RISKworld

The Newsletter of Risktec Solutions

In this issue

Welcome to Issue 40 of RISKworld. This a special edition for us – we've somehow managed to produce two a year for the past 20 years. Anybody who's ever produced a newsletter will know that this is no trivial feat!

Feel free to pass this issue on to other people in your organisation. You can also sign up to make sure you don't miss future issues.

We would also be pleased to hear any feedback you may have on this issue, or suggestions for future editions.

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20 years and counting

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"The secret of change is to focus all your energy not on fighting the old but on building the new." – Socrates

I am humbled and privileged to have taken over the role of Managing Director of Risktec earlier this year – our 20th year of business. Looking back, Risktec has faced and overcome many periods of challenge, change and uncertainty.

Only one week after our formation the terrible attacks of 11th September 2001 created worldwide uncertainty. Since then, we've had several oil price drops, a couple of financial crashes, natural disasters and a global pandemic thrown at us.

The key test of any business is how it performs in difficult times. Risktec has consistently emerged from these periods much stronger. We put this down to our core values of teamwork, integrity, empowerment and solutions, all of which were established in our early days. These values drive our culture and our culture drives our performance. Over the years our values have matured and strengthened; they help us to successfully navigate whatever we face.

From a small team operating out of a tiny office in Warrington, UK, we have grown today to over 330 people working from 15 offices in 8 countries across 4 continents. We have delivered 8,900 projects to over 1,800 clients, including many of the world's most prestigious companies.

We have helped to ensure the safe and reliable operation of so many facilities and activities, including some of the most complex engineering projects ever conceived.

But no two projects are ever the same, no matter how similar they may first appear. Remaining flexible and responsive has been crucial.

In 2014, we became part of the TÜV Rheinland group and have continued to enjoy the space to operate effectively. The group has extended our risk and safety resource pool, geographical reach and the range of services available to clients.

We hope you enjoy all of the articles in this edition. They reflect on how risk and safety management has changed over 20 years, as well as what it may look like in the next 20 years. I look forward to your continued support. And please continue to stay safe!

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Launched: Sept 2001   **Projects:** 8,900   **Clients:** 1,800

Employees: 330   **Offices:** 15   risktec.tuv.com

TÜVRheinland®
Risktec

A day in the life of a risk consultant – then and now

As Risktec celebrates its 20th anniversary, senior director Steve Lewis interviews Sheryl Hurst – one of our longest serving consultants – and asks her what's changed since it all began back in September 2001.

STEVE: HOW HAS THE TYPE OF WORK CHANGED?

Sheryl: The type of consultancy activities we carry out has always been driven by client problems and industry requirements. In those early days, most of our clients needed to submit regulatory safety cases which we helped to author – my very first job was a COMAH Safety Report for a distillery in Scotland.

As Risktec has grown in size and experience, the type of work we do has certainly expanded and we now conduct a lot of niche studies and research, and produce bespoke deliverables. I took a look at our log of projects and counted 75 different types of service we provide, and that's just for oil and gas clients.

Over the years I think the most unusual situations I have found myself in must be travelling 1km underground at a gold mine, explaining technical risk assessments at a six-week public planning hearing, and auditing management arrangements for the renovation of BBC's Broadcasting House in London.

STEVE: WHAT ABOUT THE TOOLS WE USE?

Sheryl: The tools we use as a company have evolved considerably, from simple spreadsheets and hand calculations to sophisticated modelling software and databases. We also build our own tools, whether that's to allow us to provide more efficient consultancy services, or to hand over to our clients so they can undertake assessments for themselves.

The tools we use internally to administer the business have also developed massively. I remember at the end of the first week in September 2001, we realised we didn't have a means of recording chargeable hours and very quickly had to develop a time-tracking system in Excel.

Our 'action tracker' was an A3 piece of paper pinned to the wall, and we all shared the same desktop telephone. Now we have an integrated SAP-based system across all offices and, in the remote working era we all now live in, we are routinely using MS Teams and Skype for video calls and virtual meetings.

2001

2021

STEVE: DID YOU THINK, IN 2001, THAT RISKTEC WOULD GROW TO OVER 300 PEOPLE?

Sheryl: My employee number on the payroll is 00002! We grew quickly in those first few months, reaching about 25 people by the end of 2001, but I never envisaged we would become an organisation with 15 offices and more than 300 people.

