under pressure to deliver significant uplift in their analytics capabilities, and improve data access across their UK operations. The technology roadmap had been identified and investments had been made, however, they were struggling to link these investments back to business drivers and to tangible increases in analytics activity in the lines of business.

The client engaged us to:

- reinvigorate the existing programme,
- redefine the structure and vision for analytics transformation, and
- construct a detailed roadmap and operating model covering data and technology, but also the cultural, talent and organisational changes required.

Approach and success factors

Key requirements from the client were to ramp up quickly with minimal disruption to BAU, and to generate alignment amongst increasingly siloed stakeholders across the existing programme. To meet these requirements, we designed deep dive analytics strategy workshops which used interactive exercises, simulations and design thinking sessions to engage stakeholders in a collaborative manner and gain their buy-in. As a result, we were able to better understand the current state, crystallise the revised vision and develop detailed plans to transition towards a full scale analytics operating model.

Following the workshops, we worked with stakeholders to design detailed elements of the operating model, technology architecture and information management framework, and to further understand dependencies in the developing roadmap. A requirement of the roadmap was to ensure that short-term value is delivered alongside the strategic long-term vision. This is important to maintain responsiveness of stakeholders and avoid the pitfalls commonly associated with traditional multi-year transformation programmes.

A number of immediate tactical initiatives were set in motion to demonstrate quick-wins and realise value in the short term. This included data definitions work for the claims function, creating agile working and processes, and prioritising the first set of analytics proofs of concept to execute in the new technology environment.

Outcomes

Key outputs included a high level target operating model, a first draft of a programme roadmap, an organisation structure, a scalable conceptual data model and development of a process to collect data definitions across the business. Furthermore, key decisions that need to be made in order to drive the programme forward were identified, and alignment on the resources needed to drive the analytics transformation programme has been achieved. The engagement is ongoing.

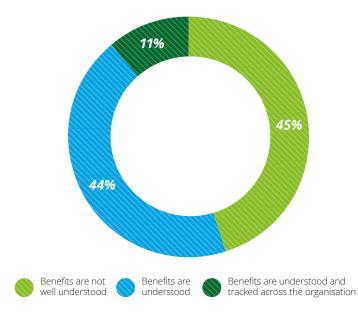


Articulating a clear business case can be tricky

Another challenge lies in articulating a clear business case for data analytics, be that in taking the first step, or in continuing to invest.

Our survey found that only 11% of respondents truly understand the impact of analytics on their business or their area of responsibility (see Figure 3). Virtually all insurers are increasing their investment in analytics over the next three years, however, almost 90% cannot identify and link the value back to the investment made.

Figure 3. Do you understand the impact of analytics on the business or your area of responsibility?



Realising the benefit



In order to increase buy-in across the organisation and subsequently secure sufficient budget for future investment, it is vital to be able to identify and track the return on investment. A combination of not being able to identify the benefits and not

having a clear vision articulated across an organisation can lead to a negative return on investment.

There are a number of common reasons why organisations may not be realising the benefits from data analytics:

- scope of data analytics projects lack direction: insufficient liaison with key business stakeholders and users to identify why the solution would be valuable and how this value will be measured;
- solutions are driven by technology: organisations have invested in buying off-the-shelf solutions which are not aligned to specific business drivers or pain points within the organisation;
- lack of adoption of solutions: more effort is required to integrate the solutions or insights into the everyday operations of the insurer and manage the people and cultural changes required to see results; and
- incomplete 'insight process': the analytics process stops at the development and release of the analytics solution and does not account for measuring activity, progress or results in an industrialised state.

Case study: Turning around the business case



The challenge

An insurer, which specialised in income security and pension products, launched a new product targeted at Small and Medium Enterprises ('SMEs'). The conversion rate was very low due to the unfamiliarity of the target group with an online pension product and the complexity of the buying process. This led to a negative return on investment. The client wanted to support prospects in their customer journey more effectively and increase the conversion rate of the online pension product.

Approach and success factors

The original business case was anchored in judgement and assumptions made by the insurer's subject matter experts. In order to develop a transparent business case, we conducted an extensive survey of clients. Quantitative information (such as customer demographics) as well as qualitative information (such as feedback through interviews) was collected.

The results revealed a number of unexpected issues, including that SMEs lacked knowledge of the pension product and the solution in general (for example, knowing that the sales process could take up to 6 months).

Additional insights gained from the survey led to the following changes:

- a new set of business requirements to select marketing tools in order to prevent disappointment resulting from unspoken expectations;
- references to other internet sites were added to the insurer's online portal, enhancing the information provision and also increasing client trust in the new product;

- a more tailored sequence of next best actions for specific personas was designed and implemented using web analytics; and
- training of the marketing department was identified to be crucial in order to maintain relevance and effectiveness of the platform.

Outcomes

As a result of the detailed information obtained through the surveys, we were able to put into context the web analytics results. This enabled us to tailor and adjust the online marketing customer experience, and align more accurately the next best action against each customer's needs. The solution was the implementation of an integrated online marketing platform which was able to support a seamless online closed loop marketing experience.

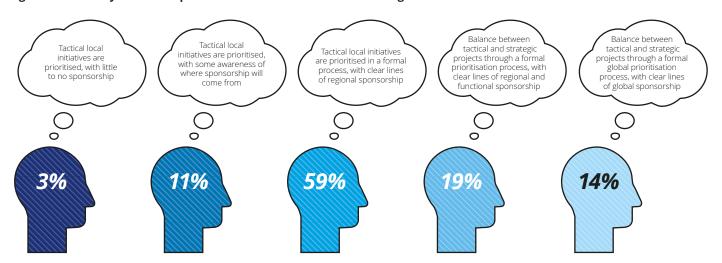
The results included:

- a 10% increase in conversion,
- a 12% decrease to the bounce rate, and
- prospects spending 70% longer on the website.



