Enterprise Risk

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The official magazine of the Institute of Risk Management

Professional by experience: IRM's senior executive route / **Serious fun:** learning though play/ **Accentuating the positive:** maximising opportunity / **Analytics:** data-fuelled conversations

Future present: Amair Saleem of Dubai's RTA on the challenges and opportunities of rapid change and cutting-edge technologies

Enterprise Risk

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IRM is the leading professional body for enterprise risk management. We are an independent, not-for-profit organisation that champions excellence in managing risk to improve organisational performance.

We do this by providing internationally recognised qualifications and training, publishing research and guidance and setting professional standards across the world. Our members work in all industries, in all risk disciplines and across the public, private and not-for-profit sectors.

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Editorial

The proof of the pudding

I have been a writer and editor for 24 years this month. I can still remember my first day at work as though it were yesterday. There was a pall of cigarette smoke over the journalists working in the newsroom as they crashed out copy on unnetworked Amstrads with five-and-a-quarter-inch floppy disk drives. Motorbike dispatch riders arrived in the office to collect the news pages, so hitting deadlines was real.

The internet still hadn't arrived at the office, and desk research was done in the library. Reporters had to scour back issues of newspapers, keep cuttings files and book time on the Reuters newswire. But the majority of research was done out of the office meeting people, learning how to get sensitive information fairly and trying to understand stories as they unfolded in real time.

I have post-graduate qualifications, but not in reporting or editing. It would be a bit bizarre for me to do a course in journalism now given that I have taught undergraduates how to write for media based on my experience. Unfortunately, in my profession there is no formal way of having that experience recognised. After all of these years, I still have to rely on cuttings of my past work to demonstrate my abilities.

> **It was reassuring to know that they are following best practice and they are living up to the high standards they set their more junior colleagues**

Fortunately, well-experienced risk managers are not in that situation. IRM's senior executive route to IRM certification provides risk professionals a way of having their considerable skills and knowledge in enterprise risk management formally acknowledged. Those who apply need at least eight years' experience and have to prove that they can cut the mustard.

Our lead feature in this issue and a special report on the programme profile some recent successful candidates. For many, it was reassuring to know that they are following best practice and they are living up to the high standards they set their more junior colleagues.

"When I source risk professionals for my team I do ask for an IRM qualification or equivalent," says one. "If I am expecting people to come to my team with that recognition, then I should also seek that recognition for myself." Most say it has confirmed their credibility with boards and other professionals within their organisations and with key stakeholders.

So, while I probably have as many old war stories to dine out on as many of my counterparts in the risk management profession, there is no way of objectively verifying that I actually learned anything from those experiences.

Arthur Piper
Editor

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REGULARS

Digital risk qualification

With rapid technological changes disrupting all sectors, IRM is responding with a new Certificate in Digital Risk Management, as Carolyn Williams explains

Are we about to see a fourth industrial revolution? Our recent Risk Agenda 2025 research highlighted technological change as the biggest driver of uncertainty for organisations today. From self-driving cars to online medical consultations, new technologies including the internet of things, blockchain, artificial intelligence, robotics and data analytics are starting to transform how things are done and present us with a new landscape of opportunity and risk. Change has always been with us, but there is a feeling that what we are facing now is more extreme. This arises from both the speed of developments and the profound impacts they are likely to have on business models and on human activity.

Our research also uncovered that less than 40 per cent of the risk management community feel well equipped to understand these changes and support their organisations in this area. Part of our response to this is "Don't panic!" – the basic principles of good risk management will stay the same – the fundamental approach of building resilient organisations with robust processes, a healthy risk culture and strong risk communications will still be very much required, albeit able to move at a faster clock speed. The context, however, is certainly shifting with new risks to address and the potential for new tools and techniques to help.

Later this year IRM will be launching its new Certificate in Digital Risk Management. This qualification has been designed to equip risk practitioners and others to apply their skills in an increasingly digital world. We are working with leading academic and practitioner experts to develop world class study material which will cover how new technologies and digitalisation are disrupting businesses and changing the risk environment for organisations of all types. It will look at how to carry out digital risk assessments, provide a detailed grounding in cyber security principles and practices and also look at the ethical issues surrounding both privacy and machine learning.

The qualification will – naturally – be delivered and examined globally on a fully online basis. It will be a relatively quick qualification to obtain, involving a multiple choice question examination and about 180 hours of study over approximately six months. It has been designed on a standalone basis to provide both a supplementary "future-proofing" qualification for our existing members as part of their continuing professional development and also as an introduction to the subject for those from other disciplines. Enrolment will open in autumn 2018, and this will be publicised widely at that time, although you can get yourself added to our pre-registration list by contacting IRM. We are also interested in identifying potential examiners, question setters and module coaches, drawing on the skills that we have in our community.

> **Less than 40 per cent of the risk management community feel well equipped to understand technological changes and support their organisations in this area**

A combination of great risk management skills together with an up-to-date knowledge of the digital risk landscape should be an unbeatable combination for tomorrow's risk management jobs.

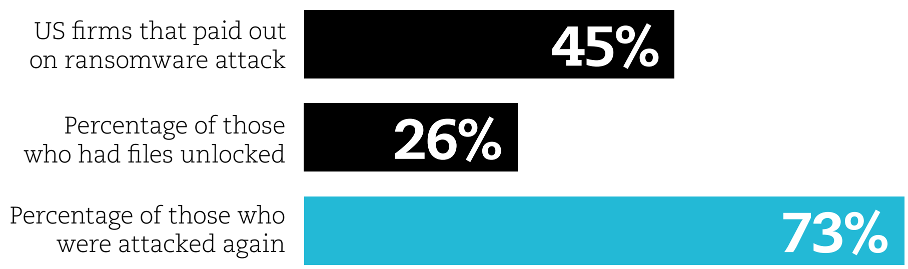
Carolyn Williams is IRM's director of corporate relations. Register your interest at: www.theirm.org/digitalrisk

Trending

DATA

The latest stories and news affecting the wider business environment as interpreted by our infographics team

Paying out on ransomware attacks does not work



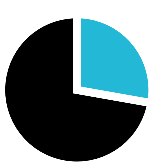
$49,060

Average value of each ransom paid globally

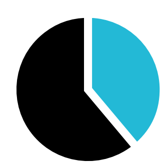
Source: Sentinel One Global Ransomware Report 2018

Conduct risk hits bottom line for UK and European businesses

Percentage of firms turning down business because of conduct risk issues:



28%
Globally

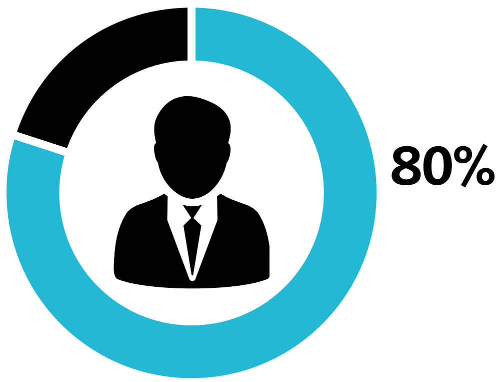


39%
UK and Europe

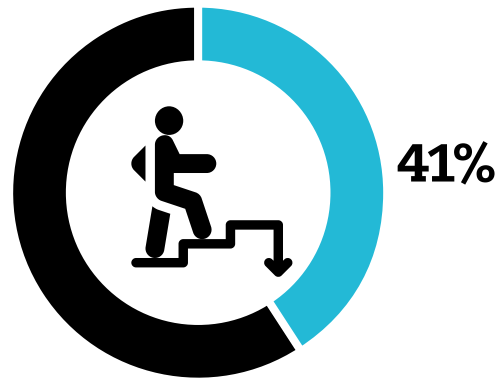
Source: Thomson Reuters Regulatory Intelligence – Culture and Conduct Risk 2018 survey

Who wants flexibility?

