Current Research

Organisational Resilience Research: Developing the Capacity of Business to Cope with Uncertainty

Definition: *Building upon the concept of mainstream organisational resilience (Tierney, 2003), this larger study will examine the extent to which agency managers and business leaders can generate a more organisationally proactive, informed and effective stance toward extreme events and threats*

The central research questions:

 Is the extent to which organisations are prepared for managing the threat or act of extreme events e.g.; flooding, pandemic flu, terrorist activity

It is argued that preparedness can be assessed by utilising the concept of organisational resilience: the **technical, organisation, resource based and decision making** aspects of organisational and managerial activities, hence we examine:

 How managers perceive threats of extreme events

 Investigate sectoral effects on the preparedness of organisational systems and processes to cope with the uncertainties posed

Pilot: Sullivan-Taylor and Wilson, 2009

Research findings:

- Senior managers and organisations vary widely in their preparedness for managing threat and actuality of extreme events.

- *Practitioners respond typically either defensively ('we have done all that could reasonably be expected of us') or fatalistically ('an attack is inevitable and will be overwhelming, so there's not much point worrying about resilience').*

Paradoxes of Oranisational Resilience

- Paradox of interconnectedness
- Damned if you do-damned if you don't
- Paradox of muddling through (emergent vs planning culture)
- Paradox of compliance culture (vs OR culture)
- Paradox of business as usual (vs fire drill culture)
- Paradox of BCM/Risk Mgt position vs strategic decision making on boards
- Paradox of regional variation in BCM preparedness & planning – (despite same risks)
- Paradox of security: hardened vs soft targets, open spaces
- Paradox of man-made risks (events that are natural in origin and have an organisational origin)

Organisational Resilience

- What makes a company resilient?
- Can resilience be achieved through processes & functions such as risk management, business continuity, technology & security, or must an *organisation's culture, circumstances and behaviours* also be considered?
  - *To what extent do we understand the organisation-wide resilience capabilities of your organisation….?*

Business continuity:
The resilience paradox
Damned if you do and damned if you don't...

- Think about Y2K/the millennium bug threat in 2000 – billions invested but nothing happened... the issue has a taint." You can either be underprepared or overprepared. If you're overprepared, she says,"shareholders will criticise you for over investing in something you didn't need to worry about. If you under-prepare, you're likely to be sacked. *You're damned if you do and damned if you don't.*

- How do you make business continuity management 'business as usual'? People won't do something they see as wholly hypothetical and a waste of their time; employees won't leave their screens... call it '*fire drill syndrome*'.

- SMEs:
- -don't want to invest in training generally or in anything that's non-core.
- -tend to do little risk planning and rely on 'muddling through'.
- -is a risk that SMEs' lack of resources will mean that they are *less able to respond to and recover from extreme events (Sullivan-Taylor and Branicki, 2011).*

Safety in numbers?

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An examination of inter-organizational relationships under conditions of extreme strategic uncertainty

http://www.flickr.com/photos/nationallibrarynz_commons/3326203787/

Auckland weather bomb scare:

No weather bomb but Auckland blows up: April 2017

Whipped into a fever of exhilarated anxiety over the threat of a record-breaking storm, Aucklanders battened down the hatches and prepared for the worst.

Flooding, power outages, traffic mayhem and general widespread misery across the metropolitan population were predicted.

And when it <u>failed</u> to materialise and socked it to the east instead? Well, heads must roll, of course….! (Eva Bradley, NZ Herald).

What happened in your organization, sector and location….?

# Inter-Organisational Relationships & Resilience

- The contemporary risk of extreme events ranging from severe flooding, to the global impact of pandemic disease to the ever present threat of terrorist attacks have arguably been one of the major transformations of the modern world.

- This strand of the current UK vs NZ study examines the impact of the threat and actuality of extreme events upon private and public sector organisations.

Whilst also…

- assessing the extent to which inter-organisational relationships (both within and between sectors) are required to deal with the large scale risks and uncertainties created by the contemporary environment.

- Limited empirical research has been conducted to date about how extreme events constitute 'wicked' or 'whole systems' problems which require a 'joined-up' response.

NZ: A highly dynamic context

- The **Shaky Isles**/**Shaky Islands** is a NZ nickname.
- NZ has frequent seismic activity.
- Earthquakes are common & several active and dormant volcanic cones.
- Earthquakes can then lead to tsunamis and major flooding.
- The country records more than 14,000 earthquakes a year – but usually only about 150 are usually felt…
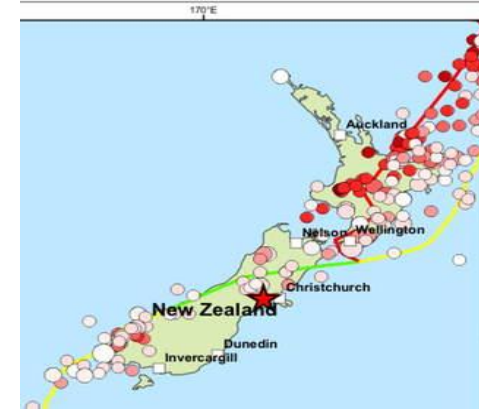
NZ experience:

Disaster recovery mainly been focused on natural hazards?
Hence, are we too complacent - she'll be right?