Tactical projects are trumping long haul strategic wins

Figure 4. How are your efforts prioritised between tactical and strategic initiatives?



Given the limited investment in data analytics planned over the next three years (increasing on average between 10-20% per annum as set out in the introduction of this report) it perhaps should not come as a surprise that over 70% of respondents stated that their organisations focus analytics efforts on short-term tactical initiatives as opposed to longer-term strategically aligned projects (see Figure 4).

Balancing short-term and long-term requirements



We believe that short-term tactical projects are important and serve a purpose. They help to finance further investment, maintain responsiveness of stakeholders and shape the analytics programme as the organisation learns more about the disruptive environment it is operating in.

However, insurers must also consider how their analytics capabilities will evolve over the long-term based on their vision for the future. Balancing short-term requirements with long-term sustainability is vital. Longer-term delivery needs to be underpinned by a method that achieves short-term value in order to avoid the common pitfalls of a traditional multi-year transformation programme.



Vision and strategy

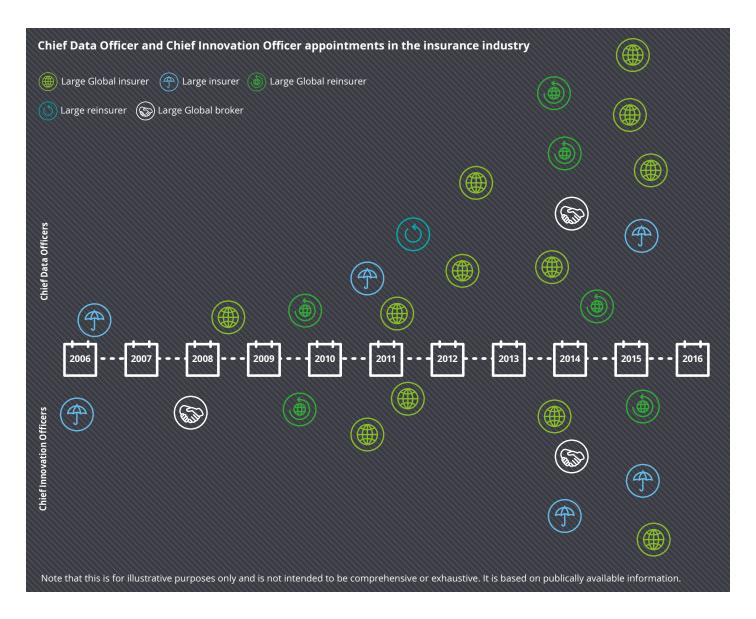
The ever evolving world of the CDO

Regardless of the scale of an insurer's analytics ambitions, an executive leader who can define the vision (with the support of the wider executive team) and drive the organisation to achieve that vision is required in order to navigate today's environment. As there is no market standard approach to data analytics in insurance, it is likely that there are multiple and often conflicting views at the top table. Many insurers have now introduced the role of the Chief Data Officer (CDO) to take responsibility and champion the vision of the business.

Over the last ten years, we have seen a growing number of appointments of CDOs (or similar roles such as Chief Analytics Officers) in the insurance industry.

Insurers, brokers and reinsurers have all in the main recognised the importance of appointing an individual in this position, with the numbers increasing significantly since 2014 (see illustration below).

Given how early on the insurance industry is with its data analytics journey, CDOs face a period of experimentation. Their roles are growing rapidly to meet ever evolving needs. Furthermore, the CDO is tasked with addressing an extremely wide range of issues, and as a result, the role is complex and challenging. Faced with too much to do, CDOs are frequently spread too thin and there is a real risk that they will struggle to be impactful in the short-term.





The four faces of the CDO



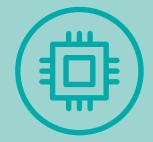
We have observed four very different faces of the CDO, as set out briefly below and in more detail in our paper 'The evolving role of the chief data officer: From marshal and steward to business strategist' (see Appendix B).



The strategist – This CDO partners with the business to align business and analytics strategies in order to maximise the value of data analytics investments.



The catalyst – This CDO seeks to instigate innovation through exploitation of data and analytics. He or she also builds stakeholder buy-in and drives change management.



The technologist – This CDO assesses technologies and designs data and technical architectures to increase business agility and manage complexity. Security of data and systems (e.g. against cyber, misuse of personal and sensitive information, access to data etc.) is also prioritised by this CDO.



The operator – This CDO defines, manages and governs data and technology policies and operations to promote and control operational efficiency and effectiveness.

Often the CDO is expected to make change happen with little to no help from other senior members of the organisation. The 'problem' is essentially passed to one individual, which demonstrates to the business that data analytics is the responsibility of that person and their team (if they have one) and not important firm-wide. This creates a new silo, instead of cutting across the existing silos and making data analytics the responsibility of all.

In order for the CDO to be impactful and drive the analytics agenda, he or she must work with the C-suite to identify a very clear remit, recognising that everything will not be possible at once. With the support of the wider executive, the CDO should prioritise what he or she is equipped and able to do, and recognise what needs to be done elsewhere.

Whilst the CDO can play a very important role in the analytics journey, he or she alone will not drive change – incorporating analytics into the business involves a significant cultural change throughout the entire organisation. This is often hugely underestimated (see 'Operationalisation and change management' on page 23).

