Clarity on Insurance

**Reimagining
claims and underwriting**

March 2021

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[FROM LEFT TO RIGHT]
Thomas Schneider, Partner, Head of Insurance and **Philipp Rickert,** Partner, Head of Financial Services

Reimagining claims and underwriting

When we emerge from the coronavirus crisis, the world will look very different to how it did before. Insurance is no exception. The industry already faced pressure to change even before this health emergency, which has re-emphasized this need in light of economic, societal and technological developments.

To help guide insurers through the necessary transformation, here is our summary of the **macro themes** for the post-pandemic environment. Some, such as financial resilience or the response to climate change, have been with us for some time. Others have emerged over the past 12 months.

- **The new reality workforce:** Remote working has become the norm, creating opportunities to acquire new talent as workforce location has become less important. New approaches are needed to combine technology and a flexible workforce, however, including impacts on infrastructure, productivity, cyber security and data protection.

- **Flexible business models:** Insurers switched overnight from a largely in-person environment to a virtual model. It is likely that they will continue to oscillate between the two. This will require a fresh look at the cost, continuity and resilience of operations. Automation and AI will drive a rethinking of end-to-end operating models.

- **Financial resilience:** Swiss insurers remain well capitalized across non-life, life, health, and reinsurance, and we expect the sector to absorb the impacts of COVID-19 without major disruptions. But better real-time modeling is needed to satisfy solvency requirements, as are more detailed liquidity management strategies and an enhanced use of scenario planning.

- **Climate change:** Environmental, Social and Governance (ESG) considerations are becoming more prominent, leading to new opportunities and products, including funding for greener investments or risks relating to carbon trading or alternative energy facilities. Insurers will be expected to enhance their due diligence management systems and non-financial reporting for new requirements approved by the Swiss Federal Council in December 2020, as well as the results of FINMA's public consultation on transparency obligations for climate risks.

- **The innovation imperative:** The pandemic proved that rapid changes are possible, with a smooth move to home working, including relevant managerial and technology changes. As the appetite for impactful innovation grows, agile and innovative Insurtechs will play a key role, and new innovation leaders will push harder to enter the Swiss insurance market.

- **Digital first, digital now:** COVID-19 has accelerated the digitalization of business and operating models across the front, middle and back offices. These need connecting to close the gap between insurers' abilities and customers' expectations. Modernizing technologies, making more use of cloud services, and decommissioning legacy systems are all necessary. The focus is on better and smarter approaches to underwriting and claims management.

In our view, 'digital first, digital now' is key to the ability of insurers to address the other macro themes.

Digitalizing the heart of the insurance value chain: underwriting and claims

This edition of Clarity on Insurance therefore focuses on this topic. In particular, we look at how to transform underwriting and claims processing, which are central to enhancing efficiency, alleviating cost pressures, improving insights and reporting and delivering a superior customer experience.

A better use of data is key. Insurers have access to a huge and growing volume of internal and external information through a range of data points. While they are getting better at utilizing it in underwriting, for example, there is still a long way to go. Data's full potential will only be realized when insurers adopt more sophisticated technology-based models and solutions. We already see insurers exploring their options in this regard. Some are collaborating with Insurtechs and existing technology partners to leverage latest, innovative thinking. We note particular progress in automation and process streamlining, especially around intelligent underwriting. But they have uncovered only the tip of the iceberg.

Insurers have lagged behind many other sectors in their digitalization efforts. It is time to catch up. The world will not return to pre-2020 norms, and insurers must be equipped for what comes next.

**Thomas Schneider**
Partner, Head of Insurance

Philipp Rickert
Partner, Head of Financial Services

Digitalizing the insurance value chain

Insurers face a number of challenges, ranging from climate change to new ways of working that have arisen during the pandemic. As one of these challenges, digitalization stands out due its capacity to help insurers deal with all the others. Insurance has lagged behind other industries in its efforts to digitalize. Better adoption of technologies in underwriting and claims in particular can increase efficiency, improve the customer experience and ensure a sustainable insurance model.

Creating a customer experience that is fit for the future

Keeping pace with society and customers' evolving expectations is key to sustainable performance and success. For personal lines, this means changing insurance from an administrative task to a lifestyle product that works alongside the customer every day. For commercial lines, it means actively helping clients identify current and emerging risks. For both, insurers need to deploy solutions that leverage data, cloud and cognitive – offering products and solutions that cover the full range of prevention, protection and care.
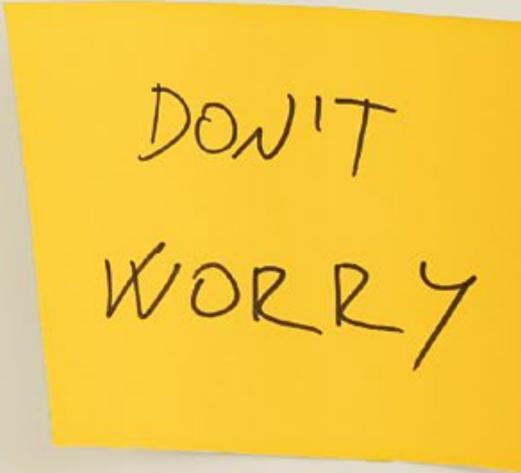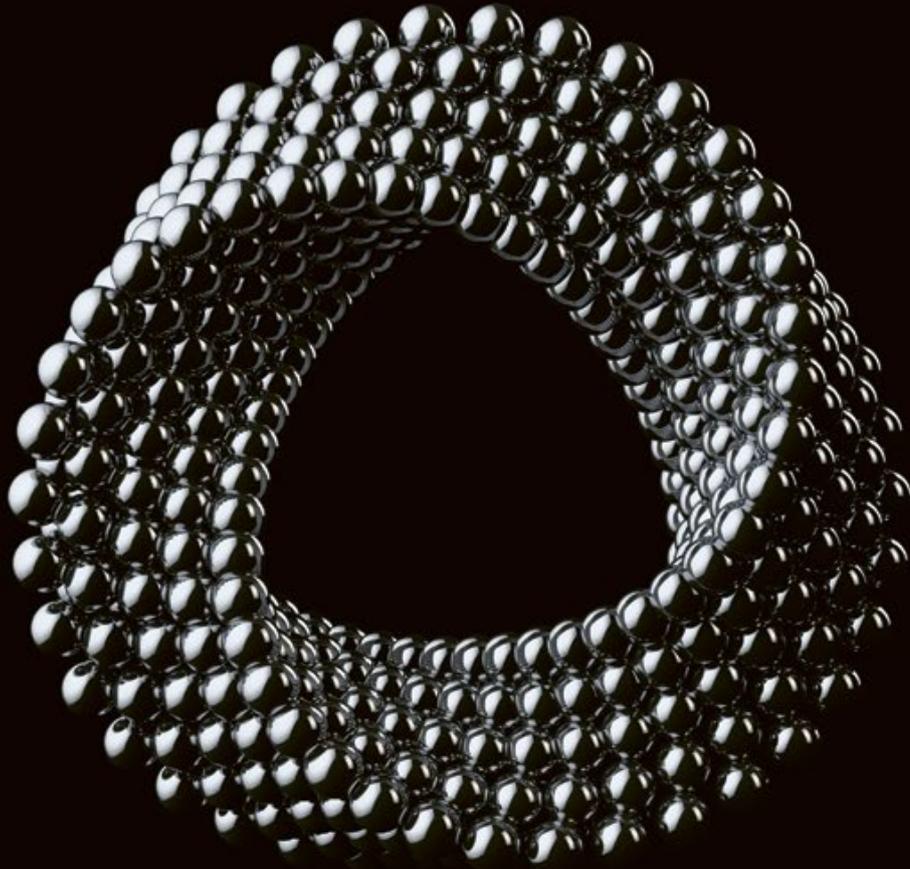
Upgrading the claims organization

Latest technology solutions give insurers the opportunity to move to purpose-driven claims by making better use of the data they hold. From using data-driven insights for prevention, to data analytics for predicting likely claim litigation, to technology such as sensors and drones for helping recover losses – the potential is huge and can be applied before, during and after claims.

Overhauling non-life reserving

For many insurers, non-life reserving remains a resource-intensive manual process. Speeding up its evolution requires reviewing reserving software tools, redesigning processes, deploying artificial intelligence (AI) and much more. As well as improving efficiency and overheads, benefits can include more in-depth analysis of key reserving risks and freeing up specialists to perform more valuable tasks and reach higher quality decisions.
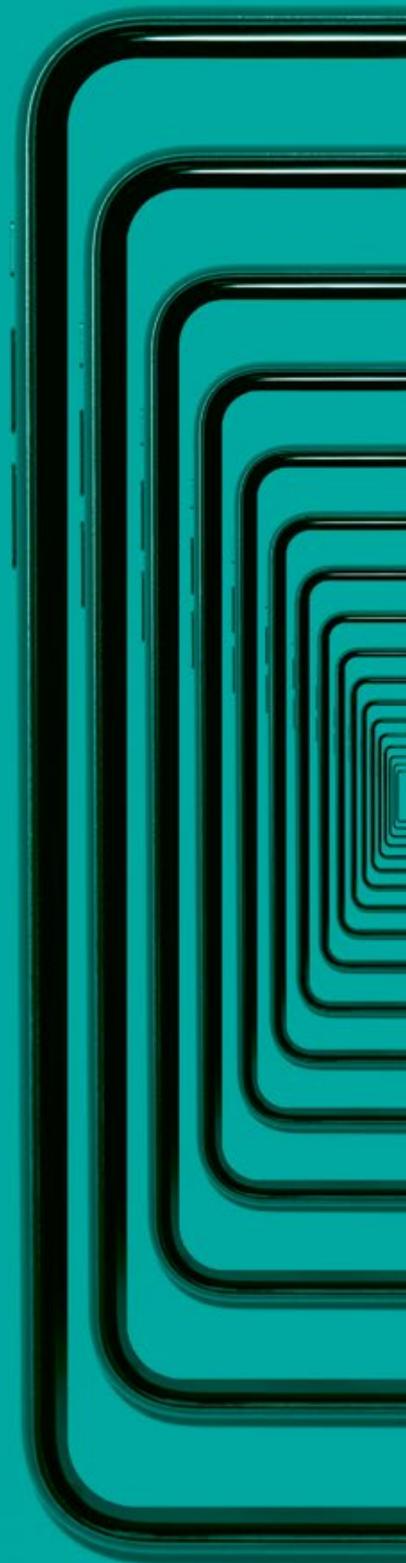
Deploying Artificial Intelligence in life underwriting

Risks must be assessed from multiple angles, involving significant and growing amounts of raw and structured data. Artificial Intelligence (AI) can help insurers process huge volumes across multiple data sources rapidly and simultaneously. It can be a game changer for underwriting, elevating the performance of this core insurance process in understanding customer interactions, reaching complex decisions, and feeding learning points back into the system for continuous improvement.

