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The future of the CRO is NOW
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These are exciting times to work in the insurance industry. Technology is having a profound impact on insurer's operations. The role of the risk professional is being redefined thanks to new sources of data and new ways of using that data for underwriting and risk modelling. Customers who have grown accustomed to the ease of use offered by Amazon, Apple, Google and other tech giants expect the experience with their insurance companies to be just as seamless. Connected devices are generating enormous amounts of data

that – in technology terms – opening up opportunities for value generation, focused distribution, and improved pricing and underwriting processes. InsurTechs are relying on innovation and agility to reinvent the insurance value chain.

At RiskMinds Insurance 2018 in Amsterdam, the world's leading conference for risk managers in the insurance industry, Deloitte's keynote focused on the primary ways these developments are impacting risk leaders. This whitepaper includes four chap-

ters outlining some of the main disruptive forces in the insurance sector and their effect on risk professionals. Each chapter outlines concrete courses of action that will enable risk professionals to navigate this changing environment and actively shape the future.

Fig. 1 – Key disruptive forces in play across the insurance sector

Risk framework redesign

The value chain is changing: applications, underwriting, claims, and billing are examples of key focus areas in the industry. As customers learn to expect innovative products and streamlined processes on digital interaction channels, the insurers of the future need to harness new technologies to gain competitive advantage. Industry leaders are investing in artificial intelligence and mining new data sources to achieve these advantages. These capabilities help improve client-related processes and services while cutting costs at the same time. Emerging opportunities to automate processes with robotics can help insurers to reduce costs internally as well.

One accelerator of the changing value chain is the rise of InsurTechs. Using the disruptive technologies mentioned above, InsurTechs disaggregate elements of the value chain by 'plugging-in' selected services. Selected InsurTechs indicate the ability to utilise technology and respond to consumer demands quicker and more agile than established players. Their business models are not bogged down by long change cycles and inherent internal resistance to disruption.

Nature of risk changes
These massive changes in the insurers' value chain also lead to changes in the kind of risks insurers encounter. While an increasingly automated and technology-driven world leaves less room for human error, it also makes operations and customer interactions much faster and less transparent. Insurers then face new challenges related to the oversight of the decision-making process and the systems themselves.

In one scenario, industry players might face a greater need to test the results of a machine-learning algorithm rather than the manual review of a middle manager. What makes this even more complex is the fact that machine-learning algorithms are dynamic – the baseline from previous tests will not work on future tests.

Pricing is another example. Would a set of 'unguided' cognitive computing algorithms be better at pricing risks than traditional ratings tables or other established methods? When we rely so heavily on inbound data and proper algorithmic behaviour, it means that our standards for quality, timeliness and regulatory-compliant usage of data sets increase as well. Otherwise, underwriting models, prices, forecasts and overall steering might be at risk.

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This is not the only issue with these new models. Algorithms in and of themselves feel no 'compunction' about discriminating on a range of factors that are immoral or illegal, such as gender, race or age. Instead, they rely primarily on data and the logic hardwired into the system - even if they are likely to be incomplete or contain implicit biases, which could lead to undesirable customer outcomes. With the increased complexity of these new models, which continue to evolve with new data sets and artificial experience, risk managers face the challenge not only of understanding the risk models, but also ensuring that they actually work.

Structure of the Risk Function
Designing an effective oversight framework requires expertise in different areas. The Risk Function needs to augment its teams with new skill sets that serve the business in an industry where the pace of change is accelerating quickly. As humans increasingly work side-by-side with AI, leadership will have to adapt to a new reality: instead of leading only 'human' teams, they will be leading functionalities. In the future, the Risk Function will need to cover risk management, actuarial/analytical skills and technical expertise to understand new methods and technologies. Developing and managing new functionalities is

not enough, risk managers will also need to change the way they collaborate with other business functions. It is up to the Risk Function to play an active role in the transformation of the insurance business, bringing their risk expertise and broad-based business knowledge to bear.

