

▶ **The Interview**

Helen Faulkner, head of insurance at law firm DAC Beachcroft

▶ **A cleaner future**

Cleantech has much to promise, but nothing comes without a cost

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Joining the dots

▶ **Blockchain: Could it revolutionise insurance transactions?**

▶ **Industry views:** "If you thought the last few years in public services were tough, you're in for some bad news"



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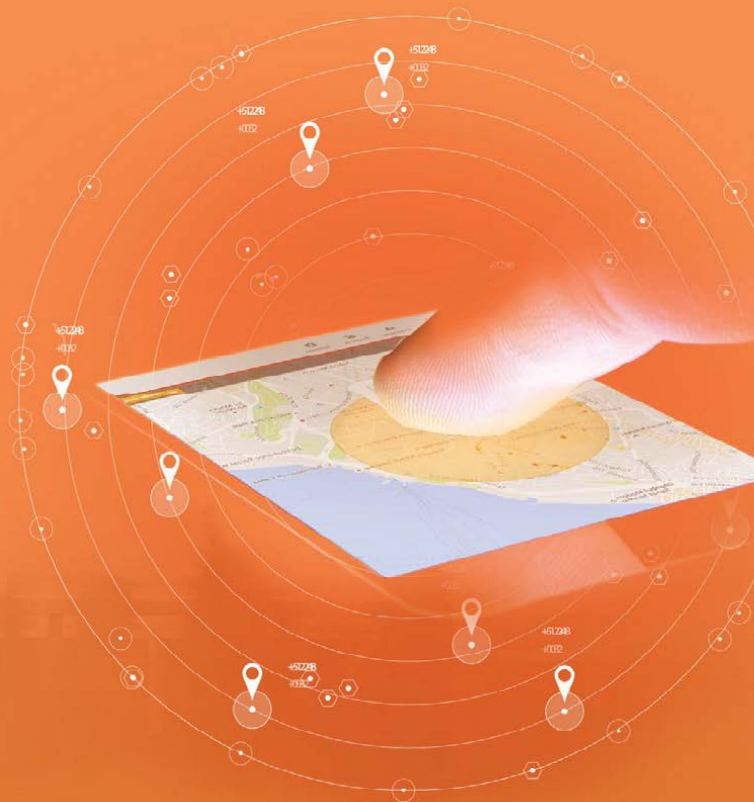
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The digitisation megatrend is transforming consumer expectations across the globe, as internet and mobile phone usage increase year-on-year. The sheer pace and scale of this trend is forcing businesses to re-evaluate and adapt, and to engage with new ways of doing business to avoid lagging behind the curve.

The impact of this digital revolution has been keenly felt in the manufacturing and retail sectors, with the shift to e-commerce and wider technological change redefining risk for the sector and posing challenges as supply chains become digitised.

The implications for insurers, though, and for insurance and risk managers are considerable – and there are huge opportunities for those that accept how critical a business issue digital transformation now is.

And it seems that insurers are beginning to address the core challenges of innovation, seeking new ways to optimise operations and processes while focusing on driving and implementing their digital strategies.

According to DLA Piper's recent paper 'Digital Transformation in the Insurance Sector', the traditional models of the insurance sector are undergoing a substantial rate of change, spurred on by technological developments such as big data, artificial intelligence and agile working methods, as well as disruption caused by new business models such as peer-to-peer and the growth of Insuretech and new market entrants.

The law firm says the next step will be to examine the key legal, regulatory and commercial challenges facing insurers as they seek to navigate the increasingly advanced and innovative digital market.

We are entering an era in which improved technology and knowledge are enabling disruptive (in a good sense) innovations that enable us to work and live in completely new ways – an era in which entirely new markets will need to be created that offer new and better ways to satisfy the changed needs of tomorrow's consumers and customers.

Disruptive innovation will by its very nature upturn many of the concepts the industry has come to accept, and it will be difficult to implement to begin with, but the opportunities involved in it far outweigh the risks of not doing so.

"Disruption represents huge opportunity," according to CEO, AXA Corporate Solutions UK, Gaëlle Tortuyaux, "Especially if we can work together as a team – risk managers, brokers and insurers – to disrupt rather than being disrupted, harnessing its power to foster mutual success rather than merely seeing it as barrier or hindrance."

The ongoing trend towards digitisation has produced huge efficiencies across a wide range of sectors, but has also increased their risk profile – most obviously through cyber vulnerabilities.

The insurance industry has until recently lagged behind more innovative sectors such as retail and banking, but that is all in the past, and insurers are now very much focused on the future.



Deborah Ritchie, Editor >



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Emergency and mass notification software features guide

Joining the dots

Can it revolutionise insurance transactions?

In the last few years in public services were tough, you're in for some bad news" have become active in global supply chains. The Slavery Act came into force on 26th September 2015. The Ethical Trading Initiative (ETI) and the Business School investigated corporate leaders' responses to modern slavery within leading companies ahead of the first anniversary of the Act.

UK prime minister Theresa May has finalised the timetable for starting Brexit negotiations, she said, is to be triggered by the end of 2017. Since the announcement, sterling fell to a three-year low against the euro, before finding some ground – buoyed by September's manufacturing sector results.



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Blockchain

used. Blockchain is also a relatively straightforward technology to use and customise.

Some insurance industry observers being made for the wider claims being made for the technology, but throughout 2016 some real world examples of blockchain use in insurance have started to appear, and some of the biggest names in the industry are beginning to invest in its development.

In October 2016 Aegon, Allianz, Munich Re, Swiss Re and Zurich announced a new joint project, the Blockchain Insurance Industry Initiative (B3i), designed to evaluate possible uses of blockchain in insurance and reinsurance and to create process standards that would allow industry-wide deployments of the technology.

Earlier in the year, a report published

insurer, then contract creation all taking place on the blockchain.

In claims management, a blockchain could incorporate all the documents related to the claims which would then be

such as car repair firms. If a claim occurred actions could then be triggered automatically.

It is not hard to imagine similar use of blockchain and smart contracts in other forms of insurance – from travel or health policies to weather-for-businesses.

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Emerging markets to lead insurance growth in 2017/8

✓ **A report from Swiss Re suggests that, despite a challenging pricing environment, emerging markets – in Asia in particular – will be behind the growth in global insurance premiums over the next couple of years**

The global economy is expected to grow moderately over the next two years, supporting continued growth in insurance premium volumes, according to analysis from Swiss Re.

Its 'Global Insurance Review and Outlook for 2017/18' forecasts growth in global non-life premiums to fall slightly from 2.4 per cent in 2016 in real terms to 2.2 per cent in 2017, and accelerate to 3.0 per cent in 2018. Meanwhile in the life sector, global premiums are expected to grow by 4.8 per cent in 2017 and 4.2 per cent in 2018. The emerging markets, in particular emerging Asia, will be the main driver of premium growth in both sectors.

Of the major economies, the US is expected to grow by slightly more than 2 per cent in inflation-adjusted (real) terms annually over the next two years. The election of Donald Trump as president-elect was not explicitly incorporated into the US forecast, but Swiss Re says this is unlikely to have a major impact on insurance markets over the next two years. The Euro area and the UK are forecast to grow by about 1.0 per cent and 1.5%, respectively, while Japan should grow by less than 1.0%. China is expected to grow by around 6.5%. Monetary policy will remain accommodative for the next

two years, even as the US is expected to gradually raise rates. Other central banks are expected to keep their policy rates and quantitative easing policies intact. With the Fed raising rates, US 10-year government bond yields will likely rise, pulling yields in Europe slightly higher.

"The insurance industry faces headwinds, with moderate economic growth, and still ample capacity in the markets creating a challenging pricing environment," says chief economist at Swiss Re, Kurt Karl. "Nevertheless, premium volumes continue to grow, in both the advanced and emerging markets along with economic activity and an increase in the insurance penetration rate, particularly in emerging markets."

Non-life insurance sector premium volumes are expected to increase by 2.2 per cent in real terms in 2017, after 2.4 per cent in 2016, and by 3.0 per cent in 2018. The emerging markets are expected to drive the improvement. Premium growth in the emerging markets is forecast to increase steadily from an estimated 5.3 per cent in 2016 to 5.7 per cent in 2017 and 6.7 per cent in 2018. An improvement in commodity prices and strengthening economic activity will stimulate increased demand for insurance from the emerging regions.

Swiss Re says emerging Asia will likely have the strongest growth in non-life premiums, forecast to be nearly 8 per cent in 2017 and 9 per cent in 2018. A contributing factor will be the investment opportunities presented by China's One Belt One Road programme, which is expected to generate an increase in demand for commercial insurance.

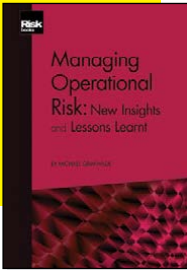
The pricing environment in the global non-life sector remains challenging, according to Swiss Re's report. Pricing in commercial lines continues to deteriorate across all regions, but at a slower pace. In contrast to many other commercial lines, however, rates in cyber insurance continue to harden but at a slowing pace and could level out soon. Increased awareness of the risks associated with cyber attacks and data breaches is boosting demand for related insurance solutions, and represents a significant growth opportunity for the non-life sector. To date, profitability in non-life has been sustained by low natural catastrophe losses and reserve releases. Assuming average natural catastrophe losses and shrinking reserve releases, return on equity is forecast to decline from 8 per cent in 2015 to around 6 per cent in 2016-18.

In non-life reinsurance, global premium growth is expected to be 2.7 per cent in 2017 and 2.9 per cent in 2018, based on increasing cessions from emerging markets.



➤ **Written by Deborah Ritchie**

Essential reading for resilience professionals



▶ **Managing Operational Risk: New Insights and Lessons Learnt**

Michael Grimwade, Risk Books, 2016. Reviewed by Deborah Ritchie, Editor, CIR

After a period of growth and stability, the financial crisis seemed a spectacular and unique mistake... With this book, author Michael Grimwade suggests that not only were the operational risk losses unexceptional, but that they could easily be repeated.

Managing Operational Risk: New Insights and Lessons Learnt addresses the root causes of the huge operational risk losses suffered after the financial crisis; new and emerging operational risk threats; and the lessons to be learnt for those working within the sphere of operational risk management.

Himself an operational risk manager working in the field for 20 years, Grimwade is currently head of operational risk for MUFG Securities, and has held previous roles in Lloyds TSB's Wholesale and International division as well as at RBS and NatWest.

The book's opening chapter asks: what were the root causes of the unprecedented spike in operational risk losses after the global financial crisis? In this part, Grimwade seeks to uncover what can be learned from the patterns of operational risk

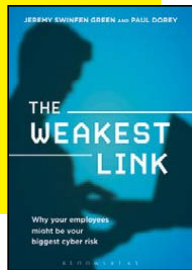
losses since 1989 – focusing on three large spikes in particular. Recognising that we are already operating in very different times, part two examines how new and emerging operational threats are unfolding, and explores a number of certainties and uncertainties within regulation, macroeconomics, technology, and society, politics and environmental change; and examines how each of these may impact operational risk management.

“A number of pithy, often humorous and always insightful quotes appear throughout this book remind the reader of the importance of the human perspective”

Grimwade presents some particularly in-depth analysis of the Libor rigging scandal – and uses a number of other case studies to illustrate his points throughout the book.

While it deals with a substantial and complex topic, a number of pithy, often humorous and always insightful quotes appear throughout this book that serve to remind the reader of the importance of the human perspective as well as of risk ownership.

www.riskbooks.com



▶ **The Weakest Link**

Jeremy Swinfen-Green & Paul Dorey, Bloomsbury, 2016. Reviewed by Mark Evans, publisher, CIR

“People are a problem.” Or so said Douglas Adams in his comic novel *The Restaurant at the End of the Universe*. As is often the case, the funny is also the insightful, and when it comes to cyber security people really are very much

a problem. In their new book, *The Weakest Link*, Jeremy Swinfen-Green and Paul Dorey explore the issues of employees' behaviours around cyber risk. The results make for far from reassuring reading.

Linking risk with psychology is hardly new, but the authors do manage to shed new light on the pressures that drive both the honest and dishonest employee to create problems, from misuse of a tweet via carelessness to outright fraud. As such, it forms something of a handbook on the potential structural and behavioural elements that might be considered in building policy and safeguards.

This makes Bloomsbury's latest offering for the risk community quite a practical book, with ideas for creating more robust security and the risks that can be less apparent – even to the use of humour as an effective part of the armoury. Moreover

it is an easy read, with major issues highlighted in small case studies of incidents that bring the message home and serve to add poignant reminders of the risks faced.

“This title forms something of a handbook on the potential structural and behavioural elements that might be considered in building policy and safeguards”

Niggles include the now almost compulsory name checking of Daniel Kahneman and behavioural economics and a slight lack of clarity to its audience: are those involved in the detailed creation of IT security policies actually unaware of what phishing is? But comprehensive it is, and it scores in a major way for this reviewer in that it accepts that risk is a sliding scale, and that it is an area for decision and management rather than eradication.

In all, a well-written practical guide that seems rooted in years of experience, sometimes painful, of what can go wrong, and food for thought for anyone with responsibility for cyber security – or indeed just about anyone who uses the internet.

www.bloomsbury.com

News in brief

➤ The latest news for business resilience and insurance professionals

✔ Augmented and virtual reality technologies are creating a new dimension of risk and insurers should do more to keep up with these developments and seize opportunities, according to analysts at KPMG. AR and VR technologies are anticipated to generate potential losses to the value of US\$20bn by 2020. Consumers are expected to increasingly suffer accidents whilst playing AR games and companies will increasingly become responsible for securely storing ever more sensitive information, such as location data.

✔ US airline Delta has admitted that the total cost of a recent five-hour IT outage, which saw over 2,000 flights either cancelled or delayed over a three-day period in late summer, came to some US\$150m. This figure shows how much of an impact even a small amount of IT downtime can have on an organisation.

✔ Improvements in the efficiency of reinsurance regulation are at risk of being undone if a covered agreement between Europe and the US is not reached, according to the International Underwriting Association (IUA). In recent years collateral requirements for international firms reinsuring US risks have been substantially reduced allowing capital to be deployed more effectively and reducing cost unnecessary pressures, but with the introduction of Solvency II, difficulties have arisen with new rules affecting US firms that are not deemed to be subject to an equivalent regulatory regime. And it is possible that this could bring to a halt any further progress in further reducing US collateral barriers.

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✔ More than 550,000 small businesses in the UK have been forced to halt trading due to a disruption in the last two years, according to research conducted by small business insurer Direct Line for Business. The average small business reports that it would last around eight months and three weeks if it were forced to halt trading, with sole traders faring better than micro-businesses at nine months and one week. For businesses employing fewer than 10 people, it was nine months; and small businesses, six.

✔ Telecoms company TalkTalk has been issued with a record £400,000 fine by the Information Commissioner for security failings that allowed a cyber attacker to access customer data “with ease”. Investigators found that the cyber attack of October 2015 took advantage of technical weaknesses in TalkTalk’s systems. Some industry commentators say the fine is still relatively small, and is nothing compared to what can be expected under the forthcoming General Data Protection Regulation (GDPR).