Leveraging Open Source for Data Science & Machine Learning platforms

Delivering a true digital transformation requires a customized Data Science & Machine Learning platform (DSML) in addition to a core system platform. This ensures data-driven solutions are plugged into the insurer's broader innovation approach. Utilizing Open Source, DSMLs should be developed in-house so that insurers build their own knowledge of pool of how to handle data, and use this to support sustainable competitive advantage.

Transforming the customer experience

Insurance has historically been about selling policies; ideally lots of them. As customers, our experience has not always been at the heart of things. We receive an invoice once a year for the insurance premium, which we pay through our e-banking app. We file the invoice in a binder that contains policies from multiple insurers, each covering a specific aspect of our life or assets. Then, with luck, we have no further interactions with our insurer for another year. This process is becoming increasingly outdated as innovation gathers pace. But what will replace it and how will this impact Switzerland's insurance companies?

OUR EXPERT

Marc Gössi
Global Lead Partner,
Financial Services

Insurance is not something we think of buying when we wake up in the morning. In fact, we generally prefer not to think about it at all. It is a piece of admin, not a lifestyle product. This might be about to change. Innovative insurers are thinking about what customers really need, and how they can better anticipate and respond. They are seeking to create an appealing customer journey that makes the customer's life easier and turns a mundane task into a lifestyle need.

What this means for personal lines

Currently, policies often overlap in terms of coverage. Their lengthy terms and conditions are also difficult to understand. The future of personal lines is about dealing with both of these issues. Rather than selling multiple policies to a client, the focus should be firmly on three key words – prevention, protection and care – delivered through a single interface. The insurance client of the future does not want multiple policies with a bunch of different insurance companies. They want one contract with one insurance company that integrates all necessary elements in a simple and understandable way and covers the full range of prevention, protection and care.

This interface will probably be an app on a mobile device and will accompany the client throughout their day. It will advise them when there is a misbalance between the consumption of healthy and unhealthy foods, for example, or the intake of calories. It will remind them to switch on the alarm when they leave the house, as the app is part of an ecosystem of connected devices in the Internet of Things. When they get into their vehicle, the app will warn them about reckless driving and speeding.

Crucially, the app will allow the client to buy dynamic coverage depending on their life pattern and real-life situations. They will be able to choose between automatic and manual coverage adjustments, such as opting for the app to automatically include travel coverage once they leave their home country.

In case of an incident or insured event, the insurance company will make it easy for the client to report the event through the app. It may require simply taking a photo with the mobile device and submitting it via the app. Alternatively, events such as a broken window might be reported automatically. This is where the app's care element could come in, helping the client resolve the issue in a straightforward way. For instance, after automatically reporting the broken window, the app may arrange a repair, with a suggested timing aligned with the client's personal calendar.

In a nutshell, insurance will become a lifestyle product that interacts with the insured person on a daily basis. The app will become an essential companion for every client, helping the insurance company to be in pole position by creating the best lifestyle experience.

What this means for commercial lines

Commercial lines are generally already more advanced in their transformation, but the role of insurance companies here will continue to change too – and in a similar way to personal lines. The three key words of prevention, protection and care will equally apply. Insurance companies will become trusted risk partners to their commercial clients. Insurers will have an opportunity to cement their client relationships directly, as it will no longer be about the client using brokers to continually changing their insurance coverage.

Insurance companies will help commercial clients to identify current and emerging risks, and to take appropriate measures to mitigate those risks. Insurance coverage will become more dynamic and insurance companies will automatically collect data points from their client value chains. Insurers and commercial clients will be digitally connected, with certain insured events being reported automatically as a result of these digital connections.
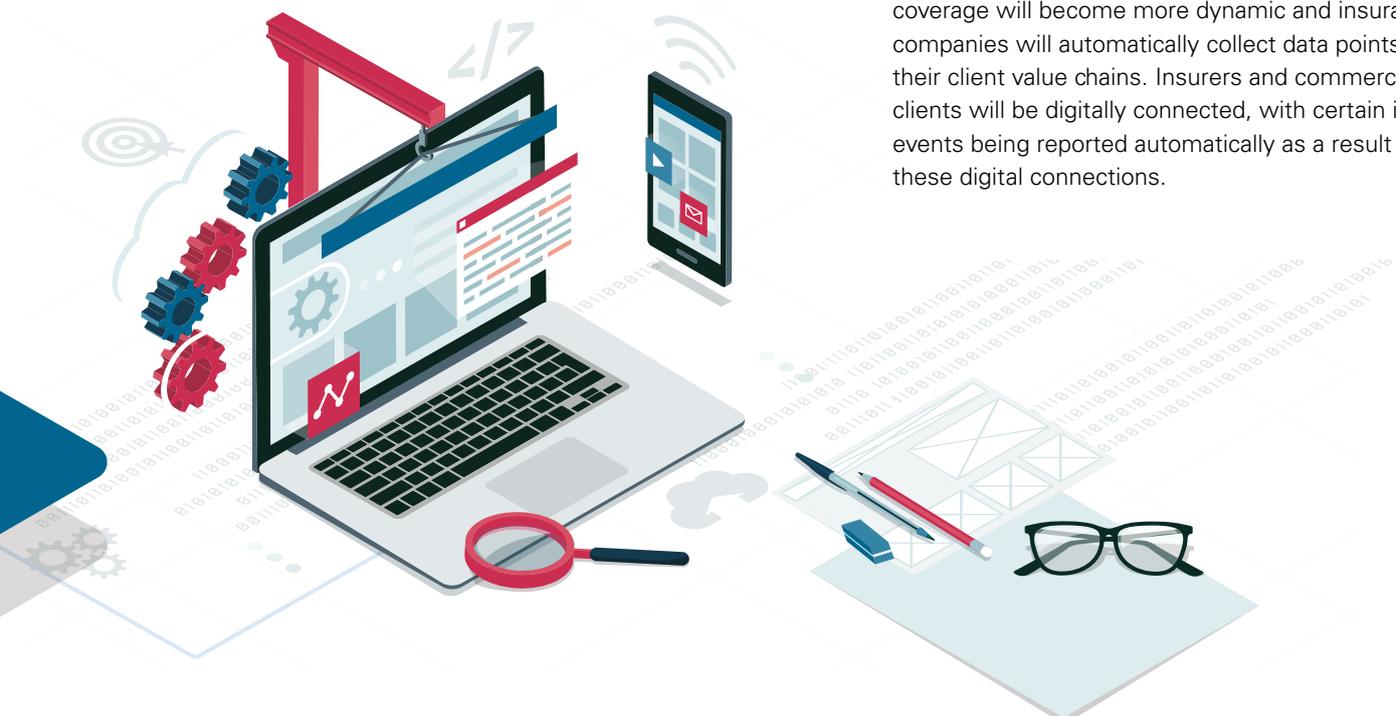
Delivering change: the importance of data, cloud and cognitive

Let's take underwriting as an example. Data points will be key to the underwriting process. It will not be possible to offer dynamic coverage without analyzing appropriate data points, which insurance companies will collect from external signal providers, as well as leveraging data points from past insured events, etc.

To do this effectively, insurance companies will need to adopt three priorities: data, cloud and cognitive. Data standardization and data governance will be critical given the extreme difficulties of leveraging unstandardized and unstructured data. In addition, all data will have to be accessible in the cloud for immediate availability and use. Finally, cognitive and machine learning applications will be needed to deal with the wide range of internal and external historical and forward-looking data that is relevant to underwriting. These solutions will enable dynamic data-driven underwriting and support better decisions.

An additional significant benefit of data standardization and integration will be that it enables a seamless client journey and experience. This entails integrating various legacy systems – that it may not be feasible or desirable to replace in their entirety – via workflow solutions that connect all systems and ensure data can be brought together and leveraged in one place.

Insurance executives would be well advised to look at other industries when driving their own innovation process. Low margin sectors such as the airline industry are far ahead in the digitalization process and have prioritized a seamless customer experience for many years. An airline's success widely depends on its 'revenue management' model, which is the airline equivalent of insurance's 'underwriting model'. This revenue management model has long used a wide range of data points and machine learning to sell seats in the most profitable manner and ensure all seats have been sold by the day of departure.

Conclusion
The challenges are considerable, but there is no alternative. Insurers must keep pace with broader changes in society and customers' expectations of convenience and simplicity. Some are already doing so by developing new pathways to deliver solutions that are more interesting and more valuable to their customers. These are the more innovative insurers, to whom the future belongs. Other insurers may find themselves becoming gradually irrelevant as clients turn to companies that can offer them the full range of prevention, protection and care in an accessible, efficient and user-friendly way.

About Vaudoise Assurances

Vaudoise Assurances is among the ten largest private insurers in Switzerland. The company was founded in 1895 and offers high-quality consultations and products in all insurance segments and in pension benefits. It is represented throughout Switzerland by its many agencies. The Group has 1,650 employees, among them 100 apprentices and trainees. Vaudoise Assurances returns part of its profits to its customers in the form of a reduction in their premiums. In 2020, these reimbursements amounted to CHF 34 million.

About Jean-Daniel Laffely

Born in 1965, Jean-Daniel Laffely graduated from the University of Lausanne (HEC), where he majored in Economics. He joined Vaudoise Assurances as Chief Risk Officer (CRO) in 2006. By 2009, he was leading the Finances & Investments department and was named Deputy General Manager in 2012. From 2017–2020, he also acted as Chairman of the Board of Directors for Berninvest AG and of Vaudoise Investment Solutions AG as well as being a member of the Board of Directors of Vaudoise Asset Management AG in Bern. Mr. Laffely was named CEO of Vaudoise Assurances in May 2020.

[FROM LEFT TO RIGHT]

Jean-Daniel Laffely, CEO, Vaudoise Assurances
Jean-Marc Wicki, Director, Insurance, Western Switzerland
Thomas Schneider, Partner, Head of Insurance
Bobby Zarkov, Partner, Digital Innovation Services

From strategy to business model: accelerating the digital transformation of insurance

An interview with Jean-Daniel Laffely,
CEO, Vaudoise Assurances

Jean-Daniel Laffely was appointed CEO of Vaudoise Assurances in 2020 as COVID-19 was spreading across Europe. He shares his thoughts on how the pandemic affected the decisions he took in his first days, as well as his view on achieving digitalization ambitions in the insurance industry.

From identifying transformation projects to giving them the best chances of success – and not being scared to fail – his experience can provide lessons for us all as the industry moves into its next phase of development.