Executives say flexible working Is core to their employee value proposition



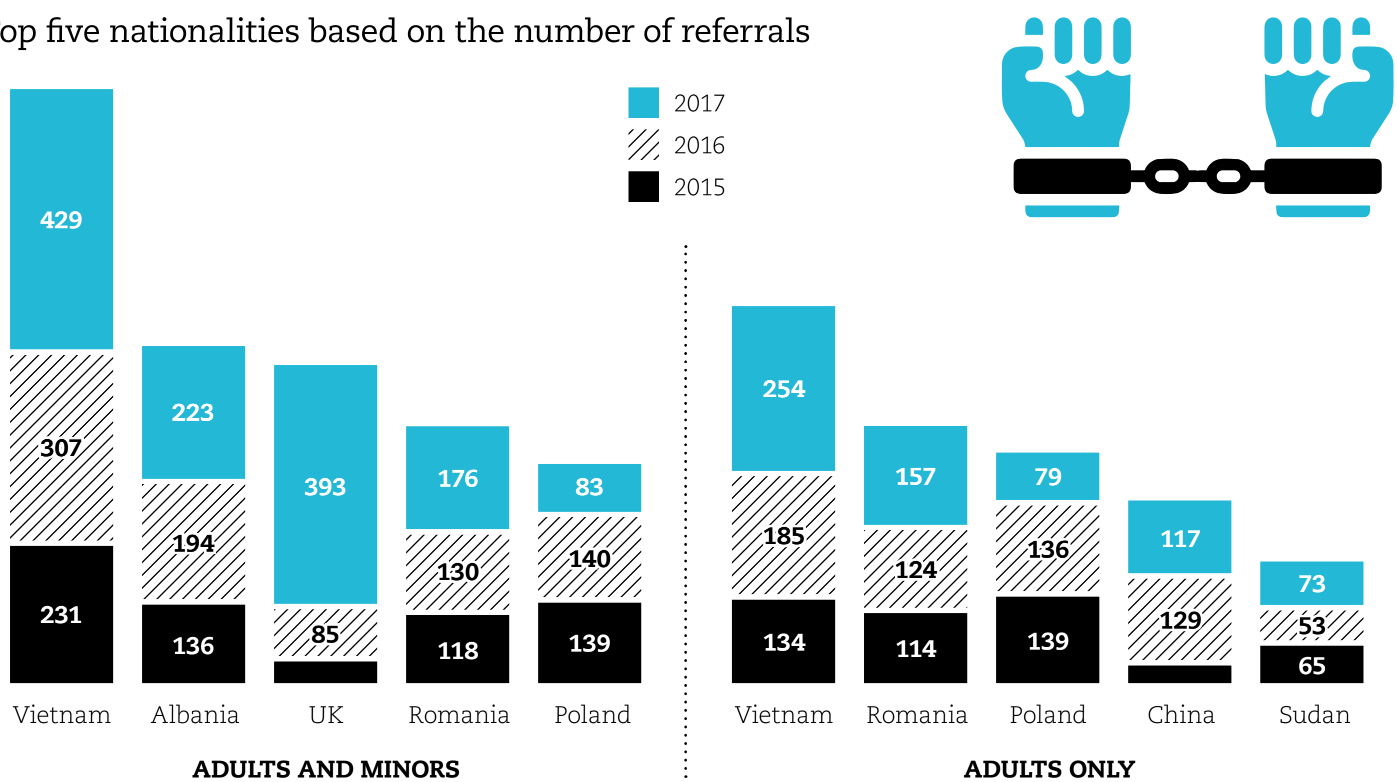
Employees who worry that flexible working impact promotion prospects



Source: Mercer Talent Trends Study 2018, Global Findings

Which nationalities are most likely to fall victim to labour exploitation in the UK?

Top five nationalities based on the number of referrals



Source: Gangmasters and Labour Abuse Authority – The Nature and Scale of Labour Exploitation across all Sectors within the UK

Future present

The Emirate of Dubai's transportation network is experiencing rapid growth and implementing cutting-edge technologies – both of which are bringing challenges and opportunities to Amair Saleem CFIRM, director of its Safety, Risk, Regulation and Planning Department

BY ARTHUR PIPER

In September 2017, the world caught a glimpse of the future in the Emirate of Dubai. Amair Saleem, Director, Safety, Risk, Regulation and Planning Department at the Roads and Transport Authority (RTA) of Dubai, watched with excitement from the ground as the public demonstration of the organisation's air taxi project got underway.

"While the demonstration was an outstanding success, there was significant effort from the organisation to get it to the point of flight," says Saleem. Those challenges included the system integration of a new type of aircraft, making sure the vehicle adapted to the location in which it would be operating and getting certification from the aviation authorities.

> **Without risk being a leading discipline in the project, it is questionable we would have ever even have started a flight test programme**

Definition

Definition was also a problem – just what is the Volocopter? The insectoid Volocopter is an autonomous aerial vehicle. It has a small capsule for a couple of passengers that sits beneath a large spoked wheel adorned with 18 mini

helicopter-style propellers. Powered by battery, it can fly for about 30 minutes and has a top speed of about 60 miles an hour. On the morning in question, the drone glided effortlessly over the sand against the backdrop of Dubai's modernist skyline.

"They are not a traditional aircraft – they don't have flaps or wings, and they don't generate lift," he says. "The project was also a lot more involved from an engineering software approach."

Saleem dealt with the air regulator by coordinating a discussion with the German-based supplier to come up with a risk-based submission that could demonstrate that the aircraft could fly safely within operational parameters. It took a while, but they achieved air-readiness approval that made the test flight possible – and even got a licence for the vehicle, which is the equivalent of a number plate for aircraft. "Personal use is a longer-term project," he says, "but we are looking for a commercial application for the project by 2022."

Safety first

Behind the scenes, RTA leadership stressed from the outset that the ground-breaking initiative had to be driven by a safety-first ethos. Saleem says that this approach meant that all of the critical assessment points for the project had to be risk based.

That has put his team at the centre of the initiative from the beginning. For example, there are a surprising number of businesses operating in this field, so selecting a suitable craft was not straightforward. For each candidate air taxi, Saleem needed to conduct separate risk assessments covering system, project and safety elements. These assessments formed the basis for selecting which vehicle would have the best likelihood of success given the safety requirements, the short timeframe and performance levels specified by RTA.

Even after selection, the risk assessments of the system and its integration into RTA's operational environment continued, and they were also the basis on which the organisation engaged with the Civil Aviation Authorities to give them structured reports on the risk levels that the air taxi could potentially

pose. Finally, the assessments became the drivers for the flight test programme where focus switched to effective risk mitigation.

"Ultimately, we ended up with the equivalent of a safety data file which was used by the Civil Aviation Authorities to make a final determination of the safety levels achieved by the aircraft in order to receive an authorisation for the final demonstration flight," Saleem explains. "This approach provided complete transparency, as we worked through the project timescale, allowing the concerned parties to make informed decisions. Without risk being a leading discipline in the project, it is questionable we would have ever even have started a flight test programme."

> We use risk management as a key analytical tool to understand the consequences and impact of potential failures of the system

Rapid growth

RTA is an interesting place to work as Dubai is an expanding city state. Its population rocketed by 700,000 to 2.7 million in the five years to 2016. Public transport usage is increasing rapidly putting pressure on infrastructure, which needs to constantly expand and adapt to the needs of the growing city.

The authorities are keen on meeting high customer expectations, investing in new technologies and improving the image of the city itself. Given the apparently daunting rates of growth, RTA often works in what Saleem describes as an "accelerated manner". By 2009, it had built a driverless, autonomous metro system – with 76km of track and 47 stations – in just five years. The kilometres of roads in the emirate increased from 11,756km in 2011 to 16,806km in 2017.

"Opportunities arise due to the clear, supported and structured transportation strategy, particularly when seeking the introduction of new technologies and innovative approaches," Saleem says.

For example, the 10.6km Dubai Tram line, which opened in 2014, chose a power supply that did not depend on overhead lines. The trams draw power from charging points spaced along the track. "We decided to go with an aesthetic power supply system, although at the time this was a relatively new technology and the first application in the Middle East," he says. "It offered operational advantages as well as being in keeping with the image of the city."

Scale and complexity

Not surprisingly, the risk management function faces challenges of scale and complexity. As well as having

> **By getting an early indication of the potential event, we can control the risk response and mitigation measures and try and avoid escalation**

to rapidly implement large-scale heavy infrastructure projects safely, new technologies are making the interaction between the diverse elements within those services and between other networks necessary.

"All transportation systems are becoming more complex in the functions that they provide," says Saleem. "The interfaces to and dependencies on other systems become more complex, making the impact of business disruption and our response to those incidents more difficult to analyse and understand from a risk perspective."

Take the kind of automated ticketing system that most customers in modern cities take for granted – Oyster in London, Nol in Dubai. They are super simple to use because a passenger can jump on a tram at one stop, take the marine taxi at another – then a train – all by using one card. The Nol card system is centralised, but the card readers are distributed over several transportation systems. If the central business system fails, there could be chaos throughout the network.

