UNDERSTANDING RISK

SKI JUMPING | Interview with Sven Hannawald about a risky sport

DANGER FROM THE AIR | The number of drones is growing rapidly – and with them the risk

SHARED KNOWLEDGE, SHARED RISK | German SMEs abroad – a challenge for insurers

HEAVY RAIN | The natural hazard of the year 2016 is a difficult risk to calculate

REVIEW | The 2016 financial year of the Deutsche Rück Group

DIGITISATION | New impetus for life insurance business
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DEAR READER,

What are the challenges that drive you? And which developments are on your mind?

The answers are as exciting as they are varied. We approach the topics that concern you in many meetings and conversations. Professionally strong and always personal, we bring our knowledge and expertise into this dialogue. In the process, we frequently find ourselves addressing similar themes with you and your colleagues. On the following pages, we will explore some of these questions.

More and more, we find ourselves discussing the risk of DRONES. The German Air Navigation Services currently estimate that there are around 400,000 private or commercial drones in use across Germany. This figure is expected to triple by 2020, increasing the risk and making "danger from the air" an exciting challenge – not only for specialist insurers.

The analysis “SHARED KNOWLEDGE, SHARED RISK” illustrates what we understand by close collaboration. We support German primary insurers in accompanying their corporate clients abroad. This is because appropriate insurance solutions require knowledge about markets and risks on the ground. After all, almost every second German SME is currently active abroad.

A recurring theme of great importance is natural hazards. Last year, we saw devastating damage caused by HEAVY RAIN. The ELVIRA and FRIEDERIKE depressions alone caused €1.2 billion in insured damage as a result of heavy rain. This is another of the themes we will explore in this issue, alongside the POTENTIAL OF DIGITISATION for life insurance.

Sometimes it can prove enlightening to take a non-industry perspective on risk. Therefore, this edition is rounded off by an interview with SVEN HANNAWALD, a former ski jumper who made history. We gain an interesting insight into his personal approach to handling risk – in a sport that can undeniably be described as risky.

A new feature of the magazine is a review of the Deutsche Rück Group’s BUSINESS DEVELOPMENT in 2016. Here you will find all the important key data and developments, clearly and briefly presented. As usual, you will find more detailed information in our Annual Report, which we will be offering exclusively in digital form from this year on. You can download the report from www.deutscherueck.de.

I very much hope you will enjoy reading this edition of our magazine. With best wishes,

Dr Arno Junke

EDITORIAL
Ski jumping is a dangerous sport. Former ski jumping pro Sven Hannawald explains the hidden risks and how best to deal with them.
Mr Hannawald, from the spectators’ perspective, ski jumping seems to be incredibly risky. But how risky is the sport really?

The sport really is very risky. Ski jumping means instant adrenalin. We ski jumpers move freely in the air and people were not created to do that. Ski jumpers need extreme concentration and optimal preparation. The external conditions also play a role in safety.

Why at that age in particular?
At that time, I probably didn’t assess the risks correctly. At 20, you are young and adventurous. I wanted to test my limits. Looking back, this phase was a good thing for me, because the falls showed me the hard way where my limits lay. This is probably the case for a lot of ski jumpers. Perhaps that is why there are very few who have more than two serious falls in their careers.

What did you do to minimise the risk just before jumping?
Before each jump, I made sure that all the screws were securely seated and also carefully checked the bindings. The connection between body and skis is the most important thing in ski jumping.

What is the greatest risk?
Actually, that’s two things of equal importance. First, the weather must be right. In strong, gusty winds or unpredictable weather conditions, ski jumping is very dangerous. For this reason, it is usually cancelled or paused in such cases. At the same time, the equipment has to be reliable and robust. If, for example, a screw on the boot or binding is loose, the result can be a heavy fall.

Did you ever have a heavy fall?
Fortunately, I never fell heavily. In my career, however, I did experience the occasional moderately heavy fall. When I was about 20 years old, I had a succession of falls.

How do you feel after a fall?
Immediately afterwards, your knees will be trembling. But it is important not to be intimidated by that.

How do you manage that?
The best idea is to jump again straightaway. Then you don’t have so much time to start getting scared about the next fall. And you minimise the “cinema in your head”. This plays an important role in ski jumping. If you focus too much on falls and dangers, it’s impossible to concentrate properly on the basics. This in turn increases the risk of falling again.

