

RISK CONSULTING

IF'S RISK MANAGEMENT JOURNAL 2/2018



Climate and energy: **The big change**

Snow load
– a challenge
for property
owners

Insurance
– important
for unlikely
risks, too

Claims analysis
to improve
corporate
traffic safety



Covering the risks of the future

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- International services in 170 countries with Nordic client teams, ensuring the best competencies for our clients.

We firmly believe in close partnerships with our clients, which is the only way forward to share our extensive knowledge on how to best manage risks. We do it large scale through experiments such as sandwich panel tests and PV panel tests, and daily by working with our clients on the management of risks.

We share the insights we get from working with our clients on our Insight pages at <https://www.if-insurance.com/large-enterprises/insight>. Here we publish useful articles and videos. Right now, you can learn more about things such as cyber risks, natural hazards, and business interruption, to mention just a few. We constantly add new material and articles to the site.

And you can, of course, find this and previous editions of Risk Consulting Magazine on the website.

Safe reading!

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Head of BA Industrial, If



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Publisher If, Niittypöytä 4, Espoo, FI-00025 IF, Finland, +358 10 19 15 15, www.if-insurance.com

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Production A-lehdet Oy **Printing** Forssa Print **Changes of address** industrial.client-service@if.fi **ISSN** 1459-3920. **Cover photo:** Getty Images

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Germ infested security

ON A BUSINESS TRIP? According to the results of a new study by Finnish and British researchers, half of plastic airport security bins may carry viruses that cause respiratory infections, according to The Guardian. The surfaces were swabbed at Helsinki airport as part of a scientific investigation carried out by experts from the University of Nottingham and the Finnish national institute for health and welfare during the winter of 2016. Conclusion: Hand-washing and careful coughing hygiene are crucial to the control of conta-

gious infections in public areas with high volumes of people passing through. The most common virus found was rhinovirus, which causes the common cold, while the samples also included the influenza A virus. "People can help to minimise contagion by hygienic hand-washing and coughing into a handkerchief, tissue or sleeve at all times – but especially in public places," professor of health protection, Jonathan Van Tam, said. "These simple precautions can help prevent pandemics and are most important in crowded areas like airports." ■

Ransomware may cost city 17M dollars

The ransomware attack that took down the city of Atlanta's computer network in March could cost taxpayers 17 million dollars, according The Atlanta Journal-Constitution. The ransomware incident in the US city knocked out services such as warrant issuances, water requests, new inmate processing, and online bill-pay programs across multiple city departments. To unlock the city's systems and data, hackers demanded 51,000 dollars worth in bitcoin, which the city refused to pay. The full extent of the damage is not yet clear.

Insurer sent in private wildfire experts

This summer, during the largest wildfire in Californian history, an US based insurer sent in private fire fighters and experts. "Before a wildfire, we know where all our clients are, where they live and how to contact them, so when they're in imminent danger of a wildfire, we give them tactics as to what they can do," Paul Krump, Chubb Group EVP, told CNBC. Last year Chubb's teams have visited more than 1,000 properties exposed to active wildfires. Proactive wildfire mitigation has a "huge return on investment," Krump noted in the interview.

Flying cars? No kidding

Japanese government is launching an initiative with the private sector to develop a future with flying cars, according to Japan Times. The initiative aims draw up a roadmap to commercializing flying cars. So far the concept has been largely theoretical. Government officials are partnering with companies like Boeing and Airbus, as well as major Japanese firms like All Nippon Airways, Japan Airlines, and NEC. A group of engineers are already developing a three-wheeled car that relies on drone technology to take flight. Toyota and affiliated companies have invested about 382,000 dollars in the project.

Climate change

The UK's Prudential Regulation Authority has issued a consultation paper on ways insurers and banks should manage financial risk arising from climate change. Appropriate governance, risk management, scenario analysis and disclosure are the main areas addressed. For governance, board-level engagement and accountability are expected.

“It’s all about preparing yourself for the future”

Over the past couple of years, Denmark’s biggest public company in the field of rail transport, DSB, has been on a major Risk Management journey. In close collaboration with If, DSB works constantly to improve safety – both on and away from the tracks.





PHOTOS: DSB

With 500,000 people taking the train every day, 298 stations all over the coun-

try, more than 7,000 employees and responsibility for buildings and workshops, there is no shortage of safety considerations for DSB to keep an eye on.

So Denmark's biggest public company in the field of rail transport also works constantly to secure ongoing safety improvements in and around the business. This includes a close dialogue with If, with whom DSB has had a partnership for years and with whom they have just decided to continue this partnership.

"If has been good at understanding what kind of organisation DSB is and contributing input and suggested improvements for our safety. Then it's up to us to find out how their recommendations fit into the journey we're on. But it's a fruitful partnership, and this smart work method helps to keep trains running safely, which benefits our customers," says Gert Mikkelsen, Senior Vice President at DSB.

One of the things he emphasises is the expertise that If contributes to engineers' reports.

"It's always useful to have a fresh pair of eyes looking at your business from the outside. The engineers' reports give us inspiration, new knowledge and better conditions for producing some loss scenarios. This good dialogue also creates value moving forwards, as If has tremendous experience and knowledge of new construction projects, which we can benefit from, for example when we're building new workshops," says Gert Mikkelsen.

He goes on to explain that the engineers' reports have created greater awareness of how big the consequences can be for the business if, for example, there is a fire in a workshop.

"The engineers' reports document very clearly that there can be some hazards that you might not give any thought to in your everyday work, when the focus is more on production. So even if it might sound trivial, we've put a greater focus on not storing combustible material such as wooden pallets against a combustible wall

or building containing combustible insulation material," says Gert Mikkelsen.

Culture programme

DSB has several levels of Risk Management. There is the overarching level, at which DSB attempts to define the major strategic pitfalls and risks that may affect the business in the future. And then there is the way they work on safety in everyday work, where they have to make sure not only that railway safety is in order, but also that the underlying infrastructure in buildings and workshops is also functioning optimally.

In this context, DSB has focused a lot on making improvements in many

of their workshop areas and in selected larger station buildings, explains Niels Dam, who is General Manager of Head of Development and Enterprise at DSB Real Estate.

"If has highlighted some irregularities and put forward some suggested improvements, which we've reviewed and acted on. This has meant that we've had lower insurance premiums, which shows that this has been a good partnership," says Niels Dam.

He explains that DSB has, among other things, improved or replaced automatic fire alarms at five stations, and they have conducted a major review of Copenhagen Central Station in which they checked that all installations and structures have been implemented correctly.

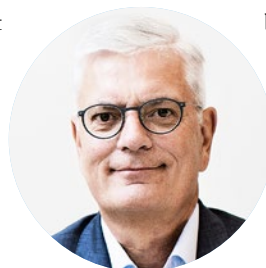
Sorting of waste is another practical example of an area that was highlighted, as well as the fact that the dialogue throughout the whole organisation has been enhanced.

"We've maintained a close dialogue with our colleagues in the workshop areas, where we've reviewed what constitutes a good safety culture. Of course the technical installations must be in order, but individual employees also have to be aware that they mustn't have combustible material nearby when, for example, they're standing there welding something," says Niels Dam.

Among other things, DSB has initiated a new culture programme, which aims to inform and educate employees even more in how each and every one of them should act and keep an eye on making →



Niels Dam,
General Manager,
Head of Development
and Enterprise,
DSB Real Estate



Gert Mikkelsen,
Senior Vice President,
DSB

The workshops at DSB have defined a new, common standard for the way they work.



PHOTOS: DSB

sure that safety is the top priority as they go about their daily work.

"It's very important that we have a strong safety culture and a few cultural ambassadors, who help to make sure that we're complying with legislation and our own regulations, and that there's a common thread in the way we work with safety," says Gert Mikkelsen, Senior Vice President at DSB.

One example is waste management outside station buildings. When having combustible material in a bin and maybe a cardboard container beneath the overhang of the roof, it's not hard to imagine what might happen if a fire breaks out.

A unique opportunity

All in all, things have become more systematic and one thing DSB has done is to produce a directory of responsibilities with clear rules defining who is responsible for what.

"We've become better at streamlining the way we work at DSB. In the past, for example, different workshops had different procedures for how they organised their work. We've become very much aware that we need to define standards for the way we work in order to make sure that we have the level of safety we

want to have, which also takes into account the variety of tasks carried out at the workshops," says Gert Mikkelsen.

What is DSB's focus for the future?

"It's all about preparing yourself as well as possible for the future," explains Gert Mikkelsen. And that means that DSB, like all other companies, has to undergo a process of modernisation. DSB is setting its sights on being market-oriented and the best in Europe, which brings its own demands. In DSB's case, they must build new workshops, and virtually the entire fleet of trains must be replaced. This creates good conditions to become more efficient, by such means as improving internal processes and maintaining a constant focus on customers.

"Right now, we have a unique opportunity in terms of creating new processes and taking account of the work processes we have now. There is of course a difference in the work processes from the time of the steam engines to the present, when we're bringing in electric locomotives," says Gert Mikkelsen, adding:

"It means that we can now design our infrastructure and buildings to meet the needs we have today. This will help us further improve the safety level with new workshops and a modern, uniform fleet

of trains, with all the benefits this will bring to customers."

New threats on the horizon

The world is changing all the time, as does the threat profile. But which threats is DSB focusing on looking to the future?