"Digital transformation is not only a matter of technology. It is also about having people with a forward-looking mindset."

You became CEO just after the first wave of COVID-19 in Europe had begun. How did this influence your initial actions in your new role?

Jean-Daniel Laffely I really did not think that I would start my new role in such circumstances and that my first action would be to close our head office and agencies. But we were lucky that we had already equipped all our employees with laptops in 2018 as part of a smart-working concept. Within one day, we began working on a home-office basis. Important for me was that we not only organized remote meetings, however, but also coffee times and yoga lessons for employees' well-being. In the second wave, there was some weariness among our employees, which is why we decided at that time not to impose 100 percent homeworking. Employees could decide for themselves whether or not they wanted to come back to the office.

What are your take-aways from the first lockdown?

We learned many lessons, including the fact that people are very flexible when there is a matter of urgency. This flexibility is particularly high when clear guidance are given, and the mission is well defined. The second lesson is how quickly new technologies can be assimilated at home. This worked really smoothly for us.

This immediately created a trend – fueled by the media – that homeworking is great, and everyone should do it. In the past, an employee had to ask their manager if they could work from home, and it was at the manager's discretion to say yes or no. At Vaudoise, we are thinking about reversing the burden in our business in the future, when there is no lockdown, so that an employee gets one day per week of homeworking unless their manager says why this should not be granted. The homeworking day is therefore almost automatic, and additional homeworking days may be requested. While we put in place some KPIs to monitor productivity, homeworking is based on a principle of trust.

How has homeworking impacted communication between management and employees? And what about with your clients – have digital tools replaced personal contact?

I believe the main change affects middle management more than our employees. Middle management must be able to manage employees remotely, convey expectations qualitatively and, at the end of the day, change their working habits. And employees have the opportunity, even more than usual, to take more responsibility. I believe they want this. Let's assume that COVID-19 disappears – in tomorrow's world, the concept of employee empowerment will be even stronger, making work more interesting for both employees and managers.

Paradoxically, our clients prefer the telephone or more basic digital tools such as Skype and Facetime, as the human voice allows better interaction, so these means of communicating are still the best way for our salesforces. At least, this is what we experience at our organization, though we understand that some of our competitors and partners have seen a rise in more digital-based means of communication.

Has COVID-19 caused you to make any changes when you look more broadly at your strategic path?

We have not fundamentally changed our plans at a strategic level. There will be some delays, however, as it is inevitable that we may fall a bit behind on large projects. But what we have gone through in 2020 clearly enhances our ability to foster change in how our teams work now that everybody knows how to use collaboration tools. This will optimize working time and make things more efficient on major initiatives such as our digital transformation program. Our legacy system at Vaudoise needed transforming. We had already started a transformation project to change it in 2018. The pandemic did not change this need.
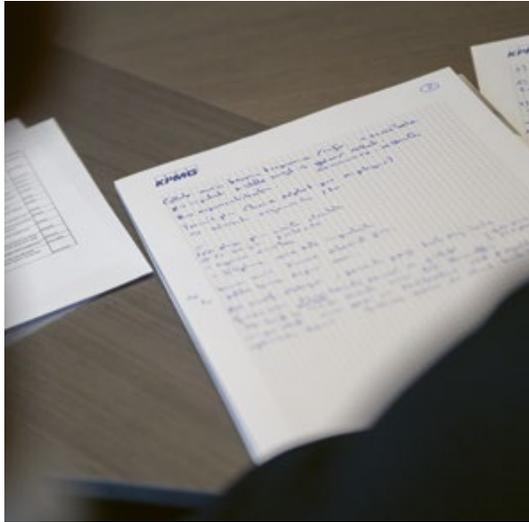
[TOP LEFT] Jean-Marc Wicki, KPMG
[TOP RIGHT] Thomas Schneider, KPMG
[BOTTOM LEFT] Bobby Zarkov, KPMG

"What we have gone through in 2020 clearly enhances our ability to foster change."

Jean-Daniel Laffely, CEO, Vaudoise Assurances

Do you feel that the pandemic has accelerated your digital transformation overall, and if so, in which areas?

It only partly has, because as I said before, we were already well equipped. We started our digital transformation two years ago. With regard to our digital strategy, redesigning processes is a crucial element. We must think in terms of client experience, not be too introspective. For instance, one of the first measures we took one and a half years ago was to ask the Executive Committee to prioritize the resumption of e-business in the motor vehicle segment. Vaudoise used to be one of the first in the Swiss market to be very active in this area. This is a good example of our true multichannel strategy where clients can choose their distribution channel and we must serve them in all channels with the same price, same look and digital first. These are the classic elements on the market today. Our vision of omni-channeling is that an advisor is available all the way, as we offer three variants according to clients' budgets. That is the basic strategy, then we can always switch to the expert model.

There are more than one hundred agencies in your distribution network – do you anticipate this model changing due to your digitalization initiatives?

I am often asked for my view on Vaudoise's distribution network in ten years. We believe a dense distribution network is still appropriate for our brand and for visibility in the market. It is not our intention to reduce the number of our agencies. The job description of agency employees has changed over the years, however, and will continue to do so. The number of advisors and the agency structure will adapt according to market conditions and needs, and some agencies will become specialists in particular subjects. The idea is to work smartly so we are serving our clients whatever their location. This is partly why we have done things a bit differently by regrouping agencies virtually instead of physically. We have a virtual call center for the whole of Switzerland, for instance, which allows us to be even more efficient in answering the one million calls we receive each year from our customers.

What do you see as the main challenges in digitally transforming the insurance industry more broadly, and do you expect business models to be widely affected?

For me, the number one challenge for the insurance sector is that we see start-ups being created that of course have no legacy. Vaudoise is not the only one in the Swiss market that must deal with legacy, needing to revisit many elements connected to old working processes before we can concentrate more on straight-through processing, which is critical going forward. There is also a challenge in understanding the client's needs. The usual, too technical point of view must be replaced by a more client-oriented perspective in order to make the client's life easier. This is extremely important to me, and I see a lot of optimization potential in this respect.

Finally, there is a lot of talk about ecosystems. Insurance companies need to be able to integrate insurance services into a larger model. This could involve start-ups, some of which have very good solutions for interacting with end-customers but are less good at long-term processing. That's why Vaudoise believes in partnering, so that we can take the best from each party and improve our clients' experience overall.

What steps do insurance companies need to take to be able to achieve their digital transformation ambitions?

You need to redesign processes before you can embark on a digital transformation project. It is a question of readiness. There must also be strong governance tools in place so that missions, roles and responsibilities are clear. Digital transformation is not only a matter of technology. It is also about having people with a forward-looking mindset. They must come from the business side in the broad sense and not simply look to repeat what we have done in the past. This is very important. And finally, we must be pragmatic. Today, at a governance level, the risk is to have too many discussions without anybody making a decision. A methodology is necessary to allow people to take responsibility. I would like to mention the notion of 'fail better'. Risks sometimes need to be taken, and if it doesn't work, we stop and improve things over time.

Automation holds significant potential when digitalizing the value chain, from the first client contact through to paying out on a claim. How is Vaudoise addressing this?

There is already optimization potential in traditional processes, without necessarily talking about artificial intelligence. In terms of automation, we are using technology to improve how we manage minor cases, whereby claims are automatically analyzed and paid out if the criteria are met. This makes our lives easier and is both quicker and more efficient at meeting the client's needs. There is also potential to develop in the area of chatbots. Vaudoise has a strategy of proximity as regards client relationships, but the client doesn't necessarily need to be in contact by telephone; they can access their client account on the Internet and check if they have been paid. This is an example of where chatbots can easily deal with a task.

As regards blockchain, there are things to be done. We have a few internal blockchain specialists and I believe there is also strong potential in that area. Overall, the Swiss industry is not yet very mature in this respect.

How as a business do you ensure continuous innovation and improvement?

It's a challenge, but we have leaders within our company who are good examples of how we can innovate. We don't tell them what to do. Rather, we give them the budget and let them organize themselves as they wish. Vaudoise has also introduced the concept of 'innovation green boxes'. The green box allows any employee to suggest innovation concepts. In addition, we organize seminars on innovation concepts and 'Hackathons', and we invite external bodies such as institutes to present their solutions to us. We have created a kind of community to support innovation and make clear to our employees that they are allowed to think about such matters. I think we need to strengthen this innovation process even further.

You mentioned ecosystems and Vaudoise's affinity for partnering. Could you tell us a little more about how you support broader innovation in your industry?

Many start-ups have presented their concepts to us. Sometimes it is very interesting, because after five minutes we may conclude that it will not work in Switzerland for such and such a reason, but that the person should try it out abroad instead. For our part, we have invested CHF 15 million in a French fund and have set ourselves a double-digit million budget to support innovative start-ups. We sometimes invest in the start-up itself because of what it is doing today, and sometimes we invest in the individual because we think they are smart and very innovative – so in the person rather than the idea they are developing. This is also innovation capital that we intend to use to help the development of certain companies on the Swiss market. We are moving more actively towards advising start-ups, bringing value to both parties.

With so many possible projects with potential, but given the expensive nature of digital transformation, how does Vaudoise decide which projects should ultimately be in focus?

We have to define priorities, of course. Typically, we organize preparation rounds, we have a strong project management office, and we manage projects in a structured manner. Over the past three years, we have worked on many projects and made a lot of progress. We have reoriented our teams' project activities to apply a clear focus on digital transformation with particular goals. We have announced a budget in excess of CHF 150 million for our digital transformation. To this end, we have created two committees. Firstly, a digital transformation committee that aims to reduce the Executive Committee's workload. Secondly, a Board-level committee that keeps an eye on our activities. We have a new Board member who has extensive experience in transformation and who helps us a lot in this respect. With so much at stake, and so many fascinating transformation initiatives in the pipeline, this is a truly exciting time to be involved in projects that could reshape our industry.

"Fail better … Risks sometimes need to be taken, and if it doesn't work, we stop and improve things over time."


Jean-Daniel Laffely, CEO, Vaudoise Assurances

The new claims organization

Insurers have historically had to choose between operational efficiency or delivering a great customer experience. This trade-off is disappearing. Customers' expectations and market realities are changing, and new technologies are emerging – together, they are driving an evolution in claims organizations. But how should a Swiss insurance company embrace the concept of 'purpose-driven claims' – delivering both an exceptional customer experience and the operational efficiency needed to manage costs and losses?