Assets and capability



Building capability and bringing assets to bear

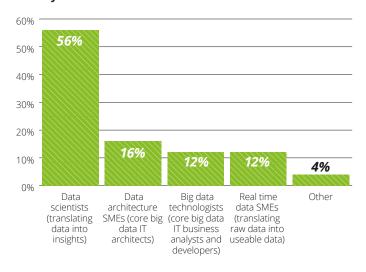
As mentioned in the previous section, a CDO without the right assets and capability will only progress so far. Building capability without a clear strategy and goal in mind is likely to prove ineffective and expensive over time. Once the analytics strategy and vision is formulated, and a roadmap of initiatives is identified, this should be used to inform the capability that is required in terms of people, processes, data and technology.

Our survey identified that when it came to capability and assets, data scientists are challenging to find, data is often inaccurate and difficult to access, and technology in insurance companies is not agile enough to meet today's demands. Our findings and recommendations are set out below.

'Purple People' are hard to find

Our survey identified that the most in-demand capability relating to analytics is data scientists – those who can translate data into insights (see Figure 5).

Figure 5. What are the most in-demand capabilities relating to analytics?



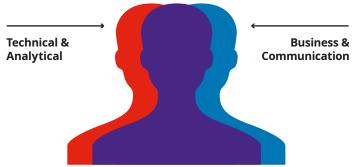
If data analytics isn't 'sticking' immediately, there is a tendency to throw more data scientists at the problem. Hiring one, two or twenty data scientists is not going to drive change in an organisation, especially if they are sitting in a silo.

Whilst data science is a valuable skill set and capability, it is not the only skill set needed to push data analytics forward. Equally as important are business acumen, change and communication skills.

In an ideal world, each data analytics hire would have a balance of technical and statistical capabilities (red skills) and industry and communication knowledge (blue skills). At Deloitte, we call these people 'Purple People'. They are able to handle sophisticated data analysis but also have fluent communication skills, business acumen and political nous.

70% of respondents stated that their organisations are tackling this capability challenge by focusing on developing and retaining in-house talent, as opposed to leveraging managed services from third party providers or hiring consultants.

Research suggests that companies across all industries are facing a significant supply gap of data analytics talent. Entry-level positons are challenging to fill, and there is also a major drought at the most senior levels. Professionals who can deliver data-backed insights that create business value – not just number crunchers – are especially hard to find and are becoming increasingly more expensive.





Attracting, retaining and growing Purple People



In our experience, it is very difficult to attract the right quality of analytics talent. High salaries, executive sponsorship, conducive organisational design, innovation culture and access to funding feature high on the requirements of these in-demand individuals. These requirements do not fit with the traditional insurance business model. Getting the right motivational factors in play is fundamental to successfully attracting and retaining talent in the long-term. For example, empowering individuals with free innovation and thinking time is attractive. Purple People do not have to be industry experts from the outset, and as such, insurers are competing not only with other insurers for this talent, but also with organisations in other industries.

Whilst the market matures, we recommend that organisations focus on creating Purple Teams – having the right mix of red and blue skills around the table to execute an analytics project or tactical analytics transformation initiative.

In the longer term, as demand for data analytics increases, it is worth considering whether building all talent required in-house is practical and affordable. We believe that a 'matrixed' supply of analytics talent, which is a mixture of in-house and outsourced capability, reflective of an organisation's comfort with options such as centralisation, offshoring, robotics, and multi-sourcing (using multiple vendors for different parts of the end to end insights process) will feature in insight-driven insurers of the future.

We are starting to see organisations in other industries, such as professional services, telecommunications and oil and gas, define specialist learning and development pathways for analytical talent which differ from other parts of the business. Organisations which truly recognise the importance of Purple People, are teaming up with leading universities and professional associations to develop the next generation. We are yet to see the insurance industry take such steps forward, and we believe insurers need to start thinking this way quickly if they want to attract and retain the best talent.

"We have a lot of data but the question remains what to do with it, and who can look at it."

Chief Underwriting Officer, EMEA



Data is not always accessible or trustworthy

The sheer volume of information being generated every day has increased at an exponential rate. Sensor based technologies, digitalised communication and artificial intelligence are now commonplace, and the race to harness data will only continue to intensify. With such an overwhelming amount of data to consider, organisations often struggle with how to approach the issue in the most effective and efficient way.

Data architecture

We believe that few companies are truly prepared for the data challenges involved in uncovering and capturing value from the Internet of Things. This is especially true for insurance given fragmented legacy systems which often do not talk to each other.

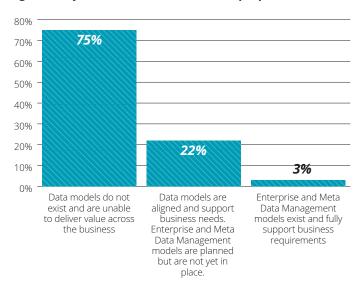
With 75% of data models either not in existence or unable to deliver business wide value (see Figure 6), data architectures in the insurance industry are not at the level that they need to be to fully maximise the power of analytics.

The challenge remains in getting data into a format and structure that is efficient for analysis, whilst maintaining it in a secure environment.

There is no unified approach to data storage and management and we see a variety of different approaches being applied within insurance companies today. For example, some clients host internal data lakes within the corporate firewall whereas others trust cloud based distributed databases from third-party data centres.

Overhauling traditional IT infrastructure in favour of more agile access to data, and constructing an architecture capable of digesting and processing such volumes of data at speed, are prerequisites to maximising future data networks.

Figure 6. Is your data architecture fit for purpose?



The characteristics of a successful architecture include:

- **core strength** consistently sourced, reliable data which is well governed and structured appropriately;
- **responsiveness** analytics architecture that supports a complex network of data flows, including internal and external data; and
- **scalability** structures that support and enable deep-dive analytics across large data sets, and evolve with business needs.

One approach to consider is outsourcing and leveraging managed services whilst building capabilities in-house. This allows organisations to take advantage of purpose built solutions without the investment and long lead-times.

