



**Resilient Organisations
Research Report 2009/05**

Resilience Retreat

Current and Future Resilience Issues

Erica Seville
Tony Fenwick
Dave Brunson
Dean Myburgh
Sonia Giovinazzi
John Vargo

Resilient Organisations Research Programme

The Resilient Organisations research group is a multi-disciplinary team of 17 researchers and practitioners that is New Zealand based and with global reach. A collaboration between top New Zealand research Universities and key industry players, including the University of Canterbury and the University of Auckland, Resilient Organisations is funded by the New Zealand Foundation for Research, Science and Technology and supported by a diverse group of industry partners and advisors. The research group represents a synthesis of engineering disciplines and business leadership aimed at transforming New Zealand organisations into those that both survive major events and thrive in the aftermath.

We are committed to making New Zealand organisations more resilient in the face of major hazards in the natural, built and economic environments. Resilient organisations are able to rebound from disaster and find opportunity in times of distress. They foster a culture of self-reliance and effective collaboration, are better employers and contribute to community resilience.

Activities and outputs of the group include informing and focusing debate in areas such as Civil Defence Emergency Management, post-disaster recovery and the resilience of critical infrastructure sectors, in addition to core organisation resilience capability building and benchmarking activities. We have produced practical frameworks and guides and helped organisations to develop and implement practical resilience strategies suited to their environment.

For more information on Resilient Organisations, see our website at www.resorgs.org.nz.

Table of Contents

- Resilient Organisations Research Programme..... i**
- Table of Contents ii**
- Executive Summary i**
- 1 Introduction 1**
- 2 The Big Shake Up..... 1**
 - 2.1 Perspective from Those Affected..... 2
 - 2.2 Perspective from the Recovery Commission..... 4
- 3 Addressing Common Resilience Challenges 9**
 - 3.1 Leadership, Management and Governance Structures 10
 - 3.2 Devolved and Responsive Decision Making..... 12
 - 3.3 Silo Mentality 13
- 4 Resilience Master Class 15**
 - 4.1 Changing the Resilience Mindset 15
 - 4.2 Questions a New CEO Should be Asking..... 17
 - 4.3 Planning for Likely Scenarios or Planning for Consequences? 18
- 5 Setting the Research Agenda 20**
- 6 Conclusion 22**
- Appendix A: Retreat Programme 23**
- Appendix B: Retreat Attendees..... 25**

Executive Summary

In February 2009, the Resilient Organisations research programme held a three day 'Resilience Retreat' at Flock Hill, Canterbury. Industry guests and others from Australia and New Zealand joined the retreat. The purpose was to promote discussion about what resilience is and how to achieve it, discuss recent research and identify areas of future research need.

The main themes that emerged were:

- Most organisations have strengths and weaknesses in monitoring threats, planning for key vulnerabilities, and adapting rapidly and seizing opportunities when emergencies occur.
- Retreat participants noted three areas where improvements were needed in their own organisations:
 - Improving leadership, management and governance structures, i.e. ensuring good management during crises so that stakeholder needs and business priorities are balanced
 - Devolving decision making and making it more responsive, i.e. promoting arrangements in which people on the ground are enabled to make decisions but where higher authority can also be accessed quickly when needed
 - Overcoming silo mentality, i.e. minimising behavioural barriers which can impede organisation performance

Tools for improvements in these areas were suggested and are summarised in this report. They focus on building resilience-enhancing leadership and enabling staff to maximise their contributions in emergency conditions.

- Other issues summarised in this report include:
 - Challenging the resilience mindset – four ideas for capturing opportunities are suggested
 - Questions for new CEOs – five specific issues that a new CEO should check are set out
 - Resilience planning – a range of issues relating to setting up and reviewing plans is discussed.
- Valuable lessons are available to New Zealand from reviewing how:
 - authorities in other countries handle emergencies – the report very briefly summarises learnings from the 2008 Sichuan earthquake, noting the needs to both build strong institutional arrangements to progress reconstruction and to involve communities in reconstruction planning
 - how institutions perform in adverse conditions – the report comments on Jemena's experience (Jemena is a Melbourne electricity lines company) following a severe 2008 wind storm, noting that customers have both

increasingly high electricity reliability needs and rapidly evolving expectations about communication with suppliers.

An improved platform was established on which future research efforts can be founded. We believe we are well placed to tackle the challenges that lie ahead in the next phases of the Resilient Organisations research programme.

1 Introduction

In February 2009, the Resilient Organisations research programme hosted a three day 'Resilience Retreat' in the beautiful setting of Flock Hill, Canterbury. Surrounded by mountains and lucky to strike fantastic weather, the three days were filled with much discussion and debate.



The first half of the Retreat was attended by the core Resilient Organisations research team. The team was then joined by invited industry guests and others from Australia and New Zealand. The programme and list of attendees are in Appendices A and B.

The purpose of the retreat was to:

- trigger thought-provoking discussion about what resilience is and how to achieve it;
- discuss recent research with practitioners and get their feedback on its usefulness; and
- work with practitioners to identify areas of future research need.

This report provides a snapshot of the issues discussed together with some food for thought on how research might address looming resilience issues.

2 The Big Shake Up

To set the scene, the programme started with a surprise simulation of a major Alpine Fault earthquake.

Flock Hill is very close to the Alpine Fault and would experience significant shaking. The scenario featured commencement of shaking just as retreat participants gathered in the conference room. Those present were asked to sit in silence for a full two minutes to simulate the duration of the earthquake, and to consider how they might be feeling and what their reactions might be.