Our successful growth has naturally affected the day-to-day nature of my job. In the first few years I travelled internationally a lot, spending weeks at a time living out of a suitcase (and once living in a shipping container in the desert). A lot of my projects were delivered just by me and these were the days before smartphones so it was quite isolating at times.

Now I manage a team of 20 consultants and my main responsibility is to make sure work is assigned to the right people and that they get the support they need to complete their tasks. I spend a lot of time 'oiling the wheels' of the team, troubleshooting and anticipating problems.

We frequently set up inter-office projects, which means we can be close to our clients while at the same time delivering high quality work efficiently and cost-effectively, but this takes a lot of coordination and communication.

STEVE: HAVE THE CUSTOMERS CHANGED?

Sheryl: Our typical client tends to be the HSE, operations or asset manager say, of a high hazard facility or activity, which might be associated with an offshore oil platform, drilling rig, chemical plant, wind farm, nuclear power station or rail infrastructure.

Every year, about 25% of our clients have never used us before, so we always have customers who are new to Risktec. On the other hand, we get over 85% of our work as repeat business. From day one, our ethos has been to develop a long lasting relationship by doing quality work and being open with clients, even if it means turning work away in the short term.

Personally, I find it incredibly satisfying when we pick up a new enquiry from someone who has never spoken to us before, and just give them some advice or deliver a small piece of work which turns into more work the next time that same client has a different problem.

STEVE: TO FINISH UP, IN YOUR OPINION, WHAT MAKES RISKTEC, RISKTEC?

Sheryl: Without doubt the people I work with on a daily basis, whether that's the people in my team, or colleagues in other teams and locations. I suppose I'm in a privileged position - having been here so long I know most people and wouldn't hesitate to pick up the phone or video link to speak to any of them. I think we have a very transparent and honest culture, with a strong sense of teamwork.

Variety is also important – different types of work, different personalities, and different client expectations – it's a cliché but no two days are ever exactly the same.

Ultimately, you get out of a job what you put into it, and I feel that a large number of people are continually working together and putting in a great deal of effort to make Risktec the successful organisation it is today, 20 years after we started.

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On Reflection: Advances in risk and safety management over the last 20 years

As we celebrate Risktec's 20th birthday, we reflect on some of the main advances in risk and safety management we've seen over the first two decades of the 21st century.

SOCIETAL EXPECTATIONS

There is no doubt that society's increasing mistrust of high hazard sectors has been the major driver of advances in risk and safety management over the last 20 years. Today, there is more legislation and stricter regulatory enforcement across more industries in more countries than ever before.

Unfortunately, society's mistrust is well-founded. In the 'noughties' we saw major accidents such as the Space Shuttle Columbia disaster (2003), Texas City refinery explosion (2005) and Buncefield oil storage explosion (2005). In the 'tens' we had the Deepwater Horizon oil well blowout (2010), Fukushima nuclear meltdown (2011) and Brumadinho dam failure (2019) amongst others. All highlighted to a global audience the adverse human, environmental and financial costs of low-frequency, high-impact failures of complex technological systems.

Subsequent root cause investigations have highlighted more than ever the importance of taking a complete approach to risk management. Twenty years ago managing risk was more the domain of risk and safety engineers engaged in the technical design phase of a project, whereas today it is also as much about leadership commitment, structured management systems and a reliable culture which engages the workforce.

QUANTITATIVE RISK ASSESSMENT

With computing power around a thousand times greater than 20 years ago, it is no surprise that it is much quicker and easier today to run complex analyses such as CFD explosion modelling or multi-site QRAs. Industry standard software has more advanced algorithms and functionality that better aligns with historical and experimental data. Furthermore, developing bespoke software has never been so easy – today it is more about the plumbing together of open source routines than the time consuming, line-by-line coding of 2000. And Excel is ever more versatile and powerful – what used to take a month can be done in a week.

We are much better positioned with data too. Long-standing databases have 20 years of additional data points and the internet has made finding and accessing data sources so much easier and cheaper.

All of this has helped to reduce (or better quantify) the uncertainty in results and thus aid more informed decision-making. But there are pitfalls to avoid, for instance: believing the numbers out-of-the-box rather than engaging in an experienced-based challenge of the results; using easy to find, poor quality datasets rather than peer reviewed, authoritative sources; and shaving the margin of safety in a design to a level that is not justified by the residual uncertainty.