What major risks are in your strategic landscape?

Different images of risk:

- **A.Natural hazards:** floods, earthquakes, bio security issues,
- tsunamis, extreme weather, pandemic flu, nova virus, bird flu…

- **B.Man-made hazards:** cyber crime, global financial crisis/impending recession, pace of technological change/IT failure, political issues, elections, terrorism, competition, restructure (eg.Fonterra).

- **C. Events which are natural and have an organizational origin: earthquakes are an external risk but the organizational**
- **component is poor building regulations…**

The Current State of Play

- What is the biggest risk facing <u>New Zealand</u> at this time?
- What is the biggest risk facing <u>your organisation</u> at this time? (ie: what issue/s are keeping you awake at night?)
- What risks are we <u>most </u>prepared for?
- What risks are we <u>least</u> prepared for?
- What is the <u>biggest challenge</u> in becoming prepared for these risks?
- How can these challenges be <u>overcome</u>?
- Whose <u>responsibility</u> is it?
- Do you think the <u>public and private sector both share the same view</u>? Yes/no…why/why/not?
- How can we achieve <u>public-private sector engagement</u> in preparedness?
- Do you think NZ is keeping up with the <u>global game</u> in the risk management area? Yes/no…why/why not?
- Please add any other thoughts and comments………?

- Ageing infrastructure/aging population and impediments to addressing these – Nimbyism, anti-immigration, lack of informed debate and polarisation of views
- Inability to find the right balance between economic growth and environmental protection /enhancement.
- Cyber
- Massive earthquake/earthquake in Wellington
- Long term financial consequences of natural disasters
- Collapse of the alpine fault leading to loss of life
- International uncertainty due to climate change and or geopolitical events
- Another natural disaster, cyber attack, Trump (nuclear button!)
- POTUS/geopolitical, another GFC crisis, biosecurity, cyber.
- Significant international economic/social shock, including conflict

**2. What is the biggest risk facing <u>your organisation</u> at this time?
(ie: what issue/s are keeping you awake at night?)**

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- Increasing legislative oversight stifling new developments
- Regulatory constraints eg; H&S has ramifications for regulatory compliance for daily interuptions affecting customers (utility sector)
- Ensuring we have the right capability (i.e. our people) as we seek to change our operating model and organisational culture.
- Having the right skills/people to deliver on our goals/strategy
- Reputation
- Ability to be prepared for and respond fast enough to be changing external events (ie: biosecurity, funding changes, natural disasters).
- Financial sustainability of the sector and sector relationships impacting on ability to deliver
- Ability to prepare for and respond fast enough to changing external events (ie: biosecurity, funding changes, natural disasters)
- Another earthquake
- Industry disruption and failure to adapt/respond
- Cyber

3. What risks are we <u>most</u> prepared for?

- Operational risks
- Ones on risk registers – i.e. front of mind risks
- Small operational risks (low impact)
- Environmental-natural disasters; initial response than ongoing recovery and risk of supply chain disruption such as labour
- cyber risk, health and safety
- Business as usual work
- Getting better with earthquakes and floods
- We are well practised on the natural catastrophe front although financially, the country is not well placed.

4. What risks are we <u>least</u> prepared for?

- The confluence of mega-risks – climate change and associated social stressors, AI and robotics, post anti-biotic health system, mass migration, another financial crisis
- Ones not on risk registers – i.e. ones we are not thinking about, or not aware of (including Black Swans) – risk is all about *uncertainty*, about what could happen, when, why, to what extent etc.
- Cyber attacks, black swan events (eg. Earthquakes), biological disruption, environmental, tsunami, sea level rise
- Left field unpredictability
- Full shut doewn of connection to the internet/office/tools
- Cyber-technology, political uncertainty (international impact on NZ)
- Business continuity in the event of disasters and aging systems failure
- Large scale natural disasters, changes from climate change, impacts of major international events, increasingly sophisticated IT attacks

Multiple disasters..

- A larger multi regional disaster, i.e. Kaikoura across many regions and the insurance industry being able to respond.

- Resilience to a larger GFC especially with the amount of debt that has been built up in the housing sector. A long term cyber hack that brings key sectors to a complete stop for not just a day but possibly extended out into a week or more.

  - *Example: imagine if Transpower got hit and locked out of their systems for instance. I know personally what it's like to have lost the national grid input in extreme winter conditions for a day and saw what people in my community were doing. No power at home lets go and see if the local fish and chip shop or the supermarkets are open only to find they are not and then panic as they did not have enough food to last them through for a couple of days. The MCDEM message of get ready get through really does work…..maybe*

- Current political, economic and social paradigms lock us in to current ways of thinking and resources are not being devoted seriously to addressing global impacts of change
- Getting people to accept:
  - *things that are unlikely or not thought of, <u>may</u> happen (or not), and that scarce resources may need to be allocated to be prepared*
  - *that unlikely events can (and do) happen and we need to be prepared to do some planning on crisis mgt.*
- Left field unpredictability
- Cost and capacity to prepare
- Putting the time into preparedness and minimisation of the effects of these risks as we are too busy with the here and now
- Investment and social change
- Consensus on the nature of exposure and its severity
- Time/cost of having a full hack/redundancy in place
- Short term disruption –having to revert back to paper-based communication would be a challenge….!