New Zealand's Alpine Fault

For those unfamiliar with the New Zealand hazardscape, the Alpine Fault is a major seismic fault line that runs along the spine of the Southern Alps of New Zealand's South Island. Geologists tend to get excited about the Alpine Fault as there is a high chance of a major rupture within their lifetime! The Alpine Fault historically has ruptured on average every 250 years, and it is 280 years since the last 'event'. An Alpine Fault rupture could be over 200km in length and have a magnitude of 8.2 on the Richter Scale.

Participants then role-played the first two hours after the event. It was assumed that Flock Hill was isolated from the outside world with no cell phone or landline communications. Electricity lines were assumed to be down and road access to both the east (towards Christchurch) and the West Coast blocked. The focus was on taking stock of damage, checking available supplies, considering communication and transport options and assessing assistance that a few resilience researchers might be able to offer to the local community.

2.1 Perspective from Those Affected

The group split into three teams, each leading discussion on one of the following issues:

- **What damage has been sustained to the Flock Hill site and what resources are available?**
- **What is the personal situation within the group?**
- **What damage has been sustained in the surrounding area (e.g. roads, local communities etc) and what could we do to help?**

The boxes below summarise the discussion.

Damage and resources on the Flock Hill site
<p>After switching off electricity and gas, the structural engineers within the group conducted a walk-through of the facility to check safety and damage (the team actually assessed seismic vulnerabilities and likely damage). The survey addressed the condition of both vertical and horizontal structures, non-structural elements and hanging items such as ceilings.</p> <p>No major damage was observed in the structural parts of the buildings, but access to a few of the accommodation lodges was denied because of the unsafe condition of the ceilings. The conference room where the team was meeting when the earthquake struck was judged to be safe. The group agreed to use that room to plan the response.</p> <p>When the safety survey of the buildings was completed, lifeline services available at Flock Hill (water, electricity, gas, phone/internet connection) and alternative communications (e.g. radio) were considered. The team also evaluated stored food and possible alternative food sources; available cars and alternative means of transport (e.g. helicopters). Fuel and equipment to support those wishing to leave Flock Hill were assessed.</p> <p>The overall conclusion was that Flock Hill was well equipped (complete with own helicopter and pilot!) and the group could survive in-situ for a week or more with few problems.</p>
Personal situation within the group
<p>Once the second team determined that there were no immediate injuries, longer term personal/medical needs were evaluated. Several group members were concerned about the welfare of family and friends at home. Depending on their personal situation, some felt the need to return to Christchurch quickly; others felt they would be better staying in-situ until it was clear that a safe return was possible. Some needed resupply of personal medication and one member had her 6 month old baby with her. Some felt they would not be physically up to the foot trek to get out; others felt they had a key role in the response effort elsewhere and needed to return to Christchurch if possible.</p> <p>After determining that there were sufficient resources to provide for those that wished to remain, those wanting to leave organised themselves in two parties, one headed to the east towards Christchurch, and the other to the West Coast where there was expected to be significant devastation. The available resources were allocated to support the parties.</p> <p>The initial intent of the party heading west was to help with the rescue and response effort and to gather initial damage information which would be valuable for later research. Arthur’s Pass, a</p>

small tourist town 50km to the west, was expected to have suffered significant damage and that was the initial destination. Upon reflection however the party concluded that they would be poorly equipped to enter the area which was likely to be subject to major aftershocks, landslides and rock falls. The decision then was to focus on helping the local community, but, being farming people remote from main population centres, local folk were expected to be highly resilient and in need of little support.

The party heading east decided to make their own way towards Christchurch, leaving the helicopter to help in the wider rescue effort. The party agreed to undertake an initial reconnaissance to evaluate the state of the roads to the east, planning to return to Flock Hill that evening. The plan was then to drive as far east as possible, anticipating a need to make way by foot over Porters Pass to the nearest township (and Civil Defence centre) of Springfield. Contacts along the route who might be able to provide food and shelter were identified.

A portable radio was provided to each of the parties to maintain communication with those staying at Flock Hill to update them about safety and conditions beyond Flock Hill.

Damage sustained in the surrounding area

The third team evaluated likely damage in the surrounding area. It was likely that buildings in the local towns had sustained significant damage. Communications were likely to be down, with limited connectivity to either the east or west coasts due to land slips and to failure of roads and bridges. The team quickly identified key skills within the group that could be of use to the local emergency response, with specialist skills in geology and structural engineering of particular note.

The overall desire of the party was to offer their services to support the local response effort in whatever way they could. In the longer term there would be significant research opportunities from observation and documentation of response and recovery efforts, but it was felt that the priority in those first few days was to provide active support where possible to rescue and response.



2.2 Perspective from the Recovery Commission

Building on the above Alpine Fault scenario, participants role-played a Recovery Commission formed one week after the earthquake.

Establishment of a Recovery Commission is not specifically envisaged within New Zealand Civil Defence and Emergency Management arrangements. For the purposes of this scenario however, participants were told that they had been chosen to join a Commission which was tasked to make recommendations to the Prime Minister on recovery priorities - specifically 'what' might be done and 'how' the recovery might be progressed.

Participants were asked to consider the recovery from the Prime Minister's perspective, with the Prime Minister needing ways to:

- simplify the issues so that they are easy to communicate;
- inspire and stretch individuals to achieve beyond levels normally considered possible; and
- unite the community into a shared and coordinated response effort.