"To avoid this, we use risk management as a key analytical tool to understand the consequences and impact of potential failures of the system," Saleem says. Each risk assessment is implemented over the full life cycle of the system from inception to operation. Risk management techniques probe potential weaknesses in systems hardware and software, in the business continuity strategies and disaster management approaches, and in cyber security resilience and many other areas. "In this way, risk management fully supports critical transportation infrastructure to achieve optimal availability and effectiveness," he concludes.

ERM plus

Saleem says that the risk function has adopted a classical Enterprise Risk Management (ERM) approach, which has been augmented to cope with the scope of RTA's business. Saleem has seven managers that are formally under him. One of those is specifically responsible for ERM, but the others are spread throughout the business in specific risk areas.

"One of the advantages of our approach is that you put all of the risks under one roof, rather than having it spread out in the different business silos," he says. "We don't want to restrict ourselves to looking at just the key business areas; we want to make sure that we are looking proactively at where those business areas cross and intersect too."

Saleem says he takes a similar perspective to the ISO standards on risk management. For him, that means that everything at its core is perceived from a risk-based perspective – as the recent assessment and implementation of the air taxi illustrates.

"We regard transportation systems as extremely integrated systems where poor performance in any area will have a ripple effect through the business and impact our service commitment to our customers," he says.

In real life, if Saleem's team does not adequately identify risks during a project delivery phase – from planning and design to manufacture and implementation – those problems will surface after the initiative has gone live. "What we have found is that we can enlarge the conventional coverage of the ERM system to act as a central engine to cover and integrate risk-based functions. In this way we have achieved a form of seamless risk assimilation across multiple management systems, strategies and projects," he says.

Finally, he says, the risk team continues to learn from and adapt to changing operational circumstances – and from other functions in the business, such as health and safety, accident investigation, security management, asset management, crisis management and business continuity.

Analytics and beyond

Given the highly automated nature of many of RTA's transportation systems, it is not surprising that the risk function uses data analytics to a significant degree in its methodology. He anticipates using artificial intelligence (AI) systems to mine big data sets in the organisation – and to provide more value to the business.

> Your self-assessment is meaningless – let a professional society such as the IRM verify and validate your standing through a transparent and independent process

RTA already deploys AI systems in its Enterprise Command & Control Centre – EC^3 – the biggest integrated transport command centre in the world, which went live in 2017. Saleem was the operations project manager on the initiative. It currently receives over 75 million records a day, and the system contractor has set up an AI system to flag up incidents that could be a cause for alarm. Put simply, the AI scans historical data sets, such as those in traffic flows at specific hours, and can activate an alarm to the system operators if an incident is occurring that sits outside of the sensitivity margins that have been set.

"This function supports us in managing risk as we get an early indication from the system telling us that an incident or abnormality has occurred," he says. "By getting an early indication of the potential event, we can control the risk response and mitigation measures and try and avoid escalation. We can also feed back into the risk registers and business continuity plans information on the adequacy of our response."

He views the extension of such advanced technology initiatives as innovation projects because for the risk team they carry too many unknown variables in real-life situations to be depended on today. For risk professionals, AI and other advances are likely to provide significant aids for risk analysis with big data sets and broader reach.

"I am somewhat sceptical that these automation technologies will replace risk experience in the short to medium term," he says. "You will always need people that challenge the given state and what I call, 'ask the stupid question'. The stupid question often transpires into a new perspective and understanding – it was just never raised before."

While embracing new technologies for what they can bring to the table, Saleem also sees them as posing a big danger for risk managers who allow themselves to become too dependent on their results. He values risk professionals who can join the dots and think of novel ideas, especially where data may be weak or non-existent.

"In the absence of this way of working, you get very static risk registers which are not truly horizon scanning and are exposed to unconventional real-world events," he says. "We must recognise that the world and the environment around us is changing and changing very rapidly – the risk registers must be equally dynamic. In short, we can choose to be reactive to the changes or predictive; I would still wager on risk professionals and not the technology at this time to accomplish this task."

Recognising experience

Saleem has recently gone through the senior executive fellow route to IRM certification – a scheme designed specifically for experienced risk professionals who wish to have their skills and knowledge in ERM officially acknowledged. It is aimed at those with at least eight years' experience and comes with the CFIRM designation, which is the highest internationally recognised accreditation available to risk management practitioners.

"If you consider yourself a true and excellent risk professional at a senior level then it's not a choice: you have to go for the qualification," Saleem says. "Your self-assessment is meaningless – let a professional society such as the IRM verify and validate your standing through a transparent and independent process. If you achieve the qualification then you know, your management knows, the risk community knows and accepts your professional status."

The process requires commitment. He advises those who go through it to thoroughly review their experience and knowledge, ideally with support from a peer to act as a sounding board and devil's advocate. "The IRM application must be treated very seriously with appropriate time and response weighed," he says. "Don't make an application if it's a half-hearted effort – wait till you believe you can address the IRM criteria and obtain the recognition. In more simple risk terms, if you are a risk expert then mitigate the failure scenarios in your application."

Professional by experience

Seasoned risk professionals undertaking the senior executive route to IRM membership report a worthwhile, if testing, experience

BY JO POWELL

Since the IRM launched its senior executive route to IRM certification, experienced risk management professionals have had the option of using it to gain full membership of the IRM by virtue of their years of hard-earned skills and expertise, rather than following the traditional path of undertaking the IRM diploma.

The scheme is designed for senior risk professionals with at least eight years' experience, and it allows them to demonstrate a parity of understanding and experience with certified members and certified fellows who have studied the Institute's International Diploma in Enterprise Risk Management.

While there may 'only' be an application form and interview involved, as a number of recent successful applicants will attest, the assessment process is far from just a tick-box exercise – and is a very worthwhile experience.

The application form asks for real-world evidence from an applicant's work history that demonstrates understanding of the principles and practices of risk management as set out in the IRM's professional standards, appropriate experience of developing strategies and plans which reflect an organisation's risk appetite, operational experience of managing the risk management process and experience in communication, change management

> **A natural choice for someone with over 10 years' experience**

Below: Claudina Castelli

and people management.

Applicants making it past this first stage are then invited to attend a competency-based interview, where they are asked to give more information about their work experience and demonstrate how they meet the IRM's professional standards.

Toni Villanen, director of risk management advisory services at global consulting firm Alvarez & Marsal, took part in the scheme during the summer of 2017. "The senior executive route felt like a natural choice for someone with well over 10 years of risk management experience and an educational background in risk management," he explained.

"IRM certifications are highly regarded and so I saw value in getting my expertise recognised through the process. I had already been involved with the IRM through special interest groups and multiple short courses, and thought certification would fit well with my idea of getting even more active and engaged."

The process of putting his application together pushed Villanen to consider past learnings and weigh up which approaches had truly worked in terms of driving measurable value through improved risk management. He also saw the interview part of the process as a real positive: "It certainly was thorough, and it was also a fine meeting of minds and I greatly enjoyed interacting with the interviewers. All in all, I found the whole process positive and engaging, strengthening my motivation to become more involved with the IRM in the future."

Professional accreditation is ever more important

Villanen says that his new certification is a formal recognition that he is proud of and, perhaps more importantly, that it offers him "full-access membership to a leading club of risk thinkers". He says that interaction with the community of IRM members is a great avenue to keep his own thinking fresh, to influence the community by sharing his own experiences of what works and what doesn't, and to get together with others to consider the future direction of the profession. "The IRM is as strong as the quality and number of its members," he says. "Getting certified is a great way to become associated with the IRM. It also allows for benchmarking oneself against the good practice requirements of the assessment process."

Claudina Castelli, who works as the senior enterprise risk manager in Transport for London (TfL) and was previously risk lead within London Underground's renewals department, also saw the senior executive route as a practical way to achieve formal recognition of her

Above: Serrina Galleymore

skills and experience in an industry where professional accreditation is becoming ever more important.

"I can't speak for all industries but in TfL and in the construction and infrastructure industry, there is a growing awareness of the need to improve risk management – both by adopting better systems and through appointing accredited professionals to ensure such systems operate effectively," says Castelli. "The stakes are often high and with increasing pressures on margins, fewer organisations are prepared to risk – pun intended – leaving such a key function to possibly less experienced or trained individuals.

"I was aware that being promoted to an enterprise risk manager role would expose me to numerous departments and individuals who may not immediately relate to my past training and experience in risk management. It was essential for me to find a means of formalising my competence in a manner consistent with other professionals."

Making an application does require a commitment

Castelli says that the time commitment needed to gather supporting data and condense it into a coherent application should not be underestimated. "It was both painful and refreshing to retrospectively reflect on and populate the missing details when looking back at some of the real-world examples of work from throughout my career," she says. "Painful, as with hindsight solutions appear so obvious when problems had occurred, and yet refreshing to analyse the thought process as one tracks developments through to the desired – and in some instances excelled – outcomes."