OUR EXPERTS

Thomas Schneider
Partner, Head of Insurance

Marc Gössi
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Delivering experience and efficiency
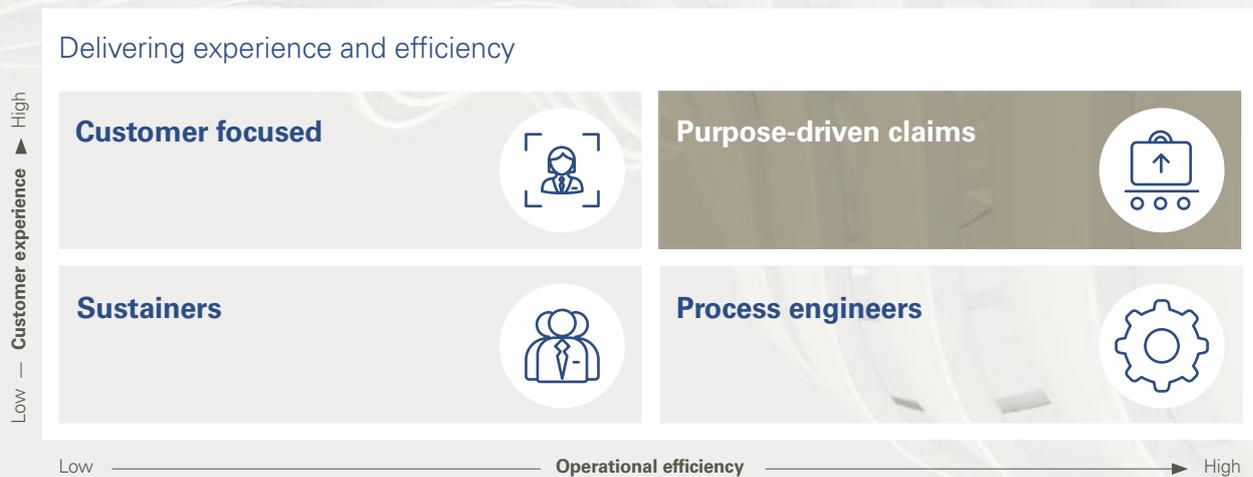
Source: KPMG analysis, 2019

A changing world requires a change in thinking

The traditional tension between customer experience and claim costs may soon be a thing of the past as three trends converge to spark an evolution in the claims space.

Customer expectations are growing, driven by online experiences with banks, retailers and other businesses outside insurance. Today's customers expect seamless digital experiences – and for those they do business with to understand them and deliver products and services tailored to their needs.

Market efficiencies have shifted. Losses have outpaced premium growth for years in some areas. Claims have grown more frequent and severe in some product lines. As a result, carriers are under pressure to become more efficient and cut operational costs.

Technology and innovation are changing the insurance landscape as technology giants and nimble Insurtechs introduce solutions from modular infrastructure and advanced analytics to new data sources and automated operations. Forward-thinking insurers are seizing on new tools and technologies to rethink how the claims organization operates.

An opportunity to enhance the claims value chain

There is considerable opportunity for insurance carriers to upgrade their claims organization across the value chain by using some of the tools and solutions that have emerged. Let us take some examples:

In prevention, data-driven insights can help identify emerging and receding claim risks and make adjustments based on projected future loss trends. Third-party data and connected devices can be used to provide tailored risk coverage and preventative communications to help prevent or mitigate losses. Hyperlocal weather data for example can be used to notify customers about a severe weather event.

In first notice of loss, insurers are putting digital tools in customers' hands, providing seamless submission processes and collecting valuable data along the way. Others are using new tools to identify claims before they are submitted, sometimes even before a customer knows that they have happened. This is through the use of sensors in properties to detect water leaks, for example, or aerial imagery following natural disasters, to identify damaged or destroyed insured property.

Insurers can use historical data and new data sources to make smarter, faster decisions about claim severity and complexity for the proper assignment of incoming claims to human processors and adjusters or automated, straight-through processing tools as necessary. Harnessing data in this way can help avoid the risk of claim reassignment, which slows the customer experience and increases costs.

In the area of investigation and evaluation, using digital claim submissions and third-party data allows insurers to rapidly assess claims, determine repair or replacement costs, and detect potential fraudulent behavior such as claim inflation.

Leveraging current claim data and predicted loss trends can enable insurance companies to rapidly adjust their reserve levels more accurately, efficiently and frequently. Instead of adjusting reserves on a scheduled basis, companies can update reserves in near real-time, which helps maximize the capital available for investment elsewhere.

Insurers can use data analytics to predict the likelihood of claim litigation and its outcome and offer payments to forestall the case. Should the case proceed, carriers can use the same tools to predict the outcome based on the attorney, judge, court or jurisdiction, and plan accordingly.

Insurance companies are partnering with claims processors to expedite digital payments to customers. Harnessing sensor and third-party data can take this to a new level, especially in the area of parametric insurance. For example: if a sensor detects some water in a basement – or weather data reveals crop losses are likely – the system can automatically trigger a claim event and issue an immediate payment.

Seamless data sharing between claims and other business units can help insurers make smarter decisions when it comes to closure. Data sharing can help underwriters better understand where losses are emerging, how risks are changing and how underwriting rules need to be adjusted. It can help insurers understand new product opportunities by analyzing uninsured losses to identify product portfolio gaps.

Technologies such as sensors, camera footage and drones can help market participants recover some or all losses once a customer claim has been paid. Data analysis can help determine who is at fault for a given claim and support recovery efforts. Claims data can also be used to refine underwriting process and the product portfolio.

Where and when insurers should take action

Before claims	During claims	After claims
Improved data and analytics will identify risks and drive actions to mitigate losses	Deeper insights throughout the claims process will create more efficient, accurate operations	Claims insights can improve recovery, underwriting, and product development

Prevent losses	Contain losses	Reduce fraud	Avoid litigation	Decrease leakage	Recover more	Enhance underwriting	Incubate products

Source: KPMG, 2019

In our experience, the insurance companies who make best use of data and new technologies are those who have a clear understanding of what parts of the business they must own, what they can deliver through partnerships, and which solutions they can integrate to build a

best-in-class operation. Leveraging data, implementing new technologies, and designing thoughtful future-oriented processes and architecture can enable insurers to drive most benefit from being a purpose-driven claims organization.

Six ways
non-life loss reserving
needs to change

OUR EXPERTS

Will Southwell
Partner, Actuarial

Nina Wingate
Senior Manager,
Actuarial

Non-life loss reserving is a highly regulated process that has historically been slow to change. As a resource intensive and often manual process, there is significant room for improvement – especially given the insights that are now possible from enhanced business analytics. Insurers continue to move away from static bottom-up quarterly reserving cycles that use traditional reserving software – towards deploying new tools for a more dynamic, modern, flexible and continuous process. This can produce significant benefits through more in-depth analysis of key reserving risks, better decision making, and reduced overheads.

LOADING UPDATE ...

With actuarial functions under pressure from all sides, more flexible loss reserving processes are needed to meet the rapid pace of change and management demands. The continual drive for shorter closing processes requires faster delivery and redesigned reserving processes. As scrutiny of the numbers by a multitude of stakeholders is relentless, however, insurers cannot sacrifice quality and accuracy of results and documentation in favor of speed.

The implementation of IFRS 17 and the need for simultaneous multi-GAAP valuations (e.g. SST, SII, local statutory etc.) require new processes and additional reconciliations, adding to the pressure on teams. At the same time, the volumes of data feeding the reserving process continue to grow, with new data sources outside of standard accounting data being integrated to produce reliable estimates and yield insights.

Meanwhile, there is no slowdown in business requests for ad-hoc additional analytics, with results needed yesterday. Yet, CFOs will generally not accept additional costs to deliver on all these requirements, as cost reduction is always an imperative.

How to change reserving

To deal with these challenges, a fundamental overhaul of the reserving process is needed. In our view, every chief actuary needs to address the following six inter-connected themes:

1 Review your reserving software tools

Most current reserving tools are static, bottom-up calculation engines that were established decades ago based on the quarterly reserving cycle. They no longer fit the modern fluid reserving environment. More bespoke solutions are now available which integrate workflow management, process automation, analytics, visualization and new methodologies into standard reserving approaches. They provide greater insights and a deeper business understanding while at the same time speeding up the reserving process. During a closing process, for example, a single tool can take a workflow view of the entire reserving process. Updated financial data is integrated more quickly, while ensuring management always has an accurate picture of the current state of the closing process.

2 Redesign your processes

Flexible processes are necessary to accelerate the financial close process, enable rapid responses to new management demands, and still deliver quality. Redesigns can be done either by updating parts of existing processes (at the risk of creating additional complexity) or by overhauling the entire process. A process redesign will naturally take place when moving to more bespoke reserving tools.

Management should look at all key stages of the process to identify ways of maximizing value and making the process even more robust. Many insurers are removing assumption-setting from a close process's critical path, for example – with off-cycle deep dives on identified high risk portfolios. In such instances, close processes run automatically unless flag or traffic light systems indicate portfolios that should be reviewed manually. Governance and automated controls of course remain critical.

3 Take advantage of automation

Bespoke reserving tools automate repetitive tasks and crucial processes, but this can also be done separately by specific workflow management software and automated controls. Insurers need to identify areas of work that could be automated. Automation can reduce costs and free up resources, allowing actuaries to focus on analyzing complex data rather than processing it. Strong data management is critical to enabling more costly staff to perform deeper reviews and validate outcomes and selections.

4 Deploy intelligent roll-forward and AI

Demand for intelligent roll-forward or AI-based techniques is growing, to enable movement between reserving periods or analyses without manual intervention, while speeding up a financial close process and freeing up time for deeper analysis. An intelligent roll-forward allows actuaries to begin their analysis where their key competencies are required. This could mean the actuary starting with a pre-reserved version and only needing to make minor adjustments to finalize results. Intra-quarterly closing processes could be almost fully automated, with adjustments being made only where management decisions require them.

5 Enhance your reporting and visualization

For effective business decisions, management requires insightful information in real-time. Interactive dashboards with drill-down capabilities and automated analytics not only allow for a deeper understanding of underlying data, but can also serve as an early indicator of hidden issues. Automated Analysis of Change analytics and reconciliations across multi-GAAP valuations help to understand the bigger picture and tell a convincing story.

6 Adopt up-to-date reserving methodologies

The most popular non-life reserving methodologies originated before computers and spreadsheets were widely available. More precise claims reserving methods, such as machine learning-based individual claims reserving, are changing the process of setting claims reserves. This is leading to more accurate reserves. The implementation of non-traditional approaches also improves business insights by identifying how drivers of underlying business segments are connected. Overall, new reserving methodologies, AI and predictive models improve reserve estimates and reduce the volatility of results.