QUALITATIVE RISK ASSESSMENT

The most ubiquitous qualitative methods such as HAZOP and FMEA are fundamentally no different today than they were 20 years ago. But recording and reporting software is certainly much better and there is a stronger working relationship between HAZOP and LOPA.

One tool that was barely used 20 years ago and is now widely accepted and applied worldwide is bowtie analysis. Its popularity is probably due to the output being readily understandable by both risk specialists and non-specialists.

Human factors techniques such as safety-critical task analysis (SCTA)

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have grown in prominence in recent years, along with the increasing recognition of the importance of preventing human errors and deliberate violations.

Risk matrices were around 20 years ago, albeit mainly in the hands of risk practitioners. Today most corporations will have one or more risk matrices that are calibrated to their activities and are widely used for all kinds of risk assessments, from workplace tasks to facility operations to company survival.

MANAGEMENT SYSTEMS

We've seen substantial progress in transitioning from an ad-hoc mosaic of policies and procedures to structured systems for the consistent and systematic management of different types of risk, all based on the requirements of new ISO standards.

In fact, there's been a deluge of standards since the 14001 environmental standard in 1996, and many organisations have been formally certified against them. For example: 27001 for information security in 2005; 18001 for safety in 2007 (now 45001); 31000 for all risks in 2009; 22301 for business continuity in 2012; and, most recently, 27914 for geological storage of carbon dioxide in 2019. Furthermore, all of these risk areas are supported by more detailed technical guidance and approved codes of practice.

Many companies have also worked hard to integrate some of these systems to avoid operating in silos, especially in health and safety and environmental protection, although there is undoubtedly much more still to be done.

THE HUMAN FACTOR

Most organisations in the high hazard industries are dominated by technical people, such as engineers and scientists, so it is hardly surprising we've seen a great deal of progress in technical analysis and structured management processes. Fortunately, we have also seen progress in addressing the importance of organisational factors and people in preventing major accidents.

The hearts and minds safety culture model, for instance, introduced around 2000, provides a framework for organisations to assess their current culture and move up an evolutionary ladder. Over the past two decades we've seen the journey of many organisations who began stepping up the ladder. Some started at the reactive stage where something was only done after there was an incident, and many have reached the calculative stage where systems are in place to manage all hazards. Others have progressed further, to the proactive stage where values, leadership and workforce involvement drive safety improvements. Perhaps a few have maintained or reached the generative

or high-reliability organisation stage, where there is a collective mindfulness to prevent all failures.

Clearly, not least because organisations are always changing, enhancing safety culture is a never ending process, but arguably provides the greatest opportunity for improvement in safety performance in future decades.

CONCLUSION

Risk and safety management has certainly matured over the past 20 years and gained a higher profile in organisations operating within high hazard industries. Technical risk assessments are more advanced, structured management systems have been put in place, and organisational, cultural and behavioural factors are being addressed to some extent.

Of course, 2021 doesn't mark the peak of performance. The risk and safety profession can look forward to another 20 years of advancement, helping all facets of risk and safety management, while facing the many technological and societal challenges that lie ahead.

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Tomorrow's World: The future of risk and safety management

There's a Chinese proverb that asserts, "Consider the past and you shall know the future". For a profession that applies this mantra on a day-to-day basis to identify and prevent the myriad ways an activity or facility could cause harm, you might imagine that predicting our own future would be straightforward enough. However, the scale of complexity and uncertainty quickly reduces the problem to one of speculation rather than science and engineering. So then, speculating, what does the future hold for the coming 20 years?

Three key technological themes emerging from the last 20 years are:

- A gradual acceleration of climate action, with the associated development of new technologies requiring risk and safety management support.
- A much increased capacity for data storage and analysis, allowing more sophisticated and comprehensive risk and safety assessment.
- Greater connectivity, integration and mobility of information and control systems.

Against this background, it is interesting to speculate what risk and safety professionals will be doing in 20 years' time.

NEW TECHNOLOGY...

As new technologies continue to emerge and develop, tried and tested methods of risk and safety assessment will no doubt be applied or adapted. The mainstays of HAZOP or FMEA, for example, can be applied to most engineering solutions, whether it's carbon capture, hydrogen generation or small modular reactors.