Although Castelli's employer supported her completing her application during working hours, she struggled to commit to giving it the uninterrupted attention it needed and generally worked on it from home. In addition to receiving support from her partner, her manager also provided a technical peer review of her application.

"I tasked the same two people with sharpening my interview skills," adds Castelli. "They each regularly conduct interviews and were able to test my knowledge and resolve, which prepared and calmed me for the interview. The interview itself was far more forgiving than I expected and the panel was expert at extracting the best from candidates."

Serrina Galleymore, head of risk and assurance for Faster Payments Scheme Limited and risk integration director for the New Payment System Operator (NPSO) Limited, says she chose the senior executive route because it provides her with credibility and global recognition of her competency as a risk professional, and allowed her to focus on her teams and her objectives without the distraction of further extensive study.

"I wanted to give my Board and my teams the confidence that I had the competence to both strategically lead and technically support them in the development, implementation and enhancement of effective enterprise-wide risk management frameworks and processes. I didn't want to spend more endless hours studying to gain a diploma just to prove that I can do what I do every day. While the senior executive route process was time consuming, it could have been more so – it really depends how familiar each applicant is with the IRM standards and how well they understand them and can demonstrate how they apply them in practice. For me, the exercise of mapping my experience and working practices to the IRM standards reinforced that I do follow best practice and carry out my work in line with the standards."

Galleymore also enjoyed the interview part of the assessment process. "The interview itself was robust and challenged all areas of my risk knowledge and experience. What surprised me the most was that it really was fun. The assessors were experienced in my industry. The payments industry is not vast, so it was great to be interviewed by people with similar experience, knowledge and understanding, meaning the interview was aligned to my sector and career."

The credibility gained as a certified member of the IRM is important to Galleymore, whose other professional qualifications are in internal audit. "When I source risk professionals for my team I do ask for an IRM qualification or equivalent, and if I am

> **"I didn't want to spend endless hours gaining a diploma just to prove what I do every day**

Above: Toni Villanen

> I didn't expect to be asking myself questions after the interview!

expecting people to come to my team with that recognition, then I should also seek that recognition for myself."

A widely recognised credential

Having recognition from the IRM was also important to Daniel Imhof, head of TechOps portfolio management and former risk director at Swiss-based multinational healthcare company Roche. His department drives risk management and project portfolio management for business and capital expenditure projects for Roche's pharma global technical operations.

Imhof was already an associate in risk management (ARM) but believes that certification by the IRM is becoming the most widely recognised risk management credential in the world.

He had wanted to do the IRM diploma for many years, but because of a heavy work schedule was never able to. "When I heard about the senior executive route, I thought this time I don't have an excuse, and it is focused on enterprise risk management, which is exactly what I need it for," he says.

"Most of the effort needed for the application goes into clearly describing your achievements in the application form, which focuses not only on responsibilities, experience, lessons learnt and insights, but also on organisational capabilities. As space is limited you have to choose the parts of your career which are really relevant for the application. It certainly helped me to consolidate my own business case as I had to pick the best elements to represent myself and formulate them concisely."

Like Galleymore, Imhof also very much enjoyed his competency interview. He says it allowed him to give plenty of examples from his long career in risk management but was also very thought provoking. "The discussion gave me some new ideas in relation to risk velocity which I could further explore within Roche," he says. "I always considered this to be less applicable in the pharma industry, where typically product development cycles are very long and risks do not change dramatically every month, but during the discussion I realised there might be some risk areas where it would make sense to look at risk velocity in more depth.

"I did expect the interview to be very specific, investigating whether I had all the required capabilities – but I did not expect to be asking myself questions after the interview and basically questioning some of my personal assumptions!"

In addition to receiving a well-respected accreditation and the benefits that brings by way of peer recognition, certified members using the senior executive route will, like all members, go on to reap the rewards of improved networking through the IRM and the opportunity to use it as a place to improve skills and to share best practice and experience. And as Imhof discovered, there may also be the added benefits of learning from the process to take back to the workplace.

To find out more about the senior executive route to IRM certification, go to: www.theirm.org/ser

Below: Daniel Imhoff

Serious fun

When Bayer Benelux wanted to implement its approach to risk management, it turned to a methodology developed from children's toys for inspiration

BY SARAH WINT

The risk management team in the Benelux region at the German life sciences multinational, Bayer, has spent the last year devising and piloting a new technique for risk assessments using a surprising product usually associated with children's toys. The team has been using the LEGO® SERIOUS PLAY® (LSP) approach, which applies bricks specially developed by the Lego Company for the business environment. The team believes it is among the first risk managers to use the LSP method in risk assessments.

The function wanted to move away from traditional ways of identifying and analysing risk where information collated during the exercise is typically only provided by a minority of the participants. David Lannoy, risk and process manager in the Benelux, says that the old style of risk assessments usually entailed 20% of the participants delivering 80% of the comments on risk. Lannoy and Helene Peters, head of risk and process management in the Benelux, say LSP now ensures that 100% of participants in its risk assessments contribute from their perspectives.

Methodology

Lannoy and Peters put the rise on participation down to LSP's methodology. It comprises three steps: building an individual model that represents an employee's contribution to the organisation's objectives; joining that

“It is experienced as a team-building exercise but you are performing a risk assessment exercise through-out the whole day

Image credit: Ekaterina Minaeva / Shutterstock.com

Above: David Lannoy and Helene Peters

same Lego model to other models to create the overall business environment, 'shared model'; and identifying the factors, 'agents', that could impact on the business model.

If that sounds daunting, participants in the project team are asked to have a play with the blocks to build a simple model. This puts everyone at their ease and ensures people feel comfortable building with Lego bricks. Lannoy, who is visiting the IRM's London offices with Peters, presents me and Peters with some blocks. We both receive the instruction to build ducks and while both finished models look vaguely like ducks, they have been constructed differently.

Lannoy says that the demonstration illustrates an important point – the individual contribution each team member brings to the process; the same instructions were interpreted and worked out differently, made visible through the 'ducks'. The next task participants are asked to carry out is to construct a more sophisticated model, such as creating their ideal holiday location from the bricks. This helps develop confidence and sophistication with the blocks.

Assessment

Once the team is satisfied with their Lego building techniques, it's time to move on to the risk assessment. This starts with each member being asked to build a model representing how their work activities contribute to the objectives of the company, their division or department. At the moment, Lannoy and Peters are focusing on the short-term objectives – spanning one to two years – in their exercises, though they hope eventually to build a construct around longer-term objectives.

Once these models are built, each

member presents it to the rest of the team and explains how it contributes to the company's objectives. As well as having the added value of performing a team-building exercise, members become aware of each other's perspectives and the way their individual roles contribute to the team's overall performance.

"Yes, it's experienced as a team-building exercise but, in fact, you are performing a risk assessment exercise throughout the whole day," Lannoy says. "You learn a lot about people around the table, how they perceive their job and their work environment." These perspectives are often missing from more traditional approaches. In addition, participants perform the Lego building exercises with a very positive frame of mind, focusing on what each of them does to make the organisation's objectives happen.

Questioning

While explaining their individual models to the team, other members of the group are encouraged to ask questions. For a sales function model, for example, the questions could revolve around what is driving the model: the quality of the product, or the customer relationship. Such questions and the chance to reflect on the answers are critical to the success of the exercise, says Lannoy. The team does not move to the next stage of the process until it is clear they all understand and accept the results, which underlines the fact that the full engagement of the whole team is key to the approach's success.

The second phase of the risk assessment requires the team to work together to build a single shared Lego model by linking their individual creations together. The aim is to create a physical summary of the team's activities and objectives.

Peters emphasises that by joining the individual parts together, the team presents a common, shared model where everyone in the project team feels represented and aligned on the objectives. It also captures all the key drivers of the business activities at the same time.

In this shared view, key business drivers, such as customer focus, product quality or compliance, become clear. When the model is finished, each team member is asked to inspect it, reflect on whether everyone is represented and consider if it adequately explains the business model. Changes can be made with the agreement of each team member in a very hands-on experience. Peters says that the process is extremely valuable when the team is comprised of different staff functions who are less aware of each other's contributions to the business's operations or even have differing priorities; it creates a common ground and understanding, also for each other.

Identifying risks

The third phase of the process is to ask the team to identify the risks and opportunities in the business environment. However, Peters and Lannoy are careful not to use the terms risks and opportunities in their sessions but to call them agents, according to the LSP methodology, or factors. This ensures that the process is kept neutral with no positive or negative connotations interfering with the creative process at this stage.