Has ski jumping become generally safer in recent years?
Yes. For example, the height above the slope is not as great on the new ski jumps. In particular, jumpers are at a lower height immediately after leaving the jump.

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SVEN HANNAWALD

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For adults, such rituals work. But how was it when you were younger?
How did you prepare for jumps as a child?
Not at all. I just had incredible fun jumping and didn’t think about the possible risks. For kids, it’s quite simple: either they dare to jump from a hill or they don’t. The kids who were already frightened on the way up didn’t jump at all.
SVEN HANNAWALD: THE RECORD JUMPER

Sven Hannawald is a former German ski jumping pro who wrote sports history in the late 1990s and early 2000s. The 42-year-old is currently the only athlete to have won all four competitions in the Four Hills Tournament. Although this is his most famous record, it is not his only one. Hannawald also set ten ski jump records, one of which remains unbroken to this day. In addition, he was Ski Jump World Champion twice in succession and won four medals at the Nordic World Ski Championships, including two golds with the team. At the 2002 Winter Olympic Games in Salt Lake City, he also won team gold.

Hannawald distinguished himself from other ski jumping pros not only through his sensational victories. He also enjoyed exceptional popularity away from the ski jump. In the early 2000s, his face was omnipresent in the German media. “Hanni” was the pop star among winter sportsmen. In 2002, he was honoured as Germany’s Sports Personality of the Year. Today, Hannawald lives in Munich and passes on his experience in seminars and as the new TV expert with Eurosport. Among other things, he will provide expert commentary for the 2018 Winter Olympics.
As beginners, do children jump from a snow hill? No, children jump from very small ski jumps. While the pros use jumps that are 180 metres long, the ski jumps for kids are much shorter. But the jumping technique and the principle are very similar.

Did anything change for you when you first jumped in front of a camera and millions of viewers? To begin with, I was a bit more excited than training at home in front of a few spectators. But you get used to it over time.

2002 was your most successful year with four victories in the Four Hills Tournament. Can it happen to professional athletes in the middle of such a run of victories that they can’t rationally assess the risks any more? Of course, this can happen, but for me that was fortunately never the case. In times of success, I had an even more finely honed sense of my limits. That also came from years of experience and training. That’s why I was able to jump even better at that time than before.

In 2004, it became known that you were suffering from burnout. Did this have to do with the enormous pressure to perform? No, I never let myself be particularly guided by results. I’ve always focused on the actual jumping. That completely obsessed me. After all, it was my lifelong passion and there was nothing else that I was so enthusiastic about. It was this lack of balance that eventually became my downfall.

Why? I’m a real perfectionist. Some jumpers could completely switch off mentally and recover well from a season. With me it was different: I could never let go. At some point, I was so exhausted that I couldn’t even look forward to victories any more. Burnout is a mental thing – the risk is there for anyone who overreaches himself. No matter how dangerous the sport or profession they follow.

Thank you very much for the interview.
NOT FOR THE FAINT-HEARTED:
THE THREE BIGGEST RISKS

We have all seen it on TV: ski jumpers shooting down the jump in an attempt to fly through the air as far as possible. It all looks incredibly dangerous. And sometimes it is. Ski jumping is a sport that involves many risks. On the one hand, human errors can lead to serious accidents. On the other, jumpers need to contend with external influences such as the weather.

1. LOSS OF CONTROL
The horror scenario for every ski jumper: making a mess of the take-off and losing balance. This has already happened to several ski jumpers. For example, Simon Ammann at the final of the 2014/15 Four Hills Tournament in Bischofshofen. The 33-year-old Swiss athlete was initially able to keep his balance at the Paul-Ausserleitner-Schanze after 136 metres, but lost control immediately after landing and crashed into the snow with full force. Ammann got off relatively lightly with a severe concussion and bruising.

2. FAULTY EQUIPMENT
In ski jumping, the athlete relies not just on his own abilities but also on the sound functioning of his equipment. Because no matter how well prepared one is, faulty equipment means the risk of a fall. And that can end badly, as was the case for Austrian ski jumper Lukas Müller. In 2016, the 24-year-old suffered massive back injuries as the result of a fall caused by a problem with his ski boot. Shortly before landing, the buckle broke loose and Müller lost control of the left ski.