"We're very much aware of the new threats relating to IT, cyber security and technology. We're a crucial part of the country's infrastructure, so we have to be prepared if there's someone who wants to harm us," says Gert Mikkelsen, continuing:

"We saw, among other things, how big the consequences were for A.P. Møller-Mærsk, when they were hit by a cyber attack, so that's also sharpened our focus in this area."

He explains that DSB has for the first time taken out cyber insurance, and that they are working hard in general to safeguard control over their IT systems.

"We have a clear plan for what has to be done, and we've earmarked some money so that we maintain control over our safety package in this area," says Gert Mikkelsen. ■

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"We've become better at streamlining the way we work at DSB."

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Theme:

Climate and energy

From making renewable energy at sea to preventing damage from heavy snow loads on roofs, the climate affects us all.

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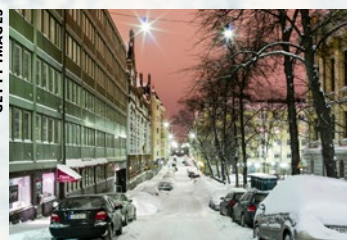
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Wind of change



The rise of renewables is one of the biggest changes in the global energy supply. Transmission capacity and networks play a central role in our future energy system, introducing also new and emerging risks.

Storms, floods, hurricanes, and drought – the effects of the changing climate have been clearly visible all around the world during the past few years. Just the past summer, with extreme heat, large forest fires, and flooding distressing Europe, the increase in uncertainty has been very tangible.

Not as the sole reason, but arguably as a significant factor, there is an identified need to address global warming. The Paris agreement, ratified by more than 175 countries to keep global warming below two degrees, is based on scientists agreeing that man-made carbon emissions should reach zero by the end of the century.

Quiet energy transition

With increasing pressure on the use of fossil fuels, the focus is concentrating more and more on renewable sources of energy.

In the past ten years, there have been significant advances in renewable energy, especially in solar and wind power. The rise of renewables is one of the biggest changes in the global energy supply, growing from 1% in 2006 to more than 3% today.¹ The question is, are they growing fast enough?

The International Energy Agency (IEA) predicts energy demand to increase on a global perspective by 30% between now and 2040, equivalent to another China and India. The IEA also pre-

dicts that renewables will account for 40% of power generation by 2040.¹

In Europe, and more specifically in the Nordic countries, there is a quiet energy transition taking place at this very moment. The Nordics are investing massive amounts in infrastructure to be able to increase the production and optimise the transportation of renewable energy.

Denmark, for example, is producing excess wind power for its own needs that could be transported to Norway, where they again can use the energy to power dams. The supply and demand must be brought together, meaning moving power over great distances and finding ways to do it efficiently.

Offshore windfarms spot the Baltic and North Seas, connected to transformers offshore and onshore through power cables placed on and in the seabed: sub-sea cables. When a power cable is big and long enough to connect between countries, it is called an interconnector.

A lot of intriguing projects in electrical power have been completed or planned in Northern Europe and in the Nordics,

*“The price of wind power
is coming close to the
price of fossil fuel.”*



connecting countries with renewable energy. In the past twelve years alone, we have seen the construction of large interconnectors such as Estlink in 2006 and NordBalt in 2015. Nordlink, connecting Germany and Norway, is planned to begin operations in 2020, and there are plans to build an artificial island in the middle of the North Sea to service the increasing number of windfarms.

The energy transition is going fast, and one of the main drivers is cost. The price of wind power is coming close to the price of fossil fuel, now around five to seventeen eurocents per kilowatt hour. We are getting closer to the point at which government subsidies become unnecessary, and the predictions are that the price will be as much as halved in the next ten years. As it becomes a more and more profitable business, we are seeing a shift from traditional oil companies to the side of renewables.

Driven not only by climate change and profitability, but also by a political agenda, this is the field of the future. The possibilities increase as we learn more. In the future,

we might be looking at a combination of different renewable sources: solar panels at sea, power from the waves and tidal water, with wind power on and offshore.

Whatever the combination will be, to move and make efficient use of the energy, a lot of infrastructure is needed. The scale and amount of investment is enormous; energy companies are moving away from fossils and investing billions in new infrastructure in renewables. The estimated investments are as much as fifteen billion euros before 2025.

Ahead in the Nordics

The Nordic area is looking into energy and renewables with an intense focus, being ahead of the rest of the world in technology and know-how.

Seeking strength in numbers, the Nordic countries have unique and long-standing co-operation in the energy field, with 2015 marking the centenary of the first subsea power cable between Denmark and Sweden.²

There is a vast number of different parties involved – governments, academia

and research, energy companies, regulatory authorities, environmental and energy business organisations, electricity-market participants, the EU, and many different institutions.

The geopolitical landscape is in constant flux. Global trade and climate policies are under pressure, and nationalist tendencies are emerging in many countries, placing challenges on Nordic energy co-operation. On a political level, there is a strong will to form a more closely coupled European Energy Union.² This is a complex area, where cooperation across borders is the key to achieving efficient and competitive solutions.

Transmission capacity plays a central role in addressing the future challenges of the power system, as strong transmission networks are a prerequisite for cost-effective operation and a green power system.

The European power system is undergoing a fundamental change in how electricity is generated and used, as well as on a political and strategical level. The future energy system will look different from that of today, but it is not yet clear how. →

Covering the Risks

“We underwrite risks that we understand”. That is the philosophy that If lives by.

Proud of its highly competent and versatile risk management, there are continually new and unknown risks emerging all the time.

The speed of development and change has increased, as has the growing impact from natural catastrophes and climate change. But the driving force for If, when mapping new risks, is our clients and their needs. If wants to manage risks together with the client, and goes where new risks emerge and where the clients need risks covered.

“The energy transition is bringing new possibilities and risks, and we want to be on that journey with our clients”, says If Senior Risk Engineer Mak Olieman.

“If has been insuring renewable energy such as solar and wind power for more than twenty years already, and the risks onshore are well known and covered. With a growing need to transport energy from sea to land and over long distances between countries, we also needed to learn about the risks at sea. Subsea cable technology is finally in a mature state, making it sensible to look into insuring these risks on a larger scale”, Mak continues.

“The project was started based on client requests, but we were all driven by the strong belief that there is business in this area, for us and for our existing clients, as well as for new ones. We have many clients in the slowing traditional energy business, and we want to support them as they move into renewables.”

“This was a very complex and multi-dimensional project. Studying the risks of subsea cables, one has to look into many possible factors, from the cable itself to the sea and to several possible external influences”, says Account Executive and Project Manager Ester Hofman-Bang.

“There was a great amount of work and research done in general in this area, and we did a comprehensive literature study to learn and continue further.”

“With subsea cables, we are operating at sea, still largely unexplored and unknown. We are learning more and more all the time, but as the sea still possesses many unknown characteristics to us, knowing

other parts of the risks as thoroughly as possible is crucial,” Ester continues.

Mapping the risks

In conquering the new area and trying to answer the needs of the clients, If challenged its internal guidelines and created new tools to estimate and study the risk.

One of the tools used with subsea cables was Risk Mindmapping. Versatile, alive, and comprehensive, with the main focus on creating a dialogue with the client, this simple and straightforward tool has been an excellent fit for mapping such a complex risk.

“The tool brings structure to the process and makes something very complex easier to access and support, both internally and externally”, says Ester enthusiastically.

Placing and burying a long and large power cable in the seabed, with an offshore windfarm at one end and highly complex technical and expensive substations offshore or onshore at the other, is a rather delicate and complicated process.

Looking into the claims history, we learned that one of the greatest risks comes from fishing, with nets and anchors catching the seabed cables in shallow waters. The sea itself, with its waves, tides, and currents, as well as the varying seabed formations, also poses a risk for the cables. In addition, construction, transportation, and maintenance, as well as continuity planning, all play a part in the risk map for subsea cables.

“Risk Mindmapping guides us to reflect on all the relevant aspects of the risk, for the benefit of both If and our clients, and to mitigate the risks”, Ester concludes.

Assessing with Subseagator

“In addition to using Risk Mindmapping, we also developed another internal risk assessment tool called Subseagator – a specific tool for mapping subsea cable risks and the related infrastructure, making sure we ask all the right questions”, Mak says.

Subseagator, similar to If’s Navigator tool for other kinds of risks, is an evaluation tool to support underwriting and to be able to assess the quality of the risk better.

“Our clients provide the information for the evaluation, and they want to do that, in order for us to be able to provide

the best possible premium for the project,” Mak continues.

“We do individual underwriting for these kinds of big projects, and to be able to give our clients the best possible price, we need open and transparent dialogue. It is complex for both the insurer and for the client, so we need to establish trust both ways,” Mak concludes.

Head on to the challenge

“The energy transition is going forward fast, and we want to be a part of it. We don’t shy away from the challenge – we are excited to dive in.”

“Developing and building different tools, and increasing our knowledge in tight cooperation with our clients, is how we grasp complex risks on such constantly evolving and changing areas”, says Mak.

“We also use our vast knowledge throughout the Nordic countries and Europe, and seek to work without national or business borders. With the subsea cable project, we had our highly skilled professionals from Denmark, Finland, Sweden, Norway, and the Netherlands working together. We had our different lines of business widely involved, gathering knowledge and utilising expertise from property, liability, marine cargo, construction, and claims and legal departments to work together on this”, Ester says.