When the team has identified the factors that affect their work they are asked to position them around the shared model depending on their frequency and potential impact on the business environment. Agents that occur frequently are placed near the Lego model. Factors occurring infrequently are placed further away. As a final step, the team flags all the agents that according to them have negative or potential positive impact on the business environment by applying red or green flags.

Peters and Lannoy agree from their experiences with LSP that this part of the process is particularly successful at identifying business opportunities, which the traditional risk assessment methods often fail to do. This, they say, is also true for risks, with the LSP team builders identifying new risks of which they were previously unaware. A further advantage is the ease with which risk managers can prioritise the risks and opportunities simply by examining

> **The function wanted to move away from traditional ways of identifying and analysing risk where information collated during the exercise is typically only provided by a minority of the participants**

Opposite and above: Serious fun in action at Bayer Benelux

where the team has placed the factors on the business model landscape.

Creating relationships

So why have Peters and Lannoy taken a big leap of faith and asked colleagues working in the traditional roles of life sciences, legal and finance functions to spend a full day working with Lego bricks? Apart from the advantages already mentioned, they say Bayer actively encourages innovation in all spheres of the work. They say the activity brings out consensus-based decision making and reinforces ownership of the business activities, risks and opportunities.

There's also another factor – the move away from risk management being perceived as a controlling function and towards being a considered a business partner or "coach". Lannoy says, "There's a trend in the profession with people not wanting to see the risk manager as a controller. They want to perceive the added value in the contribution and by doing this type of exercise, we create that relationship with the business".

Peters and Lannoy were provided with the trust and resources from Bayer Benelux to devise the programme and pilot the first exercise last year. The initial project team to take part was a rather critically but open-minded group from the pharma division. Surprisingly, it has become their best promoter within the rest of the company.

"They were positively surprised about the entire workshop and the outcome of the day," Peters says. "Throughout the whole day, risk wasn't mentioned once, as it can be intimidating, but nevertheless we still identified risks and opportunities related to their business objectives."

Lannoy posted his experience about the pilot project on his LinkedIn site and was surprised to see what a stir it caused. As well as the praise for using such an innovative method, there was equal criticism. Lannoy says he was at pains to point out the method is only for risk and opportunity identification and prioritisation. An evaluation of the risks and opportunities will still need to be done by an investigation of the impacts following research. This concluding bit is still part of the traditional risk assessment processes.

> **The beauty of the method is its flexibility, which allows them to adjust their service to the participating project team's requirements**

Improvements

So how can the programme be improved? Peters and Lannoy say getting a project team to commit to a whole day for the exercise is still a sticking point. But the pilot project was so successful that curiosity about the exercise has become infectious. They also say that the beauty of the method is its flexibility, which allows them to adjust their service to the participating project team's requirements. This serves to ensure the team feel they are actively choosing to sign up for a day's risk assessment with LSP rather than having it imposed on them.

Further ahead, Peters and Lannoy are looking to adapt the programme to consider longer-term risks and opportunities. At present, it only focuses on the narrower range of one to two years. The ability to use this model for strategic risks and opportunities is very attractive. "Bayer has created an ecosystem where colleagues can learn from each other," says Peters. "We can cross-fertilise our risk management and see where else it can benefit the company."

Sarah Wint is an assistant editor.

Accentuate the positive

The Open University and the Royal Veterinary College have been focusing their efforts on maximising opportunity management

BY LOUISA ALLEN AND IVANA VASIC

There have been a few occasions when we have sat in a risk discussion with executive colleagues and someone has said, "the risks and opportunities for this course of action are …". Of course, as risk managers we are delighted that risks are being discussed at a high level, but there is always a disappointment in the terminology used. Somehow, opportunities are perceived as distinct from risks, and risks are perceived as only negative.

If we go back to the origin of the word "risk" in classical Greek – think Homer – its meaning is "root" or in Latin, "cliff". In *The Odyssey of Homer*, the difficulty avoiding the sea is couched as both a threat, a rough sea leading to possible death, and an opportunity, grab a fig tree and escape on a turtle. Many years later, as the world opened up in the 16th century, risk became known as "to dare, to undertake, hope for economic success". There is a nod there in the direction of risk offering opportunity. Maritime insurance then veered risks off into the realm of quantifiable losses and exposures which solidified in the course of costly disasters, all which made threat management real and necessary.

Today, we need only to look at Amazon and Tesla to see how threats and opportunity are two sides of the same

> **In *The Odyssey of Homer*, the difficulty avoiding the sea is couched as both a threat and an opportunity**

> **Now, more than ever, it is the opportunities that matter for long-term sustainability**

coin. Threats can bring opportunities and opportunity can bring threats.

Shifting to opportunity

This article illustrates the way we have shifted our organisations to enhance opportunity management. The higher education sector is going through unprecedented change in the form of a new regulator (Office for Students), decreasing funding for research (amplified by Brexit), and students' costs of study being on an upward trajectory, to name but a few. Universities must navigate these changes and still attract students, funding and the best staff against ever-increasing competition. We hope to share how a proactive approach to managing risks in a turbulent environment is most effective if it also involves proactive opportunity management.

The Open University (OU) has been the driving force for opening up higher education to people across all the nations of the UK since it was founded in 1969, and our influence spreads across the world. Since the introduction of student loans, the part-time market has been in decline, resulting in fewer students studying at the OU. In response to this increasing threat, the University is carefully examining how it achieves financial sustainability with strategic opportunity responses.

The Royal Veterinary College (RVC) is 225 years old; the largest and longest-established vet school in the English-speaking world, offering undergraduate, postgraduate and CPD programmes in veterinary medicine and nursing, and the biosciences. Its established strategy of seizing opportunities has resulted in success on all measures over the years, including student satisfaction and employment, teaching and research excellence, clinical practice and faculty development, to name a few.

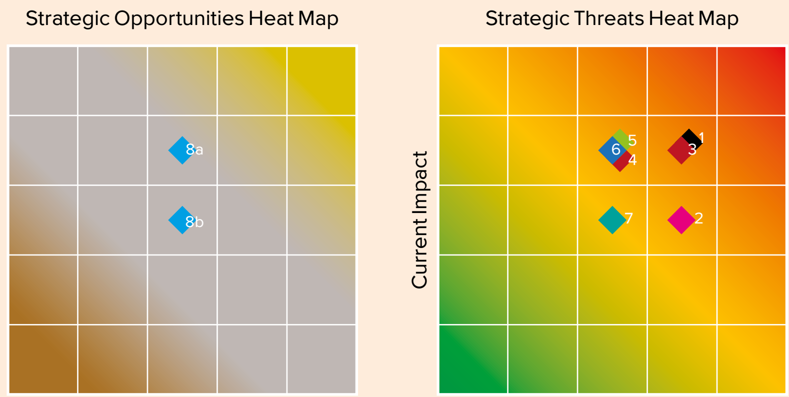
Now, more than ever, it is the opportunities that matter for long-term sustainability. Given the stark difference in the approaches and histories between these two institutions, it is helpful to consider how they approach opportunity management. So how do these two institutions harness opportunities?

Changing the visual

Red, Amber, Green – or RAG status – does nothing for opportunity management. If any organisation identifies a significant opportunity, it will want to assess the benefit to the organisation's objectives. If the benefits are worthwhile, the organisation will want to move

> Risk registers can be dangerous in isolation as they create actions to managing risks, which then may work in addition to business and operational planning actions

STRATEGIC HEAT MAPS



Source: *The Open University*

these into a reality, as well as considering the inherent risk.

The OU uses *bronze*, *silver* and *gold* in mapping opportunities on a spectrum. We strategically assess opportunities that will lead to extensive improvement, gain and benefits. Our risk response actions aim to then move bronze and silver opportunities to golden opportunities. In essence, we are making the likelihood of success more robust by tackling the risks that come with opportunities. This is separate to ongoing risk management and mitigation. The figure above illustrates the OU's opportunities continuum for two strategic opportunities alongside the traditional threats heat map.

Integrated approach

We have found that opportunity management works best when integrated with key strategic, operational planning and performance measures. Risk registers can be dangerous in isolation as they create actions to managing risks, which then may work in addition to business and operational planning actions. What any organisation does not want is multiple and misaligned sources of action. At the OU we have embedded a tool (*Integrated approach to action planning*) which encourages colleagues to consider the effect on objectives and key performance measures of every opportunity and threat.