The group quickly identified that the immediate focus of the response effort would be on alleviating the suffering of affected persons. Immediate response priorities were therefore likely to include continued work to improve access to the affected area, provision of basic services such as shelter, water and food and provision of other forms of care for the injured and others in need. Maintenance of law and order was also likely to be an immediate priority.

Civil Defence Emergency Management plans set out arrangements to deliver these immediate needs. The plans also set out supporting arrangements for provision of access, coordination of urban search and rescue, casualty management, movement control, gathering and disseminating information, and immediate relief including coordination of international assistance. In essence, the plans ensure continuation of basic but sufficient political / administrative decision making to enable the required processes to commence without delay, as a stop-gap pending commencement of more fully developed administrative arrangements for the response.

Consistent with this, the Flock Hill role play assumed that work had commenced (during the initial week) to meet immediate priorities.

The following themes emerged in the discussion:

Meeting immediate needs

Efforts to meet personal needs will need to continue for many months. Participants considered that the Commission should recommend

- steps to promote public health
- ensuring resumption of shelter, food, health and infrastructure services (the most urgent are likely to be potable water and electricity)
- relocation of affected people but only where they are unsafe in present locations, e.g. because shelter or other essentials are deficient (cruise ships are one possible source of emergency shelter)

Leadership and decision making

Participants recognised the importance of leadership in listening and communicating, ensuring good decisions and promoting the maximum sense of confidence and security. A local or national figure with very good communication skills would be well-placed to assume this leading role.

Key messages are likely to include that the affected area is not alone – the resources of the nation are being harnessed for recovery. These resources would include finance, equipment, materials and manpower (skilled and unskilled). An inventory of helpful skills, equipment and materials might need to be developed quickly to aid decision making.

Leadership at this high level will need to be complemented by well-functioning day to day decision making on the numerous recovery issues. A need will arise, for example, for clarity about the sequencing of recovery effort (which services first? which urban areas first?) so that people can plan their own complementary recovery activities.

Both local and central government will need to work seamlessly so that regulatory and funding decisions integrate to produce good outcomes.



Resourcing

Accessing resources will be essential. Participants noted many sources:

- overseas government and multilateral institutions
- local government
- branches of companies and other entities in the affected area, and peer organisations able to offer mutual support (electricity line companies, for example, are likely to be able to contribute in this role)
- the voluntary sector. NGOs will be active and helpful and donations are likely to be made available
- the community itself. Building on neighbourhood watch groups, and promoting 'adopt a friend', will offer possibilities in this area
- professional groups (e.g. engineers, who are likely to play a key initial role in building inspection and then in rebuilding)
- armed forces may be able to supply some personnel and transport equipment
- government will be able to support recovery in many ways, including alignment of regulation where needed, harnessing unemployed labour where appropriate, and welfare funding. Training and retraining programmes should be considered. Grants for new or recommenced business might also be considered.

Insurance payouts should commence as soon as possible and will be helpful in community financial support. Banks might be encouraged to adopt less restrictive lending rules in the affected area. Tax adjustments such as permitting delays in tax payments might be considered.

Re-establishing normality

Participants noted the importance of restoring a sense of normality as soon as possible. In part, this calls for recommencement of business and community activity (including schools) so that household needs can be met through normal channels and household incomes maintained. A requirement for restoring normality is that infrastructure services are reliable – recommencement of water, sewerage, electricity, gas, petroleum, telecommunications and food supply will therefore be a priority.

Internationally, a message needs to be sent to the effect that New Zealand is open for business. Effective communication in this area should aim to minimise the nation-wide risks to international tourism earnings.

Recommendations to the Prime Minister - Summary

1. Supporting communities by re-establishing physical / infrastructure links (roads, communications, other utilities) and meeting public health needs.
2. 'Adopt a Friend' initiatives to capitalise on the window of sympathy and willingness to offer support and resources. These support networks could work at various levels, e.g. between
 - affected and unaffected neighbours (to provide local support for clean up and minor repairs)
 - affected and unaffected businesses/industries (by offering resources, facilities etc in mutual aid-type arrangements)
 - affected and unaffected regions (similar to the twinning policy adopted in China following the Sichuan Earthquake)
3. Sending the message: 'These are our people in crisis and all of New Zealand will contribute to the recovery'.
4. Appoint a National Recovery Co-ordinator with access to national resources and with powers to make things happen when required.
5. Central government to underwrite local recovery efforts consistent with the message 'what needs to be done will be done'. Examine impediments and barriers to recovery including consideration to carrying local government liabilities on a case by case basis.
6. Create tax incentives or grants for businesses in the affected area. Delay tax payments. Promote access to bank credit.
7. Retrain and build capacity for people to move into new jobs.
8. Sending the message to the international community: 'New Zealand is open for business (especially tourism)'



Lessons from the Sichuan Earthquake

The conclusions from the Flock House participants have much in common with experience in responding to earthquakes overseas.

The May 2008 Sichuan earthquake measured 8.0 on the Richter Scale, causing about 500,000 casualties. The institutional and legal frameworks in China differ markedly from those in New Zealand but many of the issues are the same.

Alice Chang, Regan Potangaroa and other members of the research team, who have visited the affected region to observe the emergency response, have noted that it was rapid and decisive. It was also well planned, including extensive community participation.

Regulations set reconstruction guidelines and established a legal framework for departmental and government agency response. Households were expected to make a financial contribution and corporate donations assisted but an arrangement under which affected areas were 'twinned' with others in China to provide a framework for resource transfer and support was also put in place. Controls were imposed in an effort to stem construction cost / price pressures. Efforts were also made to restore household earning opportunities as soon as possible.