There will, however, be areas where new approaches or tools will need to be developed and validated, such as the assessment of AI safety, where AI (or machine learning) is used autonomously or semi-autonomously in settings where it could either cause or have to respond to hazards. Other concrete examples are hydrogen release consequence modelling, for which codes are much less mature than for hydrocarbon gases; and quantitative geological containment risk modelling for CO_2 storage, for which methods are still being invented.

...AND NEW TECHNIQUES

As interesting are the benefits that new methods and new technology could bring. For instance, could emerging techniques in resilience modelling, such as petri nets (Google it!), provide further insights over and above conventional and well established reliability analysis approaches (such as reliability block diagrams and fault/event tree analysis)?

Will increasing processing power mean a leap forward in our ability to identify and assess hazards, such as:

- Automating HAZOPs
- Identifying rare accident sequences that arise from combinations of independent and dependent events
- Enhanced checking of available risk controls against the latest design and peer facilities
- Increasing the scope of failure datasets to improve reliability estimates

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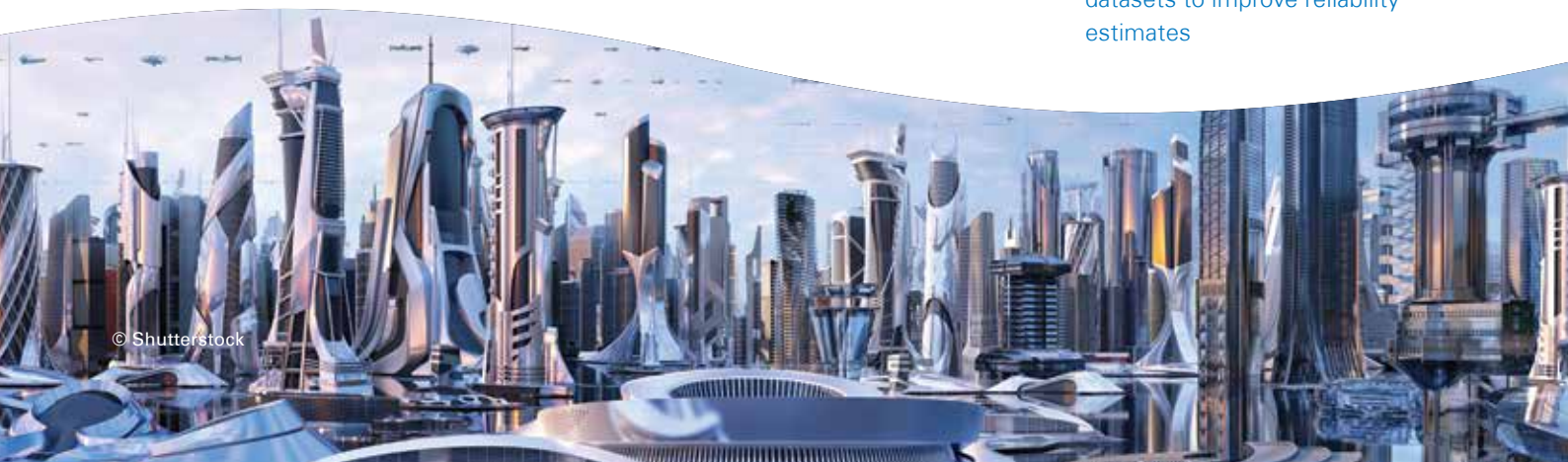
Or, respectively in these four examples, will we be limited by our own ability to conceive of hazards and associated event combinations; or by our lack of patience in coding potentially applicable controls and failure data?

Could AI and machine learning extend our capacity in these respects, or are we in danger of entering 'analysis hell', tying ourselves up in ever more detailed assessments, and relying on black box technologies to supply the answer without questioning its validity? Whilst we should certainly embrace the potential for better, smarter and more cost-effective analysis, the importance of risk-informed scoping and validation will remain.

The challenges involved are not just limited to practitioners. For novel technologies to be deployed, the regulatory landscape will need to evolve too, along with public perceptions of risk and acceptability.

Proactive and balanced risk management acts as an enabler in the sense that it prevents accidents that would otherwise set back new technologies by years, while as importantly, not stifling innovation.

INTEGRATION PLUS

As computing power grows, we might also expect to be able to integrate tools and techniques to increase efficiency and utility. One idea that's been touted for many years is the linking of the electronic design model to a risk model, so that as the design evolves so does the risk assessment (whether in the form of a bowtie or QRA, supported by consequence analysis). A logical extension to this idea is a risk monitor that is informed by real-time data from the facility in question – including health monitoring of equipment defects, availability and maintenance. Making sense of the sheer scale of data involved may well require machine learning.