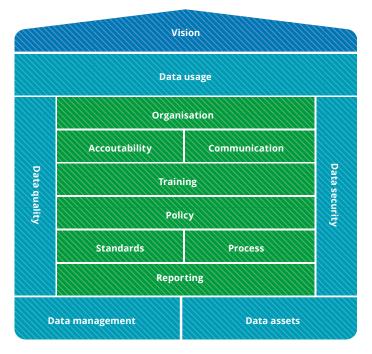


Trusted insight

When it comes to being able to trust data, our survey revealed a spectrum of responses.

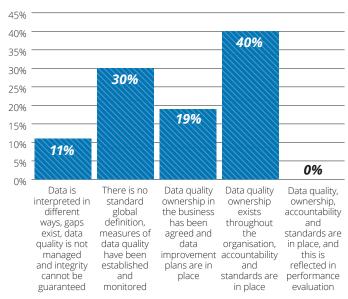
Without data that is consistent, accurate and reliable across the business, an organisation can become less competitive and less efficient. Many insurers have the foundations of a data governance capability but need to develop this further in order to address on-going issues in data quality and culture. Identifying ownership and accountability for data across the organisation at the highest (executive and CDO) and lowest levels, is key to success. This can be achieved through a robust capability framework.

Example - Deloitte's data governance framework



For 40% of respondents, their data quality is sufficient for trusted insights to be generated. For an equal proportion, their data is undefined and of very poor quality (see Figure 7).

Figure 7. Can you trust your data?



"Our internal data is of limited quality and we tend to trust external data more."

Pricing Actuary, EMEA



Taking control of data



Poor data quality is often used as an excuse for departments resisting the move to analytics. We urge insurers not to wait for perfect data before embarking on a data analytics journey. The two endeavours should be concurrent – executing valuable

analytics projects in sprint cycles whilst identifying the right information management approach and migrating to the right solution architecture.

We have seen insurers expend a disproportionate amount of effort on cleaning and correcting their internal data to get it into an accessible form. Whilst the data collected in-house can be useful, using it in isolation will reveal limited insights. In addition, there is a huge amount of external data available which has often already been manipulated and collated from various different sources. This data is easy to access and can be used to enhance poor quality internal data to gain insights in a cost effective way.

It is important for an organisation to get to know what data is available to them and how to gain access to it. Two practical recommendations to do this are:

- create a data catalogue create and manage a catalogue of the data held (including location and who the responsible owner is) to enable analytics teams to keep abreast of what data is available and allow easier access to it; and
- identify data scouts utilise resource to scout for useful data sources in the external environment to enable analytics projects to use the most relevant information and remain cutting-edge.

Regulation - thinking ahead



The results of our survey demonstrated that regulation certainly is not a driver for data and analytics investment. However, it is critical to consider the impact that developing regulatory requirements will have on data storage and usage going forward.

The General Data Protection Regulation ('GDPR'), due to come into effect on 25th May 2018, will replace the Data Protection Directive ('DPD') as the primary data protection law in the European Union. The GDPR takes away much of the existing ambiguity and complexity, and is certainly a stricter regime. Companies are required to take action to ensure operational compliance by the time it comes into effect and we expect this to have a great impact on data governance and data architectures in insurance. The changes likely to impact insurers the most are set out below, and further information on the GDPR can be found in Appendix B:

- an obligation to notify the Data Protection Authorities immediately, and in some cases the affected individuals, of any data breach (or potential data breach);
- requirements to obtain consent through clear, unambiguous, affirmative actions – silence, pre-ticked boxes or inactivity will no longer infer consent;
- obligations to erase an individual's personal data and to prevent processing once it is clear that the processing is unlawful;
- restrictions on automated-decision making including profiling where the decision-making and profiling significantly affects the data subject; and
- significant penalty increases with greater scope for non-compliance or violation.

While the GDPR will frame a common standard across Europe, legal requirements relating to the ethical use of data remain relatively immature. The Joint Committee of European Supervisory Authorities have recently launched a discussion paper which poses questions on the boundaries beyond which the use of data becomes unethical or unfair for the customer³. Instances of behavioural data causing negative media attention are not unheard of in insurance, and we recommend that voluntary ethical codes are built into data usage strategies to avoid this in the absence of legal requirements.

Case study: Making use of 'dirty' data in telematics



The challenge

A leading European insurer performed an assessment to analyse its position in the motor insurance market. Classical insurance products were identified to be in decline for the foreseeable future as a result of both the sharing economy and fundamental changes to the way mobility is organised.

They recognised that a substantial improvement in their understanding of the end customer was required in order to remain competitive. Telematics was chosen as the core enabling technology to achieve this.

Approach and success factors

We worked with the insurer to build a central telematics platform, using Hadoop data lake technology to enable the collection and storage of telematics data for millions of cars. An analytics platform was created to allow data scientists and actuaries to look for patterns in the collected data and correlate aspects of driving information with accident likelihood and claim size. Intelligent scoring algorithms were then used to calculate rebates to the premium. This enabled value-add services to be provided to the customer, e.g. trip reports with insights on driver behaviour and patterns.

The overall business model was verified in two pilot cases and is expected to be in group-wide roll out from early next year. The following factors were found to be critical to the success of the initiative:

- Data had to be of sufficient quality in order for individual driver insights to be accurately linked to personal discount factors. As telematics data is inherently 'dirty' (often incomplete or inaccurate e.g. GPS readings), data cleansing algorithms were developed to improve the raw data captured by telematics devices.
- Given the client's culture and the local regulator's stance, data privacy considerations were at the forefront of the development and use of the solution. The Information Security Officer was engaged throughout the initiative to ensure legal requirements regarding personal data were met.
- Going down the path of a new business model and technology platform required open mindedness and strong sponsorship and support from senior leaders.