Reconstruction has proceeded extremely rapidly. Whole villages have been rebuilt within 8 months and much accommodation provided ahead of target. There has been an emphasis on quality including higher seismic standards.

The very large number of people affected by the earthquake have, overall, displayed a surprising level of personal resilience, apparently reflecting the very good restoration performance.

The overall lesson is:

There is a need for speed and efficiency in relief work, a need to build a strong organisational structure to deal with reconstruction, and a need to keep social communities fully involved in planning and implementing reconstruction throughout all post-disaster stages.¹

¹ Alice Chang, Reagan Potangaroa, Suzanne Wilkinson, Erica Seville and Kelvin Zuo. *Empowerment and Capacity Building, Recovery Lessons from an Earthquake in China.* in *Tephra*, Ministry of Civil Defence and Emergency Management, July 2009.

3 Addressing Common Resilience Challenges

At the time of the retreat, the research team was about to launch a new Benchmark Resilience² survey. Over 1,000 organisations in the Auckland region were being randomly selected to participate.

Retreat participants were asked to assess the areas of strength and weakness in their organisation, using the Benchmark questionnaire.

The table below summarises the results.

	Number of organisations for which this was a significant STRENGTH	Number of organisations for which this was a significant WEAKNESS
Resilience Ethos		
Commitment to Resilience	2	
Network Perspective	9	
Situation Awareness		
Roles and Responsibilities	2	3
Understanding of Hazards and Consequences		
Connectivity Awareness	2	1
Insurance Awareness		3
Recovery Priorities	1	1
Internal and External Situation Monitoring and Reporting		1
Informed Decision Making		
Management of Keystone Vulnerabilities		
Planning Strategies		1
Participation in Exercises		
Capability and Capacity of Internal Resources		1
Capability and Capacity of External Resources		
Organisational Connectivity	1	
Robust Processes for Identifying and Analysing Vulnerabilities		1
Staff Engagement and Involvement		1
Adaptive Capacity		
Silo Mentality	1	3
Communications and Relationships	3	
Strategic Vision and Outcome Expectancy		
Information and Knowledge	1	
Leadership, Management and Governance Structures	1	7
Innovation and Creativity	4	2
Devolved and Responsive Decision Making		5

² For more information about the Benchmark Resilience initiative see www.resorgs.org.New Zealand/benchmark.

The best scoring indicators of organisational resilience were:

- **Network Perspective:** *A culture that acknowledges organisational interdependencies and realises the importance of actively seeking to manage those interdependencies. It is a culture where the drivers of organisational resilience, and the motivators to engage with resilience, are present.*
- **Innovation and Creativity:** *An organisational system where innovation and creativity are consistently encouraged and rewarded, and where the generation and evaluation of new ideas is recognised as key to the organisation's future performance.*
- **Communications and Relationships:** *The proactive fostering of respectful relationships with stakeholders to create effective communication pathways which enable the organisation to operate successfully during business as usual and crisis situations.*

The lowest scoring indicators of organisational resilience were:

- **Leadership, Management and Governance Structures:** *Organisational leadership which successfully balances the needs of internal and external stakeholders and business priorities, and which would be able to provide good management and decision making during times of crisis.*
- **Devolved and Responsive Decision Making:** *An organisational structure, formal or informal, where people have the authority to make decisions directly linked to their work and where, when higher authority is required, this can be obtained quickly and without excessive bureaucracy.*
- **Silo Mentality:** *Avoidance of cultural and behavioural barriers which can be divisive within and between organisations which are most often manifested as communication barriers creating disjointed, disconnected and detrimental ways of working.*
- **Roles and Responsibilities:** *Roles and responsibilities are clearly defined and people are aware of how these would change in an emergency, the impact of this change, and what support functions it would require.*
- **Insurance Awareness:** *An awareness of insurance held by the organisation and an accurate understanding of the coverage that those insurance policies provide.*

Organisations with these characteristics are less likely to meet key objectives when faced with significantly challenging circumstances – in other words, they are unlikely to be resilient.

Participants divided into three groups to identify take-home strategies for overcoming three of these resilience weaknesses:

- Leadership, Management and Governance Structures
- Devolved and Responsive Decision Making
- Silo Mentality

The discussion is summarised below.

3.1 Leadership, Management and Governance Structures

With disasters on the increase globally, new paradigms are required for effective leadership in emergency situations. These need to feature flexibility, build on personal resilience and aim to manage organisational risk and / or situational vulnerabilities.

The drivers influencing leadership, management and governance in organisations are wide-ranging. While the debate regarding the distinction between management and leadership is on-going, there is evidence that management style plays a part in how teams respond to challenges and how resilient they are.

'Good' or 'resilient' governance requires that the CEO, the Chair of the Board and leaders at next levels to be clear about their responsibilities. Resilience is also enhanced when there is clear accountability for results.

Leadership visibility has a distinct influence on how team members respond to challenges, especially in crisis situations. Competent, confident leaders with emotional intelligence have the effect of motivating team members and enhancing the resilience of their organisations. Some organisations also benefit from having both strong 'external' leaders (those who network extensively for the greater good of the organisation) and strong 'internal' leaders (those who focus on getting the internal processes, systems and people aspects right).



Strategies for addressing leadership for resilience

Organisations seldom pay sufficient attention to fostering good crisis leadership. Leaders are usually appointed for 'peace time', not for managing crises and recovery processes.

The capacity and capability of organisations can be enhanced through leadership building activities.