“With such a complex area like energy, we need the right resources and competencies – we need to use the full spectrum of our know-how.”

There is no doubt that there will be big developments and changes in the energy field, and If wants to be part of that development – together with our clients. ■

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“The energy transition is bringing new possibilities and risks.”

In Stockholm the rebuilding of Slussen will reduce the flood risk for municipalities upstream.

GETTY IMAGES



Climate change adaptation

– survey in Swedish municipalities

Most municipalities in Sweden have just started with climate change adaptation, but it is a requirement by law.

As long ago as 2007, the Commission on Climate and Vulnerability stressed that climate change adaptation needs to start in Sweden. However, almost 10 years later, several surveys showed that, with a few ambitious exceptions, most municipalities have just started their climate change adaptation work. Based on these results, If and several other leading insurance companies in Sweden proposed that all mu-

nicipalities should analyse how they can be affected by climate change. This proposal became a legal requirement on 1 August 2018.

In 2007, the Commission on Climate and Vulnerability, which was appointed by the Swedish Government to assess how Swedish society can be affected by climate change, presented its final report, “Sweden facing climate change – threats and opportunities” (SOU 2007:60). The commission concluded that the future climate in Sweden will be warmer and wet-

ter, and as a result the risk of, for example, floods, landslides, erosion, heat waves, and forest fires will increase. A changing climate would, however, also provide some opportunities. For example, Sweden’s energy balance would benefit due to a reduced need for heating, which by far would outweigh the increased need for cooling, and increased hydropower potential. Based on these results, the commission proposed that climate change adaptation work should start at once in order to reduce risk. The principal fea- ➔

tures of the climate scenarios, albeit uncertainties, were considered sufficiently robust to be used for planning and implementation of adaptation measures. The Commission highlighted that municipalities, which are responsible for physical planning, building development, water, sewage, and rescue services, are central components of effective climate change adaptation. To assist municipalities, the Commission suggested that the county administrative boards should be given a key role in coordinating the work in relation to municipalities, businesses, and regional sector authorities.

Comparison and ranking

Almost 7 years later, in autumn 2014, IF and several other leading insurance companies, via Insurance Sweden, initiated a first study in order to map Swedish municipalities' work on climate change adaptation in 2015. The aim was to investigate how far municipalities have come in their work and also to highlight best practices. The survey results formed the basis for a comparison and ranking of the municipalities' work. This first survey was followed by follow-up studies in 2016 and 2017. The surveys were conducted by the IVL Swedish Environmental Research Institute, a leading institute on applied environmental science.

In 2017, the survey "Klimatanpassning 2017 – så långt har kommunerna kommit" was conducted during the period January to March. The survey was sent to all 290 municipalities in Sweden, and of these, 202 responded. A total of 31 questions, plus follow-up questions, were included in the questionnaire. The questions were based on the Adaptation Support Tool, developed by the European Commission, which provides guidance on how climate change adaptation work can be systematically implemented through a six-step process.

The survey results showed that almost all municipalities (201 out of 202) believe they will be affected by climate change, and especially by increased precipitation, changed water flows, and increased temperatures. Most municipalities (9 out of 10) state that they are currently working on climate change adaptation. However, almost a third (3 out of 10) of the respondents have not analysed how they can be affected by climate change and extreme weather events. Among those who have analysed how they can be affected, 6 out of 10 have also identified their most vulnerable sectors and geographical locations. Somewhat more than half (6 out of 10) of the municipalities have implement-

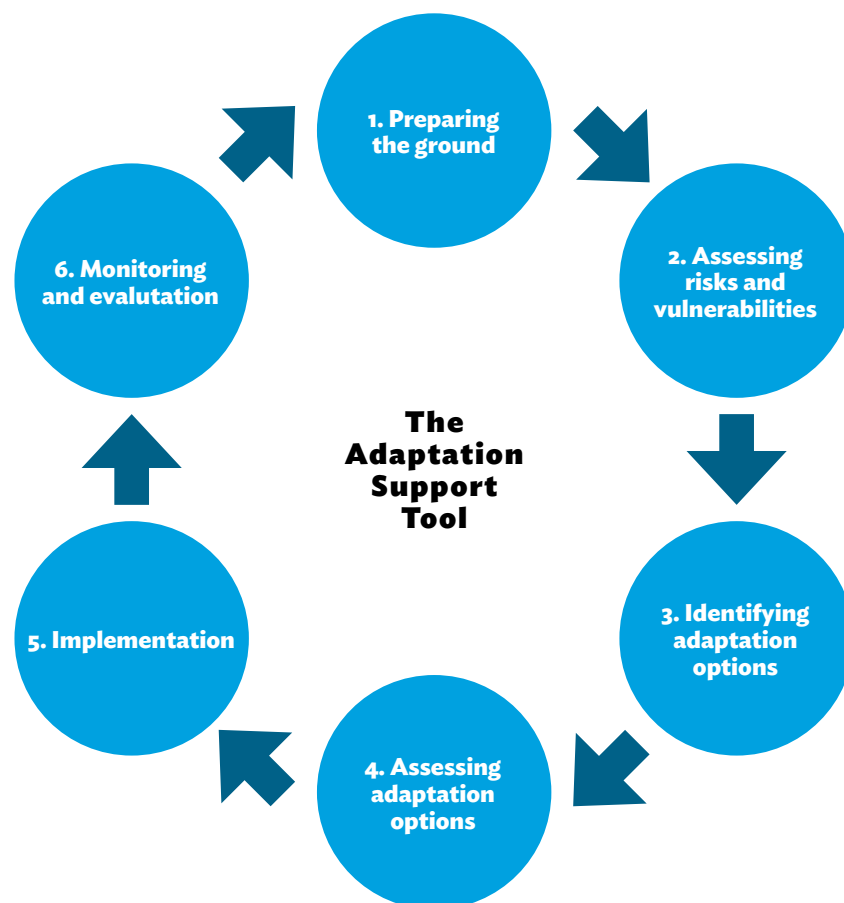
ed adaptation measures, which are primarily measures aiming to reduce the risk of flooding. Only very few (2 out of 10) municipalities have conducted a follow-up and evaluation of their adaptation work.

New cloud-burst model

The survey results also formed the basis for a comparison and ranking of the municipalities' work on climate change adaptation. Based on their survey responses, the municipalities were awarded points (maximum points 33). The ranking shows that 139 out of 202 (i.e. 7 out of 10) municipalities have a total score that is less than half of the maximum points. Approximately 4 out of 10 score less than 10 points. This indicates that while a few municipalities have come far in their work, including Uppsala, Stockholm, and Lomma, the majority have just started their work on climate change adaptation. In general, large municipalities, which have more resources, have come further in their work. Inland municipalities have, in general, not come as far as municipalities along the coast.

Uppsala has long tradition of working on climate change adaptation, inter alia because the river (Fyrisån) that runs through the city has flooded on sever-

al occasions over the years. To make sure the city can handle an increased risk of flooding, the city is making sure to include dams and "space for water" when planning and developing new urban areas. Uppsala and the Public Health Agency of Sweden have also conducted a pilot project investigating how to protect vulnerable groups during heat waves. Lomma is a low-lying coastal municipality in



Top ten municipalities in 2017

Ranking	Municipality	Score*
1.	Uppsala	33
2.	Lomma	32.5
	Stockholm	32.5
3.	Vänersborg	32
4.	Växjö	31
5.	Botkyrka	30.5
6.	Danderyd	30.5
	Eksjö	30.5
	Sundsvall	30.5
	Västerås	30.5

*Maximum score 33 points



Uppsala has worked with climate change adaptation for a long time.

the south of Sweden. The municipality has analysed how different sectors in the municipality, including housing, infrastructure, and agriculture, can be affected by rising sea-levels and torrent rain, as well as landslides and erosion. In Stockholm, the rebuilding of Slussen, which was suggested by the Commission on Climate and Vulnerability in 2007, will double the capacity to channel water from Lake Mälaren to the sea, which will reduce the flood risk for all the municipalities around the lake. Stockholm has also developed a cloud-burst model that can, for example, simulate a 100-year rainfall, and produce scenarios that can be used in the planning process. The model can identify vulnerable areas, which then need to be analysed in greater detail in order to assess potential damage and identify proper adaptation measures.

Based on the results of the survey, Insurance Sweden and the IVL Swedish Environmental Research Institute provided some recommendations regarding climate change adaptation work in Sweden:

- All municipalities need to work on climate change adaptation. Although some municipalities are more vulnerable than others, all municipalities will,

to some extent, be affected by climate change (e.g. all municipalities will be affected by torrent rain and heat waves). Thus, all municipalities should analyse how they can be affected by climate change.

- Climate change adaptation work in municipalities needs to be long-term and systematic, in line with the Adaptation Support Tool principles, in order to be efficient.
- Smaller municipalities (less than 10,000 inhabitants) have, in general, not come very far in their work and, in many cases, need assistance. The climate change adaptation coordinators in the respective county board administration should provide support to smaller municipalities, if needed.

In November 2015, the Swedish Government appointed a government inquiry to assess and present recommendations on how to enhance climate change adaptation work in Sweden. The results of the above-mentioned surveys were part of the instruction to the inquiry, and when the inquiry presented its final report in

“All municipalities need to work on climate change adaptation.”