✔ The Internet of Things and cloud computing have a direct influence on the engineering insurance risk landscape but are being underestimated by underwriters according to the International Association of Engineering Insurers.

✔ Twice as many CEOs and other senior executives have become actively involved in addressing modern slavery in global supply chains since the Modern Slavery Act came into force on 29 October 2015. The Ethical Trading Initiative (ETI) and Hult International Business School investigated corporate leadership responses to modern slavery within leading companies ahead of the first anniversary of the Act.

✔ UK prime minister Theresa May has finally outlined the timetable for starting Brexit negotiations. Article 50, she said, is to be triggered by the end of March 2017. Since the announcement, sterling fell sharply to a three-year low against the euro, before recovering some ground – buoyed by September’s positive manufacturing sector results.

For more information on these stories and other industry news and views, visit cirmagazine.com

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✔ Research carried out by the Competition and Markets Authority suggests that a majority of UK businesses don't fully understand the rules on unfair terms. Research for the CMA also revealed that some businesses think a signed contract is final, not realising that they can't enforce a term against a consumer if it's unfair. Others may copy terms from larger businesses or competitors, assuming incorrectly that these will be automatically fair and legally binding.

✔ UK businesses are thought to be lagging behind the rest of Europe when it comes to its preparedness for the European Court of Justice's latest ruling on the Working Time Directive. Some, it appears, are not even aware of the ruling.

✔ Reinsurance demand has increased over the past 18 months, with the cession ratio across the global property and casualty insurance industry registering a small rise for the first time in several years. This is according to an Aon Benfield report, which suggests this trend will continue at least until the end of the year.

✔ The UK's regulatory model must adapt to provide a smarter, more fit for purpose regulatory infrastructure to ensure the future competitiveness of the UK's financial services industry in a post-Brexit landscape, according to a new CBI report. The business group recommends a series of changes for regulators to provide certainty and stability. New forms of regulatory dialogue are paramount to safeguarding competition, ensuring SMEs in the sector can compete with larger players.

✔ Yahoo revealed that information associated with at least 500 million user accounts was stolen in 2014 by what is believed to be a state-sponsored actor. The stolen data may include names, email addresses, telephone numbers, dates of birth and hashed passwords.

✔ The government is to plough another £1.9bn into the UK's cyber defence strategy – almost doubling its initial commitment announced five years ago. The plans, revealed by Chancellor Philip Hammond, form a part of the government's new National Cyber Security Strategy, to protect the UK economy and privacy online.

✔ The Financial Conduct Authority has published its third consultation paper on the implementation of the revised Markets in Financial Instruments Directive. MiFID II, which comes into effect in January 2018, is designed to update and improve rules governing the way capital markets function, contribute to the reform of derivatives markets and strengthen transparency of trading.

✔ One in three organisations has experienced cumulative losses of over €1 million during the last year as a result of supply chain disruption, according to a Business Continuity Institute study. Despite a decrease in the percentage of organisations that experienced at least one disruption (70% from 74%), those organisations suffered more of them, with the percentage that experienced at least 11 during the year increasing from 7% to 22%.



Legal eagle

✔ **Deborah Ritchie speak to Helen Faulkner about the themes that look set to impact insurers throughout 2017, from disruptive technology and the forthcoming GDPR to the impact of Brexit**

Helen Faulkner has experience in defending a wide variety of professionals and advising on coverage issues. She also leads the market leading Professional Indemnity Claims Handling Unit for the practice. This is a highly specialised team that provides a dedicated claims handling service on behalf of Professional Indemnity Insurers and their Insureds. Helen qualified in 1992 and joined DAC Beachcroft in 1997.

▶ **You took on your role at a very interesting time in the insurance industry. What impact has that had on your work?**

With a saturated market in the UK and Western Europe, price pressures, the rise of InsurTech and continuing M&A activity, it's certainly been a busy year for the insurance sector.

But our conversations with the market indicate that things are beginning to turn a corner, and I'm really excited about the prospects for the market.

▶ **Which aspects are you most excited about?**

I am particularly interested in the global aspect of how insurance business is conducted – both insurers and their clients and customers are much more globally focused today, and that brings challenges and opportunities as they go to new markets. Cyber and connectivity issues are a major element of this.

This is among a number of topics we covered in our recent annual study of market trends for the industry,

which also highlighted disruptors such as artificial intelligence and autonomous vehicles, for instance, as themes that will almost certainly impact insurers considerably in the very near future. As a law firm, we understand the regulatory issues, and bring invaluable insight into how insurers can best tackle these emerging issues.

Issues around data processing – specifically about the way companies hold and use personal data – are also front of mind for many of our clients at the moment.

We are looking at the issue from two main standpoints – the first is focused on the way data is used and how to balance the security, ethical and legal issues around that with the commercial opportunities and efficiencies that more effective use of data can bring; the second is from the point of view of business interruption and the risks posed by cyber attacks.

We are all aware of the large amount of data that's being collected on devices, and for insurers that's both an opportunity and a risk.

With the forthcoming General Data Protection Regulation (GDPR) looming, we are focusing on helping insurers comply in the face of much tougher penalties. The regulation

“Issues around data processing – specifically about the way companies hold and use personal data – are also front of mind for many of our clients at the moment”

allows national regulators to impose fines of up to four per cent of an organisation's global turnover, and features a requirement for companies to disclose personal data breaches within 72 hours. The GDPR will inevitably move data protection and data security up the agenda for our clients.

The GDPR is due to come into effect in May 2018 and many of our clients are now embarking on their implementation projects.

▶ **What impact will Brexit have on this regulation in the UK?**

The UK will still be part of the EU when the GDPR comes into effect, so UK-based insurers will still have to implement its requirements. Even post-Brexit, all the signs are that the UK will retain a data protection regime similar if not identical to the GDPR. Quite apart from the questionable benefit of changing a regime that businesses will already have incurred the costs of implementing, anyone who wants to hold personal data in the UK about EU citizens will still be subject to the GDPR. In the same way, we don't expect Brexit will lead to an immediate bonfire of regulation in the UK.

▶ **What are your views on developments with Solvency II?**

There are a number of well-documented issues with Solvency II, but now that it has come into force I don't sense a great appetite for wholesale change. Some of the issues associated with Solvency II



are perhaps more accurately seen as issues arising from the economic environment, such as the difficulty of matching long-term liabilities when risk-free assets offer such meagre yields. This poses challenges for regulators as well as for insurers.

Having said that, I think it is certainly right that more could be done to encourage insurers to make long term investments in infrastructure, for example, so there are certainly some improvements that could be made.

“The increased regulatory focus on governance – under SIMR and its wider application for other firms in 2018 – is rightly demanding the attention of many of our clients’ boards”

▶ **Brexit has of course brought huge uncertainty to industry. What advice do you give companies considering this particular risk?**

Brexit means different things for different clients. Some insurers focus purely on the UK market, so their interest is more around the second-order impacts such as possible economic effects and the implications for their workforce should tighter restrictions on immigration be imposed.

For others, they will need to take action to ensure that their current operations can continue post-Brexit, and for some insurers in particular that will mean moving business out of the UK to another member state. The problem is, they can’t wait and see what deal the UK strikes with the rest of the EU. It will be too late by then and so they will need to have an alternative in place in good time

before Brexit takes effect.

The other advice we are giving is not to let Brexit overshadow everything else. There are many other issues on the agenda, such as GDPR, civil justice reforms, and regulatory changes such as IDD and MiFID2-derived changes in the investment space. The increased regulatory focus on governance – under SIMR currently and its wider application for other firms in 2018 – is also rightly demanding the attention of many of the boards of our clients. Our governance advisory practice is advising an increasing number of insurers on governance issues, not just with a view to keeping the regulator at bay, but also, I’m pleased to say, because board members see the benefit of effective governance as an end in itself.

▶ **Interview by Deborah Ritchie**



Trust is everything in insurance. Insurers, reinsurers, brokers and policyholders all need to have faith in each other and in the processes, systems and data upon which they all rely. There are lots of opportunities for things to go wrong.

This is one reason why the insurance market is so interested in the unfolding developments of the distributed ledger technology known as blockchain, which, it is hoped, will offer a faster and easier way to improve accuracy and reliability of data, while cutting out a huge amount of the time currently needed to complete business processes. That in turn would generate significant cost savings and open up a huge range of new commercial opportunities for insurance industry participants, while making life much simpler for clients. But what is it?

At its most basic, blockchain is

- The insurance process relies on a series of disparate processes, systems and data sets, each with numerous potential points of weakness
- Could blockchain speed up this process, make it more reliable and open up a new range of commercial opportunities for insurers at the same time?
- Some observers been reticent about the technology, but there are a number of developments and initiatives that seek to answer the difficult questions

Joining the dots

This year saw the emergence of blockchain use, as some of the biggest names in the industry started to invest in its development. CIR investigates the potential impact of this new technology on business insurance. By Dave Adams

a distributed ledger shared between organisations, held at multiple locations simultaneously, and owned equally by all authorised users. Once data is entered in the ledger it is present within every copy of the blockchain and cannot be deleted or

altered. This particular, simple feature could, in time – and in combination with other technologies such as smart contracts – lead to significant changes in the way the insurance industry operates, including changing the way insurance is written, sold and

used. Blockchain is also a relatively straightforward technology to use and customise.

Some insurance industry observers have been characteristically – and justifiably – cautious about the wider claims being made for the technology, but throughout 2016 some real world examples of blockchain use in insurance have started to appear; and some of the biggest names in the industry are beginning to invest in its development.

In October 2016 Aegon, Allianz, Munich Re, Swiss Re and Zurich announced a new joint project, the Blockchain Insurance Industry Initiative (B3i), designed to evaluate possible uses of blockchain in insurance and reinsurance and to create process standards that would allow industry-wide deployments of the technology.

Earlier in the year, a report sponsored by PwC and published by Long Finance and Z/Yen Group showed global insurers actively investigating use of blockchain. Examining potential barriers to adoption, the research concluded there were three areas where blockchain was most likely to be adopted: placement and contract lifecycle processes, claims management; and both know your customer (KYC) and anti-money laundering (AML) processes.

In the placement process a blockchain could be used to store ancillary contract documents, which could be shared between a broker, underwriters, reinsurers and other service providers; and would be accessible to regulators or (for example) tax authorities. The PwC Blockchain Development Laboratory has created a Proof-of-Concept (PoC) technology representing a policy placement flow, with communications and negotiation between broker and



insurer, then contract creation all taking place on the blockchain.

In claims management, a blockchain could incorporate all the documents related to the claims process, which would then be available to underwriters and to both a client's broker and a claims broker; thus reducing costs, time taken to complete the process and errors. Steve Webb, UK financial services blockchain lead at PwC, says PwC has also created a PoC for this process, showing how it could be linked to a smart contract, to trigger claims settlement automatically if appropriate.

Smart contracts could be used in combination with blockchain in a number of different ways. Research from Capgemini Consulting suggests smart contracts could help motor insurers save 12.5 per cent on operating and claims expenses, allowing them to pass some of these savings on to their customers. A smart contract could include all policy details and terms, which could then be shared via the blockchain with third party service providers

such as car repair firms. If a claim occurred actions could then be triggered automatically.

It is not hard to imagine similar use of blockchain and smart contracts in other forms of insurance – from travel or health policies to weather-related claims for businesses.

“We see [smart contracts] as the predominant way that insurers will leverage blockchain,” says vice-president of global insurance solutions and head of innovation at Capgemini, Mahendra Nambiar. In future, he suggests, these processes might also be driven by data collected via Internet of Things (IoT) technologies, such as sensors built into vehicles or buildings that could report on crashes or fires.

For KYC/AML processes, PwC and Z/Yen have built a prototype file transfer system that encrypts identity-proving documents and validation of them on a blockchain. An insurer or broker's counterparty or customer could then present the documents and decryption keys to each firm with which they want to do business when needed.

Other possible use cases

include improving management of insurance policies in different countries for multinationals; using blockchain instead of paperwork to manage situations where proof of insurance is required; management of portfolios of retail insurance risks; and management of excess of loss reinsurance.

Blockchain could also enable the development of new types of insurance, delivered via peer-to-peer relationships; and more customised policies for the shared economy, where consumers may act as service providers (for AirBnB-type services, for example). Another use case involves the deployment of mobile technologies alongside blockchain to enable insurance provision in environments where a conventional infrastructure and network for insurance provision does not exist, or is subject to unacceptably high levels of risk or fraud. PwC claims at least one large global insurer is developing a prototype of such an application in a developing country.

Sensitive data

All these use cases would entail storage of sensitive and/or personal data on a blockchain. Even if the data is encrypted and even if any attempt to interfere with it would in theory be easier to spot on a blockchain than if the data was held in separate locations by multiple organisations, insurers will still need to ensure there is no increase in security or compliance risks as a result of using the technology.

One problem is the regulatory stipulations around the length of time for which companies can hold personal data – which would, in theory remain on the blockchain in perpetuity. One possible solution might be to delete decryption keys that would enable access to that data – but would this satisfy a regulator?



These are unresolved questions that will eventually need to be tested in court – and legal conditions will, of course, vary by jurisdiction.

Richard Magrann-Wells, executive vice-president at Willis Towers Watson, acknowledges that concerns around security remain, but stresses that data held on a blockchain is in practice likely to be safer than that stored by only one company or organisation. Furthermore, he points out, the digital currency Bitcoin, which is based on blockchain, has effectively proved the strength of its security since its launch in 2009, since when “every hacker in the world has tried to break into it”.

The need for standardisation could prove even more of a stumbling block. Magrann-Wells draws an analogy with the development of the derivatives market, which was only able to grow once derivatives contracts had been standardised.

Implementations of the technology that have already appeared include a prototype solution for settling catastrophe swaps and bonds created by Allianz and investment manager Nephila Capital; and an application created by Blem Information Management that helps

insurers manage recoveries under excess of loss reinsurance.

Magrann-Wells expects to see more use of smart contract-enabled claims settlement in the near future, for some travel insurance claims such as cancellation of airline tickets, for example. Nambiar believes commercial forces will encourage adoption, as insurers use business process and cost improvements as service differentiators.

But any progress will require standardisation and cooperation, says Webb. “The real benefits of this technology come when multiple parties agree to adapt it together and agree rules and data standards,” he says. “That’s not easy.”

So can blockchain really live up to the hype and change insurance? Yes, says Magrann-Wells. “When you combine it with other technologies, like big data and smart contracts – that’s huge. It will change insurance.” Blockchain is going to become a bigger part of the insurance world, but it will be insurers, brokers and their customers who determine how, where and when.

▶ **Dave Adams is a freelance journalist**

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► *This year's AXA Corporate Solutions UK Client Forum was held to examine the role disruption may play in the insurance marketplace, what it may mean to the risk management role and how risk managers, insurers and brokers can prepare for it*

The impact of disruption



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A force for good

✓ This year's AXA Corporate Solutions UK Client Forum was held to examine the role disruption may play in the insurance marketplace, what it may mean to the risk management role and how risk managers, insurers and brokers can prepare for it

Insurance began as a simple concept. But since its early days at Lloyd's of London, it's become more and more complex – arguably too complex in some areas. For the most part, innovation and change throughout the industry's 300 year history has occurred at a steady pace – with products introduced, developed and improved gradually. But this pattern is beginning to change.