A culture of effective crisis leadership needs to be defined, measured and rewarded. A number of tools and techniques can then be used proactively to build crisis leadership:

- Crisis leadership considerations can be taken into CEO and senior management appointments (as well as board appointments).
- Succession planning offers a positive strategy for grooming leaders with talent and an aptitude for crisis leadership.
- Training has a role – this might include participation in disaster scenario exercises (e.g. exercises and table-top simulations) and media training.
- Mentoring for crisis leadership, governance and management may also assist in the development of new appointees.

Resilience in leadership and management is grounded in having a clear focus on objectives. Clarifying leadership roles offers an opportunity for shared leadership through appointment of individuals with primary and alternate accountabilities. Assigning clear roles and accountabilities helps to build resilience at the personal, team and organisational levels.

Performance management, reward and recognition mechanisms also play their part in motivating team members to achieve common objectives, enhancing the resilience of the team and the organisation.

3.2 Devolved and Responsive Decision Making

Managing crises calls for very effective decision making.

Responsive and resilient organisations practice participative management in which responsibility is devolved to middle/lower organisational levels. Engaging others in the organisation, including drawing on the different perspectives of those at different levels, helps ensure that the widest pool of talents and ideas is available to contribute to the task in both 'business as usual' and emergency circumstances. Efficiency and resilience are both enhanced when these matters are handled well.

The key conditions relate to values, culture and attitude towards sharing leadership. Relevant questions include:

- is there a clear vision / mission statement and objectives so that all staff share a common goal?
- do established and understood organisational culture and values exist conducive to building trust including emphasising information sharing?
- are established organisational structures and processes in place so that roles are clear?
- are qualified people in the key roles requiring intellectual resilience so that the best skill sets are available?
- are leaders accessible to others in the organisation when their support is required?
- does a culture of continual improvement exist, e.g. through benchmarking and reflection looking both inwards and outwards, so that the organisation can learn from its experiences and the experiences of others?



The challenges are particularly strong when organisations are geographically spread.

Strategies for addressing resilience in decision making

A capacity for effective, responsive and devolved decision making needs to be developed in order to build organisational resilience.

Reflection is required by organisational leaders on how well their organisations perform in devolving control. Leaders and decision makers might review decisions made and ideas rejected as a way to recognise the different qualities, capabilities and characteristics of team members.

Improved decision making involves engagement throughout the organisation, and may require embracing change aimed to devolve responsibilities while ensuring that senior management is accessible when required.

The questions set out above might form the basis of a review of attitudes to and capability for more participative leadership.

3.3 Silo Mentality

The terms 'silos' and 'silo mentality' (or 'turfism') are often used to describe individual and group mindsets which appear as communication barriers. Organisations with strong silos are unlikely to be performing to their potential in 'business as usual' or emergencies.

Intra-organisational silo mentality often reflects a limited understanding of the overall vision of the organisation and an individualistic approach to achieving goals. It can arise when departmental priorities are strong relative to corporate priorities. Silo mentality can be fostered by poor organisational design, shortcomings in project management, geographic separation and financial rewards based on individual results. Patch protection and / or isolation mentality are the symptoms.

Strategies for addressing silo mentality in decision making

Training programmes including team building, rotation policies, pro-active knowledge management, use of intranets and newsletters and other steps to promote horizontal communication may be helpful in reducing silo mentality. Performance management and reward systems may also be used to help promote good intra-organisational behaviour. Steps to increase confidence about job continuation may also play a role as insecurity can lead to inward looking attitudes and silos.

These steps create enabling conditions for silo breaking behaviour. They are however most likely to take hold if they are accompanied by a leadership style that captures hearts and minds by building a strong sense of whole of organisational purpose.

Good leadership will contribute to silo breaking behaviour by inviting commitment to a strong sense of organisational purpose. Good leadership therefore involves, in addition to the enablers listed above, building trust between staff and management. In turn, this might include steps to ensure good communication (and good listening), sharing information and knowledge, realistic goal setting and a sense of achievement as goals are met, and shared opportunities for self-improvement at both the personal and organisational levels.

In other words, silo breaking is about building a healthy organisation culture. A focus on aligning strategy, culture and values will feature in a cultural improvement programme. The emphasis is on getting things done through staff with managers' role being an enabling one.

A corollary of silo breaking is improved resilience. A business featuring strong staff understanding and buy-in to organisational objectives is likely to perform well in times of stress simply because its staff will be better equipped to make good on the ground decisions through a clear and shared sense of purpose and commitment.

Lessons from Melbourne Storms and Subsequent Electricity Failure

Peter Whelan, Manager, Emergency and Security at Jemena spoke to retreat participants on recent experiences involving wind storms. Jemena is an electricity distribution company serving much of Melbourne's environs, including the Jemena Electricity and United Energy networks. A wind storm (117 kph winds) hit Melbourne on 2 April 2008 leading to nearly 1,000 broken lines and about 250 discrete repair tasks. There were 270,000 sustained customer outages.

Jemena's emergency management team assembled 90 minutes after the first faults occurred. 45,000 calls were received by Jemena's call centre in the peak hour (about 3 hours after the first faults appeared). State emergency authorities were involved.

The repair effort involved nearly 400 on the ground personnel. These included many from other parts of Australia who brought their own managers / supervisors and were trusted to get on with the job unsupervised by Jemena.

A power worker was electrocuted during restoration, a tragedy that added the balance between restoration pace and safety to the existing management challenges.

Most connections were restored within 2 days (5,000 restorations per hour were achieved in this period) but a significant number of customers were without power for longer periods, up to 4 days in some cases.