Fig. 2 – Adjacent factors – like IoT – are introducing challenges and opportunities
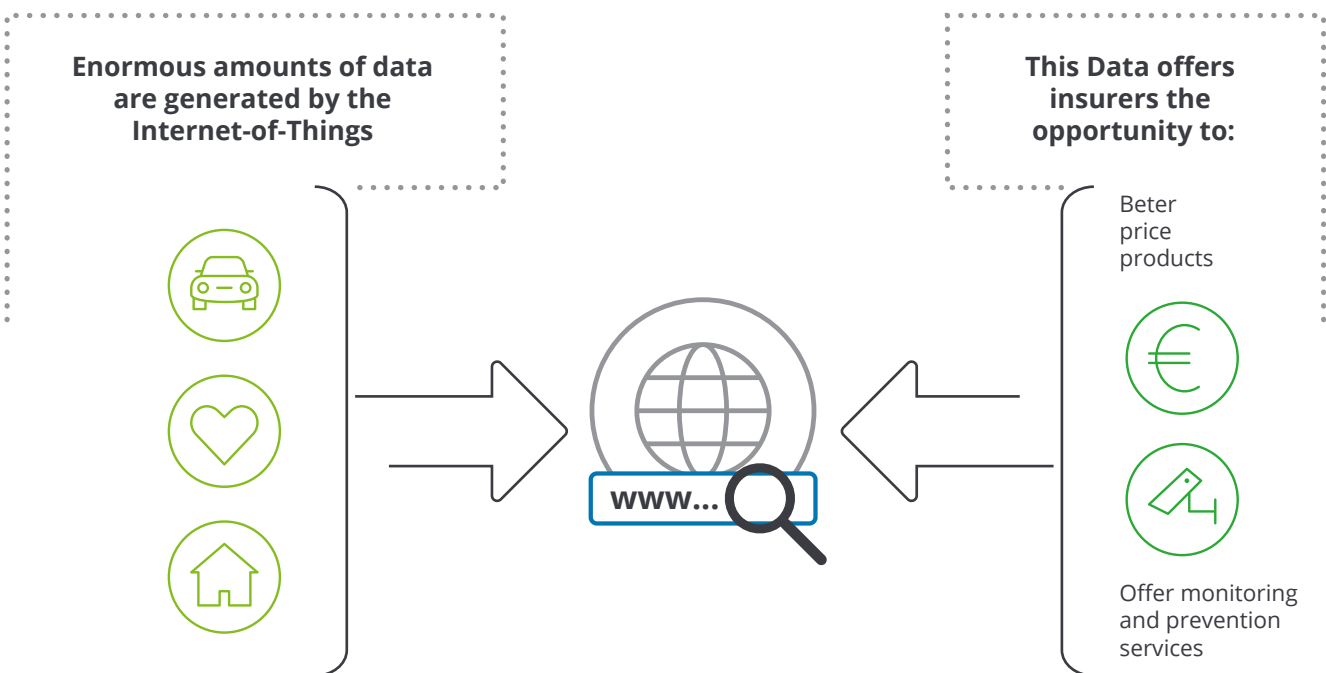
Real-time risk assurance

The traditional cycles of risk management on an annual assurance plan, a semi-annual pricing review cycle or a quarterly controls review cycle, are no longer adequate in this more dynamic environment. Dynamic businesses need to identify issues and areas of emerging risk faster to drive smarter, quicker responses and more proactive risk management.

Digitalization enables real-time risk management

Digitalization leads to processes with a high level of automation, through new applications and/or the use of robots. Furthermore, digital processes and external sources potentially generate a massive amount of data. By using this data, an insurance firm is better able to identify, analyse and measure an organization's risk exposure in real-time. As we have seen in the banking sector, regulators are likely to gather risk-related information in real-time in the future.

Risk managers at insurance companies need to move forward with a view of risk that is much closer to real-time, using technology as an enabler. A key prerequisite for risk professionals is the ability to define measurable key risk indicators and stringent data quality management in their use of continuous monitoring and analytics capabilities – so called 'risk analytics' – to identify issues early and derive risk response measures in real time. The risks in question include the typical financial risks (credit, market, etc.) and non-financial risks, such as strategic risks, third-party risks, cyber risks and conduct risks. Examples for risk analytics that provide real-time risk information include:

- Use of data from outside the organization (e.g., using data from a policy holder's or a partner's social media profile to gain insight into their behaviour and prevent fraudulent actions);