Outcomes

As a result of the joint initiative, an attractive and modern new motor insurance product was created, and a platform that can be rolled out within the group was established. In addition, the project has created a precedent for a future suite of sensor and analytics based insurance products.



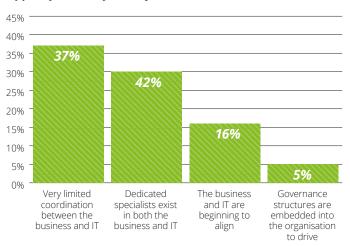
Agility and traditional insurance are not natural bedfellows

Given how important tools and technology are in data analytics, it is paramount that both the business and IT work seamlessly well together.

As shown in Figure 8, the industry has made progress in recognising that technology enabling platforms and tools (IT) need to be connected better with the business users.

However, almost 40% of respondents recognise that there is not enough alignment between the business and technology or IT today.

Figure 8. How well do the business and IT work together to support your analytics objectives?



"We have insights but our systems are so bad that we can't feed them back into our underwriting and pricing tools to use them."

Regional CEO, EMEA

Case study: Connecting the old and new world



The challenge

A pure digital insurer in the P&C and health care space wanted to provide personalised quotes whilst maintaining conversion rates at the target level. Essentially, they wanted to set an individual premium for prospects, based on estimated customer value, at the best competitive price at the time of quote.

Approach and success factors

We developed a real-time dynamic pricing engine which determines individual premiums based on (expected) customer life time value and real-time online price benchmarks. The engine orchestrates the dynamic pricing for new and existing customers and captures all proposed individual customer premiums. It also captures the pricing of peers at the moment of quote and customer responses.

Implementing dynamic pricing was a journey and the factors below were found to be critical to the success of the initiative:

• It was essential to bring all competencies together (marketing, sales, actuarial and finance) in order to design a customer lifetime value model that was understood and agreed by all. Consensus on the definition of customer value was crucial.

- In order to leverage existing platforms (such as policy administration systems) and avoid prohibitively high costs, an 'add-on' engine was developed. The add-on derives a correction factor based on multiple inputs (such as peer offering, propensity to buy etc.) to reflect the customer lifetime value at the point of quote. The correction factor is fed back into the existing pricing systems, and then to the aggregator platform enabling a real-time quote to be generated.
- The dynamic pricing tool was developed closely with the insurer in order to ensure it is successfully embedded within the organisation.

Outcomes

Preventing unnecessary discounts increased the premium income structure by 6%. The tool gave the insurer the ability to react directly on competitive pricing campaigns without having to build a new solution with new systems from scratch. Furthermore, it has provided insight into price sensitivity and the brand value associated with competitor brands.



Developing an agile approach



It is undeniable that there are many successful start-ups rapidly emerging in the insurance market. Reasons for their success include their ability to move with the requirements of their customer base, being able to quickly leverage technology and apply their analytical insights at scale.

A new era requires a new approach. Incumbents must become agile as they test and learn if they are to keep up with start-ups. One way is to create a sandbox environment which provides a platform for agile development whilst enabling an organisation to safeguard properly regulated production environments to build and deliver the next generation of solutions. For example, a UK based general insurer has instigated sandboxing and is now regularly experimenting with analytics proofs of concept in order to test the value of industrialising the solutions in the future.

Leveraging ecosystems and knowing when to partner

As the analytics journey progresses, it is easy to feel overwhelmed by the capabilities required to keep up with the rapidly changing market. Developing a network of partners and leveraging ecosystems can take some of the pressure off constructing all of these capabilities internally.

- A data ecosystem includes data suppliers, data brokers and data distribution networks.
- An analytics ecosystem includes technology and also the people and related organisations performing similar analysis.
- A business ecosystem is based on the data and analytical capabilities being offered across the value chain and can be fundamentally different from past customer/supplier relationships, including regulatory impacts.
- A talent ecosystem is made up of relationships with universities, business schools, professional associations and innovation hubs.
- A crowd-sourced ecosystem obtains its services, ideas, or content from contributions from a large group of people, especially online, rather than traditional employees or suppliers.

Insurers often fall into the trap of trying to do everything themselves. For example, as set out in page 12, over 70% of respondents stated that their organisations are tackling the talent shortage by focusing on developing and retaining in-house talent, as opposed to leveraging managed services from third party providers or hiring consultants.

We see this too often with data and technology - building internal capability is not always the most efficient way of achieving the desired return on investment. The key lies in knowing when to partner and when to invest.

Organisations should seize the opportunity of working with partners so that the task of being innovative is not always left with them. Bringing in third parties provides fresh thinking and new perspectives. We strongly recommend that insurers leverage third party support in order to accelerate their own capabilities in the short-term whilst growing their own internal capabilities. Delivering benefits in this way strengthens the business case for continued investment and sponsorship.

Analytics sandbox

An analytics sandbox is an environment which provides a core set of analytical tools and access to business data to enable exploration through various analytical techniques to identify new insights. The environment is separate from the production for standard BI and reporting to enable resource intensive analysis to be conducted without impacting critical production activities.

The sandbox can be enhanced to enable users to load their own data for more advanced ad-hoc analysis using new internal and external data sets. In addition, in some more advanced cases users can install their own technologies into their own sandbox environments to enable truly customised analytical insight to be generated – and potentially industrialised later.



The framework below supports decision making in considering whether to outsource capabilities or retain in-house.

Deciding whether to outsource capabilities Required level of business understanding Mised in-house and In-house capabilities outsource cap bilities Outsource Outsource capabilities capabilities Required level of technical expertise

Noting that ecosystems can be a powerful tool in transforming an organisation, advanced contracting and partnerships carry with them considerable risks which must be mitigated from the outset.