The company conducted a review soon after the event. The findings included:

- Customer dependencies on electricity have increased (e.g. banking and some medical procedures are commonly done in residential locations). Customer expectations exceeded restoration performance.
- The community needs to be kept informed. Answers need to be provided to questions 'what is the plan?' and 'how is restoration progressing relative to the plan?'.
- The public is more demanding than in past. Members of the public want ready access to call centres to report faults and learn of restoration progress. The proportion of unsuccessful attempts to reach the call centre needs to be monitored and contained. Customer concerns can convert to outrage when they can't reach call centres.
- Communication with other agencies involved in emergency response is critical for overall coordination and public confidence.
- New technology (using internet and cellular) needs to be included in the media management strategy recognising that different segments of the community have quite different communication preferences and that the more traditional media avenues are very slow by current standards.

The review identified over 30 recommendations, many of them being improved processes and easily developed IT solutions for information sharing. Jemena now plans for an outage event up to 30% greater than the April 2008 event in terms of customers affected and resources required to restore supply.

4 Resilience Master Class

Towards the end of the retreat, participants were asked to consider future resilience challenges likely to rise in prominence over the next few years. These discussions were generally broad and free-ranging. The sections below give a flavour of the issues discussed.

4.1 Changing the Resilience Mindset

Opportunities arise in times of crisis. How can mindsets be changed so that the opportunities are captured?

The following were amongst the points made.

Understanding the organisational context

Businesses exist within complex dynamic systems and decision making under uncertainty is the norm.

Resilience is enabling. It supports good organisational performance in good times and it promotes a seamless transition so that organisational goals are met or exceeded when more serious challenges arise.

Resilience is not something that can be bolted onto the existing organisational fabric. It needs to be built into organisational culture so that it becomes the natural way business is done. Resilience requires that members of the organisation have solution-oriented attitudes and freedom to act in the organisation's interests in crises. In turn, these require a clear understanding of the organisation's high level goals and purpose together with the confidence to get on with the job. Leadership that promotes a purpose-oriented culture together with trust between managers and other members is likely to be most conducive. This is likely to include modelling resilience enhancing behaviour. It's not about training on 'what to do and how', it's about creating a shared understanding of 'why we care'.

Enhancing situation awareness

Changes in the organisational environment can be seen as threats but they can also be seen as opportunities.

A resilient organisation will monitor trends that may impact on its business. There is value in anticipating developments that may throw an organisation off course, but there is equal or greater value in capturing new opportunities that emerge when the commercial environment evolves. For example, new ways to deliver services or new market openings may arise. The adjustments that may be required may present difficulties but these are usually transitional.

Promoting agility and adaptive capacity

By contrast, when sudden unexpected shocks arise, new ways to deliver are often needed straight away and new market opportunities may open up overnight as community needs change in unanticipated ways. A resilient organisation that is ready and able to respond to new unexpected challenges meets or exceeds the expectations of all its stakeholders (including customers, staff and owners).

When staff look to managers for permission, the organisation is unlikely to be sufficiently agile to meet customer expectations or needs in emergency situations. Similarly, new

opportunities are most likely to be identified and captured when all organisational members are actively engaged, including front line staff who are often closest to the market.

Encouraging a learning attitude

Resilience is more about attitude than training.

A resilience enhancing culture is likely to be promoted when staff and management each seek to develop to their potential to the benefit of both the organisation and organisation members. The ingredients include a belief that things can always be better (goal setting), a sense of curiosity (how to progress towards goals) and the space to promote innovation and creativity (looking for improvements and putting them in place).

Having good information available is central to good organisational performance. Organisational information needs to be shared. A fertile environment is created for resilience when staff 'cares' enough to share knowledge and are not threatened by the reduction in status or security that sharing can bring.

Practicing preparedness

While agility is important, plans and planning also have a place. A resilient organisation is likely to have identified the 'keystone vulnerabilities' that may seriously jeopardise performance and to have developed approaches to managing them.

Issues such as electricity back-up, access to records, media relations and succession planning may fall into this keystone category.

No organisation is independent of others. The nature and extent of supply chain interdependencies needs to be understood so that access to needed items from upstream suppliers is ensured and at least the priority downstream customer needs can be met. Opportunities may exist in emergencies for mutual support between organisations in similar lines of business but these may need to be set up in advance.

The approach to these matters calls for planning so that the main issues in meeting priority needs are understood and practical ways to deal with them shared. It is often useful for planning outcomes to be tested and exercised in simulations.



4.2 Questions a New CEO Should be Asking

As a new CEO or Director, if there were five key questions you should ask during your first 100 days to gauge the resilience of your organisation, what would they be?

Participants noted the following points.

1. *What processes and people do we have in place to monitor our situation?*

An appreciation of the importance of monitoring and an understanding of internal networks are required so that knowledge gained is integrated effectively in organisational processes where it can add most value.

2. *Do we know where we are most vulnerable? What plans and processes do we have in place to manage those vulnerabilities?*

Internal and external connections need to be monitored so that hidden 'network' vulnerabilities are exposed, to mention one example. Resources for recovery can then be identified and appropriate arrangements set up. Crisis recovery priorities will provide the context. Mitigation strategies, business continuity planning and insurance may need to be adapted.

3. *How adaptive are we as an organisation? Are we able to cope with our changing situation during both business as usual times and in crisis?*

Agile decision making processes well informed by recovery priorities and supported by highly engaged staff will be key to this. Is our adaptability being undermined by silo mentality or other impediments?