- Identification and assessment of high-risk interactions between customers and agents through machine-learning methods.
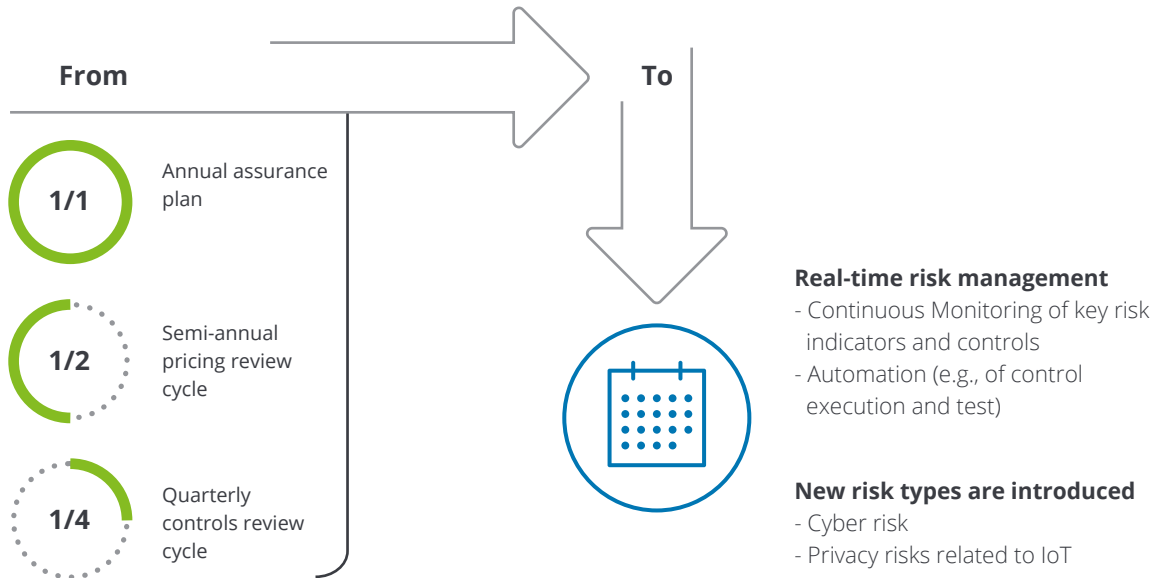
Selection of the right use cases

Not all risks that may affect an insurer can be monitored in real-time or completely. That would be too costly. However, improving real-time monitoring capabilities of financial risks to manage an insurer's overall risk exposure in a more agile and adaptive manner could be a sound investment. Further candidates for real-time monitoring might include risks that could lead to a massive violation of regulations (e.g., preventing potential fines on sanctions/embargos and reducing anti-financial crime).

Monitoring non-financial risks often involves high volumes of structured and unstructured data from heterogeneous sources. At present there is no vendor that can supply fully integrated packaged solutions for governance, risk and compliance management at such a comprehensive level. An integrated and real-time risk management requires new types of applications and processes. Monitoring of internal controls is a key area where we can already see these changes happening.

Robotics and machine learning are enabling insurers to automate tasks and control procedures in the first line of defence. Using automated controls also mean reducing the number of people required to perform controls. However, such controls require testing on an ongoing basis rather than on an annual cycle to provide assurance and identify issues in real time. We believe this will lead to increased efficiency and improved process quality.

Fig. 3 – Pivot to real-time risk assurance

From

To

1/1 Annual assurance plan

1/2 Semi-annual pricing review cycle

1/4 Quarterly controls review cycle

Real-time risk management
- Continuous Monitoring of key risk indicators and controls
- Automation (e.g., of control execution and test)

New risk types are introduced
- Cyber risk
- Privacy risks related to IoT

Analytics capabilities are key

It is an amazingly exciting time to see how quickly technology is changing the way we work and the business models we use. As this future unfolds, there are significant opportunities in the risk domain.
Risk Functions are looking for ways to effectively leverage their analytic capabilities. Analytics enable risk professionals, for example, to identify new risks, emerging threats, and potential bad actors by scanning a wide range of signals in the internal and external environment. This helps to prioritise areas for testing and monitoring, deploying automated monitoring of limits with defined escalation, addressing issues in real-time to improve the enterprise-wide view of risk (see article 2) and providing decision support.

Using enhanced data analytics means insurers have the potential to perform a full population assessment instead of sample analyses and an opportunity to increase the scope of highly robust analyses at reduced costs. We can already see how analytics are providing value for Risk Functions in the following examples:

Behaviour and Emotion Analytics Tool (BEAT)
BEAT is a voice analytics platform that uses cognitive technology and risk algorithms to monitor and produce a risk score for voice interactions based on speech, behavioural and human emotional tendencies. It flags risks through non-verbal signs, such as high levels of hesitancy and uncertainty during customer service calls, and also provides Risk Functions with the ability to identify the right responses to issues through constant monitoring.