May 2017, it recommended that all municipalities should analyse how they can be affected by climate change. As of 1st August 2018, municipalities are required by law, namely by means

of the Planning and Building Act, to present an analysis of climate-related risks and preventative measures.

The next time a survey on climate change adaptation work is conducted, we hope to have a more uplifting result, showing that municipalities are taking this very important work seriously and are implementing the necessary measures to reduce risk and adapt society to a changing climate. ■

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In the Nordic region, last winter gave us an exceptional amount of snow. Because of this, our clients and customers experienced more snow load-related damages than would normally be expected.

This winter it is natural to ask ourselves if we and our clients learnt anything from last year's experience. I believe it is fair to say that even if an insurance cover provides good economic protection from damage caused by snow load, it is always better to try to avoid such damage.

First and foremost, we all need to realise that snow load represents a significant risk that could compromise building structures. In some cases, people may also be severely injured, even fatally, by collapsing buildings or snow sliding off roofs and the like.

Reducing risks - what to do?

Follow the weather forecast. A lot of wet snow in a short period of time may represent a significant danger. Snowfall followed by rain may also pose an increased threat, as the water content of the snow will increase, and so the weight per square metre will also increase significantly.

One should always be prepared and have plans for the removal of snow load, as snow load represents a general and repeating risk.

In geographical areas with a lot of snow, removal, as well as measuring snow load and snow depth on roofs, should be considered a general and normal necessity.

It is important not to jeopardise safety when removing snow. This will normally imply that such undertakings should be left to professionals, who will remove snow safely and in a skilled way. Apart from posing a significant risk of personal injury, unloading may, if done wrongly, actually cause additional damage, for example, if the load on the building or structure becomes increasingly uneven during unloading. Unskilled workers

may also damage the roof when removing snow, causing water to penetrate the roof. Furthermore, trained personnel will also consider the risk and take appropriate measures to avoid harming people due to snow and ice falling from the roof.

Watch for signs – is anything starting to give way? Any cracks or noise? Are doors and windows increasingly hard to open or close? These may all be signals that something needs to be done sooner rather than later. In the long run, monitoring the girders of buildings is not uncommon. Such monitoring is a good and relatively easy way to detect deformation and gives an early warning if something needs to be done. Monitoring and measuring snow depth on roofs should always be considered a viable option to detect possible problems early.

Sometimes frozen drainage systems may cause snow and ice to build up on the roof. To avoid this, consider installing heating in the drainage system, especially

in geographical areas with a climate where the temperature frequently varies from below freezing to a mild-er temperature.

Even though old buildings may have been exposed to a heavy snow load over many years without

suffering any damage, the structure may have been weakened over time, and may therefore be more prone to such damage than in previous years. One should take this into consideration when deciding the need for an inspection, and deciding when to start unloading snow. Sometimes an unusual wind direction in combination with heavy snow may cause stress to the building structure that is unusual and causes unexpected damage.

Insurance cover

Most property insurance covers damage caused by snow load. If you are in doubt

about whether your insurance policy would be sufficient, ask us!

The cover is normally dependent on property owners taking good care of their buildings, meaning that the owners do what they are reasonably expected to do to avoid snow load damage. The owners must, to the best of their ability, make sure that snow is removed before the snow load becomes a problem.

In the real world, unexpected situations happen. The snow may be accompanied by heavy rain; the snow may be heavier than expected; and the wind may be stronger, come from an unexpected direction, and add to the stress. If the building code of the building is met, and the owner has acted in a way that corresponds to normal and prudent behaviour, things tend to end well without damage. However, unexpected things may happen and cause damage, for which insurance will provide cover.

What may the consequences be if you fail to be aware of the responsibility to unload snow?

Apart from the fact that people may be injured, a lack of prudent unloading may have consequences, and may result in a reduction in the insurance settlement.

Prepare and monitor

Beware of the risk. Snow load may lead to the collapse of building structures, and it poses a significant risk of damage to both people and property. Monitor the building and be aware of signs of overload. Use professionals to safely remove snow load.

If damage still occurs, If is there to help you! ■

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"A lot of wet snow in a short period of time may represent a significant danger."



When the storm arrives

Severe storms and hurricane seasons seem to be more a new normal than an anomaly. To better help clients, If has developed new ways to prepare for the risks.

The 2017 Atlantic hurricane season was hyperactive and extremely destructive, featuring seventeen named storms, with three of them standing out particularly. Hurricane Harvey was one of the costliest tropical cyclones on record, inflicting at least USD 125 billion in damage. The hurricane caused severe human suffering and property damage along its path through the Caribbean Sea, the Gulf of Mexico, and Texas, USA. In the greater Houston metropolitan area, catastrophic rainfall-triggered flooding affected hundreds of thousands of homes and displaced more than 30,000 people.

The two other severe hurricanes in 2017 were Irma, which caused widespread and catastrophic damage, particularly in the north-eastern Caribbean and the Florida Keys, and Maria, a category five hurricane on the Saffir-Simpson hurricane wind scale, regarded as

the worst natural disaster on record in Dominica and Puerto Rico.

With the 2018 season nearly behind us, we have seen no signs of slowdown. Florence, a powerful and long-lived hurricane, hit the US East Coast in mid-September as the sixth named storm of the season, causing severe damage along its path. Simultaneously, typhoon Manghut, recognised as the strongest of the year, battered the Philippines, Hong Kong, and mainland China.

There are not yet full estimates of the damage, but it seems to be clear that severe storms and hurricane seasons are more a new normal than an anomaly.

Continuous development

Even as hurricanes and other potential natural hazards develop around the globe, If is not paralysed when it comes to helping clients. We work hard to warn and inform clients with property locations in areas where major natural disasters take place.

To better help clients, If has improved its own processes during the past year. We track the development of major events throughout the world and enable a better dialogue with our clients about potential threats, and help them take action if an event threatens or actually inflicts damage to their sites.

“We can now inform clients about threats and help them avoid, mitigate, and limit the consequences,” says Jan-Erik Lagerwall, who is working on the system to alert clients.

The coordinates for clients’ proper-

ty sites located in high-risk natural hazard areas are entered into our systems, which we use to track natural events around the globe.

If closely monitors global information on weather and natural disasters. The obtained data is then processed and compared with the information on clients’ facilities, enabling If immediately to get a picture of which If-insured buildings are located in areas with a natural hazard risk.

“With Harvey, we could initially see that there were 61 If-insured locations in a radius of 250 km from the area where the hurricane made landfall”, Jan-Erik reports.

Better data and dialogue

The processed information is quickly sent to the designated client manager to inform them about the situation – for example, how the hurricane is moving, what areas it is expected to hit, what If-insured property is in its path, and what insured values are involved.

The client managers at If communicate this information further to the clients’ risk managers and brokers to discuss actions, injuries, and damage. Good communication and data processing help If to reduce risks and damage to the clients’ facilities.

Good preparation

However, this is just a small part of a bigger picture. A large part of limiting damage from natural hazards is done prior to any event, by means of good



structural designs, good preparedness routines, and good business continuity planning. Part of the dialogue with the clients and affected sites is the checklists that If risk engineers have prepared for different situations, such as snowstorms, floods, and windstorms.

“Good preparedness prior to and quick mitigation actions after an event are the key to limiting the damage from any natural hazard”, says Philip Preston, one of the flood experts at If.

“When we are able to warn our customers in good time about approaching events, we might also help the customers to take actions that ultimately can mitigate damage caused to their property”, Jan-Erik Lagerwall notes.

“The faster damage is attended to, the greater chance there is to limit the loss. Close dialogue between If and the clients and brokers in the event of a loss makes a great difference”, Jan-Erik concludes. ■

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ISTOCK



Your risks, globally

New features are now available in If Login, giving If's clients a global overview of their risks.

If's client portal If Login now offers a global overview of property and cargo risks – just as it has offered an overview of a client's expats located around the world. “The purpose of the new If Login features is to provide a fast and simple way for our clients to get an overview of all of their risks around the world,” Chief Product Owner Kristofer Palm says.

Going into the world map in If Login, clients can view cargo locations and storage values along with property locations, with the total sum insured, property damage, and business interruption.

For cargo and property insurances, all this information can be found on a

single site. Within this single site, there is also a policy overview with detailed local fronting partner information. If Login provides the possibility to view a specific policy, as well as all the locations covered on that local policy.

“We are working constantly to improve If Login, and with these new features, we meet our clients' request to get an easy overview of their global risks”, Palm concludes. ■

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Insurance – important for unlikely risks, too

In the middle of the night a fire broke out at the premises of Hörle Wire AB. The fire raged for two hours before firefighting could commence.

It was after midnight on 21 February 2018 the fire broke out in an electrical cabinet, where combustible gases accumulated and were eventually combusted due to an electrical spark. The fire then spread to the adjacent ceiling. As the fire

broke out in the middle of the night, it is estimated that the fire raged for some two hours before firefighters arrived.

The fire broke out in the production hall. Once the fire had taken a grip on the ceiling, the fire was difficult to extinguish. The ensuing smouldering fire contin-

ued for many days, and parts of the roof had to be torn down to ensure that the fire did not continue to spread over the 4000-square metre ceiling and roof.