Conclusion

To remain competitive, (re)insurance companies must improve their processes across the business, particularly in more traditional areas such as non-life reserving. Process automation is accelerating closing processes, allowing more frequent reviews as well as deeper insights. Less time spent on processes enables specialists to focus on delivering higher value work and analysis. While this requires new tools, it is critical when enhancing a process to maintain a balance between rigor and clarity for stakeholders, agility for the business, and the foresight to deal with future data requirements and next-generation methods. This requires a fundamental overhaul of the reserving process.

Digitalization, cost pressure and competition: a balancing act for health insurers

[FROM LEFT TO RIGHT]

Oliver Windhör, Partner, Audit Insurance
Bobby Zarkov, Partner, Digital Innovation Services
Thomas Schneider, Partner, Head of Insurance
Dr. Andreas Schönenberger, CEO, Sanitas

The COVID-19 pandemic has pushed the boundaries of life as we knew it and brought about entirely new scenarios for society and our healthcare system. Large health insurance companies such as Sanitas have been directly impacted by the exceptional circumstances in multiple ways. Dr. Andreas Schönenberger, CEO of Sanitas, shares his experience of this extraordinary situation, explains how the pandemic affects the development of the health insurance sector, and discusses the role of digitalization.

An interview with Dr. Andreas Schönenberger, CEO, Sanitas

About Sanitas

With around 841,000 customers, Sanitas is one of the biggest health insurers in Switzerland. The group offers solutions in the areas of mandatory basic and supplementary health insurance. The broad range of insurance solutions on offer responds to all the needs of private individuals and companies.

Dr. Andreas Schönenberger has been CEO of the Sanitas Group since February 2019 and served on the Board of Directors from 2015 to 2019. Before joining Sanitas he occupied various roles, including as CEO of telecommunications company Salt Mobile and General Manager of Google Switzerland.

"Digitalization in itself is not a strategy."

COVID-19 has changed the way employees, customers and business partners interact. What's your experience of approaches like working from home?

Andreas Schönenberger We were extremely well positioned in this regard right from the start as we had already transitioned to more digital work processes and flexible working before the coronavirus crisis. So it was easy for us to have our people working from home from mid-March 2020. The big challenges were more on the human or personal level – whether for young families with small children or single people in very small apartments, who sometimes felt cramped at home.

With such drastic changes, it's important that employees support business leaders' decisions. How were you able to ensure this and keep everyone's motivation high?

Communication with our people became even more important. Our Crisis Team provided regular updates on our COVID-19 measures, and our people could use an anonymous digital mailbox, implemented in 2019, to address concerns and make suggestions without identifying themselves. The efforts of our Safety Committee and management paid off and were greatly appreciated. We also gave our people free rein to get creative, which led to new exchange platforms popping up – things like virtual drinks or online coffee breaks. After all, informal exchange is also highly important in a company, and that's probably what suffered most during this time.

Will Sanitas continue permanently with any of the measures introduced because of the COVID-19 crisis? What do you intend to develop further?

Even before COVID-19, our working-from-home rules allowed all employees to work 20 percent from home. We're now planning a pilot phase for the post-pandemic period where employees will be able to work from home as much as they like, in agreement with their line manager and team. Depending on the take-up and the effects of this scheme on day-to-day collaboration, we will define how to take it into the future. There's a

difference, of course, between working from home because it's an externally imposed rule and choosing the arrangement voluntarily. I'll be interested to see what our experience turns out to be.

For me, physical presence in the workplace is not the most important thing. It's the output that counts. And in my view that only suffered marginally in the new set-up. I've also found that virtual meetings via video conferencing are often shorter than traditional in-person meetings at the office. The disadvantage is that discussions are more difficult. In my opinion, personal contact is very important, so I see a combination of physical presence and working from home as the ideal solution in the future. Remote working alone is not enough.

To what extent is the current situation changing and accelerating interaction with your customers? What trends have been reinforced?

We adopted a new strategy for Sanitas in 2019 with the overarching theme "Health partner and convenience for our customers". It means that customers can deal with us in all matters simply, efficiently and using their preferred channel, be that by phone, purely digitally or by coming to visit us at one of our counters. At the heart of our vision is the idea that customers can interact with us entirely through digital channels if they wish to. We're making good progress in this regard, and COVID-19 was certainly an accelerator, especially on the customer side. But I think we'll see a combination of digital processes and human interaction in the future as well.

As a result of the pandemic, we are seeing increased use of the various Sanitas apps, which we expand continuously. These enable early detection of high blood pressure, for example, or provide virtual personal training or tips on health and nutrition. These options were well suited to the unusual situation caused by the pandemic, and customers overcame their fear of using such tools quickly due to the circumstances. But digitalization in itself is not a strategy, it's just one aspect of how we, as health partners, can help our customers take control of their own health and navigate the healthcare system in a convenient way.
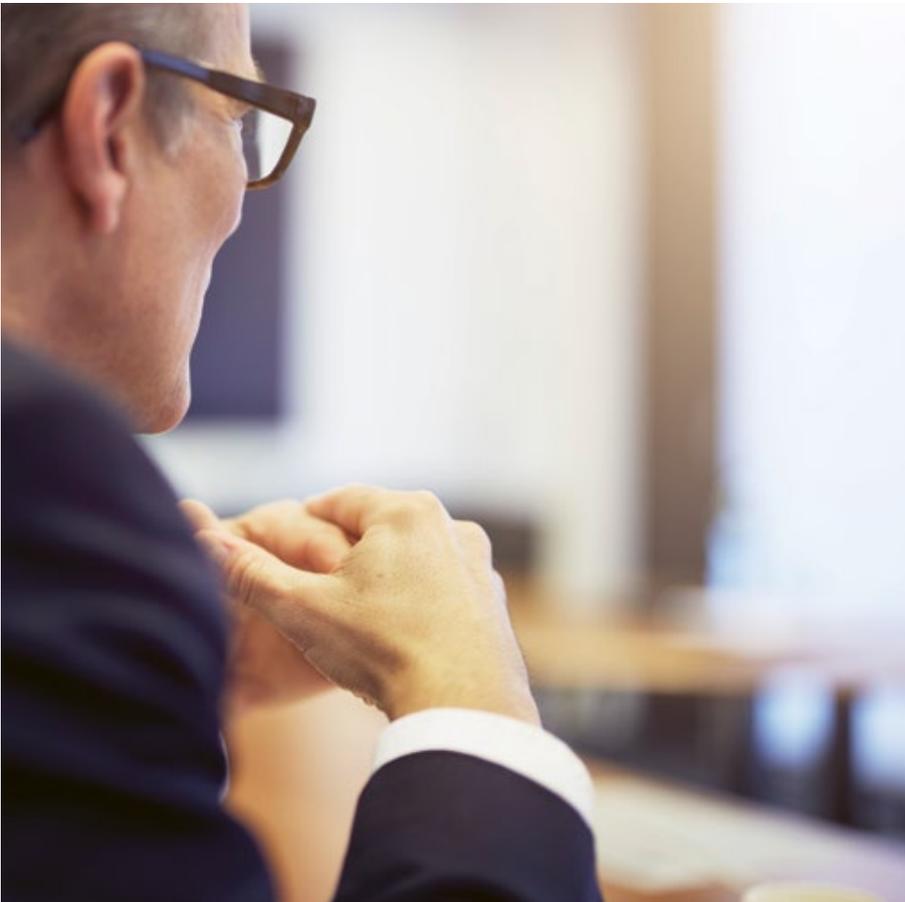
[TOP] Oliver Windhör, KPMG
[BOTTOM LEFT] Dr. Andreas Schönenberger, Sanitas
[BOTTOM RIGHT] Bobby Zarkov, KPMG

Thomas Schneider, KPMG
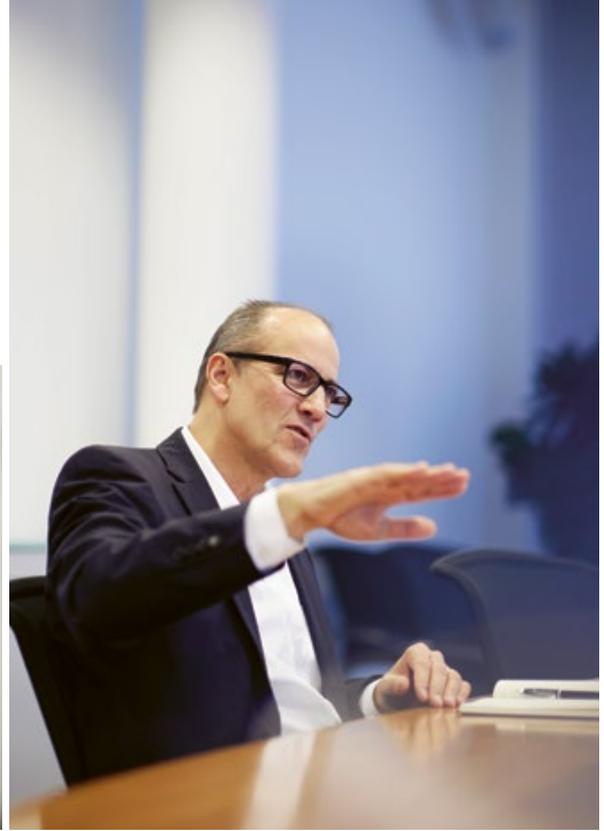
Dr. Andreas Schönenberger, Sanitas

"There's no doubt that customers want to cover as many needs as possible via a small number of interfaces."

One danger that shouldn't be underestimated is the cyber risks that come with an increased use of digital tools and remote working. How do you protect your company and customer data from attacks?

We're well aware of this risk. Customer data has to be secure because health data is particularly sensitive and requires protection. We're well positioned in this area as well and have fortunately not had any problems with cyber risks to date. We work continuously to enhance security and run regular cyber security awareness campaigns for our people. But this was something we were doing before COVID-19.

All your major competitors are pursuing the topic of digitalization or digital transformation. How do you stand out in this competitive environment?

It's true that digitalization alone won't set you apart in the market. But digital transformation is not just about infrastructure, software and customer interfaces; cultural change within the company is equally important.

You also have internal processes and data handling, not to mention the new possibilities arising from artificial intelligence. We're on the brink of major developments in this area, and it's somewhere we can definitely develop competitive advantages – working alongside the best partners on the market. The centerpiece of this next step in customer interaction is the new area "My health", which we have recently launched in our Sanitas portal app. Together with "My insurance" to help customers navigate through all our services, including on the administrative side. Let me give you an example. Our customers can easily pay their bills by credit card, Twint or Apple Pay, and we explain to them directly in our Portal app how to better understand a complicated doctor's or hospital bill.

Are the demands being placed on your employees and managers also changing as a result of these digital developments and the associated flood of data and new collaboration tools?