SMART COMMS

Risk communication is another area where there is huge scope for development. In an age when we carry in our pockets a device more powerful than the 1997 Deep Blue supercomputer that beat chess grand master Gary Kasparov, it is surprising that the majority of risk communication still takes the form of written reports. There are emerging signs, however, of an appetite for more mobile and graphical risk communication, most recently seen in a tablet/mobile based bowtie application that facility personnel can browse.

But why stop there? Why not build in interactivity – to support and register training, maintenance, defect reporting and so on, and thereby provide a real time assessment of the health and availability of safety measures? One barrier is that such a solution requires integration with separate existing systems, which can only be overcome by standardising interfaces (or less practically, by fully integrating all systems).

The flip-side of greater integration and interfacing across systems is the greater vulnerability to cyber-attack, a threat which has been growing exponentially recently, particularly with the transition to remote working. Not only is this a growth area for risk assessment in the future, but the future's risk management tools will also need protecting from cyber agents. If a real-time risk monitor can be hacked, it could be subverted to indicate that the corresponding power or process plant should shut down to protect the workers or the public; worse, it could misdirect or misinform users, ultimately undermining and degrading safety.

CONCLUSION

Not only does the past provide insights into the future, it also serves to remind us how uncertain and unsighted predictions can be. That said, it's intoxicating to speculate about how we might support the development of new technologies, or how future technologies might shape our profession. To paraphrase many (but most recently, business guru Peter Drucker), we leave you with this thought: *The most reliable way to predict the future is to create it.*

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Training Trends: Past and future

Learning and development remains vitally important for every organisation but has changed radically over the last 20 years, especially recently. The impact of the pandemic on ways of working has forced everyone to rethink their training strategy. So, what fundamental attributes of training remain the same as they always were and what can we expect in the future?

THE STATUS QUO

The benefits of investing in the development of your employees are still the same: improved performance, job satisfaction and morale, reduced turnover and enhanced business reputation. In high hazard industries, this translates into fewer incidents.

Despite huge advances in technology, the qualities of an effective learning experience remain unchanged.

Successful training will be practical and of use to the participants in their day-to-day jobs, relevant to their industry and based on real-life case studies. When participants can see the immediate benefits, their engagement increases. And the enthusiastic and knowledgeable trainer will always create a livelier learning experience than the boring acadamic.

Unfortunately, some limiting beliefs still persist amongst trainers; most notably the idea that watching slides pass by is the best way to learn something. The conviction that learning the theory outweighs 'having a go' is still out there. And there remains a belief that only classroom-based learning is 'correct'.

Figure 1 – Plane Simple game

WHAT'S CHANGED?

Happily, the effectiveness of training delivery and the resulting positive impact on organisations has improved. The concept of accelerated learning or 'learn by doing' has gained more traction. Many of us are familiar with Edgar Dale's pyramid, commonly referred to as the 'Cone of Learning', where he suggested that we retain only 10% of what we read and as much as 90% of what we do. He did warn us not to take these figures too literally, but as most people know from common experience, the underlying principle is sound.

Consistently, feedback from Risktec's own clients shows that most learning (and enjoyment) on a training course comes from the activities within it. Cast your mind back to your last training event; do you remember the slides or the activities?

Organisations are now recognising the need for awareness training across all job roles, not just risk and safety specialists, to ensure an effective organisational safety culture. This shift, combined with innovative thinking, has seen game-based learning become increasingly popular. Developed and tested over a number of years, Risktec has amassed a series of games which are designed to instil a fundamental understanding of key technical safety themes at all levels of an organisation. The games link the themes to everyday analogies, making the learning memorable, fun and hands-on. Figure 1 shows the Plane Simple game, which prompts players to challenge the quality of the operating procedures they use in their jobs.

IMPACT OF COVID

The pandemic has undoubtedly accelerated the move to online learning; many employees are now familiar with the likes of Zoom and MS Teams for receiving training. Even when staff return to the office, the pandemic has thrust us years into the future; companies have realised that allowing employees to work from anywhere is feasible and practical, and training will match this trend.