From a risk perspective, the production hall did not contain any dangerous fire risks – not even to a trained risk engi-



PHOTO: HÖRLE WIRE

Hörle Wire AB

Hörle Wire AB produces steel wire, but not just any steel wire. This is steel wire, and steel plates, for many parts of industry. It is B2B, and types of industries span from the energy sector, to furniture (e.g. for a large Swedish international furniture company), to the kitchen appliance industry, toys, coat hangers, and locks. Many large international and national companies depend on deliveries of the products that Hörle Wire AB produces.

tion be done elsewhere? What does this all mean for the employees of the company?

Large claims team

The many questions, high complexity, and thousands of decisions to take require competence. If quickly set up a large claims team to support Hörle, which is the best way of ensuring that the right competencies are involved and fast decisions are taken. The large claims team consists of a chairperson and people with the best experience and expertise for the claim in question. In this case, a building and construction expert, a machinery expert, and a business interruption expert were part of the team. The If risk engineer and underwriter were also included, both of whom provided input in cover issues and the risk itself.

The large claims team investigates questions like: What can realistically be expected? Is a certain type of machinery still available on the market? If not, what do you do? Can the business continue, and if so, in what shape or form?

The large claims team meets with the customer (which might at least be a handful of people, possible including the CEO, CFO, head of production, insurance manager and risk manager) and the broker. The team sets up and conducts frequent meetings with all the stakeholders responsible for the clean-up operation, building, repairs, reconstruction management, evaluation of fire-damaged machinery, and purchasing and procurement of new machinery, and sets up discussions between the business interruption expert and the CFO regarding budgets and the contribution margin. Discussions are held with the customer and the

broker regarding possible coverage issues. Discussions are also held with any other insurer that may cover other parts of the business where insurance has been affected because of the fire. These are just some examples of the complex issues that need to be tackled.

Shared goal

The number of stakeholders in a major loss are many. Information flow and information sharing is a crucial part of handling a complex loss. In the wake of an incident of greater magnitude, there will always inevitably be questions such as who do you talk to and who can assist. There will be issues with the property, machinery, inventory, commodities, business interruption, budgets and financials, cash flow, customers, authorities, officials, environmental issues, employees, unions and so on. To ensure prompt communication to all, the large claim team needs to be structured. To move things forward it is fundamental to build trust. If always work hard to be transparent and trustworthy. This is claims handling the way we believe is most pragmatic for all parties concerned.

Hörle Wire AB quickly informed staff, customers, and the general public of the unfortunate incident, being clear as to the current status and the next steps. By being transparent, Hörle not only managed to keep employees informed and give them encouragement that production would eventually return to normal, but Hörle Wire AB also remarkably managed to keep most of their customer base, as they were reassured that deliveries of needed steel products would be maintained, and within relatively short, have a brand new modern

production facility.

Having insurance is, as one can see, for unlikely risks, too. Having competent claims experts, adjusters, and managers to ensure trust and a good communication flow is vital, as is having a shared goal: getting the customer back on track with their business as quickly as possible. ■

"To move things forward it is fundamental to build trust."

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neer's analytical eye. However, as an insurer, we know that fire is always a risk, and this of course includes Hörle's production hall.

Immediate actions taken

Already in the morning hours after the fire broke out, If was on site to support Hörle. When an event such as the Hörle fire happens, the company and its employees are in a state of emergency. This does not only concern the actual fire, physical loss, and the inevitable business interruption, but there are lots of other concerns that must be dealt with: What does the physical loss mean in terms of how long the business interruption will be? How will this affect Hörle's customers? Can some of the production be maintained? Can some of the produc-



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Logistics versus fire safety in rack storage

Many logistics professionals do not have sufficient knowledge of the implications for fire safety of changes made to the way that goods are stored in warehouses. This article provides some insight into situations to look out for.

If a fire starts at floor level in a storage rack with goods in cardboard boxes on wooden pallets, the flames will reach some eight to ten metres in height in about one minute. The flames cannot get oxygen

from the cardboard boxes and stretch upwards in their quest for more oxygen. A fire like this is impossible to put out with a portable fire extinguisher, and would be very difficult to control even for a professional firefighter with a fire hose. After this first minute, a good fire detection installation with smoke detectors is likely to have just barely detected the fire. If the fire alarm signal is automatically transmitted to a full-time fire brigade, they will leave the fire station about one or two minutes later. The time of their arrival depends on the distance to the point of alarm. During this time, the fire will continue to grow. A well-designed water sprinkler system will be activated within one and a half to two minutes, and will immediately start to control the fire long before the fire brigade reaches the site.

Well-designed sprinkler system

It is a sprinkler system that follows a rec-

ognised standard such as the European standard EN 12845, and that is suited for the type of materials stored, the configuration in which these materials are packaged and stored, and the building's inside height and other installations in the building.

What can go wrong?

There are many ways in which a change can negatively affect the ability of the sprinklers to control a fire. These can be roughly grouped into changes in the severity of the fire in the stored material, obstructions that prevent water from the sprinklers from reaching the fire, and changes to the storage configuration.

1. Changes in the products

The automotive industry today uses many more combustible materials than it did 10–20 years ago. As you introduce more plastic components, and in particu-

lar more components made of expanded plastics, the fire risk of the goods increases, and the original sprinkler design may not be sufficient. Other examples of an increased fire hazard are the introduction of electronics in ventilation systems and the changeover in hygienic absorbing products from cellulose-based materials to super-absorbent polymers.

2. Changes in packaging

Plastic pallets are used instead of wooden pallets more and more often, for different reasons. The use of plastic pallets increases the amount of plastic in a pallet load, which in most cases results in a need for a higher sprinkler design. In the NFPA 13 standard from the USA, a distinction is made between certified plastic pallets increasing the sprinkler design by one step, and non-certified plastic pallets increasing it by two steps. Certified pallets are not common in the European market, which is why a change of pallet type could make a large difference if NFPA 13 is followed.

Sprinkler protection of products in cardboard boxes is fairly easy, since the first activated sprinkler will be able to pre-wet boxes that are not yet on fire. Introducing plastic foil wrapping of a pallet of cardboard boxes

will, in all sprinkler standards, result in an increased classification, requiring a higher sprinkler design because water can no longer pre-wet pallet loads.

Sensitive products and components are often packed in cut-out protective packaging made of expanded plastics or wrapped in such material. The hazard classification of a pallet is determined by the volume percentage of expanded plastics. The critical volume percentages are lower than 5%, between 5–25%, between 25–40%, and above 40%. Changes in the type of packaging may result in a higher classification.

An important factor for a sprinkler system is that water is able to flow over the outside of each pallet. This means that ESFR (Early Suppression Fast Response) sprinkler designs, with sprinklers at the ceiling only, do not allow the use of so-called open-top containers, which collect the water, or pallets that allow the water to flow through the pallet load and not over the pallets sides, such as SRS plastic trays used in the food retail business. Lower storage heights or in-rack sprinkler installations are the only solutions in these cases.

3. Obstructions to sprinkler water

In a rack, the water must be able to reach all the sides of a pallet at all levels of the storage rack. There must therefore be enough space at either side of pallets standing on the same beam, and between two rows of storage racks, back to back. This opening is called the flue space, and the minimum width varies from zero to 15 centimetres, depending on what sprinkler standard is used and what the storage height is. It is important that fork-lift truck operators understand the importance of the flue space and that rack arrangements are designed to allow enough space between pallets. An increase in storage height can result in a need to move the storage racks away from each other to allow for a flue space back to back.

Some companies use pallets that are larger than EUR pallets. If dynamic storage locations are used, this allows greater logistical freedom, such as enabling a beam to hold either three EUR pallets or two wider pallets, but this may destroy the vertical continuity of the flue space, allowing water to reach all the way down into the storage rack. Having storage locations for wide pallets only at the bottom of the rack would improve the situation.

All sprinklers are sensitive to obstructions to the water spray pattern from the sprinkler head. New obstructions can typically arise when changes are made to utilities, such as ventilation systems, new light fittings, and so on. Use your contact net to verify whether or not the intended solutions are compatible with the fire protection.

4. Changes to configurations

The introduction of solid shelves could also be seen as an example of an obstruction. Each standard has separate design requirements for solid shelves. There are, however, some loopholes that can be used if you know how to adopt them. For example, NFPA 13 says that solid shelves up to 1.9 m², or where the shelf design is more than 50% open, are defined as open racks.

If a change-over is made from free-standing storage to rack storage, there may be a need for a higher sprinkler design. This needs to be determined based on information about the goods and the storage height.

A lowered storage height may also be an issue. The sprinkler standards make

a distinction between the protection of production areas and of storage areas. In the standards, for storage areas, the maximum distance between the top of storage and the sprinklers is 4–6 metres. If the distance is greater, there are ways to compensate for this. With a high distance, there is a risk that the fire may spread too far horizontally before the sprinklers are activated, possibly overtaking the sprinkler design area.

In-rack sprinklers are sensitive to changes in the height of the beams in the storage racks. In the worst case, the distribution of water from the sprinklers can be obstructed by the new position of the beams.

5. Compact storage

The use of compact storage systems, in which components are kept in plastic boxes that are stored and retrieved automatically, is becoming increasingly common. It should be noted that this type of storage system is very difficult to protect with water sprinklers unless designed for this purpose from the start. Before deciding on such a system, identify how the store can be protected using either a solution from a sprinkler standard or a solution that has been tested by the store manufacturer.