We are entering an era in which improved technology and knowledge are enabling disruptive (in a good sense) innovations that enable us to work and live in completely new ways – an era in which entirely new markets will need to be created that offer new and better ways to satisfy the changed needs of tomorrow's consumers and customers.

The impact of this step change on the insurance industry, its products and services – indeed the very way it operates – will be dramatic. Disruptive innovation will by its very nature upturn many of the concepts the industry has come to accept, and it will be difficult to implement to begin with, but the opportunities

involved in it far outweigh the risks of not doing so. "Disruption represents huge opportunity," explains CEO, AXA Corporate Solutions UK, Gaëlle Tortuyaux, "Especially if we can work together as a team – risk managers, brokers and insurers – to disrupt rather than being disrupted, harnessing its power to foster mutual success rather than merely seeing it as barrier or hindrance."

Disruption as a concept is seen primarily as something negative – somewhat akin to catastrophe, but while both words are often used to describe wide-ranging events with a damaging outcome, they are very different things. Their nature and origins are different. Indeed, throughout history, thousands of catastrophic events have occurred that have changed the face of humanity and the world. But the impact of the events that we might call disruptive – while these events

might not have been welcomed or understood at the time, they are more likely to have changed the world for the better. As Tortuyaux puts it, "Catastrophe will create disruption, in the negative sense, but disruption does not always result in catastrophe. On the contrary – disruption can be a powerful force for good that we must proactively embrace to instigate positive outcomes and changes. Let's consciously choose the disr-Option."

So what impact might disruption have on the insurance industry and exactly how can it be harnessed for a positive outcome? Could we even embrace disruption to the point at which we can control it, and further drive it to our mutual advantage and benefit?

The disruptors

AXA Corporate Solutions' chief commercial officer John Pickergill's view is that one of the most



significant disruptors in the current insurance market is the customer risk profile itself. “As a result, the insurance industry is moving from a need to cover the tangible to the intangible – from the more traditional, physical risks such as property, to such risks as intellectual property or brand or even reputational risks.

“In this environment, creating opportunity from disruptive developments necessarily entails a greater need for corporations to react quickly, with less time for product development and testing – something that puts an even greater emphasis on risk. In addition, the need to react to short lived, high intensity trends, or flash trends presents another risk dimension.

“Similarly, usage-based insurance, where the focus is on assets rather than ownership is a trend we are already witnessing with such companies as AirBNB and Uber; and is likely to develop further.” Pickersgill says these developments may see companies becoming more acquisitive, as they seek to become more agile by buying smaller start-ups, or indeed creating their own spin-out organisations. “Alternatively,

we may see ‘jigsaws’ of small organisations each with disparate products, services, processes and cultures focused on niche markets, that at the same time benefit from corporate synergies.”

All of these trends are leading to fundamental changes to organisations’ risk profiles with the knock-on effect that they disrupt the current traditional insurance model.

The use of the Internet of Things is now moving into the commercial and corporate insurance space – in the first instance through motor fleet (location devices/telematics) and marine (connected ships/cargo). Similarly, driverless cars are changing the nature of risk, taking the risk from individual human error attritional losses to hacking/system failure catastrophe risk.

Further disruptive changes in client risk profile will be seen through the use of Virtual Reality, Artificial Intelligence (AI) and Intelligent Automation (IA).

“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change”
Charles Darwin

Social media risks, agile working and the introduction of robotics are also gradually creating new challenges and opportunities.

The use specifically of big data and AI in underwriting will fill current data gaps. Where underwriting currently involves a degree of ‘art’ of human analysis, soon bigger and better data sets will eradicate the need for human analysis. AI will replace human thought process and learn by experience to create mechanised, ever-evolving accurate risk modelling and rating. This will in turn create a need for accurate exposure data.

Meanwhile, new trends in data use and management in the form of Blockchain could contribute to a reduction in expenses and fraud, with potential uses extending to claims management, proof of insurance, multi-national policies and excess of loss placement.

More sophisticated use of data will also see a move from predictive to prescriptive analytics, focused on using data to mitigate risk rather than price risk – creating better real life outcomes for clients.

Will we finally see the end to the annual policy? Will zero claims be the future norm if risk prevention and data insights improve so much?

Insurers will also be increasingly



aware of the emergence of new capacity through peer-to-peer insurance that may well impact the corporate market in the future. This will inevitably create profitability challenges, and may encourage insurers and brokers to introduce an almost 'self-disruptive' discipline, involving continual review of organisation/client needs and creation of methods to address opportunities – creating more fluid processes and culture.

All of these new disruptors aside, the industry must also remain ready for the next big terrorist event, ongoing cyber risks, the impact of Brexit, and ongoing regulatory and legislative change, mainly as the Insurance Act 2015 beds in.

Preparing for disruption

What does all this mean for risk managers and their future role within the organisation? Whatever happens, risk managers still need to find ways of assessing, managing and transferring risk.

“Risk managers are always competing to get quality time with the board and so when we do get that time we need to make sure that we have all the data available to us,” says chairman of Airmic, Clive Clarke.

Data is becoming more important and risk managers need to understand the relevance of their data and business information. As insurers become more data hungry (for understanding and rating emerging risks) risk managers’ analytical skills will become more important.

Similarly, risk managers need to understand what data and information represents the business model and therefore the risks to the business. Clarke also points to a shift from predictive analytics, which traditionally looks at historical data, to more forward-thinking

▶ Future trends

Some of these changes are already well under way.

Disintermediation – enhanced data capture/analysis will enable automation of intermediary function

Connected policies – policies that automatically adapt to client needs – connected via data feed to client organisation

Outward disruption – market players (insurers/Broking houses) using capabilities/knowledge/distribution to disrupt/enter other (loosely related) markets

Single global all risks cover – feed in data and cover provided for all risks organisation faces

Omni Channelling – related to above – all types of risk cover (and related services) available through one distribution point

Deglobalisation – communication technology enabling individual voices to be heard – kick-back against global organisations (Brexit – against super-state, CETA – against big business/protect small business. Model shift in corporate market

Zero claims – success of prescriptive analytics reduce losses to near Zero or Zero – insurance becomes about prevention and not compensation

Crowd sharing – next stage from Peer-to-Peer – technology allows individuals to invest in risk

Advances in **data quality**, Blockchain, AI and IA. Robot-to-Robot marketplace

prescriptive analytics.

Risk and insurance managers, meanwhile, need to play their part in understanding the changing needs of their customers.

“Traditionally the risk and insurance manager has been



considered a luxury item,” Clarke explains. “But they will need to become more integrated with the business. The insurance manager needs to be considered essential to every element of the business model.”

Connected policies, he says, are an area of potential growth for insurers. These will allow cover to change in response to changes in the business. Such a model could translate to real benefits for the risk manager, such as better fleet management, for instance. It could also allow insurers to give risk management advice in real time, though its success would depend wholly on real time flow of data from the business to insurers and back again.

Clarke’s advice to risk and insurance managers is that they make better use of the information provided by insurers to manage risks rather than just relying solely on insurance.

They need closer ties and a better understanding of marketing, operations and finance to become better able to explain risks to the insurers and translate these into a relevant insurance product. They must confront their biases and think about risks rather than insurance covers.

Pickersgill agrees. “Insurers and

brokers need to start to question everything,” he says, predicting a shift towards loss prevention and the provision of risk management advice – particularly if insurers are no longer dealing with previous levels of losses and exposure.

The era of the risk manager

With such expansive change, today’s risk managers have a unique opportunity to raise the status of their role within their organisation and within the risk profession more widely. This means they need to act now, to be connected with all functions of the business, to learn to talk the same language as the board and to hone the skills, expertise and knowledge to articulate the risks of the business to senior management and insurers. The risk manager should become more involved in horizon scanning and shift from operational to strategic risks.

“They must be empowered to discuss and purchase relevant cover,” Airmic’s Clarke says. “This cover might be more expensive but almost certainly broader than what is currently being purchased.”

The future is now

We are already living and working

“Opportunity and innovation go hand in hand”

in period of great change, but with a limited ability to re-engineer existing systems, processes and cultures.

As we embrace this disruptive era, it is fast becoming evident that the insurance market as a whole needs to transform, so that it can focus on client needs and return to a more simplified future – moving away from the complexities of insurance provision today.

Rather than being fearful of disruption, businesses have an opportunity to embrace it, to explore the many exciting opportunities, and to use it as an enabler. As futurist, Stefan Hyttfors, put it in his closing remarks at this year’s AXA Corporate Solutions UK Client Forum, it is disruption itself that is the opportunity. “No matter what you think about the future, 70 per cent of what’s being done now won’t be done in ten years’ time. We will have new solutions to old problems. If we don’t disrupt, we will be extinct. We need disruption and a new solution. This has to be the time of the risk manager.”

Like most type of business risk, expecting the unexpected is par for the course when managing environmental projects. Some of the dangers were brought into sharp focus recently when the Transocean Winner, a sprawling 17,000-tonne oil drilling rig ran ashore in a secluded bay in the Outer Hebrides. With the semi-submersible rig grounded whilst being transported during a storm, there were very real fears it could result in Scotland's worst environmental catastrophe since the Braer tanker ran aground just west of Shetland's Sumburgh Head, shedding its 84,700 tonnes of crude oil into the North Sea. That disaster and its huge ecological fallout prompted a full-scale inquiry, tens of millions of pounds in compensation payments, and a resolve on the part of the maritime industry and politicians to ensure that it could never happen again.

In the latest incident, more than 56,000 litres of diesel oil were lost from two tanks on the Transocean Winner after it came ashore. This was far less than originally feared and the fuel is said to have evaporated and not caused a pollution incident. Even so, that such incidents can occur with traditional energy projects is worrying given the many years of experience that operators have. But for fledgling industries such as those in the cleantech arena, it is perhaps an even taller order to be able to foresee and head off potential threats.

For those involved in generating energy through wind, hydro, solar or biogas, exposures broadly fall into two distinct blocks: first is the construction phase with particular risk factors around electrical and mechanical failure on commissioning, and attendant start-up revenue delays; the second is protecting revenue during operational phases.

Perhaps less obvious are the

- Although cleantech is a rapidly evolving area, many valuable lessons have been learnt from traditional energy projects to help inform best practice.
- Even outside of cleantech, environmental risk has moved up the corporate agenda. Most large firms now have a dedicated environmental risk manager.
- The rate of adoption of existing energy sources and technologies tells us how lengthy a process it is, so what does the future hold for the cleantech sector?

A cleaner future

✔ **The cleantech sector promises much in terms of future growth, but developing new technology brings with it new risks, which insurers and their clients alike can ill afford to underestimate. Martin Allen reports**

risks around the Internet of Things, smart grid, storage, metering, carbon cleaning and electric vehicles, and the myriad of consultancy offerings all important to effective energy delivery. Here the risk is often contractual with industry or professional with a very wide duty of care.

Emma Bartolo, UK & Ireland environmental risk manager for Chubb, has been underwriting environmental insurance for around ten years, and says when you compare that with other, much longer established lines of insurance, it is clear that the historical data to enable risks to be assessed is not there to quite the same extent. "This is an important point when it comes to cleantech. We rely on using dedicated expertise and risk engineers who can provide clients with best practice guidance and ensuring they are meeting the highest standards."

Chubb launched a new biogas and solar package in July in an effort to deliver insurance and risk management solutions to businesses operating in this new and potentially challenging area. As part of the solution, Chubb's dedicated risk engineers visit sites

during construction, providing advice and support during this stage to ensure that the client is meeting the required underwriting standards. "The best way of addressing the issues surrounding this lack of detailed historical information is to work closely with the client to obtain good risk information about the project and provide access for the client to our risk engineers," Bartolo says.

Although cleantech is a rapidly evolving area, many valuable lessons have been learnt over the past decade, helping to inform best practice. Even so, one of the key drivers for managing risk effectively remains legislation. Specifically in the European Union, the European Liability Directive changed the landscape in terms of when a company causes an impact on natural habitats or protected species in relation to remediation and compensation that companies are liable for. For cleantech businesses, the risk is now significantly higher than before that piece of legislation came in. Even beyond Europe, regulation has been a key factor in increasing companies' environmental risks in recent years as other territories

around the world follow suit in tightening environmental rules and standards.

Bartolo says that globally, there are now over 17,000 pieces of environmental legislation so it has become a lot more strict in terms of the rules within which companies are operating. “This includes permits for operating, as well as the standards that they are required to meet during both construction and operation, and the expectations for remedial work in the event of an incident,” she adds.

And that is a particularly important factor given that many cleantech projects tend to be in pristine areas. Wind farms for instance are often in coastal or protected locations that have to be handled sensitively both during the construction and operational periods. Wave, solar, and anaerobic digestion projects all tend to be in more rural areas too which, by their very nature, have higher biodiversity risks.

There has been a particularly large growth in anaerobic digestion facilities, including farmers diversifying into this area to either support their own farming activities, or using larger installations to put electricity back into the grid and generate revenues this way. Local authorities up and down the country have also been given targets to reduce the amount of waste that goes to landfill and as part of that strategy, there have been lots of Private Finance Initiatives put in place to develop large anaerobic digestion facilities.

Europe and North America have a strong legacy of environmental legislation stretching back some 40 years, and there are signs that other territories are not far behind. “Although some are still slightly behind the curve in terms of legislation, I would say they are catching up,” says Bartolo. “If an organisation was to have an incident

in China, Australia or South America for example, when assessing risk we would assume that the consequences for any damage would now be similar. Emerging economies are also under international pressure to improve their environmental standards so it is likely that they will continue to tighten their own legislation to work towards a level playing field globally.”

It’s also important to make sure that insurance also covers any change in local environmental law as and when it occurs to guard against any unforeseen gaps or increased exposure occurring.

Even outside of cleantech, there is a sense that environmental risk has moved up the corporate agenda. Most large firms now have a dedicated environmental risk manager. The role will usually report directly to the board, with environmental reports published online for public view, such is the importance of environmental credentials in the public sphere. “It also sets the standard within an industry in terms of the supply chain too,” Bartolo explains. “If you want to protect your reputation then you want to be seen as trading only with partners with similarly high standards in terms of their environmental processes.”

That directors and officers can be prosecuted for environmental offences has also focused the mind. The evolving needs of the UK market and the increasing familiarity of clients with standalone environmental insurance policies are creating interest in the use of these products as a means of environmental risk transfer. There is a growing realisation among businesses that environmental impact has to be viewed as a risk and cost to the business, rather than just the risk of litigation. As a result, among the largest purchasers of environmental insurance policies have been local authorities, particularly for housing

stock transfers where policies are an effective means of protecting them against future liabilities associated with historical contamination. These policies are also becoming routine for businesses in the waste sector.

So what does the future hold for the cleantech sector? For some historical context, it is worth considering the rate of development of some of today’s more established energy sources. Spencer Dale, chief economist at BP, published data earlier this year showing the rate of adoption of existing energy sources and technologies, which demonstrates how it can often be a lengthy process. For example, in 1899 gas provided just one per cent of the world’s primary energy needs. Five decades later, that figure had grown to eight per cent.