3. FREAK WEATHER
No matter how well a ski jumper prepares and no matter how often he has checked his equipment, if the weather turns capricious, ski jumping is extremely dangerous. In 2007, the Czech Republic’s Jan Mazoch was caught by a strong gust of wind at the World Cup and crashed onto the slope at 90 kilometres per hour. The then 21-year-old suffered a severe contusion of the skull and facial injuries.
When SMEs start doing business abroad, this presents a major challenge for smaller primary insurers. Deutsche Rück’s facultative underwriting can help primary insurers better manage foreign risks.
colleagues also take into account the respective country’s exposure to natural hazards. The assessment of production risks or the risk of cyber and terrorist attacks abroad is another of her tasks. With this knowledge, Deutsche Rück supports its clients with tailor-made reinsurance solutions.

At the very latest, information about foreign markets is of interest to German primary insurers if they want to offer policyholders cover for foreign risks. They need to know not just the local risks but also the peculiarities of the markets. This is because the insurance market in the European Union is far from being harmonised, let alone the global market. Each country has its own insurance regulations and laws. In addition to geographically contiguous markets such as France, the Netherlands, Denmark, Austria and Switzerland, Asian and Eastern European markets are particularly attractive to German companies eager to expand. Gathering knowledge about each individual market is a major challenge, especially for smaller and medium-sized primary insurers, who are mainly active in the regional and German markets.

This is where Deutsche Rück’s expertise comes into play. “France in particular is a regular topic,” Winands explains. Many German companies are active there and, although France is also a member of the EU, the conditions are very different from those in Germany. For example, following the attacks of 11 September 2001, it became obligatory in France to insure against potential terrorist attacks. To hedge the risks of non-life insurers active on the French market, the reinsurance pool GAREAT was established to jointly assume liability. In France, there is also a statutory requirement to insure against natural hazards.

Deutsche Rück is familiar with the peculiarities of foreign insurance markets as well as with the local risks, and clients can benefit from this expertise. “As a reinsurer, we are particularly in demand for our consultancy services,” Winands explains. This is because both the assessment of the individual risk as well as the accumulation risk in the portfolio are just as important for primary insurers as for reinsurers. ☠️
DANGER FROM THE AIR
At the end of January 2017, a car collided with a drone on a motorway in Upper Bavaria, Germany. Fortunately, the accident was relatively inconsequential. Although the impact damaged the front of the car, the driver and her passenger escaped without injury. The 1.2 kg drone was less fortunate. It was completely destroyed. Its owner stated that the drone had disappeared from sight and accidentally landed on the motorway.

Over the past two years, incidents of a similar nature have repeatedly made headlines around the world. In Germany, drones have smashed into car windscreens on numerous occasions. In August 2016, a drone almost collided with a Lufthansa Airbus near Dachau.

Sales of the remote-controlled flying devices are growing rapidly: 300,000 were sold in Germany in 2015. According to data from the German Air Navigation Services, more than 100,000 drones were purchased over the 2016 Christmas period alone. More and more people are flying drones for private or commercial purposes. However, many underestimate the risk that these new devices bring with them. As a result, incidents involving drones are of increasing concern for primary and reinsurers.
As the number of drones increases, so do the risks they bring. These concern not only damage to property or personal injury caused by accidents, or even invasions of privacy when a drone flies over a neighbour’s garden. There are also serious implications for the safety of air traffic and the use of drones for criminal or terrorist purposes. Both primary insurers and reinsurers need to adapt to this situation.

"Drones are attractive to both private and commercial customers," explains Doreen Bracher, underwriter for the facultative motor insurance business at Deutsche Rück. While many private individuals fly the devices in their spare time, television broadcasters use them for news reports, logistics companies are trialling deliveries by drone, and wind turbine operators use drones to check rotor blades. "If something happens, this is a case for the property and casualty insurer. And so the assessment of such risks will also land with us," says Bracher. The number of damage events linked to drones has increased over the past two years. This is hardly surprising, as often drones are controlled by people who have no experience with air traffic or underestimate the potential danger of the supposed toy.

“The owner of a drone is liable for personal injury and material damage caused by an accident during operation,” explains Veronika Kremer, underwriter for liability business at Deutsche Rück. For this reason, liability insurance for unmanned aerial vehicles has already been compulsory since 2005. And yet, many private individuals know nothing about this. Kremer hopes that in the future, drone manufacturers will enlighten their customers – for example, by printing the requirement on the packaging.