Starting at the far left, the OU always initiates risk analysis against its objectives. The second column, titled "confidence", is important and should be underpinned by best forecast data and stakeholder/expert opinion to minimise uncertainty. Often risk assessment is based on past performance extrapolated as intelligently as possible, but the further out you go the more uncertain it gets. Therefore, we use "confidence" in what we know and what we think will happen.

Depending on the severity of the risk, colleagues can select the appropriate action – thereby creating a much more nuanced approach to risk appetite.

Opportunity in risk appetite

Risk appetite has to be developed to manage an organisation's finite resources in both pursuing opportunities and managing threats. If all available time, effort and money goes to reducing threats there can be little left over for optimising opportunities. At the OU determining risk appetite helps in making a strategic assessment of risks the organisation is willing to take in order to pursue its objectives.

We have created a differential approach to managing risks to our key impact areas: reputational, financial, operational and compliance. Our board annually reviews the overarching risk appetite approach to agree the extent of risk they are content for the University to take to achieve key objectives. Just like an individual's risk appetite changes during their lives (remember the risk taking we did when we were teenagers?), the OU's risk appetite will ebb and flow to reflect its objectives.

The tools illustrated here are ultimately enablers of better decision-making and opportunity assessment. Once risk appetite is clearly communicated to staff, the organisation's speed of decisiveness in taking opportunities improves too. At the OU this has been witnessed by the creation of a Major Change Board which uses risk appetite as a tool to decide which change initiatives attain funding. Of course, decisiveness can mean getting somewhere before the competition. In the currently turbulent environment, how do we set up our organisations in an agile fashion so that opportunities and their assessment happen quickly and effectively?

Learning from history

With a thorough understanding of institutional risk appetite, the RVC executive are enabled and encouraged to bring forward opportunities, assessing them on the potential positive and negative benefits simultaneously. However, on a regular basis the risks taken are reviewed in search of "lessons learned". In aid of this, all decisions involving uncertainty or risk are captured on a schematic that describes their alignment with strategic objectives, detailed anticipated benefits and risks (including mitigation), and challenges. A review date is set to reflect on the outcomes and see how accurate

> The lesson, perhaps, is thinking about how to enable your business, removing internal barriers to good decision-making, and implementing those changes proactively

these predications might have been, helping uncover weaknesses and unanticipated impediments to making the most of opportunities.

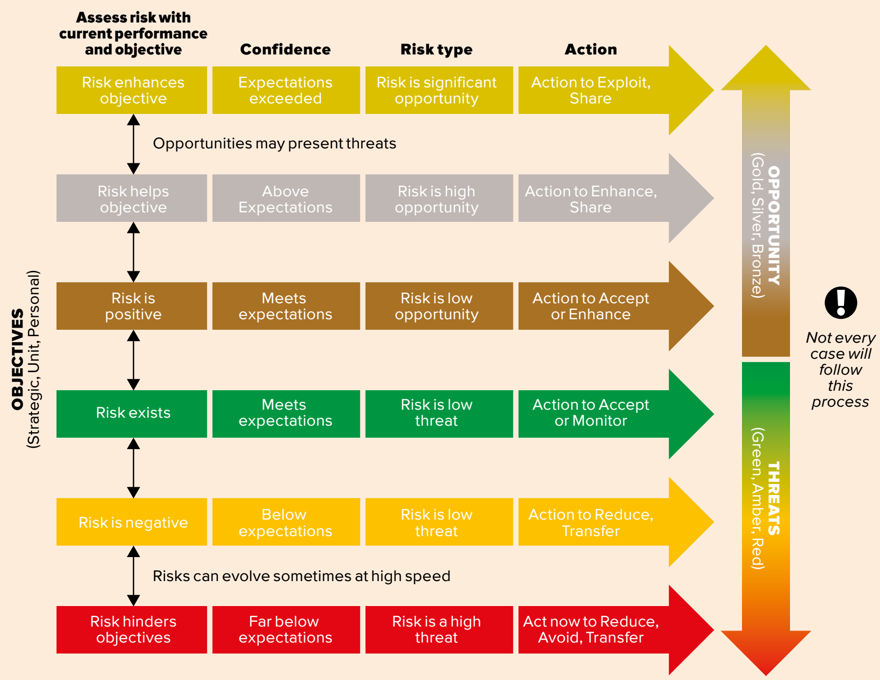
Creating an agile institution

Our sector is highly regulated – the statutory duties are onerous and require all decisions to go via committee, sometimes several. As an example, a typical university might have 50 committees with decision-making responsibility (60 at RVC with only 1,000 staff, and 45 at the OU with over 3,500 staff) – perhaps unparalleled in for-profit companies. The burden of accountability can also be an inhibitor of agility: an essential ingredient in seizing opportunities. RVC has sought to shorten the approval process for decisions aligned with risk appetite by creating a number of strategic action committees – championed by senior leaders.

The lesson, perhaps, is thinking about how to enable your business, removing internal barriers to good decision-making and implementing those changes proactively. Risk management might be traditionally seen as value preserving. Our hope is that a greater number of risk managers will enable their boards and decision-makers to see their risk managers as pivotal to value creation.

Louisa Allen is the strategy and risk manager at the Open University, and Ivana Vasic is the strategic planning and risk analyst at the Royal Veterinary College.

INTEGRATED APPROACH TO ACTION PLANNING



Source: *The Open University*

OU'S HIGH-LEVEL RISK APPETITE STATEMENT

	Averse Avoidance of all risk	**Minimalist** Preference for ultra-safe	**Cautious** Preference for safe delivery options	**Open** Willing to consider all delivery options	**Hungry** Eager to innovate
Risk Factor	**Shaded areas represent risk appetite**				
Reputation				■	
Operational a) Innovation of approach				■	■ *In some aspects we may be more hungry*
b) Implementation			■		
Financial a) Core income			■		
b) Core expenditure				■	
c) New income & expenditure				■	
Compliance	■				

Source: *The Open University*

Creating data-fuelled conversations

Risk management at Northern Programmes has introduced data analytics to improve the way stakeholders understand risk and use it in decision making. The first lap of the journey has been both challenging and rewarding

BY RICHARD BENDALL-JONES

> The first task was to identify the data sources, the relationships between systems and a tool which could corral these data streams

Network Rail Infrastructure Projects – Northern Programmes – is a project delivery organisation set up to deliver complex, multidisciplinary rail projects in the north of England. Its portfolio of work includes the recently commissioned and award-winning Northern Hub Alliance, connecting Manchester Piccadilly, Oxford Road and Victoria stations for the first time. It also includes the ongoing North West Electrification Programme and the multi-billion TransPennine Route Upgrade, as well as a rolling programme of enhancements schemes, involving new stations, depots and platforms across the region to accommodate the new trains which will be arriving in the area. All of this forms the Great North Rail Project, which aims to create rail capacity in the north of England for 40,000 extra passengers on 2,000 extra services every day by 2022.

The challenge

Data analytics is the process of examining data sets in order to draw conclusions about the information

they contain, often with the use of specialised systems and software. The number of projects in the portfolio means that there is a lot of risk data available to project teams and decision-makers. However, it can be a challenge at times to interpret so much data in a way which considers other non-risk data sources. This in turn can reinforce the perception of risk management as a tick-box, bolt-on exercise rather than an integrated source of management information to optimise decision making.

The risk management information system cannot be considered standalone. The idea of risk as a discrete function is at odds with the vision of risk-based thinking underpinning business decisions as part of Network Rail's development of enterprise risk management. The use of data analytics was seen as the way forward in Northern Programmes to create better relationships between risk information and other available data sources. This would then enhance the conversations that consider risk and inform better management responses as a result, with the aim of delivering value-for-money projects.

Multiple systems

As a large project delivery organisation, Network Rail – Infrastructure Projects (of which Northern Programmes is a part) has a variety of IT systems and data sources, ranging from safety, to commercial, to scheduling, to risk

> **Scrutiny was an unintended consequence, but challenge should always be welcomed**

> It ceases to be merely the management of risk but instead becomes part of the making of decisions with risks factored into the equation

INTRODUCING ANALYTICS

1. **Listen to the customer** – every business wants something different from risk management and the discussions they want to be able to have
2. **Find the know-how** – not everyone can be a specialist in everything, so find the right people to help deliver information that looks and is linked together better – IT and finance professionals may be able to support, as well as risk colleagues
3. **Get into the detail** – some forensic sifting of data will be required to unpick any teething problems
4. **Prepare for challenge** – being able to put together new combinations of data will mean new types of question will be asked
5. **Make it stick** – every change project has initial setbacks, so keep enthusiastic and communicate that enthusiasm with colleagues and stakeholders
6. **Keep moving forward** – the change project is the first step – and work with colleagues and stakeholders to agree what new types of information are meaningful for them to maintain engagement

and value management. Some of these systems are well connected to each other using the existing IT architecture. Some are less well developed in terms of their connectivity. So, the first task was to identify the data sources, the relationships between systems and a tool which could corral these data streams and present them in a visually appealing way. The conduit for this was Power BI (Business Intelligence), a Microsoft product which helps to automate reporting and visualise data.

