HOW ORGANISATIONS DISRUPT 'BUSINESS AS USUAL' IN RESPONSE TO EXPONENTIAL ENVIRONMENTAL AND TECHNOLOGICAL CHANGE AND WHAT IT MEANS FOR CAPABLE NZ

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INTRODUCTION/PROFESSIONAL CONTEXT/PERSONAL PROFILE

Intrigued by an upward curve that I observed in many settings – such as in the expression of rapidly increasing atmospheric carbon, rates of technological change, and growth in populations – I explored the exponential or doubling curve as a tool for thinking about responses to disruption, and so, the future.

I learned, from a 1969 talk by Professor Al Bartlett (Bartlett, 1969), that the doubling curve would always happen when a rate of change was constant, and that it was widely misunderstood. Prof. Bartlett began his talk with the statement: "The greatest shortcoming of the human race is our inability to understand the exponential function" (Bartlett, 1969). I then explored the curve's relationship to disruption through looking at the work of futures thinkers Ray Kurzweil (Kurzweil & Diamandis, 2017), Frank Diana (2014) and Gerd Leonhard (2015), all of whom believed that disruption to existing norms or expectations began to occur at the point where exponential growth overtook the more generally understood linear progression.

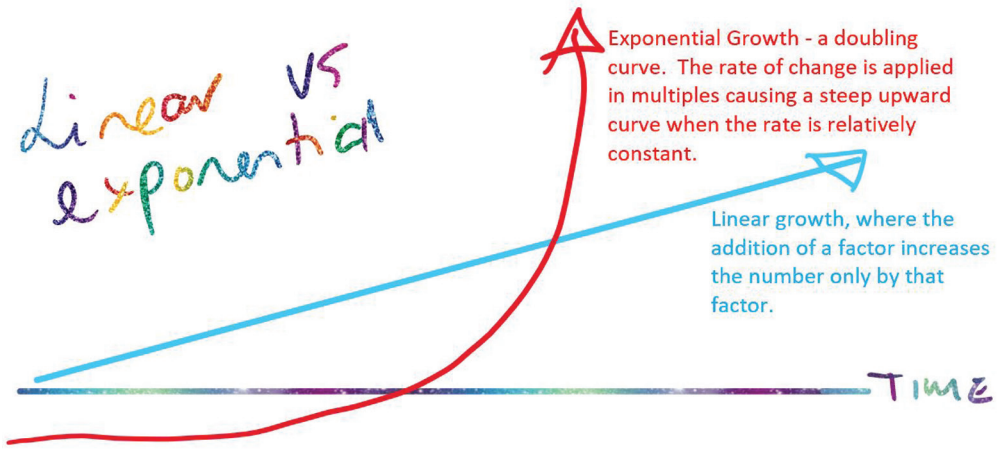

Figure 1: Linear vs Exponential Progression. Source: Alexa Forbes

While Bartlett uses the curve to argue the dire consequences of steady growth in a finite environment, the doubling or exponential curve is also a useful tool to understand the pace of technological change. The convergence of the two curves, environmental and technological, would surely increase disruption. This is not a new idea. While John P Holdren and Paul R Ehrlich (1974) outlined it many years ago in an article in *American Scientist*, I thought it highly relevant to thinking about the future of my work as both a facilitator in sustainable practice and an elected member of local government. I sought to understand these twin disruptive forces and how they were being considered in the New Zealand context, as well as how they might inform my own work.

My interest in these disruptive forces was formed through two events. The first was in 2014, when a learner in the Graduate Diploma in Sustainable Practice programme persuaded me to buy a bitcoin from him. He said that the platform that enabled crypto-currency like bitcoin was going to change everything in finance, and that therefore economies, and then society, would change as a result. The learner convinced me that investing in a crypto-currency enabled by the blockchain would help me understand the disruption caused by exponential change. According to him, while the finance sector was facing highly disruptive change brought on by this technology, awareness of the coming change was generally low.

The second key event was reading an article that claimed that higher education was "ground zero for disruption" (Hixon, 2014). I was impressed by the author's argument that tertiary institutions no longer fulfilled their societal promise: if you work hard and gain a good degree, then education would serve as your lifetime pass to a career and a middle-class life. Furthermore, the author posed the question that if higher education no longer fulfilled this promise, what becomes of its value? An intriguing thought given that I worked in a tertiary institute. Hixon's view was supported by an Ernst & Young a publication alleging that "the higher education sector is undergoing a fundamental transformation in terms of its role in society, mode of operation, and economic structure and value" (Ernst & Young, 2012).

Subsequently, I took these ideas as an initial framework for investigating what disruption would mean to education, beyond the buzz value of the term in a general sense. My previous learning work and professional practice had been centred on understanding environmental change, pollution, the 'why' of allowing economic systems to damage our ability to maintain the ecosystems we rely on to live, and the even bigger 'why' of a lack of sustained community response to this threat, particularly when such work can be so easily scaled. I realised that to understand these issues more deeply, I needed to understand the concept of disruption – technological/economic as well as socio-ecological – and its relevance to my work.