While renewable energy has been growing fast, it is coming from a very low base. ‘Modern renewables’ (which includes mostly biofuels, wind and solar, but not hydro or traditional biomass) provided just 2.5 per cent of the world’s energy last year, according to BP.

This backdrop of apparently slow progress – plus concern over the withdrawal of government subsidies for some types of renewable energy – does not paint the full picture however, and for some there is little doubt that overall, cleantech is a growing area. Chubb’s Bartolo says: “Much work has gone into developing the technology over the last five or ten years, and some of the pioneers will be looking to export their expertise on a global basis, and this creates an opportunity to insure them on a cross-border basis.”

There is still significant funding available to this sector, and with the need to continue with sustainable energy development because of the finite limits – and environmental impact – of fossil fuels, it is a sector that will continue to grow.

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▣ **A global crisis** *Water crises rate among the most critical risks for the next 10 years. We examine one of today's most pressing environmental, business and humanitarian issues. Deborah Ritchie writes p28*

▣ **Leaky logic** *Phenomenal waste is leading to problems in meeting the growing demand for water. But there is enough to go round, so what are we doing wrong, and how can we remedy it? p29*

Water scarcity and security



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Business and society depends on the proper functioning of essential sectors, including energy, transportation, telecoms, healthcare, and, of course, food and water – this latter impacting all the others. Water is needed for energy production, but based on current trends, the World Economic Forum (WEF) believes water demand is projected to exceed sustainable supply by 40 per cent in 2030.

Indeed, for the first time in a decade, environmental risk has topped the ranking of global risks with the greatest potential impact, according to its most recent Global Risks Report. “Climate change is exacerbating more risks than ever before in terms of water crises, food shortages, constrained economic growth, weaker societal cohesion and increased security risks,” says chief risk officer of Zurich Insurance Group, Cecilia Reyes. Zurich Insurance is heavily involved in the ongoing efforts at the WEF to address global risks.

Challenges around water management are immense. At a global level, over a billion people lack access to improved water. Some 40 per cent of people suffer water shortages for at least a month each year. The Organisation for Economic Co-operation and Development estimates that 4 billion people could be living in water-scarce areas by 2050.

The WEF says global, regional and national governance lies at the heart of water management, but that some developed countries are failing to proactively address water vulnerabilities, instead reacting only after extreme weather events; and that in developing countries, the political challenges inherent in water infrastructure and conservation projects are exacerbated by greater financing challenges.

A global crisis

Water crises rate among the most critical risks for the next 10 years. We examine one of today’s most pressing environmental, business and humanitarian issues. Deborah Ritchie writes

Business for the environment

Just last month, engineering giant Arup and Lloyd’s Register Foundation announced the launch of a £10m resilience programme designed to help make infrastructure more resilient to shocks and stresses. Working with businesses, engineers and researchers, the programme will seek to develop standards and build networks of learning and best practice across essential sectors – food and water among them.

This is among a number of activities taking place to tackle the issue of infrastructure vulnerability and natural capital management. Back in summer, business group the Natural Capital Protocol was launched in London, its goal to help businesses assess and better manage their direct and indirect interactions with natural capital and provide guidance to help them measure their dependence and impact on natural assets such as freshwater, raw materials such as timber, and natural infrastructure such as floodplains.

The World Wildlife Fund is among the partners of the coalition that developed the protocol. WWF UK’s chief adviser on economics and development, Karen Ellis, said the launch of the Natural Capital Protocol heralds “a new era” in the way that we maintain and enhance our planet’s environment.

This month also saw a major piece of work announced by the UK government designed to tackle

the impact of environmental issues, among them water shortages.

Ellis welcomed the Environmental Audit Committee’s report ‘Sustainability and HM Treasury’. “This report is a wake-up call to HM Treasury to future-proof our economy in the face of growing environmental risks, before it is too late. A healthy environment is the foundation of a productive and resilient economy, yet ongoing environmental damage is driving up costs from flooding, air pollution, soil erosion and water shortages. This will only be exacerbated under current growth and climate change trends, jeopardising our future economic prosperity.”

Climate change as a wider issue is only exacerbating the problem. Adding to these pressures, agricultural production will have to increase in the coming decades to feed a growing population and a rising demand for meat. Unless current water management practices change significantly, many parts of the world may even start to face competition for water between agriculture, energy, industry and even cities – a potential precursor to tensions growing within countries, between rural and urban areas and even between poorer and richer areas. Interstate tensions over water access are already apparent in some parts of South Asia, and could impact the evolution of the international security landscape – demonstrating the breadth of the water scarcity issue.

It is common knowledge that our earth is mostly comprised of water. It is a lesser known fact that only 2.5 per cent of this water is potable freshwater of which only a fraction is accessible to us – with the rest locked up in glaciers. In short, a mere 0.5 per cent of the world’s water is at hand to sustain its seven billion inhabitants.

As populations rise, and urbanisation trends continue, utility firms are finding it increasingly difficult to meet growing water demand. Our consumption has grown twice as fast as our global population during the last century. From 1950 to 1999, alone, consumption has quadrupled. Much of this is down to casual attitudes in European and American countries where water is mostly taken for granted owing to its ubiquity. Whilst we, quantitatively, do have the water resources to provide clean, drinking water to every human on the planet we are wasting our supply at a phenomenal rate.

The World Bank estimates that

Leaky logic

Phenomenal waste is leading to problems in meeting the growing demand for water. But there is enough to go round, so what are we doing wrong, and how can we remedy it? We examine one of today’s most pressing issues

more than US\$14 billion worth of potable water is lost every year because of leakage, theft and unbilled usage. The UK is a remarkable example where every day some 3.4 billion litres of the nation’s supply is lost through aged, leaking pipes. Mitigating this loss alone would provide 21.5 million people with potable water. Moreover, a reduction of half the current levels of losses in developing countries, where relative losses are highest, could generate an estimated US\$2.9 billion in cash and serve an additional 90 million people.

Thus, the modern water crisis we face is not one of supply but of preservation. At a societal level,

education is required to alter attitudes to water. At a political level, intergovernmental co-operation is essential to responsibly manage the water available and the environment so as to ensure the continuation of the water cycle itself. But, at the level of enterprise, businesses must innovate with the most advanced, modern technologies to provide the solutions that humanity needs to preserve its most important resource. There have been shortcomings in all three of these regards but no more so than in the latter.

Despite the digital revolution which has so comprehensively altered every facet of our lives, some industries have failed to take advantage of the benefits technology has to offer. The risk assurance and energy sectors are notable cases where the scale of firms have been more of a hindrance than a benefit to infrastructure modernisation. In the UK, for example, we have simply accepted the daily loss of 25 per cent of supply for almost 30 years. This is leaky logic – it makes no business, humanitarian, or even political, sense to accept these monumental losses. It’s time to change the way we think about water.

The first challenge for providers is to take control of their infrastructure and learn what is happening and where. A new philosophy of infrastructure management is needed which stresses the use of technology to make businesses pro-active instead of re-active by reducing the gap



between knowledge and execution. This is the idea of predictive analytics.

Predictive analytic infrastructure management is not dissimilar to concepts such as the smart home, where embedded technologies in the property automate processes based on a number of variables such as temperature, humidity, light and time. The occupant of the property is thus saved the task of manually adjusting controls because of a digital system which is instantly able to respond to an environment constantly in flux.

Likewise, predictive analytics approaches must become an integral part of critical infrastructure management with a paradigmatic shift from inert, analogue networks to interconnected, real-time ones. Providers will need to harness smart technologies with embedded risk management protocols. Infrastructure

will need to be managed by a mix of technologies including M2M (machine-to-machine) and AI (artificial intelligence). The ultimate goal is to end up with zero fail pipelines that can predict pipeline failures months before outage.

There are, presently, no predictive, real-time systems in operation. However, one company may just have the solution governments and industry desperately need to secure the water supply.

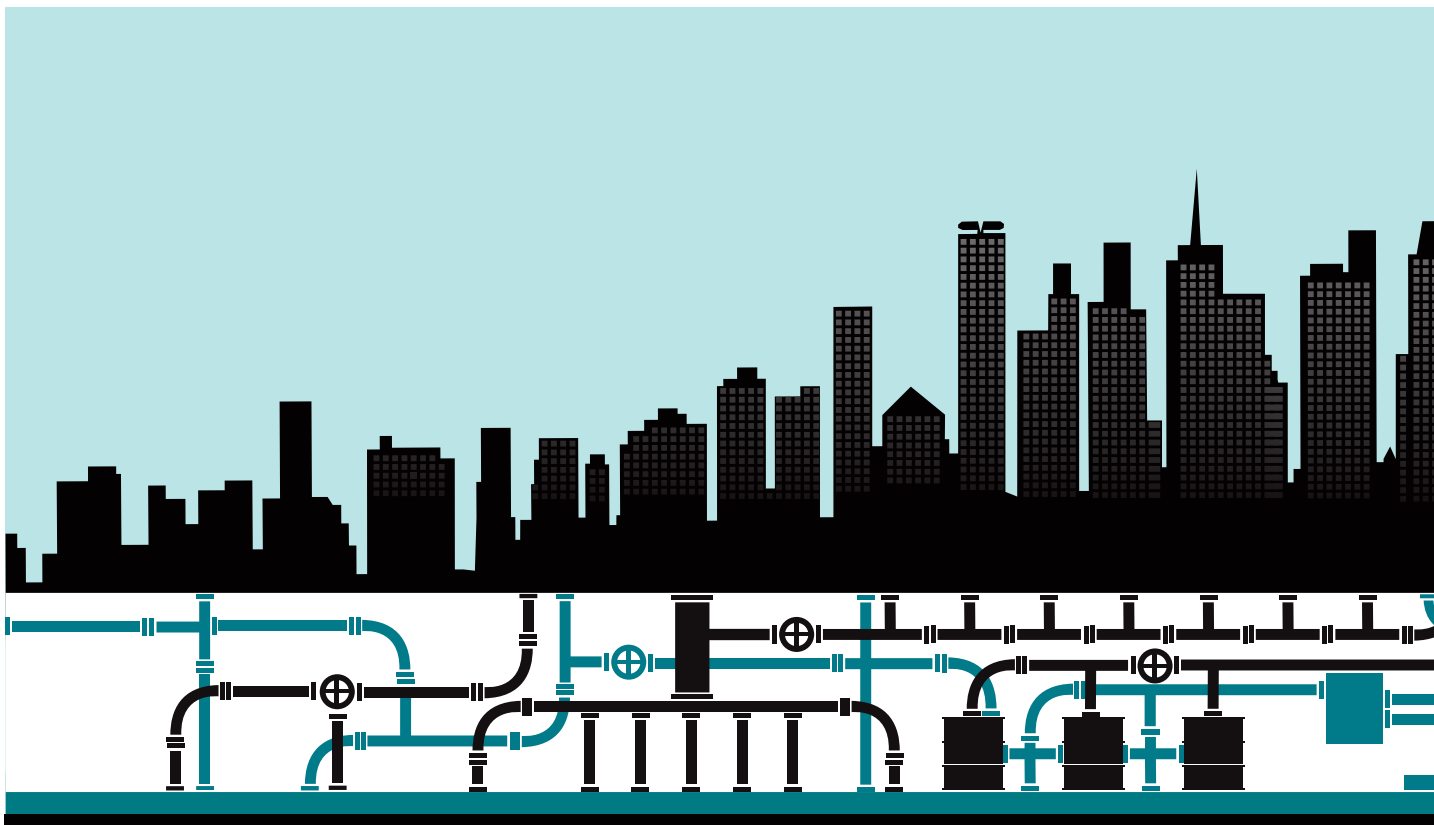
The Datatecnics vision

In military, space and medical development, nanotechnologies have amassed a fundamental importance to their respective users. The versatility and microscopic accuracy of these technologies make them intrinsically valuable to those seeking new approaches to age-old problems. The

commercial sphere, however, has been especially slow in streamlining its processes with these advancements. It is in the spirit of addressing this shortcoming that Datatecnics, a UK-based firm leading the way in the use of nanotechnology for intelligent infrastructure applications, has set out to revolutionise the infrastructure and risk assurance markets.

Datatecnics' flagship line, the Critical Infrastructure Pipeline Protection Systems (CIPPS), is the world's first intelligent pipeline technology designed to deliver zero failure for the global water, oil and gas pipeline infrastructure – totally revolutionising pipeline delivery infrastructure.

By digitising the operation of infrastructure monitoring, CIPPS transmits the health data of the entire network to operators in real-time.



CIPPS technologies are protected by international patents. The system has been designed using embedded nanosensors within the pipeline, these sensors relay a number of metrics such as stress, flow and viscosity, to operators' servers for real-time processing. This enables the whole system to effectively come alive and drive the three-stage CIPPS Sense, Predict, Act protocol in the event of leakage. In such cases, the site of intrusion is instantly detected and protected by CIPPS' unique ZeroFail system, the entire infrastructure network becomes aware of the site(s) of leakage and flow is adjusted autonomously without operator intervention. The applicability of CIPPS in addressing the water crisis is as obvious as it is urgent. For this reason Datatechnics have engineered a proprietary system specifically for

the water market: CIPPS WX100. Its aim is to address three key markets: water pipeline interdiction and failure, pipeline maintenance, and pipeline compliance and regulation.

As CEO Mohammed Zulfiqar notes, "We live in an odd time where water scarcity is our most pressing concern despite our increased technological capacity to deliver it from reservoir to tap. Something has gone deeply wrong when almost a billion people continue to go without access to clean water, every day. There are levels of loss which operators can reasonably be expected to make but the quantity of water we waste, at present, is simply unacceptable.

"Our vision is to reduce the wastage of water from over 25 per cent to below two per cent per day. Working with our industry partners we believe that we can make this reality."

The invisible threat?

Digitisation is not without its threats, however.

In 2013, the US Department of Homeland Security issued an industry-wide alert about the growing threat of cyber attacks to the energy sector, after its incident response teams noticed an alarming trend of hackers breaching US energy companies in an effort to probe their networks and determine how to take control of key processing systems. This was just one caveat amongst many that, today, the primary challenge is not theft of trade and technology secrets but the need to actively prepare for a new wave of stealthy cyber attacks that could be used as a precursor to industrial control system (ICS) "probes" and physically disruptive attacks.

The issue is, our utilities' infrastructure systems were designed more than 50 years ago – well before the technological revolution, and,

Water Vision 2030

At Datatechnics, we are long-term thinkers with a serious commitment to sustainability. This commitment has led to CIPPS receiving no less than five different industry awards in as many years. Industry leaders seem to be echoing our belief that CIPPS very much represents the world's first major scientific achievement for infrastructure connectivity since the invention of the microchip in March 1959 by Texas Instruments.

Our company's vision is to see every critical infrastructure across the world protected by CIPPS technologies within the next 20 years. Achieving a mere five per cent of this vision – aside from the economic benefit of billions of dollars in savings for states and the creation of many new supply lines and support services creating jobs and wealth – CIPPS might just end up being one of the most important means by which humans are able to secure their most vital resource.

thus, were never designed for cyber attacks. The first step in rethinking about infrastructure security investing in the education of employees' understanding of total cyber outage. To that end, it is important to understand that the first generation of cyber attacks were designed to be disruptive. Today's attacks, however, are classed as destructive: designed to cause maximum outage.