Top tips when building ecosystems



Go cross-industry:

mix of technology, data brokers, public sector and industry partners

Win-win:

design contracts to drive mutual benefits and lasting relationships



Risk-aware:

stay aware of privacy, cyber security data quality and other contagion risks

Try before you buy:

test the potential through small proofs of concept





Managed framework:

reliable but agile sourcing and supplier frameworks

Measure the benefits:

KPIs in place to track and compare value overtime



Case study: The agile insurer



The challenge

A 150 year old Canadian traditional mutual insurer recognised they were being left behind by competitors. They wanted to launch a digital proposition and disrupt the market by changing the way insurance was bought online.

Approach and success factors

We worked with them to create Canada's first, fully online, property and motor insurer. Customers can buy and service their policies at any time (24 hours a day, 7 days a week) using any digital device. Customers are required to answer just a few simple questions as opposed to the lengthy questionnaires requested by competitors. An instant quote is provided and the customer is able to buy the policy within minutes.

This was achieved through:

- building a multi-channel access, distribution and servicing network with a winning value proposition for customers and brokers;
- investing in world-class analytics to build competitive advantage in customer understanding, targeting, risk classification, pricing, product design and business mix optimisation;
- pursuing scale, diversification and growth via demutualisation and material acquisition, with near-term focus on broker investment and medium-term consideration of strategic relationships; and
- enhancing operational efficiency, talent development and productivity levels to better than industry benchmarks in all areas of the business to deliver on the strategy.

Success factors included:

- investing significantly upfront in market studies and surveys to ensure a deep understanding of customer and broker needs;
- relentlessly testing and learning to understand which pricing variables could be eliminated and replaced using big data, whilst maintaining pricing granularity and structure;
- continuously feeding back the learnings to perfect the pricing algorithms; and
- developing the technology solution around three core
 platforms (policy administration, analytics engine and digital
 front-end), all able to support cost effective agile development
 of a bespoke solution enabling automated decisions.

Outcomes

The company is the first Canadian insurer to allow customers to customise their quote and fully bind online at any time using any device. It uses sophisticated analytics to provide personalised quotes in just seconds, using only a handful of questions. It leverages the existing back office function, has no brokers or underwriters and only 20 customer service operatives. As a result, it significantly improves the customer experience and is causing disruption in the Canadian market today.

Operationalisation and change management



Organising for success is only part of the solution – acting on insights is the greatest challenge

With a clear vision and strategy, a roadmap of data analytics projects which consider in-house capabilities, leverage ecosystems and are expected to deliver value throughout, what remains is to identify the right operating model. A successful operating model not only supports delivery of the insights, but also how these are acted upon, operationalised and evaluated.

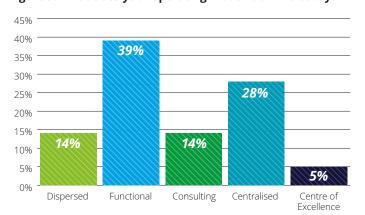
Our study revealed that there is no single way to organise for success. Communication and change management were also identified as challenges in becoming insight-driven. The section below discusses these challenges in more detail and sets out our recommendations.

Operating models have no clear winner

Considering the organisation's needs and choosing an effective operating model is important in order to realise the value of data analytics. There are a wide range of operating models adopted across the industry today (see Figure 9). Whilst it may be natural for an organisation to start with a 'functional' model and move to a 'consulting' or 'centre of excellence' model as it matures, all are legitimate forms of organisation, and at the moment, no particular model has emerged as being the most successful for the industry.

With no clear recipe for success, insurers are trying different models and having to adapt and change their approach as required.

Figure 9. What does your operating model look like today?



"Today we do analytics by function, tomorrow I am confident it will be across function."

Chief Actuary, EMEA

Organising for success



A one size fits all approach does not apply when it comes to operating models. The scope and capabilities of the analytics function should be determined, based on both the organisation's current and potential future needs – the vision, strategy and roadmap of activities will play an important role in this.

As with many other organisational functions, the data analytics function benefits from having some standardisation. The development of repeatable processes and a centralised capability can help drive scale for the enterprise. That being said, analytics should not be conducted in isolation from the parts of the business for which the analytical insights are being produced. As a young and developing function, data analytics – more so perhaps than any other support function – must be linked intrinsically to the needs of the business and show flexibility as these needs continue to change.

The challenge for leaders is to decide which capabilities should be provided centrally, and then how to seamlessly link the centralised function with both IT and front line business services. Bringing together key stakeholders to identify where efforts should be focused will help to ensure a holistic view of organisational requirements.

The scope, scale and level of influence of the analytics function will evolve over time as the perception of analytics by the business and thirst for insight matures. As a result, some organisations may switch from one type of operating model to another.



Dispersed

Analysts are scattered across the organisation in different functions and business units with little coordination.



Functional

Analysts are located in functions like marketing and supply chain, where the most analytical activity occurs.



Consulting

Analysts work together in a central group, but act as internal consultants and charge business units for their services.



Centralised

Analysts reside in one central group where they serve a variety of functions and business units and work on diverse projects.



Centre of Excellence

A central entity coordinates the activities of analysts across units throughout the organisation and builds a community to share knowledge and best practices.



Operationalisation and change management

The message is not always loud and clear

Executive sponsorship is essential in shifting the culture of an organisation towards becoming data-driven and hungry for insights.

Whilst the majority of insurers we surveyed are taking steps in the right direction, 40% told us there is a lack of senior leadership, and as a result, there is a limited understanding of the benefits and power of analytics across the organisation (see Figure 10).

