



Beyond paying claims:
CCR's vision for the
future of reinsurance

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Paying claims is not enough

Reinsurers increasingly set themselves apart by providing risk management and prevention expertise and services.

It is no longer enough for reinsurers simply to underwrite risk, sit back and sometimes pay claims. Increasingly, clients expect them to be far more involved at all stages of risk management—using their expertise and resources to also advise insurers and other bodies on risk management and prevention.

As reinsurers look to differentiate themselves, they have been forced increasingly to provide a robust service to their clients, leveraging their growing expertise and access to data and technology in the process.

CCR is a public sector reinsurer that provides cedants operating in France with government backed coverage against natural catastrophes and uninsurable risks. It also owns CCR Re, a full-service reinsurer operating on the French and international markets in the life, non-life and specialty lines of business. Established in 1946, CCR ranks among the world's top 25 reinsurers.

“As a reinsurer, you need to do so much more than pay claims,” says Laurent Montador. “Technology and big data have transformed the industry and reinsurers have been at the forefront of many of these developments.

“The bigger players are offering robust risk management strategies for clients located almost everywhere and that is setting them apart from smaller players that do not have the resources to do it. Nevertheless, smaller players can be more proactive through leaner organisations and cross-fertilised partnerships.”

Montador notes that the logic applies to all types of clients, ranging from private insurers to governments and financial institutions, and all types of risk. While reinsurers have increasingly helped clients better understand traditional risks in the property/casualty space, they are also increasingly helping clients better understand emerging risks such as cyber and climate change.

“There are some big gaps in insurance coverages, in terms of traditional risks and also the emerging areas such as cyber, which are not as well understood,” he says.

Beyond paying claims: CCR's vision for the future of reinsurance



“We are seeing reinsurers increasingly get involved in the management of these risks—and not just with private sector insurers but also alongside governments and financial institutions as well.

“In some countries, where there is low insurance penetration, such knowledge and expertise applied correctly can really make a difference to improving the situation and helping countries to prepare for future events. Many governments are not capable of handling these risks alone, and that is where the private sector can come in and help.

“It is a question of managing the risk from beginning to end and educating those involved about the nature of risk and risk transfer.”

Better data

The key to this process happening successfully, however, is the availability of quality data. The better the data available, the more likely it is that reinsurers can help their clients get a better handle on the risk.

Montador says the biggest reason for this change, and for reinsurers being able to help their clients understand risk, has been breakthroughs in the quality and availability of risk models. He acknowledges that there can be big differences between the models, but the sophistication of what is available has come on leaps and bounds and has allowed reinsurers to better understand the risks.

Flood models are probably the best example of where this has occurred quite quickly. Flood risk was regarded as uninsurable in many countries but breakthroughs in modelling triggered in part by some unexpected losses for insurers have changed that.

“We now have a much better understanding of flood risk and that has led to more coverage being put in place, whether it is for government-backed re/insurance agreements or private sector insurers.”

Climate change and big changes in demography have also played their part in making governments and public bodies more open to accepting help from private sector experts when planning for disasters. Montador stresses that this can cover fundamental issues of how governments manage land and building regulations, for example, in light of rising sea levels and more frequent extreme weather events.

Beyond paying claims: CCR's vision for the future of reinsurance



“Risk prevention measures are needed but it is very important that such schemes also conduct a cost-benefit analysis. This can be based on past experience of disasters and what might happen with and without such measures in place, although factoring in climate change is far more difficult.”

While risk prevention is key, a fast response and good crisis management are also important when an event does occur. He stresses that the correct steps, taken quickly in the aftermath of an event, can limit its consequences.

“Crisis management is part of prevention—although it is not always understood in that way,” he says. “The response of all parties including insurers and reinsurers once an event happens is very important. It can save money and lives and get a society back on its feet faster. The money needs to be available quickly, but also be used in the right way.”



Preventing claims is the future

The use of big data and new forms of technology will revolutionise the way claims are handled—and may even negate the need for them altogether.