Zulfiqar believes the answer lies in designing all future infrastructure projects using digital architecture with inbuilt enterprise risk framework on a multi-layered security safeguards. In other words, construct all future infrastructure grids through the prism of modern risk management protocols: with automated, intelligent technologies capable of protecting assets from external digital and physical attacks. This is precisely what CIPPS WX100 achieves.





Protect Your Employees Anywhere...Anytime

Are my employees safe?

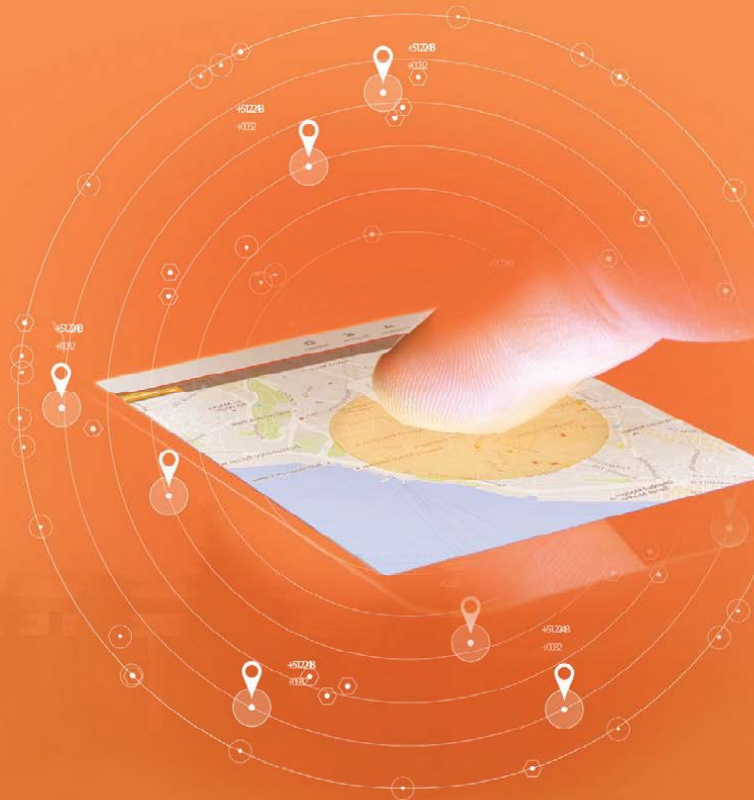
Which employees need help?

Crisis management and employee safety are top concerns when natural disasters, terror attacks and travel interruptions are regular occurrences.

Organisations around the world rely on Everbridge to:

- + Assess threats
- + Locate key employees
- + Automate processes
- + Communicate to customers, stakeholders and employees

**Call +44 (0)800 035 0081
for a demo today**



Everbridge, Inc. a Nasdaq Company.

T: +44 (0)800 035 0081 + hello@everbridge.com + www.everbridge.com

CIR

CONTINUITY INSURANCE & RISK
thinking resilience

EMERGENCY AND MASS NOTIFICATION SOFTWARE REPORT 2016-17

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Alert responses continue to fascinate me. My early years were spent living just 250 miles from the East German border. There, emergency notification came in the form of a 'station alert' – a routine exercise to simulate preparedness for hostile actions by the nearby Warsaw Pact. In the mayhem of sirens wailing and fighter jets scrambling, service personnel systematically and calmly carried out their respective duties. What disturbed me at the time, was not knowing what was really going on.

Such was the case in 9/11 and the evacuation of the Twin Towers. There, other than a fire alarm, no information was forthcoming. Reports cite 90 per cent of the survivors delayed their departure to shut down computers, tidy their desk, some even chose to change their shoes. In a time of extreme panic, confusion reigned with people first being told to leave the buildings then later being advised to stay.

It was the tragic events of 9/11 that prompted the foundation of Everbridge, since which time the emergency and mass notifications landscape has significantly evolved – now ranging from simple closed-group message broadcast systems to intelligent, workflow-driven crisis management systems able to orchestrate recovery and continuity following any type or size of incident.

While adoption of E&MN software is closely associated with the continuity management and IT functions of large corporates, its practice is cascading through supply chains and becoming increasingly important as the number of mobile workers rises.

The need to keep mobile workers safe from harm is rising up the corporate agenda. Chief technology officer at Everbridge, Imad Mouline, says travelling employees and the wider mobile workforce face a range of risks that could impact on their safety and security.

Getting the message

Trevor Morton examines emerging trends in the global emergency and mass notification software market



“Employees are increasingly looking to their employers for protection – even more so when travelling on business. Everbridge’s Safe Corridor feature can be enabled by an employee to prompt them to regularly ‘check in’. Once the panic button has been pressed, the platform immediately sends an alert to the organisation detailing the employee’s location and any relevant audio or visual data, enabling them to alert the emergency services.”

This automation of messages, in near real time, also provides an exhaustive audit trail for post-event analysis – an important process following an emergency. “The Farnborough International Airshow used our platform this year to co-ordinate communication to ensure the welfare of the show’s attendees. A number of incidents at the event required police involvement,” Mouline explains. “The control room was able to provide the police with an in-depth report of how the crises were handled which in turn reduced disruption to the event.”

For large or complex organisations,

E&MN is a logical component of any continuity proposition. In wider society too, few can doubt its simple yet critical role in adverse situations such as Hurricane Matthew. In Florida, the state-wide emergency notification programme, AlertFlorida, is powered by Everbridge. As residents were forced to evacuate their homes and counter unprecedented rainfall, wind, power outages, road closures and other incidents, this system was used by more than 900 counties, cities, businesses, transportation authorities and hospitals to ensure safety.

Hospitals, increasingly at the sharp-end of environmental and man-made incidents are adopting E&MN approaches to mobilising staff and in record times. Guy’s and St Thomas’ Hospital uses the Everbridge platform to coordinate response teams during critical emergencies. It sends templated messages which recipients can respond to immediately by choosing one of three different options: on-site; off-site and available; off-site and not available.

Buyer maturity

As enterprises mature in their usage of communication technology, both they and their employees are demanding more intelligence out of their systems. CTO at xMatters, Abbas Haider Ali, says that means “better targeting, better message content, sensible and useful responses, and high engagement mobile apps with patterns from the consumer market”.

A growing number of ways of delivering emergency messages via SMS, voice, email and push technologies provide the opportunity for a more targeted approach, but this range of options needs to be managed carefully.

“Whilst the ability to send a message via so many different channels increases the chance of the message being received, it may become counterproductive as, from a user perspective, the mobile phone is the single channel device that receives all of this ‘same message’ activity.”

Geolocation – until relatively recently limited to specialist apps and devices – is now standard on most smartphones and, according to Paul Heeren, director of X-on, is creating a host of opportunities to move to a more intelligence-based E&MN. “Geolocation allows ‘nearest to incident’ management for mobile key responders enabling X-on to develop bespoke geolocation overlays on its Alert 4 product,” he explains.

In addition, benefits of a cloud deployment are allowing notification systems to integrate seamlessly with inbound telephony, such as voice noticeboards for incident updates and secure audited conference bridges for discussions as situations progress.

Everbridge’s Mouline also stresses the importance of dynamic location tracking and alerting. “Organisations can integrate critical communication platforms into physical security systems to identify, communicate

with and account for people during disruptive events. By inputting data that organisations already have – such as WiFi networks and building access information – a critical communications platform is able to interpret real-time geolocation data, even for people moving between locations and prioritise those most at risk.”

Chief executive of ClearView, Charlie Boffin sees push technologies bringing a number of benefits – the first being cost. “For organisations with staff widely dispersed internationally, push notification benefits from being web-based, immediate and with a very high guarantee of delivery. This deals with some of the shortcomings of telecommunications networks where sometimes delivery and acknowledgement of messages relies entirely on the capabilities of local players,” he says. “The most effective communication will be a balanced, blended approach that is driven by the operational needs of the organisation concerned and its geography.”

A changing market

While the nuance for E&MN in public sector organisations in Europe may differ to that of the US, one thing is common; social media such as Facebook and Twitter are de-facto channels. According to Dr Paul Reilly, senior lecturer in social media and digital society at the University of Sheffield, websites like Facebook and Twitter do provide opportunities to improve outcomes for people who live in areas that are particularly prone to disasters.

“Our research has shown how these platforms empower communities and enable citizens to provide both emotional and material support to those living in disaster-affected areas,” he says. “There is also evidence to suggest that social media are effective tools for sharing crisis information that can mitigate the effects of disasters.”

Many organisations are beginning to realise the downside of business continuity management platforms that are not integrated with their emergency messaging systems. As Boffin says, when it comes to invoking a plan, having to switch between often disparate systems becomes counterproductive. To address this ClearView’s business continuity module is fully integrated with its own E&MN module as well as with a substantial number of other industry emergency messaging offerings. “An increasing number of clients are calling for a single consistent user interface, when moving between business continuity management activities and emergency messaging, whether they’re working at a PC, on laptop or mobile device,” Boffin explains.

“It is also important to distinguish integration of business continuity planning and emergency messaging as opposed to an interface between the two. A data interface may mean simply passing data one-way between two disparate systems whereas full integration with two-way data flows allows all activity to be managed through a single user screen,” he adds.

Application of E&MN is in growth. Given the ubiquity of social media and SMS, new opportunities beyond the current model are inevitable. Its value in a societal context will no doubt spur new innovations that will benefit business continuity, and vice-versa.

One thing employers may need to overcome is a reluctance to embrace notification on the part of employees – either because they consider it an intrusion, or simply due to input overload. As a result, education will be increasingly vital as the adoption this software increases, so that employees understand – when it matters – that one message can mean the difference between being safe or not.

On the morning of 22nd March 2016, Brussels airport was hit by a terrorist attack leaving 32 people dead and more than 300 injured. Around 25 million people travel through Brussels airport annually – over half of which are business travellers.

Whilst the chances of being involved in a terrorist attack are incredibly remote, for those travelling through the airport that morning it would not have felt that way. Nor would it have in Paris in November 2015 or more recently in New York.

The world is an increasingly uncertain place. Through acts of nature, terrorism or industrial action, the free flow of people is often impeded. As the world's trade continues to globalise, business is more frequently the victim of disruption. This causes the loss of business productivity but can also have a more profound impact on employees, particularly if they are placed in environments where they are unsafe or feel insecure.

According to a report by Strategy Analytics, globalisation and more flexible working practices will lead to around half of the global workforce working remotely by 2020. This raises some serious questions for companies. How can they keep a mobile workforce safe when there is increasing uncertainty around where people actually are? How can employers fulfill their duty of care and ensure staff are safe and protected, without compromising their privacy?

Employer Duty of Care

Every organisation has a duty of care to its employees. It is the responsibility of the employer to ensure a safe working environment and that communication channels between staff and management remain open, in any situation. When most of the world's working population was based in an office, factory or retail outlet this was

Protecting the mobile workforce

Nick Hawkins examines the benefits of two-way, multi-modal crisis communication platforms for employee protection



relatively simple: ensure health and safety regulations are met; mitigate risk and communicate this to employees – but with a more mobile workforce this responsibility is becoming much more challenging.

According to Ernst & Young's most recent 'Global Mobility Effectiveness Survey', only 30 per cent of companies have a system in place to track business travellers. This may well be due to reluctance on the part of employers to impose tracking devices on employees that they might consider an infringement of their privacy.

Passive and active location information

So how does an employer balance its responsibility for employee well-being with legitimate concerns about

employee privacy? The answer lies in using information companies already have available in a new way, to help determine precise employee locations at all times.

Employers are already passively collecting location information on employees, often not realising that they are doing so. Consider an employer with 100 sites worldwide. Each will have a WiFi login that employees can use to access the corporate network – often specific to a particular floor, department or site. This information, which is already being collected by an employer, could help to provide information to understand who is where in the event of an incident on site (such as a fire or an intruder).

Many employers already ask their employees to check in to a site via an

access control card. Aggregating this information across multiple sites can also help to understand who is working where if an incident occurs.

Many advanced companies are now training staff to check into assembly points during fire drills with the same pass code, meaning the employer has an immediate understanding of the number of people from a particular floor or building that are recorded as checked in, which can be compared with the number that have checked out. This gives an immediate picture of any missing employees and critical information for first responders such as fire crews or medical staff in the event of an incident.

In a similar way, employers will be aware when their employees are travelling and to where. They will know which airport employees are travelling to, which hotel they are staying at, where their meetings are taking place and when.

If this information is cross referenced with a global real time feed of international incidents, it is possible to inform employees when their travel might be disrupted or to avoid specific areas. For example if a port or airport is being blockaded the company can warn the employee in advance. If riots are taking place in a suburb of a city where an employee is based the employer can warn them to remain in the hotel.

Incident response

Incidents that seem fairly innocuous to one business may well be critical to another. IT downtime might be inconvenient to one company, but for an e-commerce business, where revenues rely on uptime, an IT outage could result in significant losses in revenue. A strike disrupting a maritime port might be an irritant to a business person trying to get home but could mean facing a non-delivery fine for a freight company. For every business there will be certain incidents where

the ability to change plan or resolve an issue quickly will impact on the bottom line.

For this reason two features are essential for businesses that are deploying a critical communications platform: multi-modality and two-way communications.

Multi-modality provides the ability to communicate via a number of different channels – such as SMS, email and push notifications – rather than relying solely on one form of communication. Because no communications channel is 100 per cent reliable 100 per cent of the time, multi-modality transforms the speed at which people receive messages.

During the March 2016 terrorist attacks in Brussels the mobile phone network went offline, making standard mobile communication impossible. The team at Brussels Airport made its public WiFi discoverable and free of a network key, allowing anyone with a WiFi enabled device to connect, send and receive messages. As a consequence people who were unable to communicate via text message could do so via email and WiFi enabled messaging services.

Just as multi-modality makes it easier to receive a message, two-way communications makes it simpler to confirm a response. By creating and delivering templates that do not require a written response but a simple key press, response levels from emergency notifications increase significantly.

Consider, for example, a business that knows 30 of its employees are in a city when a riot breaks out. A simple message sent with the option to reply with 'I am OK' and 'I need help' with one button press delivers a fast snapshot of an incident to the company. Combining this with location data, the company then knows where employees are and how many need assistance.

Together these two functions can help transform critical communications from a one-way

incident alerting platform into a two-way communications tool that enables companies to respond smarter and faster to employees in need.

Safety everywhere: The next step

Many advanced platforms even offer SOS alerting and Safe Corridor functionality through smartphone applications. These can be particularly useful when employees are in unfamiliar or dangerous areas, or in situations where they may not feel safe.

By capitalising on the latest smartphone technology, employees using the platform via one of the Everbridge apps can alert their employer when they feel unsafe or at risk, even setting a 'call-in time' where they will advise of their safety every few minutes until they are back in familiar territory.

If employees are confronted they can trigger a panic button to immediately alert their employer of danger, detailing location and relevant audio or visual data, enabling the employer to immediately notify emergency services.

Employers have to accept three truths about the future: employees will travel more; the world will become more uncertain; and employees will expect more from their employers when they are travelling for work purposes.