Using data to inform decision making requires a leap of faith for some, and only by proving the value on the journey, may people start to believe in the benefits of becoming insight-driven.

"The need for analytics is understood, but operationalisation is a challenge."

Chief Actuary, EMEA

Spreading success stories



Executing against a well-designed roadmap of initiatives will demonstrate value to the rest of the organisation provided that the sponsorship is strong enough to ensure that the insights are acted upon. By developing analytics proofs of concept in an agile

way, a cycle of 'promotion' can be developed as well as an internal brand for analytics.

Success stories must be communicated loud and clear to not just the executive and the sponsor, but to the whole business. Organisations in other industries are doing this through live demos, intranet sites, Yammer groups, Sharepoint sites and visual insights hubs.

Figure 10. What is the impact of executive sponsorship in changing the culture towards becoming insight-driven



There is no clear champion, understanding of analytics in the business is very limited



Local champions exist with no centralised role, there are some pockets of analytics knowledge



Emerging group champion role with some centrally led initiatives, key advocates are trained to spread knowledge of analytics



A clear group champion role exists, a widespread analytics communication plan is in place across the organisation



Senior sponsorship and champion exists, a change community is engaged to fully realise the potential of analytics



Hearts and minds do not change overnight

Everyone in the organisation needs to buy into the strategy and make use of the data, tools and insights available to them. Even with strong leadership and executive sponsorship, an organisation may not change, and it certainly will not change overnight. In particular, it requires a large cultural shift to act on insights from analysis to support and drive decision making.

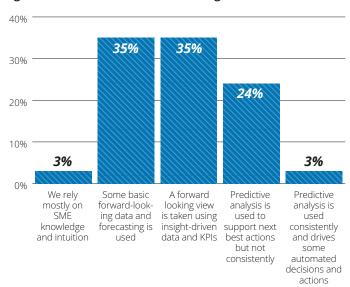
Figure 11 illustrates that whilst insights are being used in decision making in the most part, there remains a barrier when it comes to acting on insights from predictive analytics.

Only 24% of respondents are using predictive analytics to forecast future scenarios, and only 3% are using the insights to drive automated decisions and actions.

Poor data and limited trust in the insights are often assumed to be the cause for this. However, in insurance, we believe this can also be attributed to deep seeded perceptions about data analytics and resistance to move away from making decisions based on gut-feel.

As a result, insurers are missing huge opportunities – competitive advantage and disruption come from being able to predict and act quickly. Traditional mind-sets are holding insurers back from taking the leap of faith required to exploit the benefits that automated decision making and artificial intelligence can provide.

Figure 11. What is the decision making culture?



"It is easy to underestimate the effort required to drive change. We have data scientists but don't know how to best use them."

Director of Functional Risk, EMEA



Changing the mind-set



Many decisions are driven from gut feel, often supported by deep knowledge and experience, but more often by a lack of trust in (or access to) data and insight to support the decision making process. Fixing the underlying data quality and access issues are only part of the challenge; changing deep seeded perceptions is just as important in realising the benefits and acting on insights.

Change management skills are critical to the success of an analytics transformation journey. As the complexity and global reach of analytics initiatives increase, so will the impacts – different business units, cultures and geographies. Change and communication skills are often underestimated and undervalued but analytics transformation cannot succeed without them.

Embedding insights into everyday business requires a behavioural shift, and some organisations are finding that a change in the physical environment supports this. Adoption of more flexible working and delivery of innovative workspaces can help transform the environment into a place for more productivity, collaboration and innovation. Some of the latest approaches being harnessed are set out below, and we have seen some insurers already start to set up such workplaces.

- **Digital operations centres:** large touchscreens with multiple data visualisations and views from across the company's performance.
- **Design thinking spaces:** corridors, boardrooms and even aircraft hangers covered in whiteboards to encourage employees to draw their solution or insight process.
- Wearables war rooms: collections of the latest technologies for employees to work with, for example, virtual reality glasses, drones and 3D printers.
- Analytics laboratories: agile build and test environments with sophisticated data visualisation and design capabilities.

Changing the physical environment is just one way to support cultural change in an organisation. Given the scale of the challenge, it is necessary to attack the change agenda from multiple angles, many of which we have touched upon in previous sections. For example:

- **Communicate and create demand:** build a compelling picture of the future, educate people on the art of the possible and spread success stories across the entire organisation in order to inspire people and create a thirst for insight.
- **Set up for success:** ensure projects are seen through and insights are acted upon by having strong executive and business sponsorship. Thorough planning and prioritisation of projects is important to avoid data and technology hurdles.
- Think about talent in a new way: finding and retaining Purple People requires new talent pathways, incentives linked to innovation, and searching in new places.
- **Be prepared for failure:** accept that some initiatives will fail, be prepared for this and able to learn from it. It is important to fail, and to fail fast. Sandbox-type environments and agility are key.

Case study: The importance of change agents



The challenge

A top 20 global insurer recognised that they were lagging behind their competitors and wanted to find a way to leapfrog the competition in a cost effective manner. They decided upfront up on a centralised analytics factory to churn out insights supported by lean local 'spoke' teams.

Approach and success factors

The spoke teams comprised of 'change agents', individuals with business knowledge rather than pure data scientists. The change agents were able to work with the local business units to formulate the business questions, identify the business case and build stakeholder buy-in.

When the insights came back from the central analytics hub, the spoke teams were able to apply the insights to the business and identify which processes needed to change in order to realise benefits and deliver value.

Key success factors included:

 creating demand for analytics from the business through change agents to compliment the top-down push by leadership to embrace analytics;

- recognising that they needed a combination of skills in order to be successful – analytics and data science in the hub, and business and change skills in the spokes; and
- knowing that churning out insights is not sufficient, and that
 it was equally as important to be able to articulate the
 business case, take stakeholders on the journey and action
 the resulting insights.