- I think there is a real **gap** in terms of engagement at a director and senior management level. There is often lots of "talk" about how important it is, but when push comes to shove, risk goes to the bottom of the list…..this is because people focus purely on compliance risk, and do not see the importance of taking risk in business. Risk is not seem as strategic, but it is so tightly related to strategy, execution risk, choice of strategy.

- The risk of not entering a market or not choosing to do something is often the biggest risk.

- Yes someone cutting their finger on a skill saw is tragic. But really? It seem this is all the focus (H&S)….!!

Limitations…

- Thinking that the smallest issue will not cause larger ramifications

- Becoming so heavily dependent on computer modelling scenarios and losing the common sense/local knowledge aspect to the models.

- Being able to communicate with everyone in a way that they will listen and become engaged. Repetitive messages over various formats has proven not to work are people become tuned out to it.

6. How can these challenges be <u>overcome</u>?

- Intergovernmental cooperation, global thinking \ local actions, collaboration between government agencies, NGOs, business and communities
- By learning lessons from issues and events elsewhere, and from 'near misses'; by risk professionals framing up the discussions required
- Education. Arming people with the right tools. There is not enough research on my opinion on the correlation between EBITDA and risk maturity.
- Risk culture, tone from the top
- Awareness. Consider what else is out there scenario testing and development…
- Targeted and prioritised investment
- Putting some emphasis on understanding the uncertainty and prioritising our efforts
- Prioritise investment and legislate either no-go build areas or zero liability if residents choose to build in hazard areas
- Leadership and communication on risk matters
- Working with a widespread group who are not afraid to think outside the square and challenge the decisions and the scenarios that have been born from computer models.
- Looking at community based
- Clear and understood BCPs in place

7. Whose <u>responsibility</u> is it?

- Too many vested interests
- Everyone must take responsibility but that requires informed debate and research led actions
- Senior leadership / management but facilitated by risk professionals
- Responsibility vs accountability? Risk is everyone's responsibility, exec and dirs. Are accountable.
- Everyone-bust start with boards then Exec.
- Everyone's. But led by executive and supported by assurance/risk function.
- ELT, senior management down to line management
- All those involved
- Central and local government and all citizens must take some responsibility
- Public and private organisations
- To build the resilience that is required, it's everyone's responsibility to become engaged, but it's the apathy aspect that needs to be broken and the repetitive communications that's aimed at the same target audience.

8. Do you think the <u>public and private sector both share the same view</u>?   Yes/no…why/why/not?

- Probably – different drivers, but same approach to dealing with risks that they know about
- No public sector more prepared due to nature
- Not sure-will certainly impact both
- No-we have different purposes. State sector-what govt wants. Private-what gives shareholders the gains they want
- No=developers and central/local government have quite different and often opposing drivers
- Both sides are asking the same questions
- Yes and no. Private sector: totally cost driven and dividend to shareholder derived thinking so tend to become reactive risk practitioners. Public sector: same with SOE's, and on other parts are proactive risk practitioners

- Open forums, informed debate and focussed action, the media raising the bar on informing, schools and universities better educating
- Carrot and stick, education, investment/JVs, legislation
- Depends on what risks – both sectors need to have an interest in treating the risks together.
- Raise expectations –scenario model
- Work together looking for the similarities rather than the differences. We have much to learn from each other. I also think academia should be thrown into the mix. Risk is a very under-researched space
- Working together
- Leadership comes from public organisations. Private initiatives may not contribute to their own short term shareholder value priorities
- Don't know….hard to achieve…?

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- On the whole yes but that is not saying much
- Not sure – we are relatively small and have fewer formal risk bodies, professional development options etc.
- *NO – if your listed in the US, half of the financials relate to risk. Most directors give it lip service. This is changing. I have heard of so many organisations taking an excel spreadsheet risk register from one company and trying to use that as a base for their business usually in a totally different industry or vehicle!*
- No. threats overseas (pandemics, terrorism) seem less likely here. Attitudes more relaxed/complacent.
- Its getting there - but that is more often about individuals than the risk function as a whole.
- Yes, we have people in the risk industry who are globally connected and aware and will receive updates from various sources

Need for more research...

- There are some areas we are becoming leaders ie; volcanic disaster based risk. Shane Cronin and his team. Uni of Akld and Canterbury are doing a lot of good work.

- Need a lot more work done on H&S as we are lagging!

- Work together looking for the similarities rather than the differences. We have much to learn from each other. I also think academia should be thrown into the mix. Risk is a very under-researched space

Yes!

- Risk management thinking is reasonably mature here, the challenge is to convert the thinking into broad best practice in small and large organisations. ***That is where we are weak, risk management is having difficulty demonstrating value it adds to an organisation and therefore companies are not investing in quality resources and capacity for risk work or positioning the risk leader at the right level of the organisation***.

Please add any other thoughts and comments………?