Definitely, yes. Every single employee is part of our corporate culture and they all have to understand and support our strategy and the digital changes. In particular, employees need to get to grips with new virtual communication tools, and managers need to be able to use them as leadership tools. We foster an open corporate culture and a communicative leadership style. With open-plan offices and desk sharing, we openly embodied this culture until COVID-19 forced us to work increasingly from home. By the way, I also sit in an open-plan office – when the COVID-19 restrictions allow – and benefit enormously from the advantages it brings in terms of daily collaboration with my colleagues.

Have you observed an increased trend toward healthier lifestyles? Do you sense a greater need for targeted support in this area?

For some years, people have been paying more attention to their health, exercising more and eating more consciously. And not just as pure prevention, but as part of their lifestyle – in the sense of preventive health. So this is not something new. We're trying to tap into this trend and support our customers on their health journey through our apps, such as Coach or Active, and other tools.

With all of these applications there's the question: To what extent do users trust the various healthcare players with regard to security and data? Customer trust is of central importance to us. After all, only if customers trust us can we assist and support them throughout their lives. Customers must be able to decide which data they disclose to whom, and they need to understand how they benefit from sharing it.

How do you design internal innovation processes in an industry that is highly regulated and limited in its product range?

There are several approaches. First, we work directly with start-ups in various areas like our Sanitas apps. We also keep a close eye on what's happening at young creative startups and take inspiration from them.

Second, we have our Service Innovation Lab, a lean central unit where people from our business lines work with Lab employees on innovation projects. It's where we bring together relevant experience and know-how.

Third, all employees are encouraged to contribute new ideas. We give them space to do so. Our decision-making and development processes are fast and empower people to try things out.

The insurance business in general has changed dramatically as ecosystems have increasingly emerged. Competition has intensified and strategic partnerships will become much more relevant. What significance do these ecosystems have for you as a health insurer?

The topic of integrated care is not new in itself. There's no doubt that customers want to cover as many needs as possible via a small number of interfaces. In 2019 we teamed up with Medbase to launch the alternative insurance model "MultiAccess". The idea is to give customers different ways of accessing medical services, to give them flexibility, whether they choose advice by telephone or a personal consultation at a clinic, pharmacy or telemedicine center.

Integrated care takes this even further as it extends along the entire care pathway – the customer should receive optimum support. All parties involved benefit from efficiency gains, while the customer enjoys more convenience in relation to medical treatments. The healthcare system is a highly complex entity so it's important to manage interfaces so that customers get simple access to medical care. In future, we'll see different manifestations of healthcare ecosystems. It will be interesting to see how these packages are received by customers in the future.

You mention the highly complex healthcare system. What could be done to simplify certain processes and save costs without reducing the service to patients?

The Swiss healthcare system is certainly one of the best in the world, and we have every right to be proud of this achievement. Nevertheless, there are various aspects that need to be broken up and simplified. Unfortunately, the political and regulatory environment leaves little room for maneuver. One central element, for example, is the fact that the cantons play multiple roles in healthcare. While there are undoubtedly many advantages of the federalist system, it's not ideal that the cantons have so many different roles.

Infrastructure is another point. The Swiss hospital landscape includes over 200 institutions, and they're all planned, financed and operated individually in each canton. One approach could be supra-regional centers for medical specialisms, like they have in Denmark, and regional hospitals for primary care. Electronic patient records would improve and simplify the flow of information. The introduction of electronic patient records has already been mapped out, actually, but doesn't seem to be getting anywhere.

How will the healthcare system change for me as a patient in light of digitalization?

In the future, if I want to find out something about myself and my health, I probably won't go to the doctor to have my blood pressure measured and blood tested. These tasks will be done using mobile devices that measure the relevant data directly on my body. I call this "digital mobile medicine" and my theory is that this will develop as a second, more cost-effective pillar in medicine. Processes will become massively less expensive – and also faster. Of course, I won't be left

alone with the bare numbers and values; I'll have apps that give me more information, or I'll talk directly to experts and doctors via phone, chat or video conference. This continuous self-monitoring of relevant parameters and medical measures, including preventive, will irreversibly change our healthcare system in the future.

How do we, as a society, deal with all the new data and insights the digital world offers? Isn't there also a degree of risk?

Absolutely, that's one of the big questions we'll have to address. If digital and transparent patient records tell us almost everything about a person – from their genetic predisposition to eating habits and lifestyle – we'll inevitably be able to predict with a high degree of probability the course of a disease. As a society, we need to define the extent to which we consciously avoid using an individual's data so that everyone has the personal freedom to live their life as they see fit and still be supported by solidarity-based insurance benefits when they get sick. This is a discussion that we'll have to have in society and politics – and it will certainly occupy us.

What would you most like to see happen in healthcare over the next five years?

My greatest wish is directed to the regulator. Ever since the Health Insurance Act was introduced in 1996, the regulatory screw has been turned tighter and tighter. Every inconsistency has been followed by yet more regulation. I strongly believe that this perspective should be reversed, and greater freedom and competition allowed into the healthcare market through a selective reduction in regulation. More competition generates more innovation, which in turn means creative solutions and ultimately better prices. Innovation is key to successfully tackling the challenges in healthcare.

"More competition generates
more innovation,
which in turn means
creative solutions
and ultimately better prices."

Dr. Andreas Schönenberger, Sanitas

Optimizing success through a Connected Enterprise

An effective digital transformation requires true data-driven innovation. This may sound like a simple concept, but delivery can be hugely challenging in practice – especially when considering insurers' existing technology solutions, legacy systems and platforms, and often complex organizational structure across numerous business units and agencies.

Our digital innovation experts take a holistic approach to dealing with these complexities while providing a seamless, forward-looking framework to secure competitive advantage. Called the Connected Enterprise, our approach leverages the end-to-end capabilities of both KPMG and the insurer.

The first layer centers on the user experience, which should be the ultimate goal of any business improvement, digital or otherwise. Reflecting the solution's front-end and face, it ensures that a business challenge is solved from an end-user perspective, not just from a technology point of view. To achieve this, our approach actively involves end-users such as underwriters in the solution design process.

The second layer represents the specific AI application that is built to support the underwriter's daily work. The use case is very much linked to the specific underwriter role, processes, underlying data and information processing.

↪ These two layers are addressed in the following article, **"The benefits of AI in life underwriting".**

Third layer
To leverage the insurer's full AI potential requires a dedicated Data Science & Machine Learning platform (DSML). This allows the insurer to ensure appropriate standards of IT quality and compliance with data privacy regulations while building and maintaining data-driven solutions. For the insurer's data scientists, it means being able to access and work with data more easily, and the organization having the necessary infrastructure to build, integrate and maintain a range of solutions in a cohesive and coordinated manner. This is especially important when different AI applications are built across various departments or business units.

↪ This third layer is discussed in the following article, **"Data Science & Machine Learning platforms: The key to data-driven transformation".**

Implemented with the support of digital innovation experts, the result is improved and consistent risk selection, the driving of additional data insights from the customer portfolio, reducing process and time redundancies in and outside the organization, and encouraging maximum user adoption. In short, transforming the insurer into a connected enterprise that can differentiate itself in a fiercely competitive market.
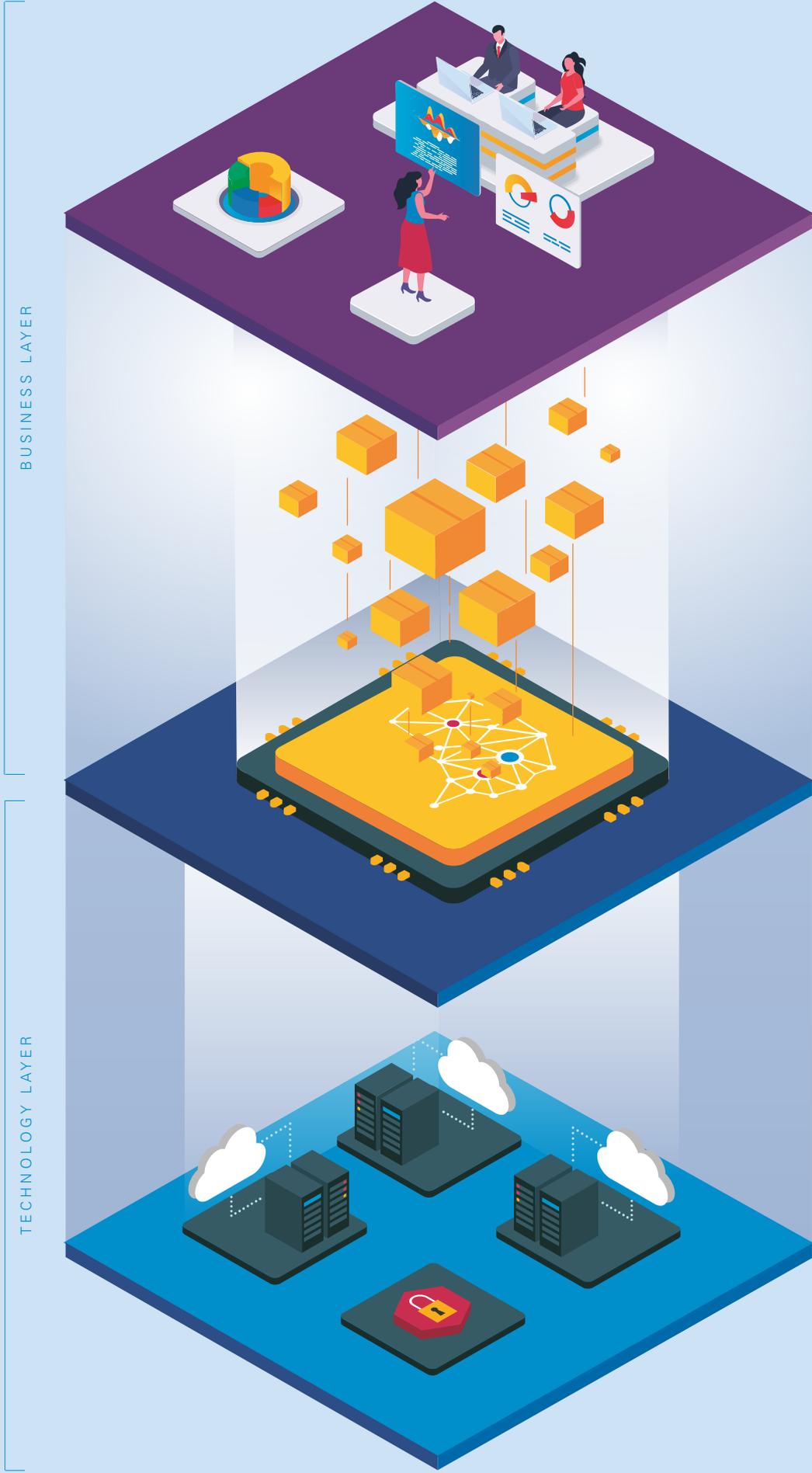
User Experience and Business Differentiation
[FIRST LAYER]

- Create differentiating user experience to realize sustainable business outcomes
- Exploit new technologies to rethink business processes

BUSINESS LAYER

Business and AI Applications
[SECOND LAYER]

- Leverage external and enterprise-wide data to forge unique data insights in business processes
- Infuse Artificial Intelligence, Big Data and new technologies
- Compose re-usable building blocks to enable short iterations during solution development

TECHNOLOGY LAYER

Technology Platforms & Cloud
[THIRD LAYER]

- Cloud-technology based flexible infrastructure orchestration
- Application Development platforms to enable agile solution development
- Data Science & Machine Learning platforms to allow governed access to data and enable standardized Data Science lifecycle

Source: KPMG

The benefits of AI in life underwriting

OUR EXPERTS

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Insurers have access to a vast, and rapidly growing, volume of data. While processing it can be an enormous task, the bigger challenge is how to effectively leverage the data to drive value on a day-to-day basis. As the advantages of using Artificial Intelligence (AI) to generate fresh insights from unstructured data become clearer, how can life insurance underwriters in particular benefit from AI?