Outcome

A hub and spoke model supporting the generation and use of analytical insights was established. The success ratio of projects is high due to the change agents:

- playing a key role to define the business case upfront;
- · connecting data scientists and the business; and
- encouraging adoption of insights and supporting implementation of changes.

Are you ready to become an IDO?



Our survey reveals there is a wide variation in analytical maturity of insurers across EMEA today. Few are seriously investing in the capabilities required to adopt analytics enterprise wide, with the majority still progressing in a slow and piecemeal fashion, with a long game ahead.

The rise of start-ups, changing consumer demands and rapid rate of disruptive technologies emerging means that insurers have to quickly change tactics and charge forward if they are to maintain market share. The key component is embedding data and analytics across the entire organisation, without it, even the best endeavours will fail.

Introducing IDOs

An Insight Driven Organisation (IDO) is an organisation which embeds analysis, data and reasoning into their decision making processes. They do not view analytics as a project with a start and end date, but rather see analytics as a core capability across their organisation to provide insight to support the decision making process; to tackle their most complex business problems; and to address the growing analytical trends.

strategy in silos

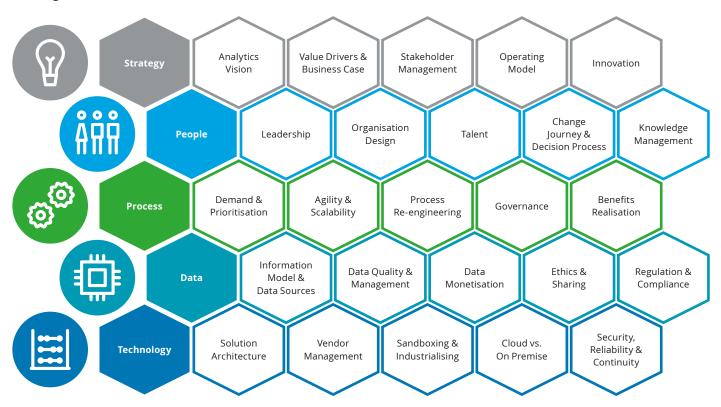


IDO maturity curve Stage 5 Insight Driven Organisation Stage 4 **Transforming** analytics Stage 3 to streamline decision Analytical making across all business functions Aspirations Stage 2 **Industrialising** analytics Stage 1 Localised to aggregate and Analytically **Analytics** combine data from Impaired broad sources into **Expanding** ad-hoc meaningful analytical capabilities content and new ideas beyond silos and into Adopting analytics, mainstream business Aware of analytics, but building capability and functions little to no infrastructure articulating an analytics and poorly defined

analytics strategy



Building blocks of an IDO



How to become an IDO

Whilst leading organisations have made significant progress in developing analytics capabilities, in our experience they often struggle to structure their strategy, people, processes, data and technology to cope with the rising volume of information and the ever-increasing demand for analytical insights. We have put together a tried and tested framework to help guide senior leaders as they transition their businesses towards becoming IDOs (see above). Each building block represents an action or subset of actions to address along the way.

Becoming an IDO is not an easy task and will certainly not happen through the drive and determination of the CDO alone, no matter how great. However, we believe that making three key changes will change the game for insurers:

 Take a holistic approach and plan for the enterprise-wide capability you will require in the future, not your short-term tactical requirements.

What kind of insurer are you today, and what do you want to be tomorrow? What are you doing about this and how do you plan on getting there? Which changes do you need to make and prioritise? 2. Leverage ecosystems to make the best use of data, technology and talent in a quick, cost-effective and safe fashion whilst building your future capability.

Do you have the ability and budget to do everything in-house? Is it efficient and prudent to do so? What could you glean from elsewhere?

3. Address the behavioural challenges by prioritising change management in your analytics efforts to truly benefit from the value of analytics.

Do you recognise the importance of change relating to analytics? How can you address this in your organisation? Does your leadership set the right example?

As witnessed in other industries, those who recognise, embrace and address these big challenges will emerge at the top of the league. Those who shy away and assume that change will simply happen will be left behind, rapidly.

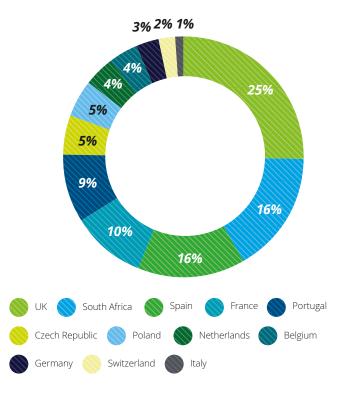
We hope that this report has provided you with some thoughts for consideration and we would be delighted to discuss our findings further with you.

Appendix A – The survey

In total, we received 102 responses to our survey from 68 different insurers across the EMEA region. The responses included 8 of the top 10 European insurers, based on a classification by total assets under management⁴.

Different levels of management responded ranging from Chief Data Officers and other C-suite members (CEO, CRO, CMO, CFO, CIO etc.) to pricing actuaries to general management.

Figure 12. Percentage of total response contributed by country





Appendix B – Links to publications



World Economic Forum –
The future of financial services



Turbulence ahead - The future of general insurance



The evolving role of the chief data officer in financial services – From marshal and steward to business strategist



GDPR Compliance - The clock is ticking

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Endnotes

- 1. CBI Insights, Trends in Insurance Tech, September 2016
- 2. Forbes online, 22nd February 2016
- $3. \quad \mbox{Joint committee discussion paper on the use of Big Data by financial institutions}$
- 4. http://www.relbanks.com/top-insurance-companies/europe

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