Managing safely

Try to understand what types of changes may affect the sprinkler installation. Develop a network of good advisers, such as your insurance company, sprinkler contractors, or consultants. It is costly to install a sprinkler system, and any changes afterwards will cost additional money and disturb operations. Try to foresee changes in production and logistical decisions as far into the future as possible. Do not always install sprinklers exactly to suit today's operations, as designing for a higher level from the start may be a low cost compared to making changes afterwards. ■

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"A well-designed water sprinkler system will be activated within 1.5–2 minutes."



European sprinkler news

It's an interesting time for sprinklers. New standards and major revisions are in preparation, technical innovations are making sprinklers more cost-effective, new research is strengthening the case for fitting sprinklers in buildings, and politicians are calling for their wider use.

Partly thanks to the work of the European Fire Sprinkler Network, EFSN, residential sprinklers are gaining considerable attention from fire safety regulators in many countries. Before they can require residential sprinkler systems in buildings, regulators need a reference standard. Some European countries have already published a national design, installation, and maintenance standard, but most have not. The EFSN therefore led efforts to draft a standard and EN 16925 has now been published. It will soon be followed by EN 12259-14, the new European component standard for residential sprinklers, which is now out for a second CEN enquiry (comment) and should be published next year.

EN 12845, the design, installation, and maintenance standard for commercial and industrial risk protection, was first published in 2004 with a first revision in 2015. The first draft for the second revision is expected in mid-2019. This will introduce many changes, firstly to align the standard with the sequential process in a project, secondly to simplify the standard by reducing the number of design options, and thirdly to introduce flexibility so that larger orifice sprinklers and new conceptual designs can comply with the standard. As part of these changes, CEN is working on EN 12259-13, a standard for sprinkler pump sets, for which a first draft is also expected next year. This pump set installation standard will be referenced in EN 12845, which will no longer address sprinkler pumps in such detail. EN

12259-13 itself will refer to EN 12259-12, a standard for fire sprinkler pumps long in preparation, for which we also expect to see a first draft in 2019. Meanwhile EN 12259-9, a component standard for deluge valves, has passed the CEN formal vote but needs some amendments before it can be published in the EU's Official Journal and used for CE marking.

Water mist systems are increasingly being offered as an alternative to sprinkler systems. To ensure that these systems work as intended, we need strict quality assurance schemes, based on standards. CEN is therefore developing water mist standards with EN 14972, a water mist system design and installation standard, expected to be published next year. To complement this, CEN is also drafting component standards and

fire test protocols for different applications.

For at least the past decade, most of the research effort among sprinkler manufacturers has been aimed at storage risks. Today, innovative products and design concepts can protect more challenging materials and new storage configurations. A more recent area of interest is corrosion protection, with field experience spurring demand for improvements, especially for dry systems. There is also considerable interest in using web services to improve maintenance and reduce its costs.

Large, well-run companies employ experts, often in-house, to think about what must be done to protect the business from fire loss. These companies usually want sprinklers. Unfortunately, small and medium-sized companies tend not to be so aware of fire, nor of the best way to protect themselves from it. This lack of awareness also applies to those responsible for non-commercial buildings, and so most buildings are only protected with sprinklers if regulations require it. To support changes in regulations, the EFSN and its partners have commissioned research:

- Cost-benefit analyses that show there is a financial case for fitting sprinklers in buildings
- The rate of heat release over the duration of a sprinklered fire, showing that an assumption of steady state in sprinkler activation is over-conservative
- Analysis of structural stability of buildings with unprotected steel and sprinklers, compared to concrete structures when exposed to fire
- The ability of sprinklers to improve means of escape from fires
- The reliability of sprinklers and their effectiveness on real fires
- The impact of fitting sprinklers on employment and government taxes

Today, most countries require sprinklers in high-rise buildings and large shops. Many also require sprinklers in large warehouses, large factories, and underground car parks. A growing number of countries are also seeing sprinklers fitted in hospitals and care homes, with many care homes being retrofitted. Perhaps the most dramatic development is to see sprinklers in homes, with sprinklers now fitted in all new apartments

European Fire Sprinkler Network

Set up in 2002, the EFSN works at a national level or with national organisations in many European countries, to promote the wider use of sprinkler systems. Over 100 members from 18 countries share a common interest in seeing an improvement in fire safety across Europe through the wider use of sprinklers. If P&C is one of our members. Our campaigns are tailored to each country and run by a local person. We work with regulators, fire chiefs, consultants, and anyone who influences the process. In some countries, we also engage with politicians. Since we began, we estimate that sprinkler usage in Europe has grown by 70%, based on the number of sprinklers installed.

We hold a major conference every two years and a seminar in between. Our next seminar, for which we are expecting about 200 delegates, will be held in Madrid on 27 March 2019.

in Norway and in a large proportion in Sweden and the UK. Since 2016, Wales in the UK has required sprinklers in all new housing.

In the past, most sprinkler systems were installed because of direct pressure from insurers. Today, regulations are the key driver, although insurers have often been influential in their drafting. This year has seen new requirements to fit sprinklers in large underground car parks in Belgium and France. In Finland, a new building fire-safety code introduced limits on the fire compartment area of buildings and enclosed car parks without sprinklers, and increased the list of 3-8 storey building occupancies that may be built using a wooden structure if sprinklers are fitted.

As with almost all fire tragedies, the Grenfell Tower disaster looks mainly to be influencing fire safety in the country where it occurred. In England, there has already been a review of the system of regulatory control, which is likely to lead to changes in who is allowed to design, install, and approve fire safety measures

in buildings. A clarification of the existing regulatory guidance for England is complete and will form the basis for a technical review of that guidance. We are hopeful that this will lead to more requirements to fit sprinklers in buildings. But the market is not waiting – local councils have announced they will retrofit over 1,000 social housing buildings, and major developers are voluntarily fitting sprinklers in new low and mid-rise apartments. Meanwhile in Scotland, a private member's bill has led to a proposal from the Scottish Government to mandate the fitting of sprinklers in all new apartments and in existing social housing.

Elsewhere in Europe, Irish regulatory guidance is already under review, but the process was interrupted following the Grenfell Tower disaster. France is working on a deregulation law that, among other things, could introduce flexibility in fire safety design, allowing a fire-engineered approach (perhaps with sprinklers) as an alternative to the existing prescriptive regulations, few of which call for sprinklers. Poland is revising its regulations, and we have proposed that the threshold areas to require sprinklers in commercial buildings be reduced. Looking ahead, we expect to see an increase across Europe in sprinkler usage in healthcare occupancies and in apartments, with small numbers of systems already installed in Belgium, France, Germany, Italy, Spain, and the Netherlands. In some countries,

when building regulations are revised we intend to advocate smaller threshold fire compartment areas for sprinklers in commercial buildings and lower height thresholds in high-rise buildings. We hope to be successful in all our efforts, and in the future, even more buildings will be protected with sprinklers, making them safer from fire.

Watch this space! ■

"Innovative products and design concepts can protect more challenging materials."

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Eliminating underinsurance in sawmills

Insurance is an efficient method for mitigating the risks associated with any business. If P & C Insurance has, together with Pöyry Management Consulting, developed a new calculation tool to evaluate the replacement values of each department of a sawmill.

Over the past decade, the growth of Nordic softwood sawmills has been slow and steady in terms of production volumes in both Sweden and Finland. The global recession hit the business sector heavily more than ten years ago, and it has taken a decade to return to the same production volumes as the sawmills had before. According to the Finnish associations Metsäteollisuus ry (Finnish Forest Industries) and Sahateollisuus ry (Finnish Sawmills Association), the total production of softwood sawn timber in Sweden and in Finland in 2017 was approximately 30 million m³ per annum. The Swedish sawmills accounted for approximately 2/3 of the total Nordic volume. Nordic sawmills produced roughly 30 percent of the sawn timber production in Europe and, from a global perspective, European sawmills produced almost one third of

the total amount of global softwood sawn timber.

Correct insurance cover

Sawmills have typically been very sensitive to fluctuations in the global economic market. Being an export-driven business means that currency fluctuations, the worldwide general economic situation, and the prices of local raw materials have a strong impact on the sawmill business. The construction industry is one of the main end-users of sawn timber, and therefore any change occurring in the rate of construction is a major demand driver for the sawmill business.

Market-related risks are not the only types of risks that can stagnate a sawmill's business. Property damage or business interruption losses are types of risks that sawmills can protect themselves against by implementing proper loss prevention measures or by transferring the risks. In-

surance is an essential part of any business, as it transfers the risks and thus provides financial security for the insured. The essential element of ensuring adequate insurance cover is to select the appropriate cover and to evaluate the sums insured correctly.

In property insurance, the sums insured are typically based on either the replacement value, the first loss value, or the daily value of the property. The replacement value means a financial value that is equivalent to the cost of replacing the property with the same kind of new property. In other words, it is not same as the book value, and therefore it should be increased annually. This increase is often taken into account by the use of building and machinery cost indexes. If the property is insured on a first loss value basis, then the amount of the indemnification payable in a loss situation is the same as the agreed sums insured. If the insurance is



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Fire is still the most severe type of loss in the sawmill industry in terms of paid losses. According to If P&C Insurance's own claims statistics, 79% of the paid losses over the past decade in sawmills were caused by fires. There are also other significant fire risks such as the further processing of sawn timber and its by-products, namely the planing of the timber, as well as the production of pellets.