4. *Does our organisational culture support and reward planning as well as adaptive behaviours?*

An innovative mindset is needed that looks for the 'silver lining' even while executing a crisis plan during the response phase. Do we participate broadly and effectively in solo and joint exercises to improve plan execution and build planning capability in an uncertain environment?

5. *Are the people resources we most depend on personally resilient and well engaged with effective planning and agile decision making?*

Do these individuals have reserves of capacity and capability or are they at the edge of being overwhelmed in day to day pressures, undermining personal resilience and putting at risk performance in a crisis? Are internal and external relationships healthy and robust or frayed and likely to be a vulnerability in a crisis?

4.3 Planning for Likely Scenarios or Planning for Consequences?

Should we be planning for likely scenarios (e.g. the alpine fault earthquake, power failure etc), or for a broad-based set of consequences? Which is the more practical approach for organisations to take?

Participants noted that this is not an 'either / or' proposition – both approaches have their place, and either can be used for effective planning.

The issue needs to be considered in the context of the purpose, which can include:

- Development of a strategic plan or framework, e.g. for establishing priorities and principles
- Developing an operational plan and set of procedures
- Exercising to review or test plans, or assist in their development

Exercises involving a number of participants will almost always need to be driven from a particular scenario. The nature of the scenario will depend on the exercise objectives and the range of the consequences that are to be addressed.

However, the development of an operational plan and procedures needs to be based on an appreciation of the range of possible impacts and consequences that may need to be dealt with. Even if the objective is to develop a plan that is specifically focused, on pandemic for example, the range of circumstances of how the pandemic can arrive in addition to a full range of consequences should be covered.

Similarly, the first step in reviewing the effectiveness of a plan and procedures is to consider the coverage of the range of hazards and risks that an organisation is likely to face. From there, specific scenarios can be used to test the adequacy of procedures.

The principal value of using scenarios as a component of plan development is as an engagement tool. It provides a context for individuals to understand how response processes work. People within an organisation need a certain level of detail to enable them to engage effectively. And of course the main value comes from the process of engagement rather than the plan itself.

Scenarios often have many different facets, and can be high level or detailed to suit the purpose. Key considerations that should be taken into account in developing scenarios include:

- What is the range of consequences and decision making that the scenario is seeking to explore?
 - smouldering (slow onset) and 'big bang' (sudden onset) scenario events have quite different characteristics, for example
 - crises where only the organisation is affected and wider regional or national disasters also raise different questions.

Slow onset events might be useful for developing / testing of a crisis management or business continuity plan, while sudden onset scenarios might be useful for testing response plans.

- What is the degree of impact to realistically prompt these consequences?
 - a worst case (maximum credible) event or a lesser but more likely occurrence may be chosen
 - double jeopardy situations, i.e. where two events coincide, might also be considered
- What level of detail is required to meet the purpose of the scenario?
 - Some scenarios can require disproportionate effort to generate the 'story', when a high level scenario would suffice.

It should not be overlooked that scenarios are abstractions. The reality of a crisis or emergency event will seldom match any scenario.

5 Setting the Research Agenda

In the final session we asked the participants from industry to provide their views on what are likely to be the burning resilience questions of 5-10 years time and to suggest items for the research agenda.

What are the burning resilience questions that we could, or should, address?

The following issues were raised.

- Modelling, understanding and measuring the resilience of sectors
- Understanding resilience dynamics and demands in smouldering (slow onset) crises
- Finding a way to answer the question “how much resilience is enough”?
- Establishing effective leadership for resilience - mainstreaming resilience and influencing the next generation of leaders
- Clarifying and informing governing bodies (e.g. boards) about resilience needs and opportunities
- Demystifying resilience and reducing the ambiguity. Is resilience a state, a series of principles or a process?
- Understanding the link with ‘business as usual’, e.g. how to manage a seamless transition to crisis management
- Analysing the relationship between resilience and the ‘4Rs’ commonly used in civil defence emergency management (Reduction, Readiness, Response and Recovery)
- Striking the balance between prior planning and flexibility during the immediate response and recovery period
- Developing practical tools that organisations can use for post-crisis reviews and debriefs
- Developing tools for analysing supply chain resilience and interdependencies
- Documenting case studies that demonstrate the business case (in financial terms) for resilience
- Identifying ways to implement resilience, e.g. tool kits (possibly including template business cases)
- Providing advice on resilience strategies throughout the business cycle
- Exploring the relationships between organisational resilience and other types of resilience

Future strategic research themes

Several weeks after the retreat, key Resilient Organisations researchers gathered to review the ideas generated and to develop a forward plan setting out where the Resilient Organisations team might focus effort over the next five years. Three potential themes were identified – *sector resilience*, *leadership and management/decision making for resilience* and *post-disaster recovery*.

The theme that appears to have the strongest linkages to the current research is:

Resilience of sectors

Research on sector resilience would build strongly on our existing research, but stretching into inter-organisational dimensions.

New Zealand's construction sector is one that might be researched given our existing connections, but the possibility also arises of looking at several others. Health, tourism, and critical infrastructure sectors (such as electricity, banking or telecommunications) could also be pursued.

A wider roll-out of the current Resilience Benchmarking tool could provide base data on the resilience of organisations within each of the sectors, and also help ensure that the link between organisational and sector resilience is clearly made.

Work would include a mapping of supply chains (or 'through chains') and interdependencies, including the challenges of joint decision making along these chains.

Linking the disciplines of engineering and business will continue to be a strong theme running through the research, reflecting the knowledge and experience of the principal researchers in the Resilient Organisations research programme.

