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Interview Of The Week: Katherine Daniell



Professor [Katherine Daniell](#), PhD, is the current Director of the Australian National University's School of Cybernetics in the College of Systems and Society. Trained in engineering, arts and public policy, her work bridges multiple domains including multi-level governance, leadership,

artificial intelligence, politics and cultures of innovation, and international science and technology cooperation. Daniell has published over 100 academic works and was the inaugural convenor of the radically transdisciplinary Master of Applied Cybernetics from 2018-2022. She has played important roles in leading multiple organizations and initiatives, including as President of the Australian-French Association for Research and Innovation, and is a Chevalier (Knight) in the French Ordre National du Mérite. Daniell, a speaker at the World Economic Forum's Annual Meeting of The New Champions in Tianjin, China in June, recently spoke to The Innovator about leading through complexity.

Q: What does leading a company through complexity entail?

KD: Current leaders need to contend with big challenges and uncertainties from technology, climate, interconnectivity and geo-political disruptions. The pace of change and response times required to steady organizations feels unrelenting. Technology invokes fear and trepidation in many leadership teams because most of the people in charge don't have a background in tech. Yet today almost every company is a tech company, so they don't have a lot of choice. At the School of Cybernetics one of our challenges is to help businesses, governments and communities with technological transformations. One of the main ways we do that is to provide short courses for executives to demystify technologies and help them to lead through complexity. We support them to approach a technology like artificial intelligence as a system and to unpack it, so they know what kind of questions to ask. We used to start by asking them to draw an AI expert. They often came back with a drawing of a man with a briefcase with spreadsheets and graphs. Yet they fast realized this is far from the reality. Today AI experts are lawyers, engineers, artists and content creators and they can be found all over the organization and throughout organizations' stakeholder networks. Each of these people are experts in specific parts of AI systems. Leaders need to recognize this and look at where the gaps across their organizations are. Where is the chaos and complexity and what human abilities are needed to address this? Some of the biggest gaps are in the boardroom. For example, during a session on cyber resilience at the World Economic Forum's Annual Meeting of the New Champions in China the focus was on how cybersecurity is not just the CIO or CISO's responsibility, it needs to be embraced everywhere in the organization, including the board room.

Q: What else do companies need to be thinking about?

KD: Every company should be thinking about the inputs, costs and opportunities of their AI transformations. They need to think about the resource use of AI systems, and how AI systems could also help them optimize their resource use to drive organizational value-making. This includes understanding their organization's AI system energy use, water use and human labor. It's a board's responsibility to check potential AI risks to an organization's operations and outcomes. And on the opportunity side, AI can help them proactively check their supply chains but also to track carbon footprints, water footprints, impact on biodiversity and on local communities. Data security should also be top of mind. Many high-level executives don't know where their data flows to, where the compute for their current or future cloud and AI services is

located, or what values and biases are inherent in their AI products or systems. These things can be analyzed, but then you have all the other complexities such as climate disruption and geopolitical turmoil that could leave organizations and their suppliers vulnerable. So there needs to be a mindset shift. Leaders need to be thinking about a desired and actionable level of robustness and responsibility, and then how to maximize organizational resilience, so when something happens, they can recover, learn and build back better and stronger.

Q: What is the best way to prepare?

KD: Gather different experts and ask what could happen if, for example, the company is hit by threat actors, there is another pandemic, an extreme weather event or if the company suffers reputational damage. You run all these scenarios, including how they might impact specific target systems in organizations – like AI systems, physical infrastructure and human health – and work them into your long-term planning and preparation. You won't be able to mitigate all risks, but you can prepare for a lot of them by developing intelligence-based scenarios. Look for signals about what could happen, then develop good programs and train people in how to respond effectively.

Q: How do you find the right people to help you brainstorm?

KD: You find them in interesting places: look for who is a connector and people who see things or do things differently. Many people are creative if you give them the license to dream and to play. Often, they will need a separate place from where they do their day-to-day work – a social island. An important skillset leaders need now is how to curate and scaffold experiences for collective learning. Bringing sufficiently diverse people together to be prompted to imagine, explore through making, acting and sometimes breaking systems. There's an art and a science to convening conversations with people who can explore and identify patterns across and beyond systems.

Q: You were a contributor to a new report from the World Economic Forum, prepared in collaboration with the scientific publisher Frontiers, on the top 10 emerging technologies in 2025. Executives are still trying to wrap their heads around AI and quantum. What do you advise them to do to prepare for other new technologies?

KD: This year's list has shown that it's not always radically new technologies we need to look out for, but moments of potential convergence and resurgence of technologies for new applications. Understanding the histories of technological systems and which parts of them might enable a 'breakthrough' such as the development of ultra low latency networks that can enable collaborative sensing, or new membrane advances that may see osmotic power finally take off. Technology systems literacy and how social and environmental systems are transformed through their evolution is a transferable body of knowledge we're building in the School of Cybernetics, and supporting our partners to develop in their organizations as they chart their own futures.

Q: What kind of mistakes do the companies you counsel often make?

KD: Organizations have often made lots of them before we work with them. We often find the ones who have made mistakes and suffered loss of reputation or trauma – who have actually experienced what can happen – are the most open to learning and new ways of thinking. They're open to change as the old ways have let them down, and ready to work across their own internal and external boundaries, experimenting in ways that might enable them to rebuild their reputations and social license to operate.

Q: What would you like The Innovator's readers to take away from this interview?

KD: Leading through complexity, with continuous technology and other disruptions, requires different sets of leaders in boardrooms and running organizations. It's no longer about being the smartest, or most empathetic person in the room, but finding people to lead who can develop collective systems awareness and agility.

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