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# THE RISK MAGAZINE

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## *THE FUTURE OF RISK EDITION*



*THE RISK LANDSCAPE  
FOR DRONES*



*MANAGING INNOVATION RISK*



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MISINFORMATION*

Reprint of article:

### **The Future of Risk, the Rise of AI and the Role of Human Capability**

Dr. Paul Guignard and Anthony Wilson

# The Future of Risk, the Rise of AI and the Role of Human Capability

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## Summary

Organisations, employees, contractors, including risk professionals, face a turbulent future impacted by new digital technologies such as artificial intelligence, global connectivity, big data and robotics. This future is here now. It brings change at a continuously accelerating pace and presents many risks and challenges, but also affords great opportunities. The authors present a model for describing this risk and challenge in the form of a 'turbulent environment heat map' and a strategy to manage it. They introduce a model of capability and show how it can be used to develop a response that involves 'magnifying the impact of human brains' as an essential component for working successfully with AI. They consider the impact of current trends on the 'future of risk', its main characteristics and discuss its impact on the risk function.

## PART 1: THE RISE OF AI CREATES A TURBULENT ENVIRONMENT

### TRENDS AND DISRUPTION

It is difficult to grasp fully the speed, depth, and overall impact of the digital and fourth industrial revolutions with, as a major component, the rise of intelligent machines. The challenges and opportunities are unprecedented, and organisations and employee lives are at the frontline. How to start thinking about risk and its future in this new environment? An image might help, that of a river.

Up until recently, this river was flowing reasonably predictably; there were sections with eddies and rapids of course but, from a risk viewpoint, emphasis could be on navigating the parts between the rapids as effectively and productively as possible. When turbulence rocked the boat, it was a matter of pulling through somehow to the next section of more peaceful flow.

Now, the river is in flood and rapids are everywhere. From a risk viewpoint, they can't be neglected, and management focus and policies need to address them. After all, rapids, if not now, will soon make up most of the river, with peaceful flow being the exception.

Figure 1: Turbulent Waters



In this paper we'll consider the impact of turbulence and disruption on risk and its future. How risk must look, not only at one section of the rapids, but prepare and be ready for a succession of rapids and eddies. We'll look at the role that capability and culture must play in a successful response.

### THE RISE OF ARTIFICIAL INTELLIGENCE

We are all familiar with the words: intelligent machines, robotics, global connectivity, sensors everywhere, virtual reality, augmented reality. We are also familiar with the early applications of these technologies: personal agents, analytics, robots, autonomous vehicles to name but a few. We can also read in the press the impact of these technologies on jobs and organisations. What is more difficult to grasp is what the future has in store in the medium to long term. A simple extrapolation won't do. The reason is that the human mind tends to extrapolate linearly; it has difficulty with a fundamental aspect of all these technologies: exponential growth. In a sense we are used to it, with Moore's law being well known. Moore's law is used to describe the doubling of transistors

on a computer chip every eighteen months and the growth in bandwidth of communication networks. Computing power, memory and connectivity are increasing exponentially and their cost is also reducing exponentially. Up until recently, the benefits could be described as benign from a human perspective; that is, mostly beneficial with few apparent disadvantages. Who would object to cheaper laptops, cheaper smart phones, cheaper phone plans, video streaming, etc. Exponential growth seems to bring convenience and material advantages that are easy to grasp.

It is a different matter when we start to think of intelligence. Let's take a child, your child perhaps. Let's imagine that she is growing in intelligence in front of your eyes. Initially, as you would expect the child will grow and it is rewarding, and you're pleased. But then, as she reaches her teenage years her intellectual capacity keeps doubling every eighteen months, in speed of thinking, breadth and depth of knowledge, and sophistication of analysis. By sixteen, say, she is at your level. By the age of thirty-two, her memory and knowledge would be approximately one thousand times yours and she would also think one thousand times faster. What does it mean and what would the impact be on you and society? And what if all children were to become like your daughter? We think it is safe to say that we have no idea. You might say that artificial intelligence is not like human intelligence or that it may not grow quite as fast. True, but it does not change the outcome, we still have no idea. We have trouble understanding exponential growth and its implications. What we can say, thinking back to the river is that we are entering turbulent waters, they will be fast, and we will be in eddies and water falls most of the time. There will be disruptions, in technology, the economy and society. Change will happen to us and we will have to change, transform and adapt. There are great opportunities but

there are also great risks.

### TWO PERSPECTIVES FOR RISK

The image of the river, supported by the rise of AI, presents us with two types of risk. The first one deals with a 'normal' river, where a reasonably predictable flow dominates and there are isolated unforeseen events. The second one relates to turbulent flow, where rapids and eddies rule.