Combined, this could be considered a major HR challenge – both in practical and financial terms. In reality it is an opportunity. A multi-modal, two-way communications platform can help protect employee safety wherever they are in the world, whatever unusual circumstances they face. Companies that embrace this opportunity will have a far clearer view of employee wellbeing and engender increased loyalty. If employees are truly a company's biggest asset, what is the price of keeping them safe?

Nick Hawkins is managing director for EMEA at Everbridge

Your guide to emergency and mass notification software

Emergency & Mass Notification Software Report



EVERBRIDGE

The Everbridge cloud-based critical communications platform is committed to keeping people safe and businesses running.

The platform is built on a secure, scalable and reliable infrastructure with multiple layers of redundancy to enable the rapid delivery of notifications, with near real-time verification.

Everbridge understands that no contact path is 100% reliable, 100% of the time. Its multi-modal functionality facilitates notifications via more than 100 different contact paths and devices including: SMS; email; VoIP calls; text-to-speech; social media alerts and mobile push notifications amongst others. Assessing a situation quickly and efficiently is critical. Everbridge supports multiple data sources, some of which may be public, to provide an insightful, holistic view of what is occurring during times of crisis. The product can analyse a building's security and badge-in systems, social media and WiFi connections to locate employees in danger and deploy relevant personnel to resolve the issue. With this data, businesses can assess an incident in near real time and prioritise communication and damage control of its assets, people and supply chains.

In 2015 the Everbridge platform sent more than one billion messages across more than 200 countries – a rate of 30 messages per second. It is used by more than 3,000 customers globally, and has been used in emergencies such as the Boston Marathon bombings, Hurricane Matthew and the Sony Corporation network hack.

“Thanks to Everbridge the Trust is saving between £70,000 and £80,000 a year. This equates to five or six extra ambulances on the road.”

Oliver Tovey, Resilience Officer at South Western Ambulance Service NHS Foundation Trust

Everbridge's out-of-the-box applications include:

- **Incident Management**

A non-critical incident for one business may significantly impact revenues for another. Incident management improves a business' response to an incident by automating workflows and using business rules to determine who should be contacted, how they should be contacted and when.

- **Safety Connection**

According to Strategy Analytics the mobile workforce will grow to more than 1.75 billion by 2020. Safety Connection enables organisations to protect their employees, wherever they are. Targeted notifications can be sent using dynamic geolocation data, sourced from building access control systems, wired and wireless network access points, travel management systems and mobile application check-ins, to inform employees of the most up to date information, advise when action is required or direct them to a safe location. Two-way polling means action can be taken if an employee does not mark their status as 'safe'. Everbridge's Safe Corridor enables employees to regularly check in with an organisation if they are travelling in an unsafe location. Should they fail to check in, the platform automatically alerts management and communicating with that person becomes a priority.

- **IT Alerting**

IT downtime can cause widespread disruption to business and quickly cost corporations millions. IT alerting enables IT professionals, key stakeholders, company executives or end users to quickly discover and fix incidents by escalating issues to the relevant teams quickly.

IT Alerting enables businesses to contact the right person to fix an issue, depending on multiple criteria including where they are, whether they are on duty and whether they have the right skills. This reduces downtime and ensures that disruption is minimal.

Contact us:

Tel: + 44 (0)800 035 0081

hello@everbridge.com

@everbridge_emea

everbridge.com

ADVANTAGE EMERGENCY RESPONSE MANAGEMENT SYSTEM

The ERMS Advantage Services software suite was designed to help organisations manage vital emergency processes and enable effective communications and response to crisis situations and incidents.

Recognising that emergency notification capability alone is not enough to effectively respond to and manage an emergency situation, this product addresses all phases of emergency management, including risk mitigation, preparedness, crisis response and recovery.

This company has been in the business for 25 years and has crisis management and business continuity planning experience.

Tel: +1 (905) 829 8216
ermscorp.com

ALERT CASCADE ALERT CASCADE

Alert Cascade is a UK-hosted SaaS model mass communications tool, designed to allow users to easily contact either a wide or other targeted audience across various contact media.

This product is a secure web portal for launching broadcasts and maintaining contact data, and provides a full accessible set of features across a range of platforms.

In the event that internet access is not available, the full feature suite can also be accessed via a landline phone number and a touch tone key pad.

Alongside its core platform, this provider offers various additional integrated and standalone modules allowing users to tailor the service to meet specific needs.

Its Public Registration Page, Event and Incident

Logging, PCI Compliant Fax, Calendar Notification and IVR modules are designed to provide the flexibility to confidently communicate with staff, members of the public and key stakeholders during escalating and evolving events.

Each of these modules allow full two-way communication, and allow users to capture and report on the responses received. Real-time and post-incident reports allow users to track exactly who they wish to contact, when, how, what their response was and how their response was dealt with.

Real-time status monitors provide a simple to read visual indicator of the progress of messages, whilst detailed post-incident reports allow users to drill down into the data and pinpoint specific areas for analysis.

In the event of a major incident, a UK-based support team is available 24/7 for the duration of the user's contract.

Both the company and the platform are ISO 27001 and 22301 accredited. The company is also registered as a data controller with the Information Commissioner's office.

Tel: +44 (0)20 3503 0999
alertcascade.co.uk



CRISES CONTROL CRISES CONTROL

Crises Control is a cloud-based emergency and mass notification application combined with a functional business disruption incident management platform.

Since its relatively recent launch in 2014, Crises

Control has developed into a sophisticated emergency mass notification system that has a number of features of direct relevance to the SME market.

The Crises Control app employs a range of media channels including email, text, phone and push notifications. The app can be downloaded free in iOS, Android, Windows and BlackBerry.

This product is designed to allow users to quickly launch and manage incident processes, alerting the response team without depending on your IT infrastructure or other resources.

Any combination of push notifications, email, SMS, phone call helps to ensure rapid notification and acknowledgement of critical incidents.

User organisations can locate response teams on a location map and also track their progress and responses.

Integration with other monitoring systems is designed to be easy, and a recently developed facility allows any user to initiate an emergency response alarm that will send an alert to the building or venue security team. This in turn allows the security team or floor marshals to send an alert message to any mobile or desk device in the building and initiate security procedures.

Tel: +44 (0)20 8584 1385
crises-control.com

E.NOTIFY SPOK

Spok e.Notify was designed to support efficient, effective communications during an incident, helping to manage two-way communications during an incident.

With this solution users can deliver and collect the right information to and from the right people at the right time, according to user-

defined protocols. With this product, users can escalate the communication further.

Spok e.Notify manages information and presents it on web-based, real-time monitors for meaningful reporting and analysis.

Tel: +1 (800) 231 2556
spok.com



EMERGENCYCALL CRITICALL

Criticall's notification platform is a cloud-based solution used most commonly across the financial, retail, petrochemical and pharmaceutical sectors.

While it is best suited to complex global messaging requirements, there is also a 'lite' version adapted for the SME market.

EmergencyCall remains distinctive in its audit and reporting capabilities, which incorporate second-by-second tracking of system user and recipient responses, including SMS delivery receipts and replies.

The product supports the ability to drill down into online reports in detail, or to extract spreadsheet and PDF files for further offline manipulation and presentation.

EmergencyCall is offered under an enterprise price-per-user model with a messaging allowance.

The intelligent system contacts different categories and types of people, to notify them of the same incident, yet can deliver a different message to each individual, or group, as required.

Alert messages are delivered in voice or text, to any combination of phone, mobile, fax, pager or email – based on personal contact profiles.

This permits the specification of where, when, how and in which language recipients should be contacted.

EmergencyCall also offers an integrated, pure cloud messaging solution for enterprises running rosters and rotas, rather than broadcast groups.

Criticall also offers enterprises full SOAP/REST API access to its global messaging platform.

This provider operates from three UK datacentre locations and maintains international accreditation to both ISO 9001 and ISO 22301 standards.

Criticall also provides direct integration with ClearView's business continuity planning tool.

Tel: +44 (0)330 606 2407
criticall.co.uk



FACT24 F-24 UK

FACT24 is a web-based service designed to help users prevent, manage and subsequently analyse critical situations.

Designed to be reliable, secure, quick to implement and easy to use, this product is available globally.

The product enables users to communicate with key stakeholders, emergency response and crisis management teams securely en masse with ease and simplicity via a comprehensive and resilient infrastructure.

FACT24's range of all-in-one solutions are used by companies and organisations of all size around the world for emergency notification, integrated crisis management and business continuity management.

Tel: +44 (0)1923 432 715
f24.com

FLARE PAGEONE

PageOne has been in the notification business for almost 30 years.

The vendor's secure cloud-based Flare service allows users to initiate and manage alerting and responses from wherever they are.

Managed via a secure online account, the product's flexibility is furthered by supporting multiple means to initiate critical alerts. Broadcast messages can be sent via web, mobile, email, text and a 24-hour bureau.

Multi-channel, device independent communication is at the heart of PageOne's messaging gateway infrastructure.

PageOne has also developed its own Responder smartphone app to provide a secure closed-user group messaging capability that can separate and elevate critical alerting from standard SMS and email channels.

Flare features include secure online management and control, filter-based grouping, real-time delivery and response and geolocation and mapping support.

It also offers a full audit trail and export for post-incident reporting and review and integration with customer database and software systems.

PageOne also supports a range of integration APIs to allow interoperability with third party software systems and databases.

(x) matters

Intelligent Communication for Smart Business

ALL EMPLOYEES

BUILDING FIRE

HAVE YOU SAFELY EVACUATED THE BUILDING?
PLEASE PRESS YES OR NO

YES NO

BUILDING EVACUATION 1

MAJOR INCIDENT MANAGEMENT TRENDS
2016
Survey Report

GET OUR SURVEY REPORT!

www.xmatters.com/resources

This provider is an approved supplier on the UK Government Network Services framework, has ISO 27001 Information Security accreditation.

PageOne is used by hundreds of customers across the blue light services, NHS, government, MOD and major blue-chip organisations.

Tel: +44 (0)844 811 0070

pageone.co.uk

HIPLINK SOFTWARE HIPLINK SOFTWARE

HipLink is a communication platform that provides text and voice messaging capabilities to desktop or mobile devices on any carrier worldwide.

HipLink Mobile is a fully encrypted communication app that works on any smartphone or desktop for instantaneous alerts or peer-to-peer communication between individuals or groups.

Attachments can be sent from or to the phone with advanced features for templates and location-based services.

Emergency messages sent can override the phone settings with persistent alerting and it works on either the cellular or a WiFi network.

The HipLink solution can work as a standalone messaging system or integrate with most software, including incident management, IT systems, security software, fire safety and building management systems for alerting and alarm management.

Using advanced two-way technology either through SMS or a mobile app, users can coordinate response, provide updated information for vital decision support, and monitor status in real time.

With this product, departmental permission policies are designed to be easy to define. A

secure environment is offered with extensive user permissions, advanced LDAP and multiple layers of encryption. A scalable architecture accommodates any message volume or speed required.

Tel: +1 (408) 399 6120

hiplink.com

PUBLIC SAFETY SOLUTION INTERSEC

Intersec's Public Safety Solution enables operators to easily spot suspicious activity or to warn all people who are in or about to enter a certain area.

The adoption of mobile phones allows local authorities to better inform during emergency situations by sending a message to handsets in an hazardous zone.

With a device agnostic solution based on mass-scale, real-time geofencing capability and a combined cell broadcast and SMS messaging platform, any subscriber located in a designated geographical area can be reached in real-time.

An interactive web interface allows users to easily monitor population density and displacements in any area during and after the event. It allows authorities to follow and analyse population movements in real-time and conduct proper evacuation or adapt emergency services' resources accordingly

A combination of passive and active geolocation enables accuracy with minimal network overload.

Intersec Public Alerting Solution enables users to pre-define alerting scenarios to be quickly activated in case an emergency arises.

A real-time geofence monitoring triggers a notification or an automated process when detecting any specific location event.

Users can personalise messages on a per-user

basis and adapt the language, evacuation instructions and post-event communication.

Intersec Public Alerting Solution can be connected to any third party application.

Tel: + 33 (1) 55 70 33 55

intersec.com



SEND WORD NOW & SWN DIRECT SEND WORD NOW

Send Word Now is a global provider of critical communications solutions.

The company's easy to use, web-based emergency notification, enterprise collaboration and mobile applications are used by businesses, government agencies, universities and non-profit organisations worldwide.

The Send Word Now Alerting Service offers a 100% uptime guarantee.

The provider has attained SSAE 16 SOC 2 Type 2 and DIACAP certifications, ensuring compliance with rigid data security controls and US Department of Defense standards.

Other security measures within the service include data encryption at-rest and in-transit to the service, two-factor authentication, and Single Sign-On (SSO) capabilities, among others.

The provider offers assistance 24/7/365.

Tel: +44 (0)20 3318 3862

sendwordnow.com

schedules, and skill sets are held in a single place so users can dynamically pull information when needed.

This provider offers support: 24/7 – through a forum, online and via phone support. Messaging costs are included in the base price.

With its conference calling facility, users can gather everyone needed on a bridge in minutes.

This provider guarantees uptime of 99.99%, provides multilingual messaging (in 13 languages).

With this product, users can create and manage groups and call trees; save commonly used messages as scenarios for quick access; and manage business continuity response from anywhere.

With the xMatters mobile app, users can send status updates and images from the field – giving users an accurate and comprehensive view of an incident.

Users can also assemble incident response with one-touch conferencing.

xMatters' cloud-based solutions enable any business process or application to trigger two-way communications (through push, voice, email and SMS) throughout the extended enterprise during time-sensitive events.

With over a decade of experience in rapid communication, xMatters serves more than 1,000 leading global firms to ensure business operations run smoothly and effectively during incidents such as IT failures, product recalls, natural disasters, dynamic staffing, service outages, medical emergencies and supply chain disruption.

xMatters is headquartered in California, US with offices in London and Sydney.

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X-ON ALERT 4
X-ON

Alert 4 from X-on is a cloud-based notification system developed and supported by a UK-based company and hosted within UK datacentres.

In addition to high volume outbound notification to groups via voice call, SMS and email, features include integration with inbound hosted telephony, including recorded conference services, call distribution, and voice noticeboards providing an option for people to call for alert updates.

For secure closed user groups, there is the option of X-on SIMs. This means that mobile recipients can be fully contained within a secure and audited network, with the recording of all voice and SMS conversations securely stored and easily accessible to authorised personnel.

Alert 4 can be configured with Public Registration Pages for COMAH applications. This provider has two decades of experience in

the UK market. Adherence to stringent data security and availability standards has encouraged deployment of the product by safety critical industries in the UK, including petrochemical and nuclear.

Tel: 0333 332 0000
x-on.co.uk



XMATTERS
XMATTERS

xMatters was designed to help users tailor emergency communications to relevant business processes, giving users the ability to create as many situation-specific messaging templates as they need to communicate quickly and effectively, drive business processes forward, or mitigate downtime during critical incidents.