This 'revolution' has brought into focus the need for better quality delivery, particularly more deliberate teacher interaction. In a classroom, trainers rely on reading body language; in the online world they need to prompt more frequently with probing questions. More teacher dynamism and creativity is required to sustain motivation levels, making use of participative exercises, breakout rooms, interactive whiteboards, polls and shared files. But it's not all about the trainer though; participants have to be more vocal when they want to interact, no longer being able to rely on a quizzically-raised eyebrow or a frown.

Many of our clients have accepted that live, online learning can work well. Some are still going through that process, but our experience of delivering online training can help. For example, we recognise that online training is more intense and concentration levels can drop, so we recommend that sessions are limited to two hours at a time, with breaks, and two sessions per day.

A GLANCE INTO THE FUTURE

What will the next 20 years bring? We expect the term 'blended learning' will be one you will hear more and more as training and development becomes a combination of online learning and classroom training. Blended learning is tailorable to an organisation's culture, geography, training budget and training needs of the participants. Blended learning offers variety in methods of instruction (lecture, discussion, games), delivery (live or recorded virtual classrooms, computer-driven lessons), guidance levels (individual, facilitator-led, group learning) and scheduling.

Another trend is the need to invest in technology with immediate payback and a strong return on investment. Whilst developments in virtual and augmented reality in the metaverse will be exciting, we envisage many sticking to basics – less of a focus on the 'shiny and new' and more of a focus on the 'core', such as the learning management system (LMS) platform.

Expect also to see a growing demand for personalised online learning. Online training makes it easier to create micro-learning units that can be put together to create bespoke learning. So, instead of a one-size-fits-all training programme, we can look forward to customised, personalised and streamlined training packages for each individual.

CONCLUSION

COVID-19 has forced many organisations to adapt like never before. As more people are choosing to work remotely and requesting increased flexibility, this really is the best time to modernise your corporate training strategy.

Learning and development approaches are evolving faster than ever, aided by the rapid changes in available technology. The one-size-fits all mentality for training is outdated and companies need to capitalise on new training trends to improve learning, while freeing up valuable time and money. Recently, the renowned management consultancy firm McKinsey & Company commented: "*Now is the time for companies to double down on their learning budgets and commit to reskilling. Developing this muscle will also strengthen companies for future disruptions.*"

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The evolution of safety culture

The term safety culture was introduced by the International Atomic Energy Agency (IAEA) following the nuclear reactor accident at Chernobyl in 1986. In the aftermath, people began to understand that the underlying reasons for accidents were not only technical faults or individual human errors, but that an organisation's shared values and beliefs interact with its structures and control systems to heavily influence safety behaviours. Today, a safety culture is very high up the agenda of the corporate board. So, how have we got to where we are?

THE EMERGENCE OF SAFETY CULTURE

Technical safety has been part of the design and operations of high hazard facilities for several decades. In the early years, society simply trusted the designers and operators to address safety in their design and their operating and maintenance procedures (see Figure 1). As public perception of the risks associated with high hazard activities grew in response to high profile accidents, the trend was for designers and operators to 'tell' how safety was being addressed in the design and managed during operations, for example in the form of a documented safety case.

However, investigations into major accidents over the last two decades all invariably reached the same conclusion as that found by the IAEA in 1986 – that the technical and procedural failings can be traced back to organisational factors, and that the maturity of the associated safety culture is crucial for avoiding incidents. This led to a shift away from 'telling' how safety is managed to 'showing' how it is delivered via a holistic approach that encompasses sound engineering and design, robust management systems and a proactive organisational culture.