- There is a **gap** currently with respect to leadership in risk management in NZ (e.g. public sector – no 'Chief Govt. Risk Officer" or equivalent; no 'national risk register')

- The **tools and the language we use do not help promote risk.** Risk is good for business. Excel is not user friendly.

- **Governance of risk in large organisations is inadequate** due to the low level of knowledge and understanding of risk management disciplines across our director base.

Paradoxes of OR

- Paradox of interconnectedness
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- Paradox of regional variation in resilience and BCM preparedness & planning - despite same risks
- Paradox of security: hardened vs soft targets, open spaces

Risk Analysis:

- 1. Do the classic risk management approaches apply in the context of global terrorism? If not, why not?

- 2. What strategies can organizations put in place to cope with the ongoing uncertainty posed by global terrorism?

- 3. What capabilities do organizations need to develop to cope with this threat and level of risk?

- 4. How could scenario planning help organizations cope with uncertainty? How would this be applied and what type of scenarios should be included?

Risk from Terrorism is Different?

- The risks from terrorism are not about expected returns……

- They are about the *likelihood of occurrence* of a terrorist attack (the outcomes of an attack are fairly easy to predict).

- They are about the *degree of vulnerability* of the organisation to a terrorist attack.

Definition of Terrorism

- *Terrorism is:*

    The threat or use of violence to attain political or other goals through intimidation (threatened or actual) towards organizations and individuals in civil society.
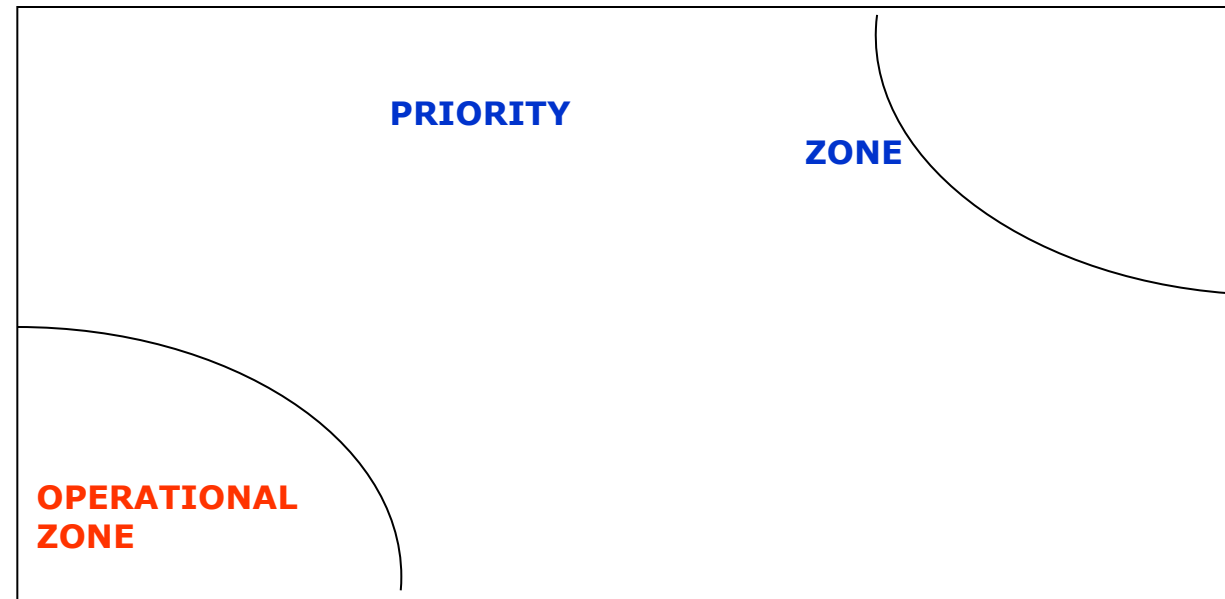
Czinkota et. al (2004)

# Terrorism threat and how its changing targets

- Hard to soft targets
- Open spaces/crowded places
- Iconic and postcard sites
- Exiting vs entering venues
- Family events
- Festivals, parades

The Collaborative Imperative

- Joining-up: a magic bullet?

- The 'joined-up' or 'whole systems' approach which looks at cross cutting problems and fragmented governance (Sullivan, 2005: 15) could arguably be seen to underpin the Government vision for the security and resilience of NZ/Australian organisations.

- It is arguable that this approach, following wider policy trends, may be informed by the belief that 'problems are found on the interface between organisations' and that performance improvement may therefore require a move from existing structural forms (Richards et al, 1999: 10; Newman, 2001: 106).

Managing Uncertainty & Extreme Events Scenarios

- Business continuity managers and risk managers often have an impossible job as they are *"damned if they do and damned if they don't"*, due to the unpredictable nature and scale of extreme events."

- Develop the capabilities and preparedness for any type of extreme event (natural hazards/man-made/both).