Automatic driver scoring and risk analytics for pricing automobile policies (telematics)

Insurers price various risks in automobile policies based on dedicated scoring models for the vehicle drivers' behaviour. Based on various data points (i.e., street, speed or time of the driven course), risk-related information is gathered on mobile devices or devices embedded in the car. This information is then provided to the insurer (or a central server of the automotive OEM (Original Equipment Manufacturer)). By being able to estimate the risk of a driver's dedicated journey, the insurer is prepared to offer more customized and usage-based products (so called micro-insurance).

These examples represent just the beginning of the data-driven pricing, underwriting or other risk-related operations. With more sensors in buildings, cars and devices (Internet of Things), insurers will be able to use the generated data to price risks more effectively or to help clients prevent or at least reduce the risk of a loss event. This will lead to better portfolios/better risks (selection/anti-selection) and better risk diversification management. However, this trend might also change perspectives towards the overall concept of general insurability and the 'principle of solidarity' in insurance.

Teaming with other functions for Risk Management Excellence

The level of technological sophistication required to run an insurance company grows as algorithms and robots dominate parts of the value chain. This increasing level of technological sophistication is also redefining jobs and transforming entire professions by enabling humans and machines to work together side-by-side. This also applies to risk management. Teaming with other functions to share capabilities is key. The Risk Function will profit from other functions' technological, legal or strategic expertise to shape its operating model for the future. Conversely, risk professionals will be able to support other functions with the risk management skills they rely on in a dynamic, complex, and increasingly technological business environment.

Fig. 4 – Deepen technology savvy

Increasing availability of data and the rapid development of cognitive technologies

Increasing capabilities of automation

Impact underwriting and analytical capabilities

More efficient and effective execution and monitoring of processes and controls
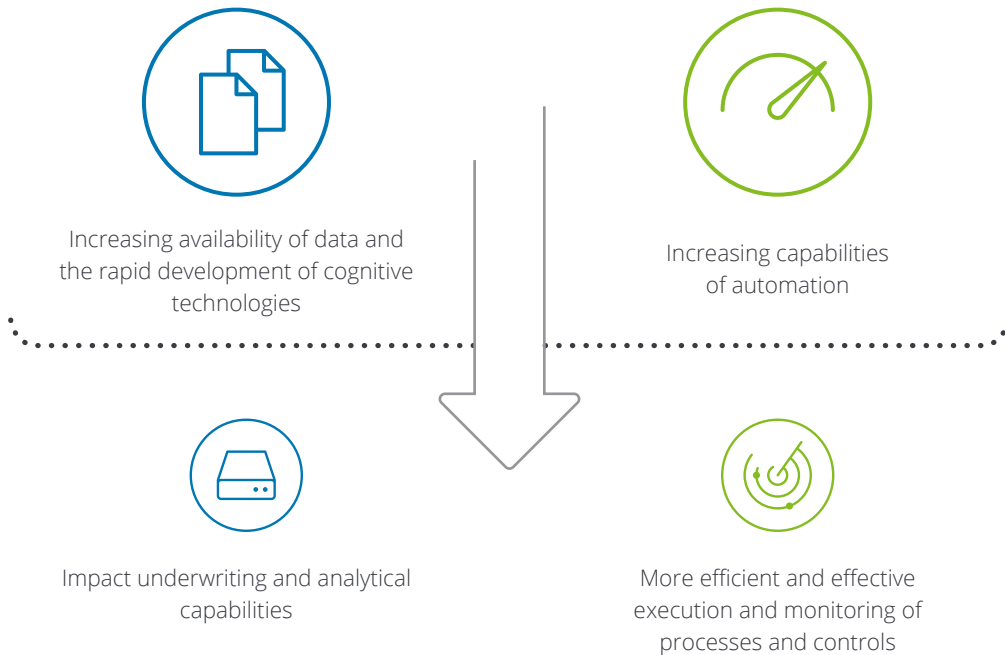
CRO as strategist

The changing technological environment guides the way for insurers to transform how they use and manage technologies and data to become substantially more effective and efficient. The industry needs to embrace emerging technologies that can enhance the customer experience, provide access to new markets and new products while reducing costs.

Organisations need strong leadership in these changing times and CROs, now often reporting directly to the CEO, have a key role to play. With deep insight into the insurer's business, a CRO can collaborate with the business to achieve the best results for the customer and for the business. Since a CRO is keenly aware of the organization's risk exposure, she or he can act as an early adopter of new technologies and manage disruption effectively and diligently.