There is, however, no legal definition of the term “drone”. Depending on the intended use, the devices are considered either as unmanned aerial vehicles or as so-called flying models. "If private individuals use a drone for sporting purposes or other recreational activities, the rules for flying models apply," Bracher explains. "If there is another purpose involved, especially commercial, they are regarded as unmanned aeronautical systems, in which case the corresponding regulations apply.” Insurers also distinguish between the different types of drone use in their policies.

In the coming years, the issue of drones is likely to continue to occupy primary and reinsurers. In view of the rapidly growing number of drones in the sky, the legislature also wants to adopt stricter regulations for the operation of these devices. The German Federal Cabinet submitted a draft bill in mid-January. According to the terms of the bill, drones should in future not be allowed to fly any higher than 100 metres, and a flight ban should be imposed over sensitive areas such as gatherings of people. Last but not least, drones with a weight of more than 250 grams will in future have to be marked with the address of their owner. This would also facilitate the work of insurance companies, as the holder of a drone could be quickly determined in the event of damage.

A legal definition of the term “drone” has not yet been established.
The number of drones is increasing. This not only heightens the risk of accidents or intrusions into people’s privacy, but also the risk of jeopardising air traffic or misuse by criminals or terrorists.

DRONES

Some are tiny, others can save lives. Their number is growing rapidly.

According to estimates by the German Air Navigation Services (DFS), there were around 400,000 privately and commercially used drones in Germany in 2016. This figure is expected to triple by 2020. By way of comparison, around 1.9 million of the unmanned aerial vehicles are already in use in the USA.

Probably the smallest of the world’s drones is the Piccolissimo. It is the size of a 20 euro cent coin, weighs 2.5 grams and is produced by a 3D printer. It was developed by a research team at the University of Pittsburgh.

Researchers from the University of Delft have developed the prototype of an ambulance drone with a storage space for a defibrillator or other medical devices, which can be sent as first aid to patients in an emergency.

The first self-propelled drone for passenger transport is called EHang-184. It is about 1.40 metres long, can carry a person – or a payload of 125 kilograms – and was developed in China.

Drones have different names depending on their design. These include the quadrocopter (four rotors), hexacopter (six) and octocopter (eight). In principle, all drones with more than two rotors count as so-called multicopters.

Meanwhile, there are also more and more ways of protection against unwanted drones, for example at airports or major events: trained eagles, special drones or guns that shoot nets.
Reinsurers faced tough overall conditions in the 2016 financial year. Surplus reinsurance capacity led to high competitive pressure, while interest rates on the capital markets remained very low. The Deutsche Rück Group nevertheless managed to convert its strengths into commercial success in this challenging environment. The Group stabilised its already good market position in Europe, further strengthened its capital base and improved its results in 2016.

**A HIGHER VOLUME OF BUSINESS**
The Deutsche Rück Group also expanded its volume of business further and recorded positive growth in gross premium income. This growth came from all lines and was attributable to connections in both group and market business. Premium volume rose by 9.1% in gross terms to €1,175 million in 2016.

Premiums earned for own account increased by 9.0% to around €721 million. Premium volume in life reinsurance business – operated exclusively by the parent company, Deutsche Rückversicherung AG – also developed to the full satisfaction of the Group’s Board of Executive Directors in the last financial year. Gross premium volume grew by more than 11% to around €47 million.

“Low entry barriers to the reinsurance market are continuing to put pressure on prices and conditions,” Chief Executive Officer Dr Arno Junke says, explaining the challenge of the last financial year. “Our services – including those protecting against biometric risks – provided impetus for growth, which we exploited in order to expand our business volume, particularly with existing cedants. In other words, we won’t grow at any price but will always make sure our growth is sustainable.”

**A LOWER LOSS RATIO**
The last financial year brought a good claims situation for the Group: the positive trend in fire business continued in 2016. The homeowners’ comprehensive insurance and windstorm lines performed even better. Losses due to natural hazards were barely noticeable in the winter and were much lower in the summer than in the previous year. However, the gross claims burden in liability, accident and motor insurance business was up year on year. The Deutsche Rück Group therefore strengthened its claims provisions in line with the risk. The gross loss ratio improved from 62.3% to 58.1%; the net loss ratio fell from 69.6% to 66.3%.