The public demonstration of an effective organisational culture has been at the forefront of business strategies for organisations involved in the high hazard industries. What was considered by some in the early 2000s as simply a public relations exercise involving posters and 'easy win' initiatives (such as safety moments, reverse parking, holding the handrails) has in more recent years become an integral part of the management of a business.
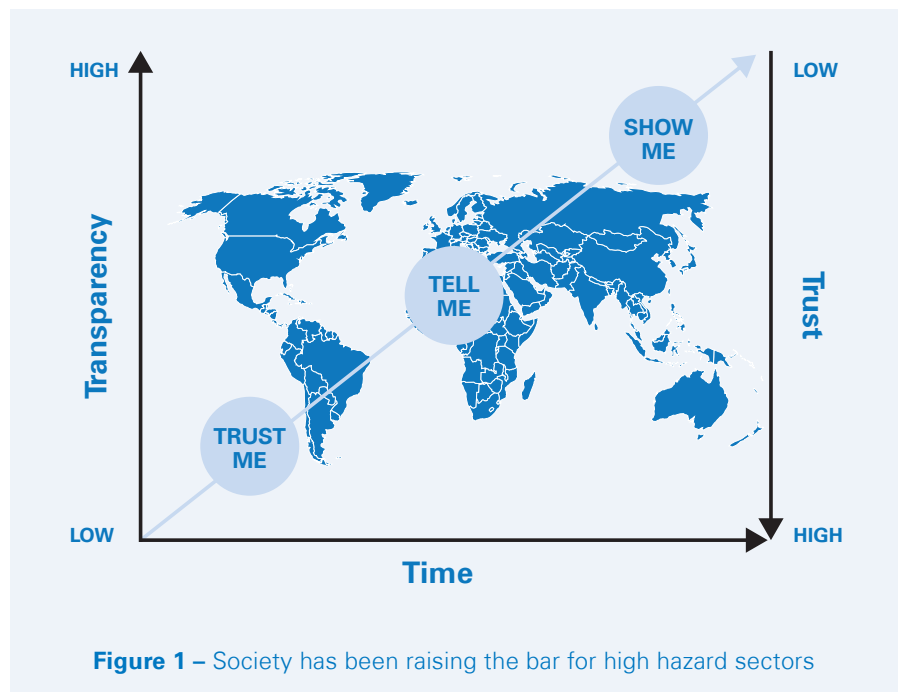

Figure 1 – Society has been raising the bar for high hazard sectors

The introduction of measureable safety culture objectives in corporate business plans is today adding value to businesses both within and outside high hazard sectors, whilst at the same time demonstrating to the public the commitment to a proactive safety culture.

BEYOND SAFETY

In parallel, over the last couple of decades, the public perception of risks in high hazard industries has extended beyond the safety of people. Well reported accidents, such as Deepwater Horizon in 2010 and Fukushima in 2011, served to highlight the risks to the environment. Similarly, the increase in worldwide terrorism following the World Trade Centre attacks of 2001, as well as cyber attacks on high hazard facilities in more recent years, has served to

highlight the security risks to people as well as the environment.

This has led to the need for companies to show their organisational environment and security culture alongside their more established safety culture.

AN INTEGRATED APPROACH

Today a combined approach to the development, maintenance and demonstration of an integrated and effective organisational health and safety, environmental and security culture is becoming standard practice.

A generalised view of progressive risk reduction in high hazard sectors over the decades is commonly represented as three stages corresponding to the attention focused on engineering, management
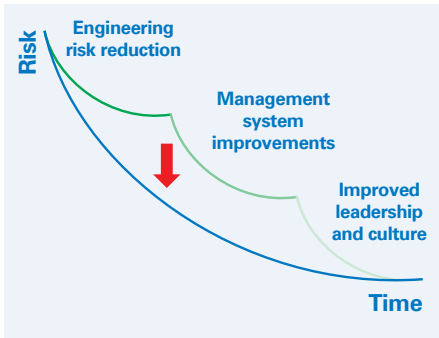
Figure 2 – A culturally-enabled approach

systems and leadership and culture (see Figure 2). This model helpfully distinguishes the key enablers for reducing risk but implies that improving culture is separate from, and follows, engineering and management system improvements. Clearly this is not the case – they are mutually dependent. Good organisational culture should drive the development and implementation of the management system and engineered risk reduction, and the management system should be designed to promote and support a positive culture.

An integrated, culturally-enabled approach would be expected to deliver faster and more effective risk reduction across all risk reduction enablers, as illustrated by the lower blue line.

WHAT'S NEXT?
Looking to the immediate future, environmental factors are currently being considered more holistically under 'sustainability' along with social and economic factors. The United Nations (UN) has produced a 2030 Agenda for Sustainable Development and, in response, governments around the world are embedding sustainability into their wider objectives.

Many companies are publicly supporting the UN Sustainable Development Goals and drawing up and implementing sustainability plans.

It will not be long before the enhancement of organisational culture to incorporate sustainability will be a requirement for all organisations involved in the high hazard industries.

CONCLUSION
Society continues to be increasingly less trusting of high hazard sectors and is demanding ever more transparency in how major accidents will be prevented. Recognition that organisational culture is at the heart of managing risk has enabled organisations to take an integrated approach to demonstrating how health, safety, security and the environment are being managed.