- Communication: both high and low tech solutions

- Exercising scenarios with geographically close community, supply chains
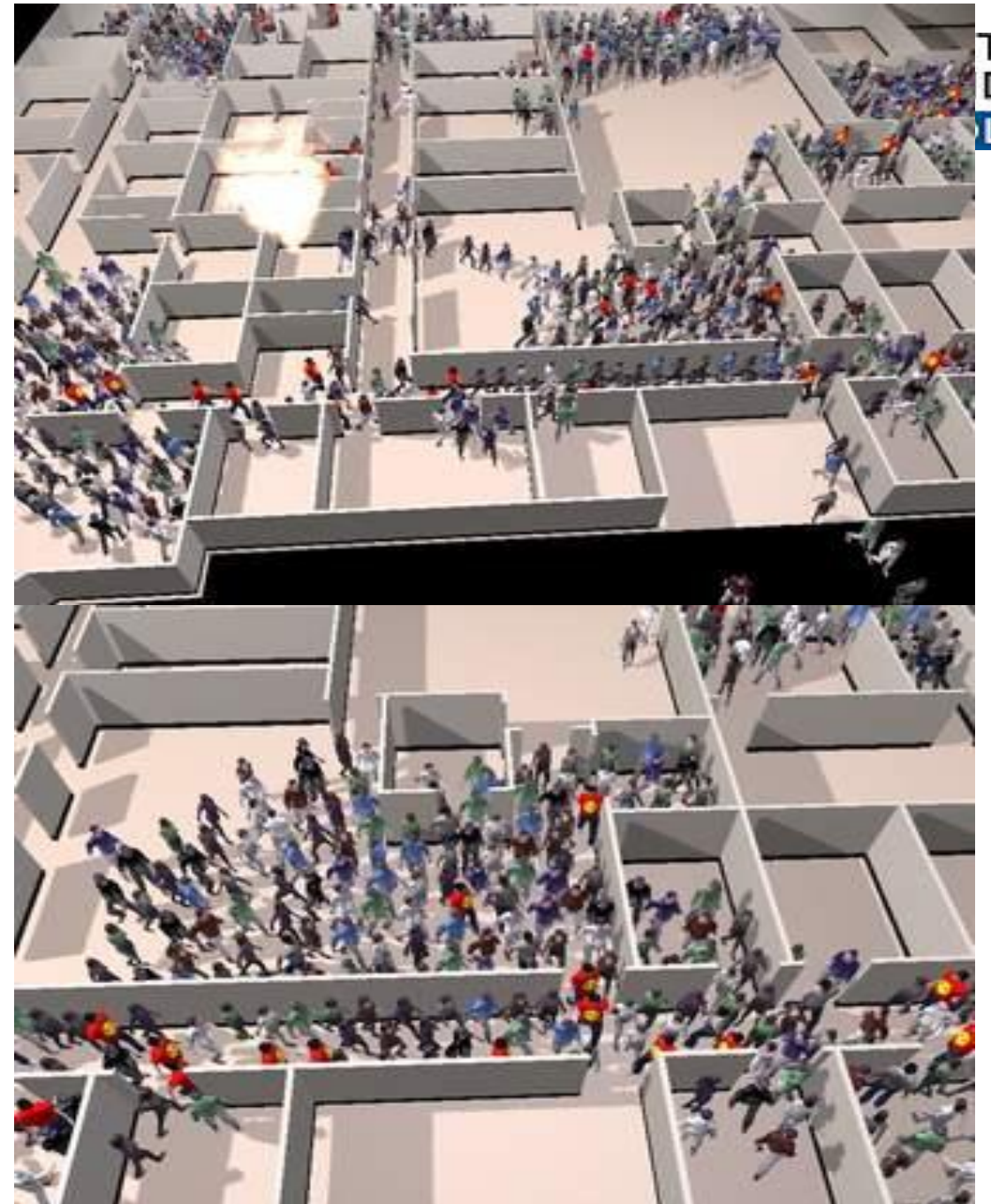
Lego Serious Play
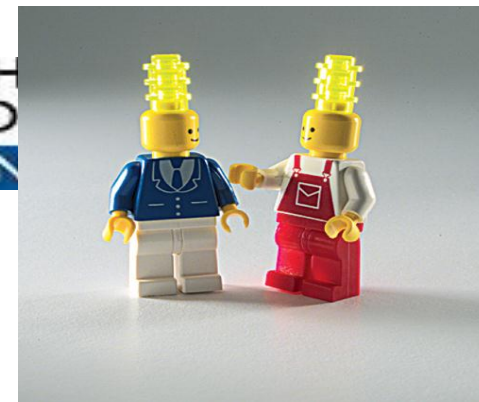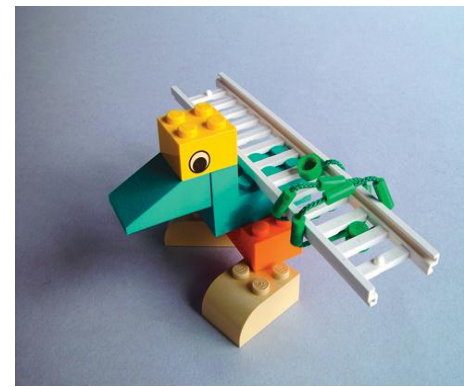
- **THE ESSENCE**
- The LEGO® SERIOUS PLAY® Method is a facilitated meeting, communication and problem-solving process in which participants are led through a series of questions, probing deeper and deeper into the subject. Each participant builds his or her own 3D LEGO® model in response to the facilitator´s questions using specially selected LEGO® elements. These 3D models serve as a basis for group discussion, knowledge sharing, problem solving and decision making.
- The LEGO® SERIOUS PLAY® Method is a technique which improves group problem solving. By utilizing visual, auditory and kinesthetic skills, the Method requires participants to learn and listen, and it provides all participants with a voice. The Method serves as a shared language regardless of culture or position. It is also a method that requires a trained LEGO® SERIOUS PLAY® facilitator.
- **GAINING CONFIDENCE AND COMMITTING TO SHARED GOALS**
- By using the LEGO® SERIOUS PLAY® materials and methodology you will explore the relationships and connections between people and their world, observe the dynamics both internal and external, explore various hypothetical scenarios, and gain awareness of the possibilities.
- **Corner stones**
- The concept is based research in three areas of development.
- *Play* - *Play is defined as a limited, structured and voluntary activity that involves the imaginary. That is, it is an activity limited in time and space, structured by rules, conventions or agreements among the players, uncoerced by authority figures, and drawing on elements of fantasy and creative imagination.*
- *Constructionism* - *Based on the ideas of* Seymour Papert, *which built in turn on the* Constructivist *theories of Papert's colleague* Jean Piaget. *Papert argued that learning happens especially well when people are engaged in constructing a product, something external to themselves such as a sand castle, a machine, a computer program or a book.*
- *Imagination* - *Throughout history, the term "imagination" has been given many different cultural and linguistic connotations. While all share the basic idea that humans have a unique ability to "form images" or to "imagine" something, the variety of uses of the term "imagination" implies not one, but at least three meanings: to describe something, to create something, to challenge something. From the point of view of Lego Serious Play, it is the interplay between these three kinds of imagination that make up strategic imagination – the source of original strategies in companies.*
- http://seriousplaypro.com/category/serious-play-library/
- http://seriousplaypro.com/facilitators/books/
- Global Training Centre: Lego Executive Discovery Centre, Billund Denmark.