Insurance underwriting is vital in assessing preferred and acceptable risk from the insurer's perspective. By nature, risks can have many aspects, requiring an underwriter to look at them from different angles. This can involve considerable amounts of structured and unstructured data that must be assessed in a short period of time, especially when seeking to reduce the interaction time with the customer and increase the conversion rate.

AI can give underwriters an almost unlimited computing power to process huge volumes of information across multiple data sources simultaneously. It can also provide insights from the entire customer portfolio and give the insurer access to knowledge that is isolated in individual cases. AI helps to digest information in a condensed and visualized form, enabling the underwriter to make system-based recommendations on the basis of factors such as historical cases. It also helps them screen documents in seconds by highlighting the relevant parts and providing instant knowledge management from numerous peers. Ultimately, it allows the underwriter to shift their focus from time-consuming information collection to more value-adding assessment and decision-making.

Underwriting is one of a number of core insurance processes where AI is a good fit. It can help understand a specific interaction when a customer applies for an insurance product using natural language (voice, images and unstructured text in mails and forms), for example. It can also help to support or reject the underlying hypotheses that sit behind the interaction and the potentially complex decision being made. And finally, it can take advantage of the learning process that builds when this process is repeated every day, whereby the data feedback that is generated is fed back into the algorithm for continuous improvement.

By way of example, below is a small sample of illustrative AI use cases applicable to life insurance:

Use case life insurance	Description	Benefits
Input Management / OCR	Extraction of data from delivered documents, i.e. tables, forms and unstructured texts (e.g. medical reports) Manual post-correction if quality is not high enough	• Availability of text overlay and machine-readable formats are the basis for any use of AI in business processes and automation • Input management is vital to enable quick turnaround times in customer interactions
Life consultation and sales support	Preparation of the consultation by combining all internally available structured and unstructured data into a holistic 360-degree view The customer's social media information could be added. This is technically feasible, but should be carefully considered from an ethical perspective An AI-guided consultation with corresponding needs assessment, and a product recommendation with cross-/upselling considerations based on the customer journey Close connection to underwriting (see below). These functionalities could be part of an AI-based consulting case for agents or employees	• Focused customer insights • Optimal preparation of customer meetings • Positive customer experience • Convincing product advice and service quality
Life underwriting	Preparation of all information relevant for an underwriting decision, including: • 360-degree view of applicant • Medical examination of the application documents • Comparison with already decided cases from the portfolio ("Risk like This") so that the underwriter sees comparable cases and decisions • Suggestion of (additional) product modules • Proposal of exclusions based on the underwriting guidelines • Triage of the cases: Rejection with proposal of justification, approval, or extended examination	• Consistent and more accurate risk selection (favorable risks should be accepted) • Prioritization/triaging of cases all the way to the customer advisor • Preparation for automated processing for clear cases (Acceptance/Decline)

Utilizing an AI-driven dashboard

The various functionalities in the use cases can be modularized, and serve various roles within the insurance organization, including supporting its agents. By bringing the various factors together in an easy-to-use dashboard, the user can view only those functionalities that are relevant and of interest to the respective function and role. The following graphics outline a typical dashboard for a life underwriting advisor.
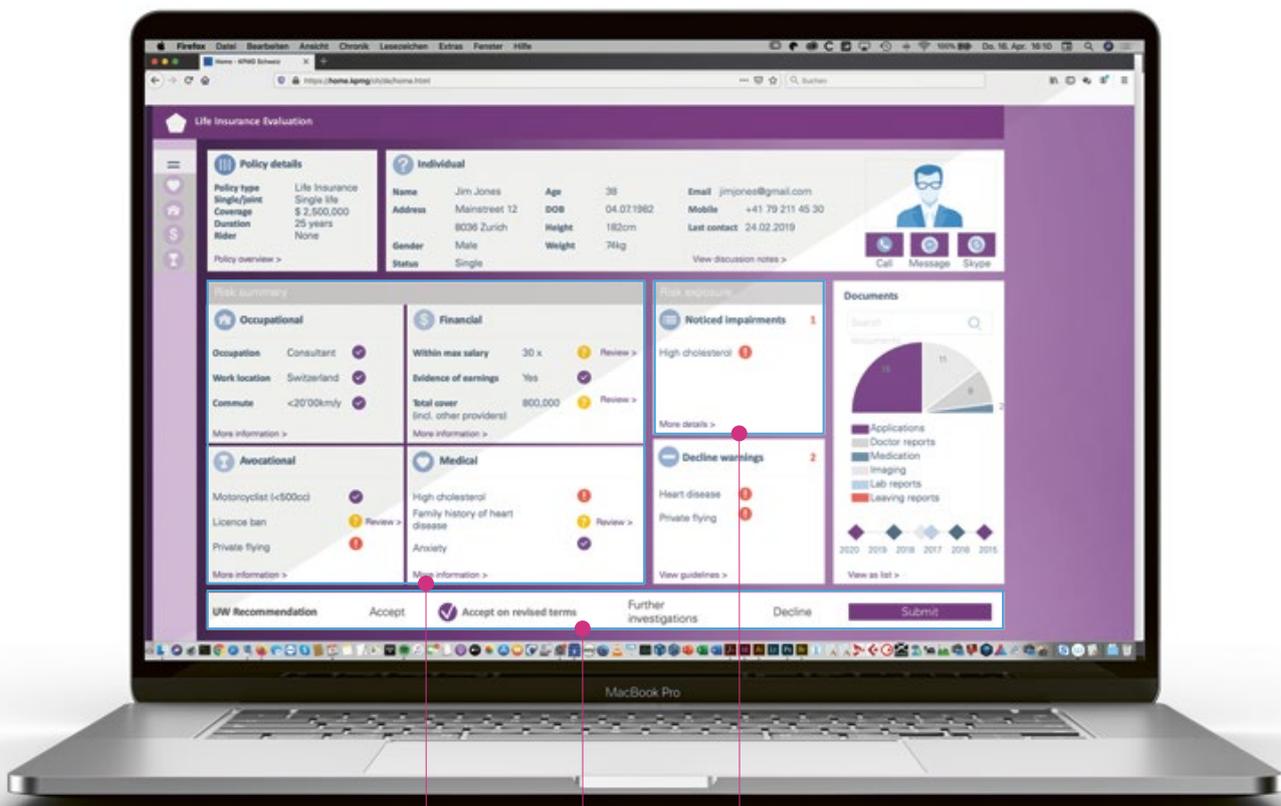
Categorized summaries extracted from structured and unstructured sources

Impairments which need attention according to guidelines

AI recommendation waiting for final human decision

Structured and unstructured information are visualized and accessible in a single view and in a format that is easy to digest. The underwriter receives a risk summary based on an applicant's documentation without having to read the documents in full. Categories such as 'Occupational', 'Financial', 'Avocational', 'Medical' can be adjusted to be in line with the sections in the insurer's underwriting guidelines.

In each section, an initial assessment is made based on internal underwriting guidelines. The underwriter has an aggregated view of all impairments and can drill down into each section to see supporting evidence. This equips them to provide an initial recommendation that is based on all interpreted information. The final decision remains with the human rather than the technology.

Detailed and structured
medical information

Visualized medical conditions
by time and body area

Additional, detailed information can be easily accessed in the respective sections. For example, various medical events are visualized on a timeline and human image. Similar applications help an underwriter understand related policy terms and approved conditions. This drives consistency in the underwriting process.
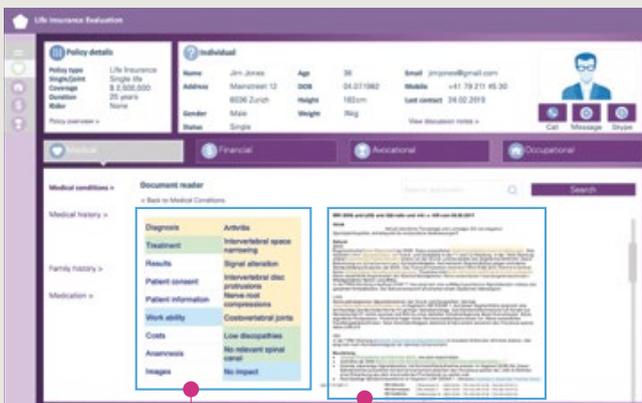
Structured summary
on document level

Drill-down and highlighting of
evidence in a medical document

The most relevant terms are aggregated in a context-driven way, making them quicker to navigate. Applicable sections are highlighted within the document to make them more accessible.

Such dashboards and advisors are tailored to the client's specific requirements and the needs of the end-user. To achieve this, co-creative techniques are leveraged to maximize adoption rate and create a unique user experience.

The prerequisites to leveraging AI's full potential

There is a lot of misunderstanding on what AI is and what impacts it can have. This often leads to resistance. When implementing an AI initiative, therefore, consistent change management, realistic expectations, pragmatic project phases and transparent communication are crucial throughout the duration of the project.

At a technical level, most projects can fail at the beginning due to a lack of available information (e.g. missing input management) or poor data quality. The first implies that all required and relevant information needs to be available in a machine-readable format. For text documents this means an OCR (Optical Character Recognition) layer is required. However, even if formats are digitalized and readable, poor data quality can jeopardize the realization. Assessing data

quality first is essential and provides an indication of overall feasibility.