With the global focus on sustainability and environmental, societal and governance (ESG) investing coming to a head, we can expect organisations to take a similar culturally-enabled approach.
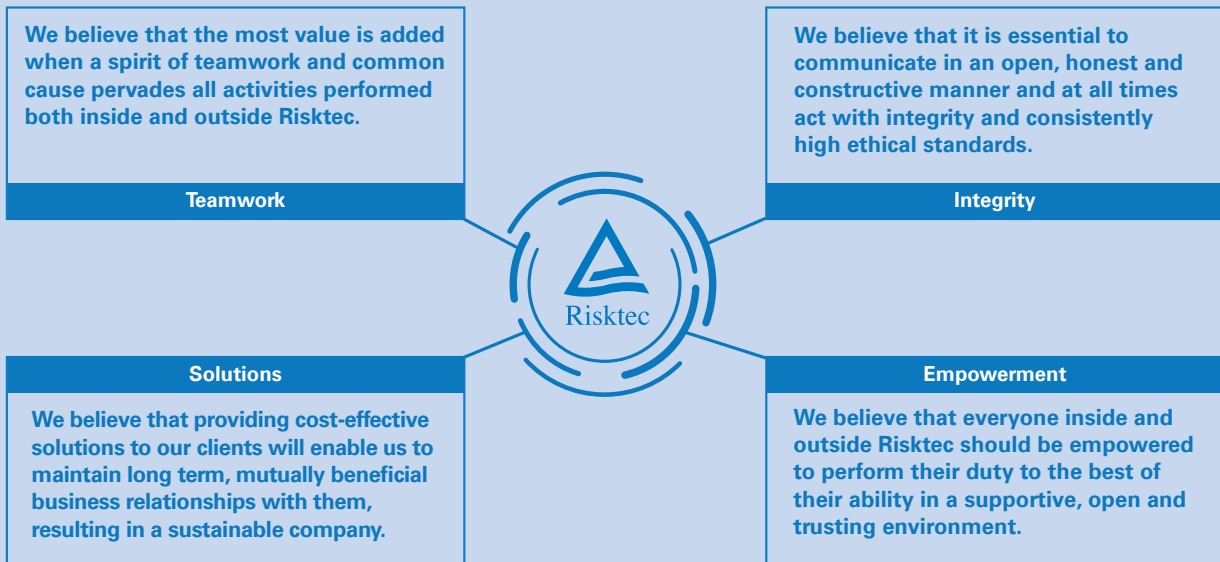
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Many companies recognise that a good organisational culture also leads to enhanced business performance through increased staff motivation and customer satisfaction. As a result, the organisational values underpinning the culture and driving people's behaviours are increasingly being promoted both internally and externally to reap the benefits for the business.

As an example, Risktec's organisational culture is founded on four core values which were established when the company was formed. These core values of teamwork, integrity, empowerments and solutions, have defined our culture and set the standards for our behaviour over the last two decades.

The four core values have stood the test of time. They have facilitated our growth, guided us through challenging market conditions and delivered robust business performance whilst - most importantly - maintaining exceptionally high levels of client satisfaction, as reported on our website.

Teamwork	Integrity
We believe that the most value is added when a spirit of teamwork and common cause pervades all activities performed both inside and outside Risktec.	We believe that it is essential to communicate in an open, honest and constructive manner and at all times act with integrity and consistently high ethical standards.

Solutions	Empowerment
We believe that providing cost-effective solutions to our clients will enable us to maintain long term, mutually beneficial business relationships with them, resulting in a sustainable company.	We believe that everyone inside and outside Risktec should be empowered to perform their duty to the best of their ability in a supportive, open and trusting environment.

Box 1 – Case study: Organisational culture also enhances business performance

According to Google, these are our most popular RISKworld articles from the past 20 years…

#1: SIX STEPS FOR SUCCESSFUL INCIDENT INVESTIGATION
Incident investigation made easy.

AUTUMN 2008

#2: RISK-BASED DECISION MAKING
The risk-based decision making process and its application.

SPRING 2005

#3: CHRONIC UNEASE
The hidden ingredient in successful safety leadership?

SPRING 2014

#4: SO WHAT IS ALARP?
A brief explanation.

AUTUMN 2003

#5: THE MATRIX RELOADED
Our guide to the risk assessment matrix.

AUTUMN 2016

#6: DETERMINISTIC OR PROBABILISTIC ANALYSIS?
What's the difference?

SPRING 2002