**A COMPETITIVE EXPENSE RATIO**
Growth in gross premiums also led to a rise in expenses for insurance operations: the net expense ratio increased to around 36%. Compared
with other reinsurers, Deutsche Rück’s administrative expense ratio remains at a very competitive level.

**PROVISIONS INCREASED**

Thanks to the increased premium volume combined with a favourable claims experience, there was a significant improvement in the technical account before changes to equalisation reserves. Following a loss in the previous year, the profit for 2016 came to €11.2 million. The Group strengthened its equalisation reserves significantly, with net allocations of over €25 million. After changes in equalisation reserves and similar provisions, the technical account closed with a loss of €14 million.

**SOLID INVESTMENT INCOME**

Deutsche Rück’s investments, income from which supports the technical business, performed satisfactorily. The company’s investment strategy is based on a conservative, low-risk approach, as in previous years. A large portion of the financial investments consist of fixed-income securities (see chart). Despite persistently low interest rates on the capital markets, Deutsche Rück generated an adequate return with its portfolio. Once again, it achieved solid investment income. Regular income totalled €46 million, which, as expected, was down €3 million year on year – mainly owing to low interest rates.

**NET PROFIT FOR THE YEAR REMAINS STABLE**

The company’s net profit was virtually unchanged compared with

<table>
<thead>
<tr>
<th>OPERATING RESULT</th>
<th>2016</th>
<th>2015</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross premiums written</td>
<td>1,175.0</td>
<td>1,077.4</td>
<td>9.1 %</td>
</tr>
<tr>
<td>Net premiums earned</td>
<td>720.7</td>
<td>661.1</td>
<td>9.0 %</td>
</tr>
<tr>
<td>Combined ratio – net¹ (as % of net premiums earned)</td>
<td>101.3</td>
<td>99.0</td>
<td>—</td>
</tr>
<tr>
<td>Underwriting result – net (after change to the equalisation reserves)</td>
<td>–14.0</td>
<td>–25.2</td>
<td>44.4 %</td>
</tr>
<tr>
<td>Operating result before tax</td>
<td>23.1</td>
<td>17.0</td>
<td>35.9 %</td>
</tr>
<tr>
<td>Equity capital (before appropriation of profit)</td>
<td>511.9</td>
<td>498.9</td>
<td>2.6 %</td>
</tr>
<tr>
<td>Equalisation reserves</td>
<td>218.1</td>
<td>192.8</td>
<td>13.1 %</td>
</tr>
</tbody>
</table>

¹ Excl. life insurance
the previous year. General business closed with a result of around €37 million. Higher underwriting income led to an improvement in the operating result before tax, which came to more than €23 million. As a result of this positive effect, the net profit for the year after tax totalled €14.5 million.

QUALITY OF OUR PORTFOLIO IMPROVED
Renewals as at 1 January were highly satisfactory for Deutsche Rück, despite the fact that the market environment had remained fiercely competitive. The Group once again reviewed business in which conditions are inadequate from a technical viewpoint, and will continue its selective, profit-oriented underwriting policy in future.

“We will continue to systematically pursue our profit-oriented approach to business,” the Chief Executive Officer, Dr Junke, says of the Group’s strategy. “The number of client relationships in non-life business has been kept stable. Our goal is to work continuously on the quality of our portfolio. Quality comes well above quantity here.”

Meanwhile, the reinsurance market still does not seem to have bottomed out. Reinsurers must expect ongoing pressure on prices due to surplus capacity to continue.

A GOOD CREDIT RATING
2016 was an encouraging year for the Group. Its credit rating is considered exemplary: once again, Deutsche Rück received a financial strength rating of “A+” from Standard & Poor’s. The rating agency based its assessment on the positive development of the company’s competitive position with a stable outlook, the company’s extremely strong capital base and its secure earnings situation – paired with a conservative policy on the recognition of reserves.

ORGANIC GROWTH
As a leading reinsurer in the German market and a sought-after partner in Austria and selected European markets, the Group offers reinsurance cover for many different lines

INVESTMENT STRUCTURE AS AT 31 DECEMBER 2016
in %

- 41.0 % Fixed-interest securities
- 26.0 % Shares, interests or shares in investment assets and other variable-yield securities
- 23.1 % Registered bonds, loans and promissory notes (incl. mortgages)
- 8.2 % Shares in affiliated companies and shareholdings
- 1.7 % Deposits with banks

€11.2 million
Underwriting result (before change in equalisation reserves): significant improvement following a loss in the previous year
of insurance. The Group’s Board of Executive Directors always pursues the goal of sustainable corporate development.