The way data can now be used by the insurance industry, leveraging new technologies such as artificial intelligence (AI)/machine learning, the internet of things (IoT) and robotic processing, is revolutionising not only the way re/insurers are tackling underwriting and risk but also the way claims are being handled—and may even cause their prevention.

Technology is becoming so sophisticated it is now helping re/insurers get a much better understanding of risk and also helping them to manage it and very quickly understand how, and why, a claim has occurred.

“These techniques, especially the way we can now harness big data with AI, are aiding our knowledge of risk and risk selection but they are also revolutionising the claims process,” says Laurent Montador.

“The way we can now connect to the IoT means that an insurer can be informed of a problem, even before it has occurred.

“If you consider the insurance of large and complex machinery, for example, this has big implications for claims prevention. Even if something is going to break down, it also means that a larger loss might be prevented and it can be repaired very quickly as well.

“If you know a large-risk accident is likely, you can take preventive measures. All this can significantly reduce the cost of claims.”

Business models

Montador stresses that the breakthroughs made in this field are revolutionising life and non-life lines of business and will ultimately change the business models employed in both fields. He admits this also presents a challenge for re/insurers but believes the more sophisticated companies will flourish as a result.

“The way the industry is approaching this issue is changing very fast and it is heading towards more claims prevention and crisis management—that starts to change the business model of the industry,” he says.

Beyond paying claims: CCR's vision for the future of reinsurance



“The industry has often been a little slow to embrace change but that must now change, and some companies are leading the way. Technology will never replace the need for human intervention in this industry—especially the very important face-to-face contacts with clients—but it will certainly complement and improve what they can offer.”

He stresses differences will emerge in the way reinsurers and insurers approach this opportunity—compared with insurance, reinsurance involves fewer moving parts and fewer people. But that simply means that different parts of the business could benefit from this technology.

An important step forward for both sectors, however, could be the use of blockchain to implement so-called smart contracts or treaties, whereby a contract can be triggered or even enforced digitally allowing transactions to be completed without the input of third parties.

“That is clearly the way business will be done in the future,” he says.

Montador also notes that such technologies could fundamentally change the role of intermediaries in the industry.

“There will not be as many layers in the future,” he believes. “The ones that remain involved will be those that add clear value.”



A duty to fill the protection gap

With their expertise, global reach and access to data, reinsurers should increasingly understand their role in helping society fill the protection gaps that exist in the world.

The biggest reinsurers increasingly grasp the fact that they have a responsibility to society to share expertise and their capacity to help fill plug protection gaps—wherever they may occur.

This issue has come to the forefront of the agenda for many countries, partly because they have endured big losses in recent times and partly because of new and emerging risks that are not covered.

It is estimated that the global protection gap for weather-related risks alone is at least \$180 billion. This statistic is very revealing for the re/insurance industry because the sector is very good at understanding and taking on weather-related risks. “Solutions are out there and everyone benefits if we can get a handle on this risk,” says Laurent Montador.

This is predominantly a problem in emerging markets. Much progress has been made on the issue in some countries in recent years with governments working with the risk transfer industry to find solutions, sometimes in the form of risk pools. It is not confined to emerging markets, however.

Flood risk is a growing problem in many developed countries but is rarely adequately covered, primarily due to the historical challenge of attempting to model this complex risk.

The problem extends way beyond weather-related risks. There are many new risks in the world, which are rarely fully insured. Cyber risk is the best example but it also applies to the use of things such as drones and automated vehicles.

Closing the gap

The protection gap also exists in life and health on a very big scale. There are a lot of products in existence that could fill these gaps but there is often a long road to travel in terms of education in many countries for such ideas to become widely adopted.

“This is a challenge that transcends many areas of the world and many types of risk, yet it is in everyone’s interests to help solve this problem,” Montador says.

Beyond paying claims: CCR's vision for the future of reinsurance



“For reinsurers, it will help drive growth, which has been in short supply in recent years. But it is also about doing something that is in the best interests of society.”