With this product, all employee data, groups,

	Everbridge Platform	Advantage	Alert Cascade	Crises Control	e.Notify	EmergencyCall	FACT24	Flare	HipLink	Public Safety Solution	Send Word Now & SWN Direct	X-on Alert 4	xMatters
Key functions													
Incident standard operating process control	•	•	•	•	•	•	•	•	•	•	•	•	•
Document storage – proprietary	•	•	•	•	•	•	•	•	•	•	•	•	•
Document storage – through third party	•					•	•				•		•
Document plan management – proprietary		•	•	•		•	•				•		•
Document plan management – through third party	•		•			•	•				•		•
Location based services	•	•	•	•				•	•	•	•		•
Customisable user filters	•	•	•	•		•	•		•		•		•
Customisable mapping	•	•	•	•			•		•	•	•		•
Customisable per user dashboard views with widget options	•		•	•		•	•		•			•	•
Link external feed (eg. RSS) to dashboard and/or devices	•	•	•	•		•	•				•		•
Permissionable templated forms for data capture and send	•	•	•			•	•	•	•		•	•	•
IVR													
Crisis lines	•	•	•			•	•				•		•
Two-way crisis lines	•	•	•			•	•				•		•
Conference call	•	•	•	•		•	•				•	•	•
Add additional people during call	•	•	•	•		•	•				•	•	•
Auto SMS/email with dial-in for missed recipients	•	•	•		•	•	•	•			•	•	•
Bridging to third party conference call	•	•	•			•					•	•	•
Communication													
SMS	•	•	•	•	•	•	•	•	•	•	•	•	•
Text to speech	•	•	•	•	•	•	•	•	•	•	•	•	•
Live voice broadcast	•	•	•			•	•	•	•		•	•	•
Plain text email	•	•	•	•	•	•	•	•	•		•	•	•
HTML email	•	•	•	•	•	•	•	•	•		•	•	•
Email with attachments	•	•	•			•	•		•		•	•	•
Desktop alerts	•	•	•	•	•	•	•	•	•		•	•	•
Radio pager	•	•	•			•	•	•	•		•	•	•
Fax	•	•	•		•	•	•	•	•		•	•	•
Social media	•	•	•	•		•	•	•	•		•	•	•
Broadcast	•	•	•			•	•	•	•		•	•	•
Sequencing	•	•	•	•		•	•	•	•		•	•	•
Escalation	•	•	•	•		•	•	•	•		•	•	•
Customisable content according to medium (ie. SMS/email)	•	•	•		•	•	•	•	•		•	•	•
One click message templates	•	•	•	•		•	•	•	•		•	•	•
Smart insert of data in message fields based on form selections	•	•	•			•	•	•	•		•	•	•
Scenario-based messaging template	•	•	•	•	•	•	•	•	•		•	•	•
Checklist-based message templates	•	•	•	•		•	•	•	•		•	•	•
Audit & Reporting													
Real time message audit	•	•	•	•	•	•	•	•	•	•	•	•	•
Field validation	•	•	•	•	•	•	•	•	•		•	•	•
Online performance and data reports	•	•	•	•	•	•	•	•	•	•	•	•	•
Exportable PDF reports	•	•	•	•		•	•	•	•		•	•	•
Graphical statistics	•	•	•	•		•	•	•	•		•	•	•
Downloadable monthly management reports	•	•	•	•	•	•	•	•	•	•	•	•	•
Customisable reporting and views	•	•	•	•	•	•	•	•	•	•	•	•	•
Text-based templates	•	•	•	•		•	•	•	•		•	•	•
Voice-based templates	•	•	•			•	•	•	•		•	•	•



Everbridge Platform	Advantage	Alert Cascade	Crises Control	e.Notify	EmergencyCall	FACT24	Flare	HipLink Software	Public Safety solution	Send Word Now & SWN Direct	X-on Alert 4	xMatters	Responses
													One-way
													Two-way
													Polling
													Free text content response
													Unlimited customisable responses
													Response wording different per medium (ie. SMS, email)
													Reply via hyperlink on email
													Technical, security, support
													24/7 helpdesk
													Multilingual capabilities
													Selection of global time zones per user
													Customisable languages
													IP ownership – company owned
													Shared communication capacity
													Customer dedicated capacity
													Interface with third party products
													Integrate message sending through third party
													Integrate contact data updates through third party systems
													Administration access rights limited by user profile
													Restriction of products by administration rights
													Delivery by SaaS
													Delivery by software installation
													System accessible through smartphone
													Native smartphone application
													Multiple geographically disparate datacentres
													Integration for data load
													Mobile functionality
													Accessibility through mobile web browsing
													Accessibility through mobile application
													Mobile iOS app
													Mobile BlackBerry app
													Mobile Android app
													Send messages through app
													Review delivery reports through app
													Respondee list access via app
													Access templates via app
													Free type message through app
													Create ad hoc groups via app
													Access contact details and user list via app
													Store and use plans
													Real-time team mapping capability
													Task allocation and management
													App-based push messaging
													Initiate conference bridging via app
													Reply with attachment from app
													Mobile SAML for SSO
													Unified app for sending and receiving

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Everbridge is a global software company that provides critical communications and enterprise safety applications that enable customers to automate and accelerate the process of keeping people safe and businesses running during critical events. During public safety threats such as active shooter situations, terrorist attacks or severe weather conditions, as well as critical business events such as IT outages or cyber incidents, over 3,000 global customers rely on our SaaS-based platform to quickly and reliably construct and deliver contextual notifications to millions of people at one time. The company's platform sent over 1 billion messages in 2015, offers the ability to reach more than 200 countries and territories with secure delivery to over 100 different communication devices. Our critical communications and enterprise safety applications include Mass Notification, Incident Management, IT Alerting, Safety Connection™, Community Engagement™, Secure Messaging and Internet of Things, and are easy-to-use and deploy, secure, highly scalable and reliable.

www.everbridge.com



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www.crises-control.com

Crises Control is a cloud based emergency mass notification application combined with a functional business disruption incident management platform. It was launched in 2014, after a significant period of development, by an IT managed service provider and app developer that built the platform to initially serve its own clients.

Crises Control now offers a sophisticated emergency mass notification system that has a number of unique features of direct relevance to the SME market, which has so far proved largely resistant to EMN software on the grounds of resources and costs.

People consume information through many different channels and a mobile application meets these different needs through the ubiquitous modern communications tool, the mobile phone. The Crises Control app employs a range of media channels to choose from; email, text, phone and push notifications. The app is downloadable for free on the iOS, Android, Windows and Blackberry platforms.



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You can tell a lot about a person by the company they keep. The same goes for us.

KPMG, ITV, Nomura, Standard Life, Man Group, Marks & Spencer, AstraZeneca, BP, ConocoPhillips and National Grid. Blue chip organisations who are best practice and thought leaders in their respective fields. They deploy our notification services for their respective national and international Operations. If you consider them good company, why not come and discuss your own enterprise notification needs with us. As you can see, we have a good track record of helping out. Many of our clients have stayed with us for over a decade, perhaps because we're the only company known to guarantee and deliver them consistent 100% service availability.

Not only are we UK-based, we are also ISO 9001 and ISO 22301 certified, so you can be sure your sensitive corporate data remains safe in our hands. Contact our Vice President of Business Development, Justin Rhodes on 07960 197533, or email him at: justinr@criticall.co.uk. He'll be happy to arrange your personal demonstration.



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FACT24 is an innovative, efficient, professional tool for alerting and crisis management purposes. With FACT24, clients can manage and handle critical situations more reliably and effectively – from beginning to the end.

To manage a crisis event, it is crucial to ensure that communications are reliable and quick to be delivered. Decision makers need to easily capture reliable information from multiple sources in order to be kept informed and briefed about the nature of the incident.

Detailed logs on the event, actions taken, tasks performed and decisions made, need to be securely maintained in the “mobile” world. This enables organisations who utilise FACT24 will always be proficient during a crisis event and business continuity and emergency planning can be further improved post incident.



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Send Word Now is the leading worldwide provider of critical communications solutions. The company's easy-to-use, web-based emergency notification, enterprise collaboration and mobile applications are used by businesses, government agencies, universities and non-profit organizations worldwide to ensure fast, effective, two-way communication when it is needed the most.

Send Word Now's notification service is capable of transmitting tens of thousands of voice and text messages in minutes, all while gathering the feedback needed for rapid, sound decision making and better business resilience.

Send Word Now and its recently acquired One Call Now group messaging company serve the critical communications needs of more than 30,000 public and private sector organizations around the globe.



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When your business is experiencing a critical situation, every moment counts. Whether you're in the midst of severe weather, power outages, product recalls, or a catastrophic digital event, you need to immediately notify the right people to keep your people safe and your business running. xMatters BCM helps you tailor emergency communications to your relevant business processes. Create as many situation-specific messaging templates as you need to communicate quickly and effectively, drive business processes forward, and mitigate downtime during critical incidents. With xMatters all of your employee data, groups, schedules, and skill sets are held in a single place so you're prepared for the unexpected. Having high-quality, reliable data means you can effectively communicate when you need it the most. Dynamically pull information about your groups, contact teams, user skill sets, geography, and other parameters so you don't have to stop and refresh data during a crisis or business disruption.



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Alert-4 from X-on is a cloud notification system developed and supported by a UK company, hosted within UK data centres. Adherence to the most stringent data security and availability standards has encouraged deployment by safety critical industries in the UK, including petrochemical and nuclear.

In addition to high volume outbound notification to groups via voice call, SMS and email, features include integration with inbound hosted telephony, including recorded conference services, call distribution, and voice noticeboards providing an option for people to call in to hear Alert updates.

For secure closed user groups, there is the option of X-on SIMs. This means that mobile recipients can be fully contained within a secure and audited network, with the recording of all voice and SMS conversations securely stored and easily accessible to authorised personnel.

Alert-4 can be configured with Public Registration Pages for COMAH applications.

Alert-4 encompasses all the functionality and audit tracking of the most advanced systems available. We've consulted our clients and developed a system fine-tuned for the UK market based on two decades of experience.



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Uncertainty prevails in workplace recovery provision

✓ **A new report from the Business Continuity Institute has identified a disconnect between business continuity professionals and end users when it comes to workplace recovery. CIR examines the key findings**

A disconnect exists between business continuity professionals and end users when it comes to workplace recovery, according to a new report from the Business Continuity Institute. The global study showed that, while only 12% of business continuity experts confirm their organisation lacks a workplace recovery arrangement, 31% of end users claimed their employers don't have any arrangements in place, or they are unaware of what they are.

The Workplace Recovery Report noted that even organisations with workplace recovery arrangements in place face risk and uncertainty when it comes to actual recovery plan implementation. One of every five experts feel uncomfortable that their organisation's employees will execute their work area recovery solution as planned, while 17% of end users are not comfortable they can carry on services in the case of an area-wide event.

The success of a chosen strategy such as workplace recovery depends on its proper implementation by staff, led by a capable business continuity or resilience team. The results reveal that experts have a basic level of confidence in the capability of staff to effectively execute workplace recovery during disruption. However, there are still gaps in awareness and implementation that need to be addressed.

The safety of employees remains a key priority for both workplace recovery experts and end users. This needs to be articulated by practitioners as it can facilitate staff buy-in into workplace recovery and enable embedding of business continuity throughout the organisation. While priorities among experts and end users differ down the line, it is useful to communicate the importance of workplace recovery as a chosen strategy in appropriate language and along staff priorities.

Many employees also reveal a preference for working from home during an incident. This may be related to their desire to be close to their families during a crisis – a fact that should



▶ The Workplace Recovery Report: Other findings

- 37% of end users are either unaware or unable to provide feedback on their organisation's workplace recovery arrangements
- 26% of end users and 16% of experts feel that their organisation's business continuity priorities are not fully consistent with end user priorities
- Three quarters of end users consider themselves critical, while 64% of experts believe only 20% of employees fall in this category
- Nearly four out of every five end users believe that there is a workplace recovery plan for them in the case of a disruption
- Work-from-home received less consideration as a workplace recovery approach from experts than from employees (26% vs 44%)
- 45% of end users are not happy to work from home for more than two weeks
- When deciding whether to work from an alternative location or from home, 32% of employees base their decision on ease of reaching alternative sites, while 20% focus on access to key enterprise systems, and 15% on having appropriate office infrastructure.

Source: Business Continuity Institute

be strongly considered prior to selecting a single recovery facility that is a long distance from where the employee lives. This also carries significant implications to organisations such as ensuring that employees' homes are conducive to such an arrangement from a business continuity, risk or health and safety perspective.

Patrick Alcantara, senior research associate at the BCI and author of the report, said when executed properly, in line with an holistic business continuity programme, workplace recovery can help build resilience within organisations. "As part of business continuity strategy for many organisations, it is important to benchmark workplace recovery leading to better planning and implementation," he added.

The BCI's survey was conducted during July 2016 and received 565 from experts and 349 responses from end users, all from a total of 78 countries.

▶ **Written by Deborah Ritchie**

Industry views

▶ In recent years, the risk community has been calling for risk managers to have greater access to key decision making in their businesses – in other words having a voice at the top table. We are therefore delighted to see a growing band of evidence showing that the message is getting through. In a survey conducted by the Federation of European Risk Management Associations (FERMA) this summer, two thirds of the 634 respondents said they now report to board or top management level.

This message is supported by surveys of Airmic members which show that risk managers now find it dramatically easier to gain attention from the top. Last year, 43% cited lack of access to the board as a number one or two concern. In 2016, this had reduced to 18%. Respondents also reported greater support and leadership from the board on risk issues. This is still work in progress, but it is clear that businesses are increasingly appreciating the value of risk management.

But while the message is getting through to the top, research indicates that more is needed to embed risk management across businesses. Almost three quarters of Airmic members say their number one or two concern is risk management and risk education not being fully integrated with wider business units. Similarly, in a business resilience survey conducted by consultants Control Risks this year, 48% of

respondents said they remain reliant on centralised governance and oversight instead of multi-disciplinary risk meetings.

Successful enterprise risk management requires an integrated approach: it is not possible for the risk function or senior management alone to be effective at detecting risks, and in particular identifying aggregations of risk across a business. One area, for example, where there is typically a lack of communication is between risk and IT functions. In a world where cyber risk is one of the biggest threats, this is no longer good enough. We often refer to the “risk glass ceiling” in companies where risk information fails to flow to the top. It is a great credit to the risk community that we are making cracks in the glass ceiling: now it’s time to work on the risk glass walls.



▶ Julia Graham is deputy CEO of Airmic

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▶ Brand and reputation risk protection is something that major companies and organisations are – or should be – all over; but for many small and medium sized enterprises that is just not the case. But failure to address this could have a much wider knock-on impact both up and down complex supply chains.

This gap in cover and risk understanding was recently identified by the CII Insurance Broking Faculty New Generation group, working as part of a CII talent development programme, who looked in depth at the need for brand and reputation risk cover; the barriers to insurer participation; the level of coverage currently available; and most importantly how the insurance industry can and should respond.

With a view to driving change rather than just highlighting the issues, the report, ‘Reputation Risk in a Social Media Culture’, includes a breakdown of four elements of protection that the group believe a brand and reputation risk policy aimed at SMEs should cover, namely: prevention risk management; crisis costs and containment; indemnity protection for loss of revenue; and post-loss consultancy.