Risk management, broadly speaking, has up to now been mostly and justifiably concerned with the first type of risk. However, we believe that it is reasonable to postulate that the second risk perspective is the one that will likely dominate in the future. It follows that the 'future of risk' will be linked to developing models and strategies for dealing with the dynamism, unpredictability and relentlessness of turbulent flow. This, we believe, is a major challenge that will rapidly migrate closer to the C-suite.

Let's look at a way to map this second risk to gain a better understanding of some of its main features.

### TURBULENT ENVIRONMENT HEAT MAP

Unlike the classical risk matrix (or heat map) which typically deals with a single event, we would like a diagram that describes the 'pressure' put upon organisations by rapid change and disruption. With reference to the river model, the classical risk map corresponds to describing the risk of a single event disrupting the regular flow. For example, a single rock just under the surface that, if not seen, could puncture a hole in the canoe. In contrast, in turbulent flow, or the rapids, emergencies happen nearly simultaneously and without interruption: from one eddy to the next, from one waterfall to the next, from one challenge to the next. There is hardly time to catch one's breath. Simultaneous emergencies can easily overwhelm a crew and boat that is not prepared for the challenge.

Below is a diagram we use to describe the impact of turbulence on risk, considering two factors: the frequency of change or disrupting events and the 'preparation', or capability, of the boat and crew to deal with multiple events successfully.

The horizontal axis describes the capability of the organisation and its people to deal with multiple change or disruptive events. This is normally labelled organisational agility. The vertical axis represents the frequency of change or disruptive events. The heat map shows that the most favourable situation is to have high agility and not be engaged in many simultaneous challenging activities. Conversely, the less the agility and the higher the frequency the more heat is being applied. Such situations can cause an existential threat to

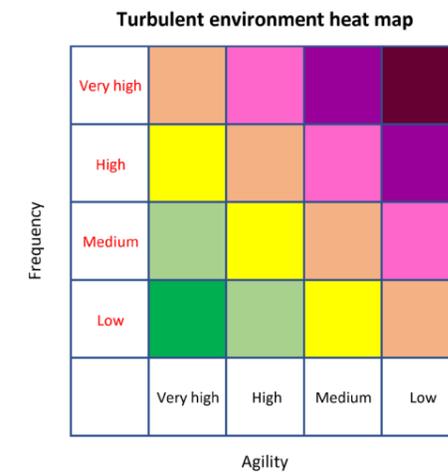


Figure 2: Turbulent Environment Heat Map

organisations. It is no exaggeration to say that turbulent environments will dominate in the future with a lot of heat being applied.

### RESILIENCE IN TURBULENT ENVIRONMENTS

Resilience is defined as "The ability to respond quickly, decisively and effectively to unforeseen and unpredictable forces" (Gartner, 2002) or "the ability of an organization to anticipate, prepare for, respond and adapt to incremental change and sudden disruptions in order to survive and prosper" (Denyer, 2017).

These two definitions do not explicitly consider the impact of the frequency of unforeseen events or disruptions. It may be that a definition that includes frequency would be more adapted to the age of intelligent machines, for example: "the ability of an organisation to deal decisively and effectively with multiple change or disruptions, whether planned or unplanned, that are either overlapping or take place in quick succession."

With reference to Figure 2, the definition of resilience we propose - called enduring

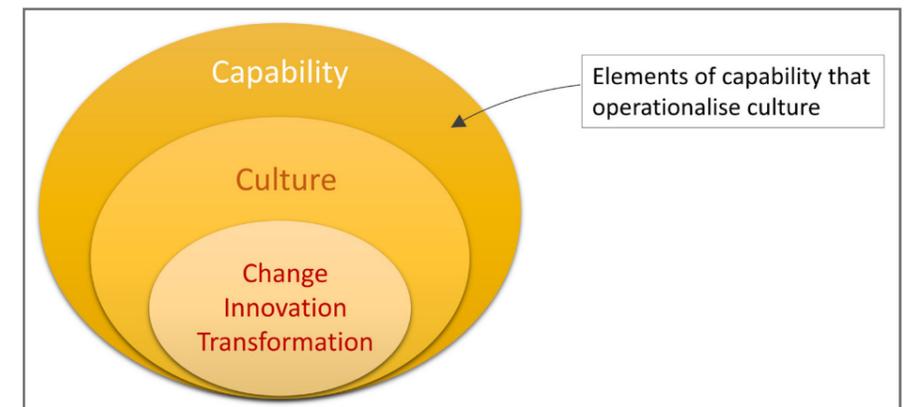


Figure 3: Capability, culture and change

resilience - describes the capability of an organisation to deal with the heat generated in turbulent environments. As these environments are expected to dominate in the future with their associated heat, it is reasonable to expect them to contribute most to the risk faced by organisations.