With regard to property insurance, the insured is always the party responsible for providing the insurer with the sums insured, either by themselves or with the assistance of an insurance broker or valuator. If the sums insured are too low or if the cover is not sufficient, then in the event of a loss, a situation arises in which underinsurance exists. Property insurance policies typically take underinsurance into account by providing the insurance company with the option to calculate the amount of indemnification to be paid based on the ratio of the sums insured to the correct values of the new property. The claim settlement will only be the same percentage value as the sums insured represent to the correct value of the property.

Property losses are typically partial losses, meaning that only a part of the insured's property is damaged. In a partial loss, only part of the machine or machinery line needs to be replaced. In these types of losses, it is equally important to a case of a total loss that the machinery is insured on the basis of the up-to-date replacement value of a new machine or machinery line. This is because the amount of indemnification to be paid will be based on the sums insured. In other words, if the insured has evaluated the insured property to be 70% of the correct replacement value, and therefore pays only 70% of the premium, the amount of indemnification will only be 70% of the claim's total value.

If the insured, after suffering a property loss, receives only part of the costs of the lost property, it will have an impact on the time needed to replace the lost property, as the insured needs to source funds to be able to pay the costs of replacing that part of the loss for which the insurance does not provide indemnification. This makes the recovery time longer than in an optimal situation.

Block valuation tool

To ensure that property insurance delivers the desired risk transfer to insured saw-

mills, in 2018 If P&C Insurance developed, together with Pöyry Management Consulting, a new calculation tool that determines the sums insured based on the replacement values of the buildings and machinery. If P&C Insurance is a significant forest industry insurer in the Nordic countries and, since the 1980s, has successfully used a similar tool for pulp and paper mills.

Through the application of this new tool, the insured will achieve several benefits. As the sums insured are valued using the tool, If P&C Insurance will not apply the underinsurance clauses. These clauses could have reduced the amount of indemnification paid to the insured, if the sums insured had not been set at the correct level. The client does not need to worry about whether the values are incorrect or do not reflect the current situation regarding the real value of the buildings and machinery. The use of the model reduces the workload in the insured's organisation, as the collection of the correct insurance values is easier.

The valuation procedure consists of three parts:

1. The preliminary collection of data, in which the insured fills in the capacity data concerning the sawmill's different departments for continuous production
2. An interview with a site tour
3. The reporting and use of the modelled values in the insurance cover

Based on the daily production capacities, meaning the maximum volume of production during a continuous period of 24 hours for each department or production line, the programme calculates the block values as investment costs for a modern, new plant or production department.

Once the valuation has been done for the first time, it is simple and straightforward to bring the valuation up-to-date prior to insurance renewal. ■

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based on the daily value, then the property is evaluated on the date of the loss, and the amount of indemnification payable is based on the actual value on the loss date.

Determining what the sums insured for property insurance should be is not the only important issue to consider when selecting and formulating property insurance cover. Having the correct cover does not only refer to the insurance wording, but it also means that the cover limits adequately reflect the insured's needs. In Business Interruption insurance, the key elements to consider are whether the amount of gross profit and the required length of the indemnity period have been calculated correctly, and whether the need to insure the variable wages has been recognized.

"Property losses are typically partial losses."



Claims analysis to improve **corporate traffic safety**

Traffic safety has been under thorough research for many years. Due to continuously evolving technology, both car and traffic system safety has been and will be improved.

Although technology can help to remove or avoid certain risks in traffic, it can also bring along several new ones. For example, navigation devices and applications on mobile phones can help to find a destination more smoothly, but can also seriously disturb the driver's focus. Technology can help us to stay safe and release

some cognitive capacity to focus on traffic. However, it can also distract the driver's attention fatally if it distracts the driver's attention at the wrong moment.

What happens between the car and the driver is just one part of the story – traffic safety is strongly affected by many external factors, such as weather conditions, road maintenance, and other road users. In fact, safety, just like risk, can have its origins far before the driver even sets foot in the car. For example, time, and especially a lack of it, can be a strong contributory factor to accidents and incidents. It can make us take risks intentionally, or make us forget to identify and avoid risks.

Incidents relating to vehicles are a major source of losses: there are over 100 000 claims per year in total in Finland alone. A significant number of traffic accidents involve vehicles that are owned by companies and/or used for business purposes. Like any accidents and incidents, these can also cause major costs for companies, both directly and indirectly. Although most accidents result in minor ve-

hicle damage, the post-accident processes will at least cause some extra work and loss of time.

Corporate traffic safety and loss prevention of vehicle fleets is sometimes touched indirectly in cargo and personnel risk management. There are also some common topics in property risk management, such as fire safety in pits with a vehicle fleet. As traffic is a major risk for personnel in any industry, it has sometimes also been touched as a part of personnel safety.

So far, corporate traffic safety and loss prevention has mainly been up to companies. As the interest in loss prevention and safety promotion is common for both the client companies and If, If has started to look for ways to help the client companies in promoting traffic safety and preventing losses relating to vehicles and fleets.

Study of motor claims

In order to get a good overview of the current typical factors behind corporate

clients' claims statistics, Risk Management Services Finland produced a Master's thesis. The work was carried out at If in winter 2017–spring 2018 to identify the main factors that relate and contribute to typical losses of insured vehicle fleets. The focus of the study was solely on the motor insurance of large corporate clients, and especially on the causes and contributing factors behind typical claims cases.

The study included an extensive literature review concerning the promotion of traffic safety in companies. The research included an analysis of If's motor insurance claims statistics and an overview of publicly available Finnish traffic accident statistics. The statistics were analysed in different ways with the aim of finding out what kinds of factors typically contribute to the traffic accidents of If's corporate clients. In order to limit the number of cases adequately, the claims analysis was focused on a group of corporate clients with large fleets in the years 2012–2017.

In addition to quantitative analyses, the study involved semi-structured interviews that involved a group of long-term experts working on motor insurance and claims within If. The interviews had two main aims: to chart the experts' perceptions concerning the insurance company's ways of improving and supporting corporate traffic safety, and to chart client companies' current practices that influence traffic safety and motor insurance claims.

Main findings

The literature review followed the five pillars of road safety, as set by the World Health Organization, WHO. The pillars are targeted at decision-makers on a national level to improve traffic safety around the world. The five pillars include: 1) road safety management, 2) safer roads and mobility, 3) safer vehicles, 4) safer road users, and 5) post-crash response. The literature review in this study followed this classification.

The literature review confirmed the assumption that although efforts to improve traffic safety have been (and still are) active and continuous, corporate traffic safety and loss prevention in vehicle fleets have been of minor interest in comparison to traffic safety research in general. Many of the related studies have been conducted in Australia and the United Kingdom.

The study involved an extensive statistical analysis, conducted using an analy-

sis of keywords, based mainly on accident descriptions as written in claims notifications. A keyword analysis on the If statistics revealed that the five most common keywords or themes in the claims reports included reversing, objects in the built environment, human factors, turning, and snow with slippery conditions.

According to the analysis, reversing appeared to be the most common factor related to claims. In the statistics, reversing was typically connected with objects in the built environment, and "human factors", which in this context refers on a general level to various defects in the driver's observation and/or failure to control the vehicle. The high number of cases involving objects in the built environment underlines how urban areas are typical as accident scenes.

A major part of the study consisted of interviews with If's own experts in motor insurance and related services. The interviews pointed out four key areas in corporate traffic safety promotion, namely: 1) drivers, 2) vehicles, 3) mobility, and 4) companies. Factors relating to "drivers" include driver education, driving behaviour, and monitoring of drivers. "Vehicles" relates to, for example, vehicle maintenance, additional equipment and technologies in the vehicles, and vehicle types. "Mobility" includes various external factors that can influence safety and the smoothness of driving. Examples include route planning and the weather. The fourth group, "companies", refers to company practices, including safety policy, management support, choice of contractors, and awareness of industry-specific factors that have an influence on safety.

Next steps

The outcomes of this study will be refined and explored in greater detail. If wants to support clients in traffic safety promotion; the interest is shared when it comes to loss prevention for vehicles and fleets, not to mention saving lives. In the case of corporate traffic safety, there are various ways to promote it, as confirmed in this study. Some ways can be targeted at supervisors and management, to help them identify points of safety promotion during daily planning and management. Other ways can be targeted at drivers, such as training in safe driving. An interesting area is helping the client companies to identify and remove avoidable traffic and vehicle fleet risks. This can cover, for example, traffic and route plan-

*"Multitasking
is a major
accident risk."*

Did you know?