LEGO SERIOUSPLAY®

Group activity

- Choose your extreme event scenario

- Use one mat and the Lego provided

- Design your model

- Then present back to the group
your scenario, strategic landscape and
joined up resilience principles…

What major risks are in your strategic landscape?

Different images of risk:

- **A.Natural hazards:** floods, earthquakes, bio security issues,
- tsunamis, extreme weather, pandemic flu, nova virus, bird flu…

- **B.Man-made hazards:** cyber crime, global financial crisis/impending recession, pace of technological change/IT failure, political issues, elections, terrorism, competition, restructure (eg.Fonterra).

- **C. Events which are natural and have an organizational origin:** earthquakes are an external risk but the organizational
- component is poor building regulations…

Who is in your strategic landscape?

- ***Map out the key stakeholders….***
- In your immediate location/s: CBD, greenfield…
- Community
- In your supply chains
- Domestically
- Internationally
- Public/private

Internal Risk Registers?

- What is your role when a crisis happens?
- Who do you contact in a situation/who contacts you?
- What happens to connectivity?
- Is there a crisis communication process (alerts via texts?)
- Who is on the critical skills list to stay at work during a crisis?
- What are the expectations of staff?

Organisational Resilience Scenario

Using Lego Serious Play….

1. **Natural hazard/man-made/combined:** Choose a scenario for an organisation. Provide a thumbnail sketch of the organisation's key characteristics and strategic landscape of key stakeholders.

2. **Assess the impact of this on organisational factors** such as customer demand, costs, supply, levels of competition, changes in technology, restructuring etc.

3. **Internal Risk Register:** What does this mean for your role and skills and position in the company before/during/after a crisis to help quicker business recovery?

4. Then suggest one or two strategies an organisation might adopt now to prepare for the future you have outlined.

5. Assess the organisations's capabilities in implementing your identified strategies. *What additional core competencies will be needed (if any) and which current competences may become redundant?*

LEGO

Session Review: Organisational Resilience

- What makes a company resilient?
- Can resilience be achieved through processes & functions such as risk management, business continuity, technology & security, or must an organisation's culture, circumstances and behaviours also be considered?
  - *To what extent do we understand the resilience capabilities of your organisation….?*
  - *What does this mean for your role and position in the organisation?*

- New Zealand's historic heritage is under threat from both exogenous and endogenous risks. Due to New Zealand's dynamic landscape, unpredictable hazards pose a potentially catastrophic threat to historic sites. Additionally, historic heritage is under constant development pressure (Rouse & McCracken, 2014). Transformational change can be achieved through protecting the urban characteristics which affect tūrangawaewae, civic pride, cultural well-being and community resilience.

- A national decision-making policy framework for New Zealand's historic heritage that mitigates risk and incorporates the wider economic value of tūrangawaewae, civic pride, cultural well-being and community resilience.