On the initial launch of the platform in Northern Programmes, a lot of useful information was being gleaned, with some of the risk data requiring refinement. The situation was addressed as a priority within risk and value management to avoid stakeholders questioning the integrity of the data, which could have eroded confidence in risk management as a whole. It was time for risk management to step up and prove its worth.

Forensic analysis of the data in the system showed that some filters were stopping some data from arriving in Power BI. Sparing the technical details, collaborative workshops with the function responsible for implementing this system (in this case, Finance) enabled troubleshooting of the problem and helped forge a relationship where feedback could be provided to improve future user experience.

Finding the right people to fix the problems wasn't easy, but the solution, as it often is, was to keep asking questions and to focus on getting people talking to each other until they found a common language. Not everyone implementing the change needs to be an IT expert, as long as they can communicate what they require, in a SMART way – in a way that is specific, measurable, achievable, realistic and timely – to someone who is an IT expert with the responsibility of fixing issues.

Reaping rewards

The aim, as mentioned before, was to integrate the sources of data we already hold within the organisation to create a more co-ordinated conversation between the different functions and therefore have a more meaningful and informative risk discussion to optimise project and business outcomes. Further still, the inclusion of risk information in these integrated dashboards means that, potentially, we can talk less about "risk conversations", and more about conversations which all have risk embedded within them. Ultimately, however, the transformation is about quality conversations, and delivering the actions that result from them.

Once the data quality issue was addressed, teams were able to compare their risk exposures against their contingency allowances, automatically, on a project-by-project basis. At first, this provided a quick way to perform a health-check – could we cover our risks with the available contingency, for example?

But the conversation soon matured, beyond whether the situation was good or bad, towards a discussion about the quality, accuracy and currency of the data and what could be done to improve it. Having the right information with regard to risk exposure and contingency funds meant we could place added focus on the management of risk and potentially deliver further efficiency to our funders, be they government or third party.

In a short space of time there were project managers and directors carrying out their own risk audits

> The aspiration is to make existing information streams connected, intelligible and useful

and supporting the risk management community in their quest to continually improve their risk data quality. A risk register was updated, the data trickled through to Power BI and the change would be reflected by the following week, which provided feedback to stakeholders that the system was working. Scrutiny was an unintended consequence, but challenge should always be welcomed – this reaction demonstrated senior-level engagement with the risk management process and the content of their risk registers.

New dimensions

It is worth mentioning that this is only the start of the process. The new integrated BI tool has only been used for a few months. People are still getting used to how to utilise the system most effectively by, for example, optimising precious time in meetings. It is possible to see, however, that automatically joining risk information with schedule and commercial information (for example, via Earned Value) can help us to create key risk indicators or early warning indicators that can inform senior stakeholders and add executive focus on risk or contingency management. It is this point that creates added value for the risk management function; this is where risk management ceases to be a means to its own risky end and forms part of a deeper and more comprehensive process. It ceases to be merely the management of risk but instead becomes part of the making of decisions with risks factored into the equation.

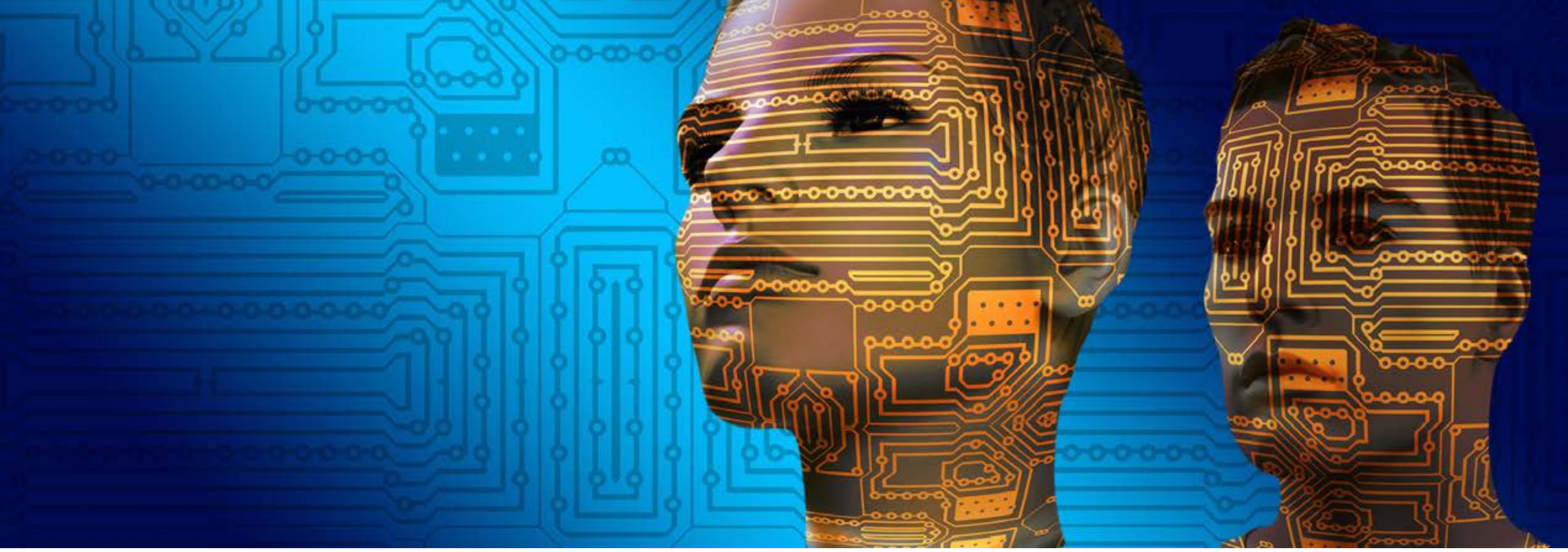
Analytics don't need to stop at the project's lifeblood of time and cost – by linking this data to finance, safety or sustainability metrics, for example, there is an opportunity to draw correlations between performance in some areas of project delivery and the overall risk picture. This link between the previously unconnected parts of the business that data analytics has brought has and will bring significant benefits – not just to decision making, but to the status of risk management and risk managers within project organisations. This may even see an evolution of risk management towards decision support and data science.

Future plans

At Northern Programmes, the data analytics journey is an exciting one. The opportunities and benefits are far-reaching, so another challenge is not to be overambitious. At the moment, the aspiration is to make the existing information streams connected, intelligible and useful.

This could entail including the results of our quantitative risk assessments (QRAs) and correlating those with the outputs of Earned Value Management to provide assurance that our planning and commercial systems are cognisant of a project's current performance. Another next step could be to use analytics to capture the effect of complexity in our portfolio, by considering systems engineering issues, or aggregating risk exposure at the portfolio level to capture efficiencies and optimise our use of contingency funds in managing public money. As we progress, at the centre of this improvement will be conversations and insights between people using readily available data and that joins up the dots among information that was previously only available in manual formats.

Richard Bendall-Jones (IRMCert) is risk and value manager at Network Rail.



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Fuelling the debate

Energy companies are facing upheaval and change, according to forthcoming research by IRM

The big story of the last few years in the energy sector has been the collapse of oil prices and a low-price trend that is expected to continue. Not surprisingly, 80 per cent of those taking part in IRM's recent research project in the sector – *Fuelling the debate* – agreed that this has had the largest impact on their organisation over the last few years.

Companies are looking to new long-term strategies for growth while ensuring they achieve maximum efficiencies in the more immediate future. Risk managers in the energy sector are focusing on improving their Enterprise Risk Management (ERM) programmes, as well as increasing efforts in business continuity.

> **The tone at the top is crucial for risk management to be implemented successfully, and this area was highlighted by respondents as often being a major challenge**

While over 40 per cent of organisations said they had business continuity plans in place, just over 30 per cent indicated that they were "somewhat in place", which suggests further work needs to be done in order to update them or improve on them. Additionally, 20 per cent of organisations are planning on putting them in place over the coming years.

Numbers

When it comes to risk management staff numbers, the results of the survey indicated that the large majority of organisations had an ERM department of between one and five people. This did not include project risk staff, who vary vastly between organisations with just as many organisations having over 20 staff as organisations having between one and five.