### HOW TO MANAGE RISK IN TURBULENT ENVIRONMENTS

#### IMPACT OF CULTURE AND CAPABILITY

If surviving in turbulent environments requires resilience, then the organisation faces a fresh risk challenge. Dealing with it will require many of the tried and tested skills that have proved useful in times of the relatively smooth waters. However, this new disruptive environment will also require two new elements.

Firstly, a culture that embraces change, fosters innovation and enables transformation combined with a laser-like focus on execution. The ability of the organisation to stretch, bend, change and reform in a different configuration in response to multiple challenges will require new found flexibility of ideas, customs and behaviours.

Secondly, risk leaders will no longer be able to satisfy themselves with having identified, analysed and prioritised risks to the organisation. Future risk managers will also have to consider whether the capability exists within the organisation to deal with the identified threats and opportunities.

Figure 3 illustrates the relationship between capability, culture and what's needed to operate in turbulent environments. Culture is a subset of capability. Or, to put it another way, the elements of capability that are not culture are these elements that operationalise culture. They give culture effectiveness in day to day operations. It is where the 'rubber touches the road'. For example, organisational model, clarity

of objectives, infrastructure, processes and resources are important elements of capability that play a determining role in dealing with change and transformation, without being part of culture.

An important message of Figure 3 is that dealing with change projects on an ad hoc basis, treating one change project independently of its relationship with culture and capability is very unlikely to bring the desired outcome. It is very 'risky', as evidenced by the high failure rate of change initiatives across organisations and industries.

The message is clear, dealing with the challenge and risk of turbulent environments necessitates developing, nurturing and leveraging the correct culture and associated strong operational capability.

**ABILITY TO WORK WITH, AND LEVERAGE, INTELLIGENT MACHINES**

Dell, in conjunction with the Institute for the Future, have recently published the Realizing 2030: A Divided Vision of the Future report in which they interviewed 3,800 business leaders globally on their predictions and preparedness for the future. Whilst there were divergent opinions on the impacts and benefits of new machine capabilities, all agreed the change will be 'immense'.

The study found that "More than eight in ten (82%) of leaders expect humans and machines will work as integrated teams within their organisations inside of five years (26% say their workforce and machines are already successfully working this way)"(Dell, www.delltechnologies.com).

If you accept the findings of the study, it becomes clear that organisations need to be addressing the associated threats and opportunities of AI now – that is, to consider the potential impacts and what capabilities will be required to deal with these threats and develop them now. Not to do so is to accept a very high risk indeed.

This could be an uncomfortable situation for many – particularly in organisations that don't identify themselves as primarily being affected by AI and intelligent machines. This 'head in the sand' approach will render the organisation particularly vulnerable – especially if more agile competitors, not burdened by legacy systems and technology, enter the market.

Other organisations may recognise the potential opportunities and threats but not grasp the speed at which the disruption will occur. Trying to make up lost ground will then be the only priority but once advantage is lost, the organisation may never catch up.

On the talent side, success in the era of digital transformation will "require new skills sets and resources, but finding the right people for this work is a major hurdle" (McKinsey survey 2018, www.mckinsey.com). Organisations will not only need to leverage existing internal skill sets, but investment in upskilling current resources and procuring external expertise will be a major determinant of success.

The Asia Business Council takes a similar view.

*"Companies and governments around Asia must act on a number of key priorities to become more prepared for an resilient to AI-led changes. They must train new workers and retrain existing ones to work alongside machines, unleashing new productivity that can benefit consumers and societies. (Asia Business Council, 2017).*

The Boston Consulting Group identified three sources of competitive advantage that leverage 'man and machine' (Gerbert P & al, 2017). They are:

Source	Human Component
Act where others can't	<ul style="list-style-type: none"> <li>Talented Workforce</li> <li>Business ecosystems</li> </ul>
Merge exploitation and exploration	<ul style="list-style-type: none"> <li>Agile form or working</li> </ul>
Embrace continuous change	<ul style="list-style-type: none"> <li>Adaptive Organisations</li> <li>AI-Driven job adaptation and training</li> </ul>

**Table 1: Human competitive advantages**

**MACHINES ARE NOT HUMANS**

And it is going to remain so for ever or a very long time indeed. The best outcomes will result from using the best of humans and machines. These human skills, attributes and areas that can most contribute to overall success, and therefore need to be further developed and leveraged include those listed below.

**Table 2: Human attributes not shared by machines**

- Leadership/empathy/social skills
- Imagination/creativity/purpose/vision
- Extrapolation/judgement
- Strategy
- Flexibility
- Communication, emotions, stories
- Global view
- Psychology/sociology/emotional intelligence/persuasion
- Collaboration – multidisciplinary teams
- Values and ethic
- Willingness to adapt and acquire new skills, agility
- Curiosity

From a business viewpoint, employees, working alongside intelligent machines and deploying AI to help solve business problems, will be better equipped to respond to customer demand, regulatory requirements and competitor actions.