“In view of market conditions, we will continue to focus on existing clients and to expand these relationships gradually in the near future. Our high market penetration will stand us in good stead here,” Dr Junke explains. “From our solid market position, we are aiming for organic growth – our speciality is the long haul.”

LONG-TERM RELATIONSHIPS
As a medium-sized reinsurer, the company is sufficiently flexible to enable it to react quickly to unforeseen developments. This business model pays off in particular in financial years with an extremely high claims burden, as it is geared towards long-term relationships – always with the aim of achieving a balance over time at terms and conditions commensurate with the risk. Deutsche Rück therefore attaches a great deal of importance to collaborating with all clients, shareholders and members of the Group on the basis of continuity.

A CAUTIOUS FORECAST
A company that depends on exogenous factors can only ever give a forecast with reservations. The Board of Executive Directors in principle anticipates a stable result in underwriting business in 2017. This assumes that claims remain within the expected range. As long as there are no disruptions on the capital markets, we expect stable investment income slightly above the previous year’s level, despite ongoing low interest rates. In view of the high priority accorded to our excellent level of security, the Board of Executive Directors therefore regards the current financial year as an opportunity to further strengthen Deutsche Rück’s assets.

€1,175 million
Premium volume: up by around 9%

DEVELOPMENT OF CLAIMS PROVISIONS 2012 – 2016 in €m

<table>
<thead>
<tr>
<th>Year</th>
<th>Property</th>
<th>Liability, accident, motor</th>
<th>Life</th>
<th>Other insurance segments</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>855.2</td>
<td>31</td>
<td>7.7</td>
<td>934.9</td>
<td>1,033.2</td>
</tr>
<tr>
<td>2013</td>
<td>934.9</td>
<td>52</td>
<td>1.9</td>
<td>975.6</td>
<td>1,103.8</td>
</tr>
<tr>
<td>2014</td>
<td>975.6</td>
<td>55</td>
<td>11.2</td>
<td>1,033.2</td>
<td>1,103.8</td>
</tr>
<tr>
<td>2015</td>
<td>1,033.2</td>
<td>60</td>
<td>9.1</td>
<td>1,103.8</td>
<td>2,139.1</td>
</tr>
<tr>
<td>2016</td>
<td>1,103.8</td>
<td>65</td>
<td>10</td>
<td>1,103.8</td>
<td>2,212.8</td>
</tr>
</tbody>
</table>

GROSS PREMIUM INCOME BY LINE OF INSURANCE 2016 – DIFFERENCE TO PREVIOUS YEAR in %

<table>
<thead>
<tr>
<th>Line of Insurance</th>
<th>Difference to Previous Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>+7.7</td>
</tr>
<tr>
<td>Liability, accident, motor</td>
<td>+1.9</td>
</tr>
<tr>
<td>Life</td>
<td>+11.2</td>
</tr>
<tr>
<td>Other insurance segments</td>
<td>+29.0</td>
</tr>
<tr>
<td>Total</td>
<td>+9.1</td>
</tr>
</tbody>
</table>
The German life insurance market is stagnating. Biometric products, the hope of many insurers during this period of low interest rates, are selling significantly less than hoped for. At the same time, the industry faces the enormous challenge of adapting its business model to the transformations of digitisation. But digitisation also offers opportunities for life insurers to generate new impetus for the business.

The current situation in occupational disability insurance is paradoxical. The product has never been better than it is today, but it is clearly not reaching customers to the extent that the insurers want. In the course of the conditions battle of recent years, the actual needs of many customers have not always been properly assessed. In addition, the preferred new business target group of younger customers is presenting a new challenge. Can the attention of the much-vaulted, highly Internet-savvy customers of Generation Y be attracted by such a complex long-term product? Is the classic sales approach reaching these customers at all? Does the received "market wisdom" that occupational disability insurance is too complex a product to sell online still apply? Or is it the case that no one has so far succeeded in doing it effectively?