Other themes

Other themes that we would like to pursue, providing funding is available include:

- **Leadership and management/decision making for resilience.** This would draw heavily on strands of current research to identify what makes good leadership and decisions during a crisis.
- **Post-disaster recovery.** This would cover aspects of reconstruction, but an emphasis would be placed on how reconstruction contributes to greater community resilience. The broad focus would enable links with researchers on community resilience to be developed and the role of NGOs in facilitating community recovery to be explored.

6 Conclusion

The purpose of the retreat was to promote discussion about what resilience is and how to achieve it, discuss recent research and identify areas of future research need. The thrust is to help organisations become more resilient in the face of a wide range of hazards, and thereby to help promote improved community resilience.

The retreat programme enabled a wide range of issues to be explored. Participants benefitted from learning more of the work of others in the team, exchanging ideas and challenging perspectives. It was a very stimulating three days, and it was also very effective in improving cohesion between researchers from different organisations and practitioners from a wide range of fields and backgrounds.

An improved platform was established on which future research efforts can be founded. We believe we are well placed to tackle the challenges that lie ahead in the next phases of the Resilient Organisations research programme.

Appendix A: Retreat Programme

16th February

- Resilient Organisations - What is everyone doing?
 - A quick 5-10 minute round up from everyone on the team on what they are researching and how they are progressing
- The big shake up! What would we do if....

17th February

- Resilient Organisations team session
 - How to improve Resilient Organisations?
 - What are the future research directions and themes?
 - What would we like to get out of the Steering Committee and industry guests over the next few days and into the future?
- Invited guests arrive.
- How Resilient is your Organisation really?
 - In this session you will get the chance have a sneak preview at our new Benchmarking Survey – and fill it out for your own organisation.
 - We will then be looking at common areas of strengths and weaknesses and breaking into groups to develop take-home strategies for overcoming them.
- After dinner speaker: Peter Whelan will talk about the Jemena experience during the Melbourne wind storms when 400,000 people lost electricity for several days and how the organisation performed in face of a major operational effort, a staff fatality and ongoing public enquiries.

18th February

- Erica Seville will talk about the China reconstruction effort following the Wenchuan earthquake earlier this year, when more than 70,000 lost their lives and the pros and cons of the leadership role provided by the Central Government.
- What if you had the power to direct a community recovery effort?
 - In this session we will be following on from an exercise done with the research team a few days before hand, simulating that an Alpine Fault earthquake occurs while the team are staying at Flock Hill. In this session we will be putting you in the shoes of a Recovery Commission formed one week after the earthquake, to make recommendations to the Prime Minister.
 - Details of how and why you suddenly have the power to make decisions on behalf of the New Zealand community will become clear during the scenario – but the key question we want to explore is: if you had the power to control the recovery process - what would your top priorities be? This session draws on

the theme of leadership in times of crisis – and how that leadership is provided to organisations and communities in times of crisis through communicating strategic priorities.

- Burning Resilience Questions
 - In this session you will get the opportunity to decide which group to join to answer some burning resilience questions. We will pose some of the questions, but you will also get the opportunity to suggest some during the retreat. Examples include:
 - As a new CEO or Director, if there were five key pieces of information or evidence you would like to gather during your first 100 days gauge the resilience of an organisation – what would they be?
 - In times of crisis comes opportunity: how to change the mindset of resilience as a defensive strategy to an offensive one?
 - Planning for likely scenarios or planning for anything – do we need to change our approach?
- State of the Research Programme
 - Where we have been, where we are going and how to get the most out of the research.

Appendix B: Retreat Attendees

Resilient Organisation Team Members

James Beckett, Auckland University (Undergraduate)
Dave Brunson, Kestrel Group (Practitioner)
Alice Chang, Auckland University (PhD student)
Andre Dantas, University of Canterbury (Academic)
Tony Fenwick, private consultant (Practitioner)
Sonia Giovinazzi, University of Canterbury (Research Engineer)
Dean Myburgh, Options 80/20 (Practitioner)
Frederico Pedroso, University of Canterbury (PhD student)
James Rotimi, Unitec (Academic)
Erica Seville, University of Canterbury (Research Fellow)
Amy Stephenson, University of Canterbury (PhD student)
John Vargo, University of Canterbury (Academic)
Suzanne Wilkinson, Auckland University (Academic)
Kelvin Zuo, Auckland University (PhD student)

Invited Guests

Gordon Ashby, Solid Energy (Practitioner, mining sector)
Jason Clement, Watercare (Practitioner, water sector)
Linton Gray, Teamstyles (Practitioner, leadership and team dynamics)
Andrew King, GNS (Researcher, natural hazard risk)
Ljubica Mamula-Seadon, Ministry of Civil Defence & Emergency Management (Practitioner, emergency management)
Joe McCarthy, Canterbury CDEM Group Recovery Manager (Practitioner, emergency management)
Jon Mitchell, Canterbury CDEM Group Emergency Management Office Manager (Practitioner, emergency management)
Robert Oldfield, Organizational Resilience, Australia (Practitioner, business resilience)
Caroline Orchiston, Otago University (Researcher, business impacts)
Stefano Pampanin, University of Canterbury (Researcher, earthquake engineering)
Felicity Powell, Opus International Consultants (Researcher, business impacts)
Richard Smith, Ministry of Civil Defence & Emergency Management (Practitioner, emergency management)
Mariana Van der Walts, South Africa (Researcher, resilient strategy)
Peter Whelan, Jemena, Australia (Practitioner, energy sector)