There are certain challenges to realizing an AI-driven underwriting function. Strong management support and a clear vision are required so that the endeavor is not seen as a short-term experiment or simply as a proof of concept (PoC). Rather, than colleagues see its potential to be productive. A sound and compelling business case is also essential to understand what benefits can be expected and when, i.e. what is the return on investment. If the upsides in terms of efficiency, effectiveness and an enhanced customer experience are expressed clearly, then even within the context of the investment required, the benefits should be clear for all to see.

Data Science & Machine Learning platforms: The key to data-driven transformation

The past decade has seen AI assert growing influence over financial services. Rapid advances in technology have created new opportunities for insurers to innovate with regard to products, services and the customer experience, as well as process and organizational improvements. A robust Data Science & Machine Learning platform (DSML) is a prerequisite to harvest this potential. But to what extent can Open Source platforms speed up the process and help insurers implement AI at scale?

OUR EXPERTS

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In the previous article "The benefits of AI in life underwriting", we described AI's usefulness in supporting decisions to automate and drive benefits from one of insurance's core processes. We now focus on how to realize these benefits through the data, orchestration and automation platform.

Behind every good AI application is a robust technology platform. Yet, in our experience, a significant proportion of innovation ideas pass the proof of concept (PoC) stage but do not progress further into an implementation. This can be due to DSML not being integrated into an insurer's standardized value chain. Plugging DSML into a broader innovation approach is critical to developing and maintaining a portfolio of ideas – and to managing the complexity of putting an IT application into production so that it moves beyond PoC to become an enterprise-ready solution.

The need to invest in DSML and core system platforms

We see a number of clients investing significantly to modernize their core insurance platforms. These systems host data and typically lead the process workflow. However, to truly leverage and institutionalize AI in the organization, a DSML is required. This enables data to be accessed and used by data scientists. Their models and functions can be created, information analyzed and processed by data-driven solutions, and resultant insights fed back into the core system.

Focusing only on core systems can limit the potential innovation from using AI and data science, impacting the insurer's ability to sustain long-term competitive advantage. It is necessary for the two platforms to coexist.

Ensuring the right DSML coverage

An enterprise-grade DSML must cover all three areas of the data science lifecycle:
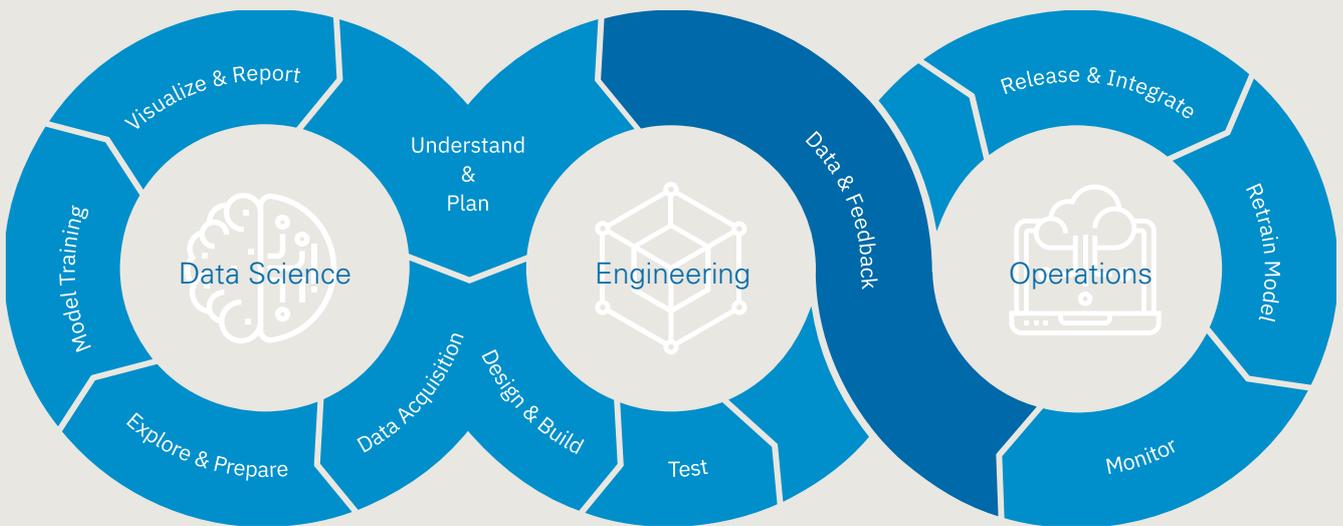
Data Science

It is important to provide data scientists with the right infrastructure and tooling to find, exchange and analyze available data and to experiment, develop and train models.

Engineering

Model development should be integrated into application build, test and application management to ensure required quality standards for data science artifacts.

Operations

At first glance, running machine learning-based services is not difficult. From an enterprise perspective, however, the deployment and operation of models needs to be secure, scalable and integrated with existing IT application management.

The successful evolution of data-driven solutions requires continuous access to productive transactional data. At an initial stage, access to production data is required to explore and create the first version of a model. When the model is integrated in a productive environment, the continuous data flow is required to ensure model quality and to continuously improve the model. A DSML integrates the tools, infrastructure and processes and makes them accessible to data scientists, data governance teams and application management teams.

Open Source is state-of-the-art for Data Science & Machine Learning

Various providers have begun to offer their products as DSMLs. Each product can have its own strengths and weaknesses depending on where it originated, such as from data analytics or cloud infrastructure. In our view, there is no standard solution that covers the entire data science lifecycle that we have described.

Open Source offers a number of important advantages:

• A huge global developer community, which means quicker development. We see very active development cycles and perpetual inspiration in the community in areas such as Natural Language Processing and other AI topics, which businesses can leverage

• A broad range of data science and AI components, allowing a best-of-breed approach with the flexibility to continuously exchange components

• Transparency in the community fosters trust and traceability. At KPMG, we call this 'AI in control.' We therefore believe Open Source is particularly good at helping a business to understand AI algorithms

• There are no software license costs. There is clearly an investment involved in building an Open Source DSML, but over a period of three to five years, the cost-benefit case supports the Open Source route

• It avoids vendor lock-in. Businesses are able to choose the right DSML components for them and define their own DSML roadmap, without being dependent on a single vendor and its product roadmap.

Building competitive advantage through a customized DSML

Insurance companies can gain considerable benefits by building their own DSML with the help of Open Source. While this is a complex task, it is entirely feasible. A number of our clients have implemented a DSML, either switching from existing standard products to Open Source, or starting directly with Open Source. Of course, this requires particular resources and expertise such as solutions architects and development capabilities. However, it allows a business to set its own pace. A full-scale DSML implementation generally takes 12 to 18 months, with first productive use cases after three to six months and useful outputs being generated throughout the entire project.

An additional bonus is that by having employees involved in DSML, the insurer builds a reservoir of innovation knowledge and skills that can be applied for the organization's broader benefit. This can center on – but potentially goes far beyond – a better understanding and greater maturity in tackling internally-available data and technical solutions. The Open Source component itself does not provide the competitive advantage, which stems rather from the in-depth knowledge and ability to integrate and use the components as the need arises.

'Ignite' and 'Signals' are KPMG data science solutions built with Open Source. Our digital innovation experts have outlined several insights and perspectives on enterprise grade Data Science & Machine Learning. If you are interested in a deep dive into this subject follow the QR-code below.

Conclusion

The need for a specific DSML should drive insurers' digital innovation roadmaps. This is in parallel with core systems, not in conflict with them. A DSML should be based on Open Source, which offers a series of compelling benefits. Keep in mind, however, that competitive advantage is not about simply having the algorithm, but in knowing how to deploy and use the models within an insurance context, and to unlocking the benefits of the insurer's own data.

Insurers should therefore build a custom DSML. This will increase their own maturity and capabilities around what they can do with their own data and will help to secure competitive advantage in the digital innovation space in the long run.

To help Switzerland's insurers develop their platforms and enhance their use of data, our Digital Innovation experts have put together a report that sets out the key considerations and ways forward.

⊕ **www.kpmg.ch/dsml**

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This series of publications from KPMG Switzerland provides insights, analyses and studies on a range of topics. All publications are available online. For more information, please contact **kpmgpublications@kpmg.com**

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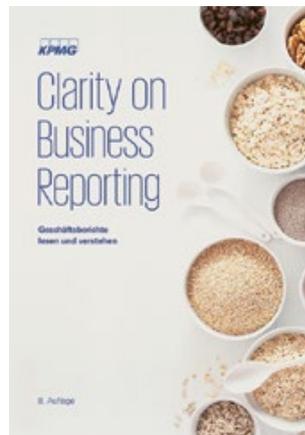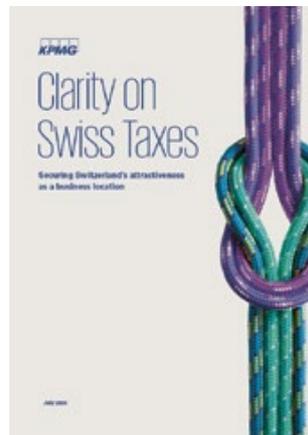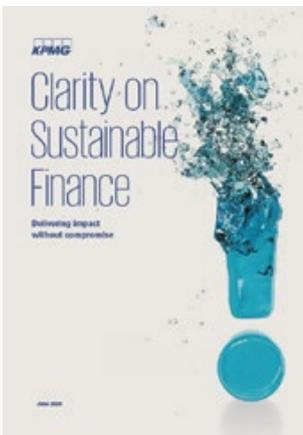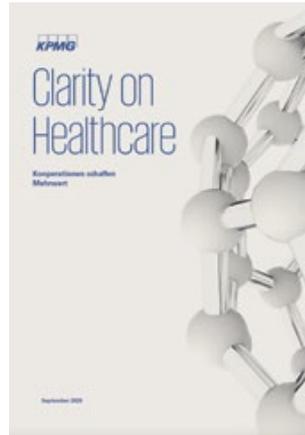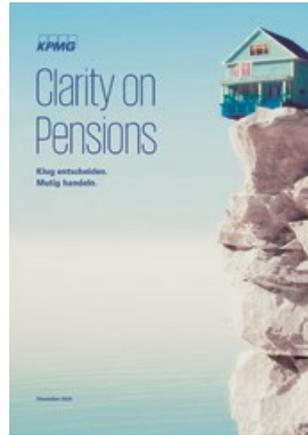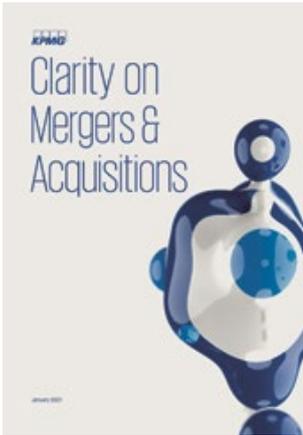
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