- We hypothesise that tūrangawaewae, civic pride, cultural well-being and community resilience is associated with the protection and effective management of heritage buildings and Māori taonga tuku iho. Incorporating non-financial aspects into the economic value of these assets will enable urban planning decision-making logic to build better communities which prioritise the holistic well-being of residents and mitigate the risks associated with natural hazards and development pressure. By gaining a better understanding of the public good value inherent in our historic heritage, both local councils and developers will be able to make more systematic, informed, consistent and improved decisions. We hypothesise that a nationally standardised framework for public and private management of these assets will remove the current inconsistencies and encourage public private partnerships to develop, enabling the successful management of our historic heritage.

- # The Organisational Resilience Paradox

SME Resilience to International Hazards

Themes: entrepreneurship business strategy, local entrepreneurial behaviours, SME's, resilience, strategic management, black swan events.

Presented by Dr B. Sullivan-Taylor

Paradoxes

- Paradox of interconnectedness
- Damned if you do-damned if you don't
- Paradox of muddling through (planning culture)
- Paradox of compliance culture (vs OR culture)
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- Paradox of man-made risks: events that are natural in origin and have an organisational origin
- Paradox of security: hard vs soft targets, open spaces

Resilience to International Hazards

- NZ businesses are highly reliant on their ability to export and import goods.
  - Due to a low level of risk at home few consider the potential dangers faced by their upstream suppliers and downstream customers, and the flow-on effects that any extreme events would have on them.

- SMEs tend to do little risk planning and rely on 'muddling through'.

- This paper examines the unique vulnerability of SMEs, which make up 97% of the NZ economy and yet are often unprepared for international hazards.

Focus of Study

- A natural hazard, technological event or man-made disaster overseas would all have catastrophic effects on the ability to continue trade with a supply chain partner, thereby affecting a NZ company just as severely.

- *Study:*

- A first step towards examining the implications of globalization on risk and resilience.

- Since SMEs make up 97% of the NZ economy, the intention is that this research will allow for critical understandings into methods for enhancing the resilience of the NZ SME economy and similar economies worldwide.

SME's Study - Literature Review

- Importance of SME's to the NZ economy
- SME resilience
- SME's in supply chains
- Legislation and standards

The importance of SMEs

- SME's make up 97% of the NZ economy & in all of NZ's major industries: service sector, production and primary industries.

- Reliant on international trade (Ministry for Primary Industries, 2016). *This reliance creates the opportunity for a unique vulnerability.*

- Recent GFC significantly impacted markets overseas, causing a domino effect that depressed the NZ market (Bedford, 2008).

- Are 97% of the NZ economy, *SMEs may be increasingly important in times of economic recession* (Stokes, 2002; Waikato Times, 2014).

- *In extreme events such as this, SMEs are simultaneously very vulnerable and very significant.*

SME's Resilience

- *Mind the gap: very little literature exists on the resilience of SMEs towards extreme events.*
- A study examined the gap in the field of organisational resilience research and made an attempt at examining the features of SME's that make them more or less predisposed to resilience (Sullivan-Taylor & Branicki, 2011):
  - SMEs have a unique perspective and attitude towards resilience compared to larger firms
  - Storey (1994) noted that SMEs are not simply scaled-down versions of larger firms, operating in entirely different operational contexts.

SME Strengths and Weaknesses

- Weaknesses in times of crisis:
- SMEs have much lower access to resources and technical capabilities and so are far more vulnerable in this regard (Sullivan-Taylor & Branicki, 2011; Herbane, 2010, p.44).

- This leaves them *vulnerable to events of a smaller scale* – such as the death of a key person, communication breakdown or invoice non-payment – and disproportionately increases the likelihood that they will fail (Sullivan-Taylor & Branicki, 2011).

- Strengths in times of crisis:
- Their *rapidity and agility of decision-making* allows for faster responses and reactions to extreme events when they occur
- Leadership and decision-making were observed to be more direct, due to the *lack of prior planning allowing for rapid decision-making* (Sullivan-Taylor & Branicki, 2011).

How resilient are SME's?

"Resilience is a protective strategy against unforeseen or unthinkable events, and key instruments for it include 'the strengthening of the immune system, diversification of the means for approaching identical or similar ends, design of systems with flexible response options and the improvement of conditions for emergency management and system adaptation.'"

(Aven, 2015, p.87)

- Hypothesis 1: SME resilience is distinct in that they are uniquely vulnerable to the flow-on effects perpetuated by extreme events overseas.

How resilient are SME's in international supply chains?

- *"SMEs do not typically consider supply chain strategy before product introduction, and subsequently experience supply chain problems that are likely to be detrimental to the firms' growth potential"* (Sharifi et al., 2013).

- They noted that this lack of planning later exposed typical SMEs to major risks and increased their vulnerability to market changes.

- The source of this vulnerability was found to be resource availability, managerial attitudes, and culture (Sharifi et al., 2013).

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Vignette: MNEs and SMEs –The Canterbury 2011 Earthquake Crisis

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Disaster Management Practices

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- 1. **SME agility**: MNEs have more resources, planning and stress testing capability than SMEs.
- Hence, we would expect that 80% of SMEs go out of business after an extreme event like the 2011 Canterbury earthquakes. That didn't happen though; NZ SMEs proved to be exceedingly agile, with no rise in the 'death rate' of organisations….because SMEs are so agile, planning may not always be the best use of their time." Instead just 'muddle through' events may overcome their lack of resources or preparedness.