The group’s recommendations also include a call for data capture and collection to be developed to allow quantification, with insurers and brokers co-ordinating a shared approach to recording loss data.

The group’s view is that once the insurance industry becomes more comfortable with brand and reputation risk, and as data becomes available, insurers will begin offering ‘brand and reputation’ cover by way of an extension to commercial combined or liability policies. In the meantime, more insurers could provide policy extensions to assist SME companies in prevention, mitigation and crisis management.

The group’s report is a sign that incoming insurance leaders are embracing the need to innovate and address difficult issues and this can only be a positive sign for risk managers looking for cover for emerging risks.

The full report is available on the CII’s website at www.cii.co.uk/40917



▶ Ant Gould is director of faculties at the Chartered Insurance Institute

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What's your view? Email the editor at deborah.ritchie@cirmagazine.com

▶ If you thought the last few years for local government and public services were tough, you're in for some bad news. The really tough times may be yet to come.

With the increasing devolution of funding from central government to local government; continuing cuts to government grants and the increasing reliance on local government income coming from business and council rates raised locally, you'd be forgiven for wondering just how the public sector is going to cope.

There will certainly be further challenging times ahead and the way we adapt and change, seek opportunities and create innovative solutions will determine how much and how well we can deliver services to our community.

Future resilience will be determined by how much income can be raised locally, and it follows that public services must seek clever ways of achieving this. We are already witnessing local authorities running energy companies, airports and hotels. With shared services, local authority trading companies, community interest groups and combined authorities, the traditional local government model and associated risks are a thing of the past.

Recognising the future challenges and opportunities of public services self-sufficiency, Alarm has recently published a

guide to risk arising from new service delivery models entitled 'New ventures, new risks'. New ways of working present some of the most challenging risk management issues for today's risk and insurance managers, and the guide describes a number of different service models, identifying the most common risks together with insurance management considerations of each.

The key message from Alarm in this rapidly changing world of public services is to be ever vigilant as to what the organisation is planning, and respond with advice in a timely fashion. Keeping pace, understanding the changing role and developing the right skills in our increasingly commercial world are vital to ensure the risk manager plays a core part in the future delivery of services to the community.



▶ **Jane O'Leary is vice-chairman of Alarm**

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▶ The last decade has been rich in financial scandals in both banks and multinationals alike; the rigging of LIBOR, the mis-sale of financial products, the facilitation of tax evasion, to name but a few.

Despite their range, these scandals often have three common features; they have persisted for many years; the scandals often, but not always, span a number of firms across an industry; and they typically involve the active participation of more than the odd rogue employee.

The last point illustrates how even the most sophisticated operational risk management framework may be undermined if staff simply do not escalate appropriately their knowledge of these issues. Consequently, a portfolio of approaches is required to improve staff behaviours.

Set the tone from the top: Start by assessing company culture – staff engagement surveys can be used to assess the extent to which staff feel able to escalate issues. Provide training, communicating simple rules using external case studies to show what good looks like. Incentives and penalties can work in your favour – reward staff members who escalate risk issues. Some financial institutions have their risk and compliance functions rate the performance of first line department heads, that impact on remuneration reviews.

“Trust but verify”: Don't just meet with department heads; operational risk managers should also speak directly and regularly to junior staff members, asking them about their concerns. Rotate staff in and out of operational risk management teams to both ensure that the second line has hands-on experience and also seed the first line with risk-aware staff members.

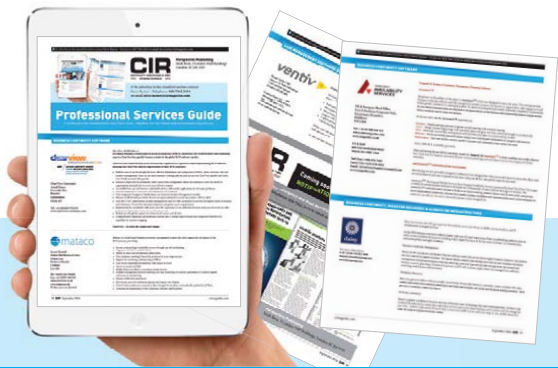
Test staff responses: The use of false phishing e-mails to test staff responses is becoming an increasingly common practice. The extent to which staff proactively raise issues is the ultimate test of how embedded any risk management framework is, so these actions and initiatives could be among the most critical that any risk management team could initiate.



▶ **Michael Grimwade is head of operational risk for MUFG Securities EMEA, and a director of IOR**

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ClearView BCM Software

Developed through a combination of practical experience of BCM consultants, live client feedback and technology experts, ClearView has quickly become a leader in the global BCM software market.

ClearView has removed many of the barriers that organisations experience when implementing BCM software, ensuring that ClearView delivers improvement to their BCM processes.

- Delivers ease of use for straight-forward, effective deployment and maintenance of BIA's, plans, exercises, risk and incident management. Users do not need extensive training and can pick up and use ClearView quickly and easily, even if only accessed infrequently
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Mataco is a cloud based business continuity management system that offers support for all aspects of the BCM process, providing:

- Secure, resilient, high availability service through our off-site hosting
- Aligned to BS 25999 and ISO 22301
- Ability to store and edit business critical data
- Plan templates enabling Plans to be produced to your requirements
- Support for reviewing and exercising of Plans
- User driven reporting functionality, with export to Excel
- Alerts via email and SMS
- Mobile Mataco enabling access from mobile devices
- Incident management module enabling real-time recording of incidents, generation of incident reports and access to incident log
- Import of BIA data from Excel
- BIA Survey tool with validation process and import into Mataco
- Control and maintenance ensured as data changed in one place, automatically updated in all Plans
- Tracking and monitoring of Plan Approvals, Reviews and Exercises

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www.sungardas.com

Sungard AS Business Continuity Management Planning Software

Assurance^{CM}

Brand new to this edition of the report is Assurance^{CM} which was designed by users, for users. This next-generation business continuity software and risk management solution removes the barriers to organisation-wide engagement and builds greater confidence in contingency plans. It's about extending beyond simply addressing compliance requirements. It's also about knowing teams are prepared to recognise threats to the business and empowering them to engage locally before incidents lead to major disruptions.

So far our users rate the Assurance^{CM} experience as:

- Intuitive** – Simple and easy, get your program up and running with minimal training
- Aware** – Merge external happenings with enterprise plans and gain real-time contextual insight to act decisively
- Alive** – Eliminate manual data management and trust that your data is accurate and up-to-date
- Efficient** – Yet secure to help you work smart, engage users and delight stakeholders on program effectiveness
- Independent** – SaaS and mobile, connect quickly to people and information that matters the most

And a 100% SLA availability guarantee.

Plans and testing do not deliver outcomes, people do. **Sungard AS Assurance^{CM}** is about enabling you to take what we learn back into the business continuity/disaster recovery planning cycle and share it across the company for better outcomes.

ASSURANCE^{NM} (NOTIFICATION MANAGER)

Introducing our new powerful emergency notification tool, designed for when you need it most to ensure the effect send of critical alerts to your key recipients at any time, using any device, and get the response you need.

Assurance^{NM} Alerting and Mobile Services from Sungard Availability Services (powered by Send Word Now[®]) leverages a variety of communication methods to transmit tens of thousands of voice and text messages in minutes. The Assurance^{NM} communication solution is built on an award winning platform that is used by both public and private sector organisations worldwide, offering them market leading capabilities and superior performance which Sungard AS customers can rely on. For more information please contact Sungard AS:

BUSINESS CONTINUITY, DISASTER RECOVERY & ALWAYS ON INFRASTRUCTURE



For more information:
Call +44 (0) 344 863 3000
Enquiry.dcs@daisygroup.com
www.daisygroup.com

Daisy has become the UK's go to partner for resilient, secure and always available communications and IT infrastructure managed services.

As the UK's business continuity industry leader with over 25 years' experience, Daisy is embedding resilience into its entire service portfolio, focussed on enabling today's digital business in the key areas of always-on infrastructure, connect & protect and agile workforce.

Business Continuity Management:

Daisy's BCM consultants and Shadow-Planner software work with you to deliver digital business resilience and address the new risks of the digital economy. We advise, deliver, support and manage all or part of your business continuity management, including emergency response planning; crisis and reputational risk management; operational and business recovery planning; infrastructure process and IT risk analysis; supply chain risk management; authentic exercising, maintenance and awareness.

Workplace Recovery:

Daisy has got your offices and your people covered from 18 specialist business continuity centres available UK-wide, mobile and virtual office solutions delivered to the home and complex call centre and financial trading positions. We'll give you a workplace within four hours.

IT & data continuity:

Daisy's complete portfolio of recovery services will protect your technology, data and communications. We have nine resilient UK datacentres, instant data replication services and secure cloud backups, active archive and file storage for your data. And for replacement IT onsite fast, we have over 1,000 servers and seven ship-to-site, mobile datacentre units, all ready to dispatch if disaster strikes.

BUSINESS CONTINUITY SOFTWARE



Contact Daisy to find out more about the unique benefits of Shadow-Planner:
Call +44 (0)344 863 3000
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Daisy Shadow-Planner enables you to plan, develop, test and execute more streamlined and structured Business Continuity. Taking the pain out of the entire process, Shadow-Planner helps your people work smarter and faster and enables your business to deliver against its BC commitments more quickly, efficiently and cost effectively.

Designed by BC specialists, this suite of integrated software supports the entire Business Continuity Management (BCM) lifecycle: from impact analysis through developing plans to testing and reporting. Daisy supports you every step of the way, helping you create the strongest and most effective plans to minimise downtime and ensure you can work 'business as usual'.

Shadow-Planner is based on four core modules:

- Business Impact Analysis (BIA)
- Business Continuity Planning
- Notification
- Mobile Plans

Organisations in the financial services sector, public sector and others in regulated industries have used Shadow-Planner to help comply with business continuity standards such as ISO 22301 and other specific codes of practise.

How you benefit

A low cost solution, requiring no local cap ex or hardware investments, you can:

- Get rid of inefficient, inaccurate and risky manual approaches - Word documents and spreadsheets
- Ensure all essential data (plans, contacts, documentation and more) are in a single secure location, at your fingertips
- Be assured that all data is regularly reviewed, updated and consistent
- Achieve faster ISO22301 BC certification

CLAIMS HANDLING & RISK MANAGEMENT SOFTWARE SOLUTIONS



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(JCAD is an ISO9001 accredited company)

JC Applications Development Ltd are market leaders in the development & implementation of highly effective software for the Claims Handling and Risk Management markets. Our commitment to providing simple to use yet feature rich applications has enabled us to grow a successful and satisfied client base of over 160 organisations, with over 200 successful implementations to our name.

Although our clients can occupy very different sectors of business, for instance; UK Central & Local Government, US Government, Housing Associations, Construction and Insurance, sentiments converge when looking for a proven technology solution provider.

So, if you are looking to improve your Corporate Governance and reduce costs through better claims management or wish to easily embed risk management throughout your organisation, then we look forward to talking with you.

EMERGENCY AND MASS NOTIFICATION SOFTWARE



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Everbridge is a global software company that provides critical communications and enterprise safety applications that enable customers to automate and accelerate the process of keeping people safe and businesses running during critical events. During public safety threats such as active shooter situations, terrorist attacks or severe weather conditions, as well as critical business events such as IT outages or cyber incidents, over 3,000 global customers rely on our SaaS-based platform to quickly and reliably construct and deliver contextual notifications to millions of people at one time. The company's platform sent over 1 billion messages in 2015, offers the ability to reach more than 200 countries and territories with secure delivery to over 100 different communication devices. Our critical communications and enterprise safety applications include Mass Notification, Incident Management, IT Alerting, Safety Connection™, Community Engagement™, Secure Messaging and Internet of Things, and are easy-to-use and deploy, secure, highly scalable and reliable.

www.everbridge.com

RISK MANAGEMENT SOFTWARE & CONSULTANCY



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Riskconnect, Inc. is the provider of a premier, enterprise-class technology platform for risk management professionals, configured to meet our clients' existing and future business processes. We provide risk technology solutions for incident/claim intake and management, certificates, policies, healthcare risk management and patient safety, governance risk and compliance, environmental health and safety, and more – all on a single, fully integrated platform. Riskconnect products are all connected, allowing users to navigate easily within the system to review, analyze, and report on data from user-friendly web-based interfaces that provide a single point of access for global organisations.

Riskconnect is committed to providing clients with the best customer service for the best risk technology, and to ensuring risk professionals are provided the leading edge in risk technology, allowing them to do what they do best... manage risk. Go Beyond with Riskconnect.

#1 Ranked RMIS in the World



Inform decision-making | reduce losses | improve productivity | optimise total cost of risk

All of these benefits are possible using Ventiv Technology's RiskConsole, a web-based risk management information system. Here are some examples of how we have helped clients:

Ventiv Technology
(Formerly Aon eSolutions)
8 Devonshire Square
London, EC2M 4PL

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Managing Director, EMEA
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www.ventivtech.com

- International mining giant Mosaic Company generated a 10.7% reduction in excess liability premium and reduced the data-gathering process for renewals from eight weeks to a fortnight.
- Tesco reduced indemnity spend; improved store safety; reduced accidents; and implemented successful risk-mitigation programmes with RiskConsole.
- Stagecoach Group uses RiskConsole to produce numerous reports at the click of a button; automatically matches claims with vehicle and depot; and accesses 20 years of motor claims and financials from RiskConsole.

Today, over 700 clients rely on Ventiv Technology to provide reliable and workable insights on all their enterprise-wide risk and exposure data.

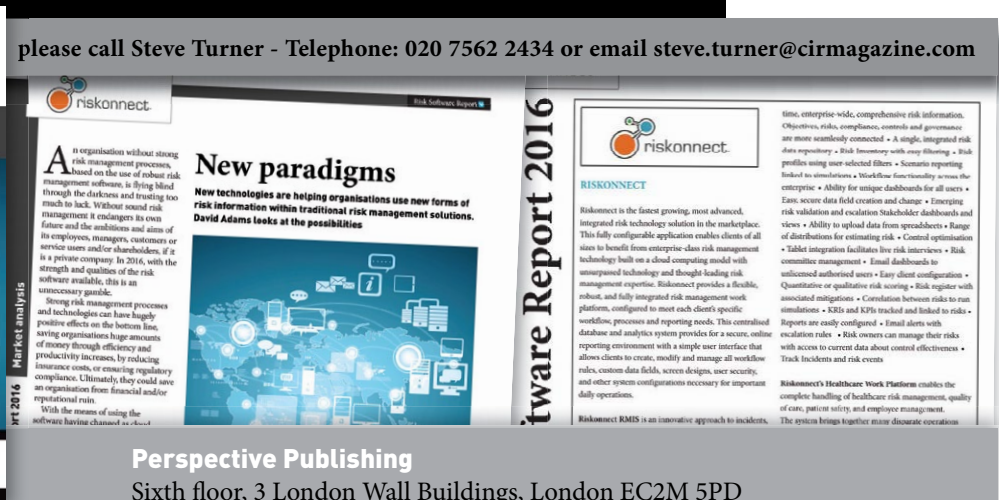
To discover how Ventiv Technology and RiskConsole can help your organisation visit www.ventivtech.com.

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