The chief risk officer, while not a necessity, can often be an important ingredient within an organisation in order to ensure risk management is well embedded. According

to the survey 30 per cent of organisations had a chief risk officer while the majority didn't have one in place.

One of the questions asked what confidence organisations had that their boards were receiving sufficient regular, transparent and robust information on risk. Even though half answered positively, there was nearly 30 per cent who were not very confident while an additional 20 per cent were unsure. This indicates that some improvement needs to take place in terms of either the quality of risks captured, the escalation and consolidation process involved or the reporting itself.

Reporting

Most organisations reported their risks at least annually or six-monthly. Over 25 per cent said that they reported between two and four times a year, with 20 per cent reporting even more frequently than that.

The tone at the top is crucial for risk management to be implemented successfully, and this area was highlighted by respondents as often being a major challenge. There are a number of reasons why the tone at the top may not be as effective as it should be. For example, boards are not necessarily equipped with the risk management knowledge that is needed, and where it is fully understood, there may not be mechanisms in place for them to be seen to be using risk management.

Some respondents said that their organisations lacked an effective risk appetite statement, which should be present to help with risk-based decision making. Several respondents said they felt they needed more visibility and independence in their organisations.

Over 30 major companies took part with 80 per cent of those companies having over 1,000 staff. The survey, led by Alex Larsen CFIRM, was run in conjunction with a soon-to-be-launched IRM Energy Special Interest Group. The final report, *Fuelling the debate*, will be published in the summer.

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Risk management information systems

NTT DATA Figtree Systems is a specialist software provider for risk management Information Systems. Figtree Systems is used globally for incident and OH&S management, claims management, corporate insurance and employee benefits management, fleet and asset management and enterprise risk management. By using system features such as workflow automation, document management and creation, reports and dashboards, smartphone and web-based data-capture and email notifications, users have reported increased productivity, lowered costs and improve risk management processes. Easily configurable, the system is available in the traditional client-server model as well as a Software as a Service (SaaS) model from ISO 27001 compliant datacentres.

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Risk management software

4C Strategies is one of the world's leading providers of risk management solutions. Combining expertise with an innovative approach, our advisory services and software solutions help organisations to build, verify and track the Readiness capabilities they need to deliver on their strategic and operational objectives. Our Exonaut™ software delivers a platform from which organisations can identify and assess risk, implement mitigation strategies, record validation activities, track real-time performance and respond dynamically to major incidents. The Exonaut™ suite of integrated modules is supported by an enterprise-wide mobile app, which enables staff to log and access critical risk data, wherever they are in the world, to support risk-informed decision-making and performance optimisation.

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Risk management software

Arctick is a brand new enterprise Governance, Risk and Compliance (GRC) management software solution, developed by the award winning, in-house Technologies team at Styles&Wood. Developed with the user at the heart of the process, Arctick provides a 360° view of risk, allowing the organisation to look beyond data and use risk management as an operational tool to drive value.

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Risk management software

Magique Galileo provides flexible and fully integrated web-based solutions for enterprise risk management, policy compliance, incident management, questionnaires, issue tracking and extensive reporting. Its web interface works with PC, laptop, iPad and other smart devices, enabling the whole organisation to participate in the risk management and assurance processes.

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Risk management software

Origami Risk is the industry's #1 Risk Management Information System (RMIS) as ranked by the 2016 RMIS Review. Founded by industry veterans committed to bringing new ideas and advanced features to the RMIS market, Origami Risk's innovative software is designed with the latest technology and a focus on performance and ease-of-use. It features powerful workflow, advanced reporting and analysis tools, and intuitive features to improve productivity and better manage Total Cost of Risk—saving our clients time and money and enabling them to be more successful. Learn more at www.origamirisk.com.

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Risk management software

Xactium is a cloud based GRC software provider that helps Risk Managers to transform the way that organisations value and manage their enterprise risk. As the central risk platform used by the FCA to supervise the market, it has also been adopted by a wide range of financial organisations such as Direct Line Group, JLT, MS Amlin, Leeds Building Society and Argo Group. Xactium is the world's first enterprise risk-intelligent system, with the revolutionary use of embedded AI (Artificial Intelligence), 3D visualisation and automation that dramatically improves efficiency and creates innovative analytics. Reporting is made easy and timely, and predictive insights enable senior managers to prioritise resources. Overall, Xactium releases more time and resource for the risk team to help promote best practice and demonstrate the value of risk across the business through actionable insight.

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Risk management technology

Riskonnect is an independent innovator and the only global provider of enterprise-wide risk management technology solutions. Built on the world's leading cloud platform, Riskonnect breaks down silos and unites the entire organisation by providing a holistic view of risk management. Through Riskonnect RMIS, Riskonnect GRC, Riskonnect Healthcare, and Riskonnect Safety, the company provides specific and configurable solutions needed to reduce losses, control risk, and increase shareholder value. Riskonnect's growing suite of risk management applications are built on a lightning fast, secure, and reliable platform you can trust.

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Specialty insurance solutions

Allied World Assurance Company Holdings, AG, through its subsidiaries and brand known as Allied World, is a global provider of innovative property, casualty and specialty insurance and reinsurance solutions. With 20 offices servicing clients throughout the world we are building a global network. All of the Company's rated insurance and reinsurance subsidiaries are rated A by A.M. Best Company and S&P, and A2 by Moody's, and our Lloyd's Syndicate 2232 is rated A+ by Standard & Poor's and AA- (Very Strong) by Fitch.

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On your bike

The economic stakes in climate change are high. Despite the large uncertainties in modelling, stringent remediating actions look like the best course of action

The take-up of alternative modes of transport – such as bikes and electric cars – plus green energy to power homes, offices and factories is well underway in the UK and elsewhere. Last spring, for example, a holiday heatwave in the UK set a new record for solar power generation, which created a quarter of the nation's electricity mix one Friday afternoon. That meant that Britain's solar panels produced more electricity than nuclear and coal power combined.

While that may give environmentalists a warm glow, the reality is that capping global temperature increases to the United Nations' most optimistic Paris Agreement target of 1.5C is going to require much more than consumer action. Capping it at 2C will require a bit less but comes with potentially greater risk.

Recent research has attempted to work out the economic benefits of achieving those different temperature levels over the coming century – see Marshall Burke and others in the May 24, 2018 issue of the international journal *Science*. It is a task fraught with difficulty – not least because some of the historical data on the potential mitigating influence of new technologies is hard to predict. In addition, others have questioned the value of using gross domestic product – their chosen measure – as a metric at all.

As one would expect, the article is full of figures, but the conclusions are easily understood. "Our results suggest that achieving the 1.5C target is likely to reduce aggregate damages

Image credit: Arthur Piper

> Models represent nothing short of a window through which to see the world

and lessen global inequality, and that failing to meet the 2C is likely to increase economic damages substantially," say the authors. The accumulated global benefits of hitting the lower target could be about $20 trillion, they estimate. The worst-case scenario they envisage is that per capita output would fall by about 30 per cent for 4C warming by 2100.

Of course, economists are split over the approaches used by the report authors – but they tend to agree that more work on such models is urgently needed. In historical terms, linking the potential impact of global climate change to economics is a relatively new initiative. The economist Bill Nordhaus is credited with publishing the first paper in the field in 1991 – "To slow or not to slow: the economics of the greenhouse effect". Nordhaus compared the costs of acting to mitigate the effect of harmful emissions with doing nothing. He concluded it was better to act than to accept the consequences.

The debate around models, the science of climate change – rather than global warming as it was once called – and the strategies and tactics needed to mitigate its effects have come a long way since then. But models, which represent nothing short of a window through which to see the world, have played a major role in shaping and deepening the debate.

That should give risk managers the confidence to model uncertain areas in their own organisations. If initially the model is relatively crude, it will at least get people talking. They will want to challenge its assumptions, deepen its sophistication and challenge how well it represents the threats they face. All of that activity helps raise risk awareness in the business and feeds back into an improved model – that then goes through the same process of debate and refinement.

If climate change models have helped people get on their environmentally friendly bicycles, then risk managers can hope that their own attempts at calculating the potential impact of uncertain risk will have a similar effect.

ARCTICK
PROTECT YOUR BUSINESS
We understand that staying compliant in an ever changing regulatory environment can be difficult, therefore Arctick has been tailored to accommodate and compliment the current rules and regulations that your business is subject to.
Arctick's software solution helps you identify, manage, monitor and report risk in one place.
Cut the cost of your compliance today and see how Arctick can provide you with a 360° view of risk.
arctick-grc.co.uk
IDENTIFY | MANAGE | MONITOR | REPORT