Holistic understanding of insurance business is key

CROs have a unique perspective in an organisation, with a mandate to see the big enterprise-wide picture and the benefit of day-to-day interactions with all departments. Thinking about the level of strategic engagement a CRO has with the business, and how the business engages with the Risk Function plays a key role - for example:

- What the Risk Function is doing to support the business' assessment of leveraging InsurTechs or partnerships;

- How the CRO works with the CIO (Chief Information Officer) and CDO (Chief Data Officer) to manage developments in technology and data;

- Whether the Risk Function is committed to defining a risk-optimized IT Security strategy.

Many CROs already have excellent analytical/actuarial skills and a strong focus on the oversight of capital, pricing, and operational processes and controls. However, we can expect the CRO function to evolve from a purely operational and technical role to being truly strategic, initiating dialogue, identifying opportunities, and pushing the Board to go further.

CRO as navigator in a cross-ecosystem environment

As changes in customer needs and technological developments significantly impact the business models of insurance firms, a CRO can help shape a company's innovation strategy. CROs can assess strategic industry partnerships (e.g., pharmaceuticals, tech companies, energy industry, logistics, automotive, etc.) and bring in views around the value and risk of these partnerships to support and enhance the insurance business. The future will bring entirely new types of insurance products. Insurance services can become integral components of other industry services. Such (bundled) services might even include 'component services' of other industries to reflect changing customer behaviours and an overall trend in products and services towards 'experience', 'lifestyle' or 'emotion'.

The development of cross-ecosystem platforms will help generate new and alternative ways to grow. A CRO team must also keep in mind that increasing digitalization and greater connectivity between actors, processes and systems will also drive vulnerability. Managing business continuity and actively addressing operational risks and cyber risks will be key for the successful cross-ecosystem environment. The CRO team will have to bring in the right holistic thinking and understanding of opportunities and risks.

To support this strategic navigation as an integral part of the Risk Function's operations, CROs will need to think about how their teams are formed as well: Does the risk team have a sufficiently strategic mindset? This is typically harder to achieve than purely technical skills. How do you attract, retain and develop the right talent? We will see new skills, new teams and new collaborative models within the risk departments of the future.

Conclusion

Although the incumbent insurers still dominate the insurance market, disruptive forces are about to alter the balance of power. The Risk Function has a very important role to play in recognising these forces, and acting appropriately to stay ahead. Taking advantage of new technologies and data will be key, but beside this, the CRO has to reshape the structure of the risk department. Nevertheless, the CRO is predestined to help an insurer enter new markets or establish cross-ecosystem alliances.

CROs are facing exciting times – we are looking forward to form this future jointly
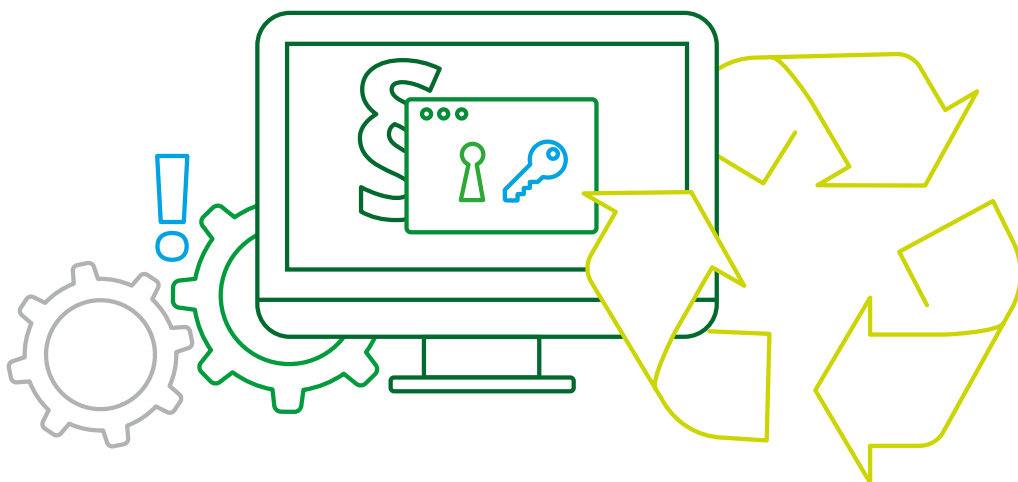
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