LEARNING FROM THE INSURTECHS

In this area, life insurers can learn from the InsurTechs, who have begun to design complex, consulting-intensive products in such a way that they can be counselled and purchased online. To do this, they use fast, uncomplicated and, wherever possible, mobile communication with customers. This also includes gamification elements to interest people in the product and a deliberately simplified application process. Established insurers need to closely monitor the digital start-ups and also seek to cooperate with them when it comes to creating digital approaches that are very different from the techniques the industry has regarded as gospel for decades.

InsurTechs can also help insurers learn how quickly new products can be developed and then tested in practice. This approach allows the tiresome problem of "time-to-market" to be circumvented. Another technique of the InsurTechs that is well worth imitating is their attitude to mistakes: if you want to be innovative, you must also be allowed to fail. Failure has not been a management option in the insurance industry so far – but anyone who wants to promote the much-needed creativity needs to change that attitude.

The pressure on insurers to adapt accordingly and to develop new digital ways to reach the cus-
Customer will only increase in the future. People today are heavily influenced by their experiences with other sectors, where processes are extremely simple and convenient. Sales communications, issuing policies and claims processing must be as fast and transparent as consumers have long been used to from Amazon and similar companies. If insurers fail to achieve this, the InsurTechs will squeeze through the gap and conquer an ever-increasing portion of the market. In communicating with customers, for example, it would make sense to focus on new ways of interacting: e.g. enabling photos and important documents to be uploaded to digital platforms, or allowing customers to track the progress of their applications in real time.

**NEW CUSTOMER APPROACHES**

Digitisation also offers interesting possibilities when measuring the fitness and health status of the customer. Within the market, the product concept of a major life insurer is currently attracting serious attention. In life risk and later also in occupational disability insurance, this product ascertains the policy holder’s fitness activities and then offers a basic bonus discount and price reductions with partner companies in the retail trade.

Irrespective of the question of how such discounts can be calculated and whether people in Germany are actually willing to entrust such personal data to the insurer, this product approach offers one particular advantage. Via the monthly fitness assessment, the insurer stays in regular contact with its customers – unlike in the conventional world of life insurance products, where there is usually little if any contact between customer and insurance company once the policy has been issued. This new dynamic gives the insurer the opportunity to be perceived as an advisor and expert by providing tips and suggestions for healthy living, over and above specific product recommendations. This strengthens customer loyalty and creates the opportunity – especially among younger customers – to sell other products in the context of regular contacts that are not only accepted by the customer but may even be requested.

Digitisation is changing how customers can be approached – bringing with it new opportunities for life insurers.
2016 was the year of heavy rain. This is a difficult risk to calculate because predicting which places will be affected is almost impossible.

Metre-high piles of rubble, mudslides and smashed windows: images of the ruined town of Braunsbach in Baden-Württemberg at the end of May 2016 were shocking. The cause of all this devastation was ELVIRA. The depression brought so much rain to the region that the small town experienced the entire month’s rainfall within a few hours. As a result, the two small streams that run through the town (Orlacher Bach and Schlossbach) were unable to contain the deluge. Violent flood waters ripped through Braunsbach, tearing loose rocks, uprooting trees, overturning cars and damaging more than 100 houses, some of them seriously. Even before Braunsbach had time to recover from the shock, the FRIEDERIKE depression tore across Germany, flooding further areas of the country, including the small town of Simbach am Inn in Bavaria.

Localised downpours accompanied by heavy thunderstorms are particularly prevalent in the summer months. Extreme rainfall within a very short time can be difficult for the ground to absorb, causing small watercourses and sewers to rapidly become inundated. As a product of climate change and the associated higher temperatures, increasingly dry summers are forecast for Central Europe, but also stronger and more frequent extreme rainfall. So when the skies do open, the rain will increasingly be heavy.

Insurers need to find ways of dealing with hazardous situations. “It is extremely difficult to assess the risk of locally heavy rain,” comments Meike Müller from Deutsche Rück’s NatCat Centre. A qualified geocologist, she has been working at the centre on natural forces such as floods and summer storms since 1998. “In the case of heavy rainfall,
generally only a small area is severely affected and the surrounding areas are spared. Nevertheless, it is hard to predict precisely where the rain will fall,” Müller explains. The level of damage also depends strongly on local conditions. Are there any streams? How do they run? How steep is the adjacent terrain? Are there hollows or troughs?

However, in the past few years, a series of extreme loss events have increasingly turned the insurance industry’s focus on heavy rainfall.