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Conclusion

- This paper has examined the unique vulnerability of SMEs in global supply chains in light of their typical lack of preparedness to extreme events.

- *Findings reveal :*

- vulnerabilities of SMEs and lack of preparedness to extreme events and large disasters, especially international events that may be 'unknown unknowns'.

- paradox:distinct way in which SMEs are adaptable and yet unprepared for extreme events

- need for further research:
  - *methods for enhancing the resilience of the NZ SME economy*
  - *the implications of globalization on SME resilience and exposure*
  - *effect of risk-related cultural phenomenons (eg; dependency upon govt)*
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Paradoxes

- Paradox of interconnectedness
- Damned if you do-damned if you don't
- Paradox of muddling through (planning culture)
- Paradox of compliance culture (vs OR culture)
- Paradox of business as usual (vs fire drill culture)
- Paradox of man-made risks: events that are natural in origin and have an organisational origin
- Paradox of security: hard vs soft targets, open spaces

Resilience to International Hazards

- NZ businesses are highly reliant on their ability to export and import goods.
  - Due to a low level of risk at home few consider the potential dangers faced by their upstream suppliers and downstream customers, and the flow-on effects that any extreme events would have on them.

- SMEs tend to do little risk planning and rely on 'muddling through'.

- This paper examines the unique vulnerability of SMEs, which make up 97% of the NZ economy and yet are often unprepared for international hazards.

Focus of Study

- A natural hazard, technological event or man-made disaster overseas would all have catastrophic effects on the ability to continue trade with a supply chain partner, thereby affecting a NZ company just as severely.

- *Study:*

- A first step towards examining the implications of globalization on risk and resilience.

- Since SMEs make up 97% of the NZ economy, the intention is that this research will allow for critical understandings into methods for enhancing the resilience of the NZ SME economy and similar economies worldwide.

SME's Study - Literature Review

- Importance of SME's to the NZ economy
- SME resilience
- SME's in supply chains
- Legislation and standards

The importance of SMEs

- SME's make up 97% of the NZ economy & in all of NZ's major industries: service sector, production and primary industries.

- Reliant on international trade (Ministry for Primary Industries, 2016). *This reliance creates the opportunity for a unique vulnerability.*

- Recent GFC significantly impacted markets overseas, causing a domino effect that depressed the NZ market (Bedford, 2008).

- Are 97% of the NZ economy, *SMEs may be increasingly important in times of economic recession* (Stokes, 2002; Waikato Times, 2014).

- *In extreme events such as this, SMEs are simultaneously very vulnerable and very significant.*

SME's Resilience

- *Mind the gap: very little literature exists on the resilience of SMEs towards extreme events.*
- A study examined the gap in the field of organisational resilience research and made an attempt at examining the features of SME's that make them more or less predisposed to resilience (Sullivan-Taylor & Branicki, 2011):
  - SMEs have a unique perspective and attitude towards resilience compared to larger firms
  - Storey (1994) noted that SMEs are not simply scaled-down versions of larger firms, operating in entirely different operational contexts.

SME Strengths and Weaknesses

- Weaknesses in times of crisis:
- SMEs have much lower access to resources and technical capabilities and so are far more vulnerable in this regard (Sullivan-Taylor & Branicki, 2011; Herbane, 2010, p.44).

- This leaves them *vulnerable to events of a smaller scale* – such as the death of a key person, communication breakdown or invoice non-payment – and disproportionately increases the likelihood that they will fail (Sullivan-Taylor & Branicki, 2011).

- Strengths in times of crisis:
- Their *rapidity and agility of decision-making* allows for faster responses and reactions to extreme events when they occur
- Leadership and decision-making were observed to be more direct, due to the *lack of prior planning allowing for rapid decision-making* (Sullivan-Taylor & Branicki, 2011).

How resilient are SME's?

"Resilience is a protective strategy against unforeseen or unthinkable events, and key instruments for it include 'the strengthening of the immune system, diversification of the means for approaching identical or similar ends, design of systems with flexible response options and the improvement of conditions for emergency management and system adaptation.'"

(Aven, 2015, p.87)

- Hypothesis 1: SME resilience is distinct in that they are uniquely vulnerable to the flow-on effects perpetuated by extreme events overseas.

How resilient are SME's in international supply chains?

- "*SMEs <u>do not</u> typically consider supply chain strategy before product introduction, and subsequently experience supply chain problems that are likely to be detrimental to the firms' growth potential*" (Sharifi et al., 2013).

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What major risks are in your strategic landscape?

Different images of risk:

- A.Natural hazards: floods, earthquakes, bio security issues,
- tsunamis, extreme weather, pandemic flu, nova virus, bird flu…

- B.Man-made hazards: cyber crime, global financial crisis/impending recession, pace of technological change/IT failure, political issues, elections, terrorism, competition, restructure (eg.Fonterra).

- C. Events which are natural and have an organizational origin: earthquakes are an external risk but the organizational
- component is poor building regulations…

Terrorism –changes in targets…

- Soft vs hard targets
- Exit vs entry access
- Open spaces
- Public places
- Festivals, concerts, gatherings, family events…