There is plenty of evidence that if insurance is in place, the economic recovery in the aftermath of a natural catastrophe is quicker, and the human deprivation and the cost to the taxpayer are lower.

Some initiatives have been set up, including the Insurance Development Forum (IDF), designed to coordinate the efforts of the risk transfer industry in trying to solve these challenges.

Montador believes that the industry is well placed to help improve the situation.

“With our access to big data and the expertise we have, we have the capability to make a big difference,” he says.

“Index-based policies, for example, can be fantastic add-on solutions because of how quickly they pay out and how easy they are to understand. This solution can be particularly useful when dealing with agri risks, for example, which can have a devastating effect on farmers.”

He stresses the industry can also do much to help on loss prevention.

“It is not just about paying claims, but trying to stop them occurring in the first place,” he says. “This is also a service that can be provided by the industry”.

A way to reduce the protection gap

The risk transfer industry understands that more could be done to close the protection gap, and more risk pools linked to governments could help solve this problem, argues Laurent Montador.

Re/insurance pools, whether governmental or private market-driven, are usually created involving public and private stakeholders either to resolve disruption in the re/insurance supply or to mitigate the threat of unaffordable insurance, especially for complex or high-value perils, such as natural catastrophes, terrorism, war, aviation, pollution, nuclear or energy, for commercial lines and personal lines in P&C, but also in the life, and accident & health sectors.

What is at stake? Obviously, the protection gap, but also a recognition of the potential inefficiency of the market. Competition drives forces to innovation for the benefit of customers, but there are cases where insurability also can have its limit, but not only after a crisis, as in 2008.

As situations, knowledge and behaviour evolve, alongside the scope of perils and covers, expectations of different stakeholders in pools as well as how pools might be structured could evolve as well. The time element is also important as such structures could be set up on a temporarily basis or with a more permanent status.

The way they have been structured depends not only on their objectives but also on the risk-reward culture of the country involved (state interventionism versus market-driven) and the intentions of the law makers. Public or governmental-structured, with private players involvement as important stakeholders (as seen in Spain, France, Switzerland, Japan and India), or privately driven with strong sponsorship from the state (as seen in the UK, the US and CEA) are common examples.

It would, however, be an error to oppose those two sides, as we can see by the existence of many public-private partnerships, in one form or another that we will summarise as pools.

A framework for classifying pools

The notion of protection gap entities (PGEs) allows us to attribute a 'public' or a 'private' characteristic, depending of the risk-reward culture of a country.



In their report *Between State and Market: Protection Gap Entities and Catastrophe Risk*, Paula Jarzabkowski et al from Cass Business school propose a framework of classification of these schemes, depending on (i) type of market intervention; and (ii) the position in the insurance value chain.

Type of market intervention

- Removing the risks: for risks that are seen as too volatile or extreme for the market to take, such as multiple large terrorism attacks (including chemical/biological/radiological/nuclear) or extreme nat cat events such as earthquakes.
- Redistributing risk: taking the risks of highly exposed groups of policyholders (homeowners, commercials, industrial or municipalities, but also some specific industries of national importance such as agriculture) for which the 'actuarial' premium would be too large to be affordable, and subsidising them either by paying directly a part of the premium by the state (or at a higher international level such as the EU) or by increasing the actuarial premium to be paid by lower-risk policyholders.
- Combining risk removal and risk redistribution: usually, this is a result of an evolution of the pool—either after a full removal, gradually return risk to the market or gradually reduce risk redistribution as protection measures in highly prone areas progressively make insurance premiums affordable.

All these three types of market intervention have the same goals: providing sustainable coverage to the largest number of insureds possible and maintaining affordable supply. Then, after an event or crisis that provokes a market player's withdrawal, removing the most volatile risk allows the market to return in a less volatile area, restore the supply and bring back stability and security.