As a result, I have argued that technology presents a greater potential as a driver of change for human thinking and action than does environmental damage. This is because limited, linear ways of thinking have placed the economy on a higher level than environmental living systems on our attention radar. Accepting this conclusion opened up a new direction for me, as I had previously been constrained by the overarching logic of the need for change, driven by ecological imperatives only. Buying that bitcoin took me deep down the rabbit hole of technology, future thinking, disruption and exponential change, and fundamentally changed my approach to thinking about these issues. Climate change impacts are now likely exponential (Hansen et al., 2015), as is technological change (Berman & Dorrier, 2016). As these two major forces converge, I argue that we are looking at a future where everything is likely to be disrupted through systemic exponentiality – a concept that is hard for the human brain to comprehend.

METHODOLOGY

As in the rest of the world, many organisations in New Zealand are undergoing disruption to business models. Participants from six New Zealand organisations were researched as case studies towards building a picture of what it's like to work under these circumstances, and how relatively normal business can continue while disruption occurs. Participants were interviewed in person or via Skype or Zoom, using questions designed to be conversation starters that would allow free-ranging comment, but within parameters that ensured that themes could emerge, if indeed they existed.

I wanted to understand how these participants felt about disruption in terms of their organisation, what it meant to them, and how they distinguished between (or felt about) technological disruption as opposed to environmental disruption – mostly understood in terms of climate change or environmental degradation. Study participants were included throughout the process and were invited to review and amend their transcripts, and then finally review and sign off the final summary.

PROJECT OUTPUTS

I found that the increasing pace of technological evolution was highly disruptive for many New Zealand organisations, with several now exploring self-disruption as a defence strategy. The study participants described this process as the need to think beyond the practicalities of delivering today's purpose, so that the forces of change could be considered from other perspectives – potentially those of an as yet unknown competitor. The participants hoped that this 'eyes open' approach would help them act as start-ups (for instance, to look for gaps and act) even when the business case didn't really stack up. Overall, the idea was to remove the normal constraints of business-as-usual and be willing to allow some areas of a business to be cannibalised by others, if that's the way the technology was rolling.

Six key themes emerged from the case studies: 1) disruption is relentless, affecting everyone and working across every sector; 2) oranisations must disrupt or be disrupted – adapt or die; 3) there really is an emergent sense of chaos and amazement, and it's messy; 4) partnerships with others are essential, but not easy; 5) environmental disruption is generally less front-of-mind than technological; and 6) while accurate, the term 'disruption' is also overused, incorrectly used, and perceived as negative.

I acknowledge that the New Zealand organisations in the study are part of a small minority – fully prepared to recognise the revolution in front of them, take a hands-on approach to their future (no matter what it may hold), and freely talk about the failures along the way.

However, their stories were only part of the picture, as the future development of Capable NZ at Otago Polytechnic was subject to the same disruptive forces. I argue that the future of Capable NZwill depend on a willingness to self-disrupt from a position of 'understanding the revolution' as the twin disruptive capacities of technological advance and environmental degradation cause exponential change to all societal systems. Capable NZ needed to find and drive a strong, easily articulated purpose, or find a place within another organisation that had that same purpose, so that it could capitalise on the advantages it had already developed. Those advantages included supporting the development of twenty-first-century skills such as adaptability and creativity through learning frameworks, and operating and delivering a flexible learning environment. If Capable NZ sought to behave as a truly disruptive innovator (assuming it could become such a thing) it would, by its very nature, work to completely overturn the processes of the incumbent system, because that is how the process of disruption works.

REFLECTIONS ON PROFESSIONAL PRACTICE/ LEARNING OUTCOMES

In my work for Capable NZ , I needed a further qualification to be able to progress my career. The serendipitous convergence of that need, and my introduction to tech-led disruption, led me to enrol in a Masters of Professional Practice at work, for work. My aim was (and is) to drive my personal and professional development while also looking for a way to develop the futures thinking that will support Capable NZ and its mother institution (Otago Polytechnic).

Adding to my eclectic motivation mix, I am also an elected member of a local government body (councillor and chair of infrastructure at Queenstown Lakes District Council) and, as a result, am grounded in the everyday realities of arguments about growth, congestion and groaning sewers. This combination of perspectives – educator, politician,

environmentalist and future-phile – has allowed me to look hard at my responses to different situations and consider how one part of what I do impacts on other parts. My Master of Professional Practice study has taken me into the future and back to the past as I have tried to think systemically and consider how yesterday's solutions have become today's problems and tomorrow's opportunities. Complementing this, my concurrent work with learners and local traffic issues has grounded my thinking in the here-and-now reality of change and human reactions to it.

Alexa Forbes lives in Queenstown. She works to towards driving positive societal, environmental and economic change through facilitating Leadership for Change programmes at Capable NZ and also as an elected member and chair of the Queenstown Lakes District Council Infrastructure Committee. She is a member of the Institute of Directors and provides mentor-ship and strategic governance advice to several organisations, mostly in a volunteer capacity. Prior to her current roles, Alexa worked for 10 years as a journalist and a further 15 years as an executive director of a public relations company.

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