**THE IMPORTANCE OF CREATING A 'CAPABILITY AND CULTURE ECOSYSTEM'**

It behoves risk management then to take an active role in creating the right conditions for the organisation to anticipate, evaluate and respond to these emerging risks. With reference to our river analogy, the overall mission (destination of our canoe) will likely be relatively stable but there will need to be course adjustments made to get us there. Changes in direction, manoeuvring around immovable objects, and occasionally abandoning projects that are not meeting expectations will become the norm. Trying, failing fast and then trying again will need to be part of the organisational mantra.

New business models, tailored to the turbulent environment, will emerge to create the transformative organisation of the future. In our view, these models will be bespoke to each organisation incorporating its risk maturity, cultural settings and its various capabilities.

But an ecosystem is a complex network of interconnected resources – people, machines, data & software, suppliers, and customers to name a few. For organisations to have the capability, and therefore the agility, to cope with the expected turbulence, these elements will need to work in harmony.

Here we consider the 'capability and culture ecosystem' which is a subset of the total ecosystem organisations need to develop. The importance of the capability and culture ecosystem is that it determines, to a very large extent, the resilience of the organisation to turbulent environments, that is to change, innovation and transformation pressures. A strong capability and culture ecosystem is associated with high competitiveness and risk maturity and, conversely, a weak ecosystem corresponds to a low competitiveness and risk maturity.

**Capability and culture ecosystem**  
*The values, models, methodology and infrastructure put in place by the organisation to develop, nurture and leverage its ability for change, innovation, transformation and execution.*

The elements of the capability and culture ecosystem are:

1. A capability model that describes the enablers of successful change, innovation, transformation and execution. The implementation of this capability is an expression of values and culture.
2. A methodology for leveraging this capability at the personal, team and organisational levels.
3. An infrastructure that supports communication, knowledge sharing and learning, and the definition, implementation and tracking of execution plans for change, innovation and transformation.

These three elements can be viewed as magnifiers of human capability. Having them working in harmony 'magnifies the impact of human brains'. This statement recognises that dealing successfully with the turbulent environments created by new technology and AI requires developing and implementing strong human capability, including the systems that support it.

The second part of this article will be published in the next edition of the Risk Magazine. It deals with the impact of human capability on team and organisational capability, and their ability to manage risk. It also includes a summary of the main actions that organisations and risk practitioners need to take to address the emerging global risk challenge.



# What is your risk strategy for the digital and AI revolutions?

**Prepare your organisation now for relentless change and disruption. Future-proof your own career and help shape the profession.**

- Do you have a clear plan for addressing digital and AI threats and opportunities?
- Does your organisation struggle with digital transformation and its risks?
- Do you know how to control risk in change projects?
- Do you know how to progress the risk discussion in your organisation?
- Do you want to add new strengths to your skills base?

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# RMIA Management of Enterprise Risk Course

## 2018 Course Dates



**Melbourne**  
**Date:** 9-10 April  
**Time:** 9am - 5pm  
**CPD Points:** 12  
**Location:** Melbourne Parkview Hotel

[Register Here](#)



**Adelaide**  
**Date:** 30-31 July  
**Time:** 9am - 5pm  
**CPD Points:** 12  
**Location:** TBA

[Register Here](#)



**Melbourne**  
**Date:** 29-30 October  
**Time:** 9am - 5pm  
**CPD Points:** 12  
**Location:** Melbourne Parkview Hotel

[Register Here](#)



**Perth**  
**Date:** 28-29 May  
**Time:** 9am - 5pm  
**CPD Points:** 12  
**Location:** Rendezvous Hotel

[Register Here](#)



**Canberra**  
**Date:** 27-28 August  
**Time:** 9am - 5pm  
**CPD Points:** 12  
**Location:** Black Mountain Tower

[Register Here](#)

RMIA's Management of Enterprise Risk 2 Day course is facilitated by Rod Farrar, Managing Director at Paladin Risk Management Services.




**Brisbane**  
**Date:** 11-12 June  
**Time:** 9am - 5pm  
**CPD Points:** 12  
**Location:** TBA

[Register Here](#)



**Sydney**  
**Date:** 24-25 September  
**Time:** 9am - 5pm  
**CPD Points:** 12  
**Location:** Harbourview Hotel North Sydney

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The Risk Management Institute of Australasia (RMIA) is the professional industry association for Risk Managers in the Asia Pacific Region. Members of the RMIA are involved in every sector of the community and economy.

The RMIA has over 30 years' experience in representing the practise of risk management. We facilitate linkages between members and offer continuing professional development opportunities via our Annual Conference, Best Practise Guides, Special Interest Groups, Chapter Networking Events and Education Programs.

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