The depressions EL VIRA and FRIEDERIKE alone caused insured losses of €800 million as a result of heavy rain, and a further €200 million resulting from squalls and hailstorms. Never before have storms with heavy rain caused such severe damage in so short a time, according to the 2016 natural hazard report of the German Insurance Association (GDV). Compared to other severe rain events of recent years, ELVIRA and FRIEDERIKE hold a depressing record. The next most costly storm was QUINTIA, which flooded Münster in July 2014, resulting in insured losses of €240 million. However, severe rain events are less damaging than extensive flooding. By way of comparison, the June flood of 2013 caused around €1.7 billion of insured losses, while the Elbe flood in 2002 topped €1.8 billion.

There is no pattern to these events. “Every year is different in terms of natural hazards,” Müller explains. In 2002 and 2013, for example, there were enormous floods.

In other years, winter storms were the problem. To assess risk as effectively as possible and to be in a position to optimally hedge primary insurers against natural hazards, Deutsche Rück employs experts in geocology, meteorology and geology alongside Müller. Their role is to explore the risks of storm, hail, earthquake and flood. “Our task is to constantly improve our ability to assess the risk of damage caused by natural hazards,” says Müller. The four specialists work with different models for individual hazards, which they designed themselves and are constantly developing – such as a summer and winter storm model, for example.

Damage caused by heavy rainfall, on the other hand, is usually dealt with in the context of flooding models. However, the extreme impact of events in 2016 also made it clear that there is still considerable research needed to understand and model this complex and multifaceted phenomenon.
Clearing up after the mudslides. Many inhabitants of the Franconian town of Braunsbach had their homes ruined.

Huge volumes of water rampaged through the town, carrying rocks, trees, cars and whole buildings with them. In a very short time, more than 100 houses were damaged, some of them severely.

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**RAIN LEADS TO DAMAGE – NATURAL CATASTROPHES CHARACTERISED BY HEAVY RAINFALL**

<table>
<thead>
<tr>
<th>Number of property damage events</th>
<th>Claims expenditure in property and natural hazards insurance (excl. motor insurance), in €</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,000</td>
<td>18,000 70,000,000</td>
</tr>
<tr>
<td>Lucia / Michaela (2014)</td>
<td></td>
</tr>
<tr>
<td>18,000</td>
<td>19,000 85,000,000</td>
</tr>
<tr>
<td>Rainer (2009)</td>
<td></td>
</tr>
<tr>
<td>19,000</td>
<td>27,000 100,000,000</td>
</tr>
<tr>
<td>Hilal (2008)</td>
<td></td>
</tr>
<tr>
<td>27,000</td>
<td>32,000 145,000,000</td>
</tr>
<tr>
<td>Norbert (2013)</td>
<td></td>
</tr>
<tr>
<td>32,000</td>
<td>800,000,000 n/a</td>
</tr>
<tr>
<td>Quintia / Renate / Susanne (2014)</td>
<td></td>
</tr>
<tr>
<td>800,000,000 Elvira / Friederike (2016)</td>
<td></td>
</tr>
</tbody>
</table>
Observing, documenting and analysing the weather is mainly the task of meteorologists and geoscientists, such as those working at Deutsche Rück’s NatCat Centre. Since the end of last year, however, students at Geschwister-Scholl-Gymnasium in Düsseldorf have been able to try their hands as weather researchers, too. Thanks to Deutsche Rück, the grammar school is the first school in the city to have its own professional weather station.

Working together with the association Climate Ambassadors – Klimabotschafter e.V., Deutsche Rück installed the facility on the school grounds. “As Germany’s leading reinsurer in the field of natural hazards, it is important to us to raise awareness among children and young people of topics such as weather, climate and the responsible use of natural resources,” explains Sven Klein, Senior Consultant in Deutsche Rück’s Communications department. Due to its central location in the city, the weather station at the “Scholl” is an ideal addition to the official weather stations (often located outside large cities), especially in the case of locally isolated extremes of weather such as rain or heatwaves.

The station records temperature, wind, humidity, air pressure, UV and solar radiation as well as precipitation, according to the standards of the World Meteorological Organisation (WMO). The students involved in the project can make their research results available to their classmates, teachers and the general public. The measurement data of the Geschwister-Scholl-Gymnasium, together with those of the other weather stations that “Klimabotschafter” has so far set up in German schools, can all be accessed via the association’s website.
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