Positions in the value chain

- The insurer: the PGE insurer develops its own insurance policies for specific perils, with its tariff (or percentage of premium), limits, deductibles and wording and offers them using private insurers as distributors and service contractors to pay the claims. Sometimes, the private insurers act altogether as 'public' insurers when specific perils within their policies are mandatory and highly regulated by law.
 - The reinsurer: the PGE reinsurer can supply failure by removing risks or to gather a share (up to 100 percent) of all the risks from the insurance market or only the considered most highly exposed risks, and then keep them, partly when it is possible to cede them to the reinsurance market at an affordable price.
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- Government body: the private market is not used as primary insurer or primary reinsurer, sometimes used as distributors and collectors, but potentially using reinsurance and the financial market on a secondary step.

Learning from experience

There are organisations that bring the stakeholders and managers of pools together to meet regularly, to discuss technical issues with lively discussion and views that can be shared under the strict 'Chatham House' rule. Public communications and conferences can follow for the benefit of all.

The International Forum of Terrorism Reinsurance and Insurance Pools (IFTRIP) and the World Forum of Cat programmes (WFCP), the latter dedicated to nat cat, are two good examples, which allow circulation of ideas about evolution in the scope and structure of these pools, especially with the sharing of experience after a large event or a recognition of a new demand to fulfil.

The sorts of questions discussed include how to treat cyber in terrorism risk, limited to physical damage as already in place in several countries or extending to non-physical damage.

A particular peril that is also worth mentioning is nuclear risk. The development of commercial nuclear reactor installations in the 1950s made it necessary for national authorities and insurers to meet to enhance their knowledge about the consequences of failure to control the nuclear fission chain reaction causing damage to the installation and also more serious events causing radioactive contamination of third parties and installations.

Nuclear liabilities principles are based on international conventions—Vienna, Paris, and Brussels—and laws (the Price-Anderson Act in the US). There is a strict and exclusive liability, with mandatory financial coverage for the operator in place for potential victims minimum compensation, a lex loci principle and a limited liability principle where beyond a certain level (recently increased from €91 million to €700 million) the responsibility is passed from the individual operator to the state and then up to another threshold (€1.2 billion) up to €1.5 billion to a pool of states which signed the Paris Convention, the eventual shortfall going back to the state involved.

Nuclear pools (and mutuals) were created allowing an industry to be insured with an architecture involving many stakeholders from many countries with a proven track record, enhancing the knowledge and prevention of an exceptional risk—a risk that could be seen before as totally uninsurable.



Newcomers and pioneers

There are other existing protection gaps that do not receive a full answer: the demand for non-damages business interruption is enormous, for corporates and for small businesses.

At the moment, only a small part of these could eventually find such a cover with limitations. Limit of access due to a security cordon following a terror act is not seen as something impossible by the potential insureds.

Why does the market not provide enough capacity in this field? Information data, statistics and geo-modelling are often missing and if a deterministic model (delivering a 'what-if' approach) could be available, a proper probabilistic (delivering a 1:200 years return period in occurrence or aggregate basis) is sometimes just impossible.

Nowadays the financial and reinsurance market needs to be fed with probabilistic models. The 'old-fashioned' PML approach with less granularity is no longer sufficient and the risks seem to be too complex and intercorrelated to rely only on this approach. The work of shaping an appropriate cover that fits part of the demand as well as the financial capacity of the provider cannot be made properly due to this lack of models.

This is where modelling agencies could enter the circuit, providing more and more accurate models that bring confidence for the players to enter the arena of risk providing. That's also where re/insurtech could bring innovation with other than traditional insurance data and models.

The internet of things will open up new sectors to be used for new indicators of risks, helping to prevent and mitigate them but also helping to resolve bridging the gap in uninsured or underinsured areas.

We can already see initiatives for risks such cyber emerging in the modelling industry. This brings some confidence in putting capital at risk with a possible decent return, but the accumulation control of a such diffuse peril with heterogeneity in loss definition needs to be increased.

A greater supply could emerge responding to the enormous demand of security. But, where initial models fail, if losses emerge far above expectations, with significant capital losses provoking eventual bankruptcies, there will be a brutal stop in the supply.

That's eventually where states and market will gather together again to create a new protection gap entity.

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