- Braking distance from 80 km/h to 0 km/h with 1 second reaction time takes
 - on dry road 50 meters and 3 seconds
 - on snowy road 105 meters and 8 seconds
 - on icy road 187 meters and 16 seconds
- With 2-3 seconds of reaction time, an accident can still be avoided with controlled stopping or bypassing or straightening the slipping car.
- When driving, a single two-second glance doubles the risk of an accident
 - In a study it took on average 86 seconds to enter a full address correctly to GPS using a touch screen
- While increasing our driving experience, age lengthens our recovery time between tasks, slow the reaction times and narrow the visual fields. This emphasizes the importance of minimizing distractions while driving, including devices that are aiming to help us (such as navigators and speech-controlled hands free -equipment).
- Multitasking, is a major accident risk. It is impossible for the brain to truly focus on two things at the same time. Keep your eyes and mind on the road!
- Alcohol and different medications can decrease alertness and reaction times seriously also on the day after. The same applies to otherwise impaired health condition, such as even ordinary illnesses and sleeping disorders. Truthful observation of own health condition, alertness and ability to perform well enough is of focal importance in traffic safety.

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ning, as well as loss prevention in pit areas. Risks to identify and avoid can include schedules that are too tight, unsafe practices while driving, and the identification of risky areas on routinely used routes. ■

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The rise of cyber

The value of a company used to be determined by its physical assets, but today, most of the value comes from intangibles like data, intellectual property and technology.

In 1975, just 17 percent of the market value of S&P 500 companies was tied to intangible assets. Today, the numbers have reversed: just 16 percent of value is in physical assets; the rest comes from intangibles.¹

There has been significant growth in the cyber insurance market in the past few years, with 16 percent growth in GWP from 2016 to 2017 and the estimated size of the market to reach 20 billion in 2025.² The main driver for cyber insurance, especially in Europe, is business interruption.

Additional complexity in managing cyber risks comes not only from the new technologies being adopted, but also from the increased growth and sophistication of attacks originating from organised cyber-criminals and nation-state sponsored actors.¹

We are seeing bigger and more sophisticated cyber-attacks, such as the big, global ransomware attacks WannaCry and NotPetya in 2017. Considered to be the most devastating cyber-attack to date, NotPetya hit many global industries and companies at the same time, with several filing losses for more than 100 million dollars.

The omnipresent risk

“Cyber risks touch clients from all industries, and companies of all sizes. Cyber is an emerging area with largely unknown losses. There are lots of incidents that have not been reported, and almost 70 percent of breaches take months or longer to discover³”, If Cyber Risk Engineer Peter Granlund says.

Cyber-crime is largely driven by financial motives³, making practically anyone a target. Governments also play a critical role, as cyber has emerged as an effective tool to pressure, influence, and spy on foreign nations – a weapon without going to war.

Over the past ten years, state-sponsored attacks have been responsible for one quarter of all cyber incidents³, not only affecting public sector organisations and critical infrastructure, but also sensitive information in the private sector. This trend shows no signs of decreasing, but rather the opposite.



Peter Granlund,
Cyber Risk Engineer, If

“Cyber-crime is largely driven by financial motives, making anyone a target.”

In all industry sectors, personal information (name and address, credentials, payment and medical records) is the number one data compromised in cyber breaches.³

The good and bad technology

Companies from all industries are becoming more and more dependent on different and increasingly complex IT systems, information, cloud computing, software, sensors, smart devices, and artificial intelligence, making them more vulnerable to cyber-attacks.

32 percent of IIoT (Industrial Internet of Things) devices are connected directly to the Internet, bypassing traditional IT security layers.⁵

“The planning for building these connected networks is not yet mature, and where automation and IIoT bring great possibilities, they can also create risk exposures”, Peter notes.

“Many organisations have started to realise their cyber risks, but still often choose operational efficiency and costs over security, or do not spend sufficient time thinking about cyber security, life-time support, and budgets when incorporating these devices as part of the infrastructure⁴”, Peter says.

Defence from collaboration

“No industry is safe from cyber risks, so all industries need to find means to develop resistance against them. In nearly two-thirds of organisations, cyber risk is among the top five risk management priorities.¹ However, it should be top five for everyone”, Peter says.

“We are beginning to understand the risks and the means to protect against them as we gather more data. Cyber risks cannot be eliminated, but we can prepare and mitigate the risks”, Peter continues.

The key to tackling the rapidly changing cyber risk environment is transparent collaboration between organisations, insurers, and governments.

The new EU data protection regulation, GDPR, requires all organisations to report breaches on privacy to the authorities, inform affected individuals, and compensate them for damages.

References

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² Allianz Global: A Guide to Cyber Risk – Managing the Impact of Increasing Interconnectivity
<https://www.agcs.allianz.com/assets/PDFs/risk%20bulletins/CyberRiskGuide.pdf>

³ Verizon – 2018 Data Breach Investigations Report
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⁴ The 2018 SANS Industrial IoT Security Survey
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“With this new regulation in place, and the increasing number of cyber-attacks, combined with privacy information being the most affected in data breaches, I think 2018 is the year we will start to see a sharp increase in financial losses among organisations experiencing cyber-attacks”, Peter continues.

On the positive side of GDPR, the authorities have the potential to provide new and wider information on the number and consequences of cyber incidents, which both organisations and insurance companies can use to manage this risk.

This could enable the cyber insurance market to better understand this new, complex, and unpredictable risk. This, along with the capability to calculate and price risks, can provide more financial capacity to the market.

“In the end, the key is to manage cyber risks together. It is neither practically nor financially feasible for organisations to implement technical and organisational security controls that protect them 100 percent. Cyber insurance solutions will play a vital role in protecting organisations’ intangible assets”, Peter concludes. ■

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Sawmill industry and wood-based panels industry textbooks released

New textbooks have been released to sustain and strengthen competence in the wood product industry. *Wood-Based Panels Industry* and *Sawmill Industry* are new textbooks covering the wood value chain from the forest to wood-based panel products and timber, and further to the customers. The initiative was launched and coordinated by the Finnish Woodworking Engineers Association. The work was launched in 2016, and the release of two industry-specific books in different versions is being finalised this year. The books are intended especially for educational purposes, but they also provide detailed technical information concerning the sawmill industry for companies in the field.

The writers of the book are experts in the wood-based panels and sawmill industries, having worked for a long time in their respective fields of expertise, acquiring a wide perspective on the topics in Finland and abroad. The books have been written in cooperation with several authors representing different companies operating in the woodworking industry. The contributors represent, for exam-

ple, machine manufacturers, wood product manufacturers, and research. An important contribution has been provided by If's Risk Management Services: two experts with a focus on If's forest industry clients, risk engineer Veli-Matti Kortelainen and EB specialist Salla Lind-Kohvakka, have written the chapters concerning fire and occupational safety risk management.

The book *Wood-based panels industry* is divided into six parts: raw materials, the plywood industry, the laminated veneer lumber (LVL) industry, the particle board industry, other wood-based panels, and other issues in the wood-based panels industry.

The book *Sawmill Industry* is divided into 14 chapters starting from the history of sawmilling in Finland. There are chapters about the wood procurement, the phases of the timber manufacturing, quality control and certification, maintenance, safety, marketing and sales, ICT systems, further processing and challenges and vision of the future.

Together, the books create an image of the modern wood-based panels and sawmill industries from both the technical and economics points of view. In gener-

al, the books highlight the significance of the industries for the national economy, including the significance of related technologies, products, and markets.

Wood-Based Panels Industry is published in English and Finnish, and *Sawmill Industry* is published in Finnish and will soon be published in English, too. In addition, there are e-book versions of both these books. The books are available in Puuteollisuuskirjat.fi. For If's clients, the e-learning materials will be linked to the Risk Management Library, available through If Login. Further information is also available from the Finnish Woodworking Engineers Association stmy.fi. ■

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GETTY IMAGES



Blockchain is changing the business risks

There is plenty of hype around blockchain technology, which is a concept having the potential to change business processes, enable new businesses, and even revolutionize the world economy. According to a recent study by Juniper Research nearly two-thirds of large businesses are looking to deploy new blockchain projects.

Blockchain is a digital-age technology to transform business models. In short, it enables the creation of a secure distributed ledger to certify ownership and keep records of transactions. This is achieved without the involvement of trusted third parties, such as banks, in money transfers between two parties. It functions in the spirit of a platform-based sharing economy. Information is secured, with many computers connected to each other through the Internet. Any kind of information can be stored, such as text and pictures, not just official records or transactions. It has an impact on businesses from insurance to industrial management, and from public records to voting. There are many ongoing projects, mostly private inside a large company or a group rather than public, to test the opportunities.

Blockchain is expected to disrupt business with its ability to connect parties peer-to-peer without dependence on one central source, guaranteeing symmetrical information for everyone and reducing monopoly advantages. The most widespread application so far has been cryptocurrency, like Bitcoin, enabling payments independently from established financial operators. There is, however, still work to

do before speculative cryptocurrencies established only between owners threaten the banks.

Another application is to use smart contracts to conclude the task automatically, like buying a soft drink from a vending machine. Blockchain makes it possible to use smart contracts in any business, based on numerous contracts. The contracting rules must be objective and clear, but then the result is achieved right away and without any further paperwork. For these smart contracts to operate reliably, new requirements are set for the quality of the original information fed into the system.

The technology is still at a stage in which plenty of exploring and development needs to be done. The USA and China are the most advanced countries in this development. Cyber risks are, of course, relevant. But it is strongly believed that it is not possible to break the actual blockchain encryption; all the other entities around it are more vulnerable. For business owners, the open and transparent information available to clients means very high-quality operating models, such as for pricing and analytics, are needed to survive. The regulatory status of the applications is still highly uncertain. ■

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*“The Nordic area is looking into energy
and renewables with an intense focus.”*

