

RESILIENCE – FACT OR FANTASY IN AUSTRALIA?

By

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I would now like to take a State and national wide view to critical infrastructure protection in response to the call for greater shock proofing. What exactly does this latest resilience buzz word mean? There have been many papers and discussions on this subject recently and while it has not formally entered Emergency Management vernacular that I am aware of there does seem to be a consistent view emerging. In general terms resilience is understood to be the ability for an organization to withstand shock. It has come about as a way of describing the blending of disciplines in the market place with the best organizations having moved beyond Risk and Emergency Management. What began as Emergency Management and evolved through Disaster Recovery into Business Continuity and Crisis Management has now become Crisis Leadership and Disaster Avoidance. Resilience has been described as the 'sweet spot' expression on the golf ball whereby with this combination of management disciplines it is possible to hit a golf ball out of any sand bunker.

Resilience is the capacity for complex systems to survive, adapt, evolve and grow in the face of turbulent change. Opstal What is the right combination of management disciplines to achieve resilience? The general view is that resilience is as much an attitudinal or cultural approach as it is hands on management. That is that resilience is as much a state of mind as it is documentation. It seems that resilience is possible when organizations put people first plus have diversity available as part of the business model plus they coordinate effectively with external parties. Some practitioners say that this approach is becoming a self-regulating expression. In pictorial terms this attitudinal approach to resilience leads to sector wide responses in the market place as a continuity strategy. It is the drawbridge, moat, castle and network of castles approach to prevention, planning, response and recovery. Such thinking also enables effective approaches to horrific scale disasters such as from pandemics which have impacts across all sectors. The tipping point expression is now part of resilience jargon. It comes from epidemiology and it describes the multiple points of failure; all independent that a pandemic has across sectors.

Resilience is not something you doit is something you are. Dr Erica Seville In terms of current State level thinking and action on resilience, there does not appear to be a consistent approach at present in any State. Each State is doing something differently, driven by their own circumstances. There are also a lot of best practice or aspirational approaches in the market place put up by various academics, consultants and practitioners but only Victoria and Queensland have gone down the legally binding, regulation or good practice path that I am aware of. Victoria is leading the way having legislation for the power and water sectors to mandate that they have security plans in place based upon risk assessments and that they be tested annually with active participation by

Police and their Department of Sustainability & Environment. While focused on the terrorism hazard the plans also have to address when one sector has a flow on impact to another. Queensland appears to be following suit with the same regulatory approach to security risk being put in place for organizations responsible for mass transport. The approaches in Western Australia and South Australia still seems to be driven by the terrorism hazard, perhaps driven by available finance for this hazard in isolation, although there are calls for an all hazards approach to available funding in WA. At the Federal level, the national Counter Terrorist Committee met in late May and sought to add Consequence Management to their list of responsibilities in an order to bring some business bite to the concept of recovery which currently only has connotations for communities. Also in the Federal arena the Trusted Information Sharing Network (TISN) has been operation for a few years now with differing sector approaches managed through various Infrastructure Assurance Advisory Groups; IAAGs for short. These mechanisms rely on voluntary and unpaid participation by the market place, public, private company cooperation and each IAAG is at different levels of thought and cooperation. There have been frustrations expressed that a lot of information has been collected and gone into a Canberra vacuum with little in the way of concrete outcomes. With such disparity in approaches by each State, and in deference to the primacy of States in these matters, there is however little that the Federal Government can really do other than to coordinate and guide and invent Consequence Management definitions.

What is current state of Resilience? In WA, where I come from, critical infrastructure has been surveyed over the last four years or so through a formal Critical Infrastructure Program jointly coordinated by Police and the Department of Premier & Cabinet. There is now a body of knowledge but we await some definitive outcomes as to what to do with that knowledge. There are a range of views as to what could or should be done and in late May the WA Auditor General raised concerns that plans for half the major emergencies identified in State laws are out of date; in particular that there is no plan for energy or gas shortages despite last year's Varanus Island blast that crippled supplies. Six major hazards; bushfires, urban fires, dam breaks, fuel shortages, marine oil pollution and marine transport emergencies had no lead agencies nominated. A recent Auditor General's report in Victoria on the preparedness of essential services and critical infrastructure was equally daunting. While Victoria was the first Australian jurisdiction to develop arrangements for protecting essential services and critical infrastructure the report finds that the roles and responsibilities of some involved agencies in Victoria are unclear and that forums for communicating with industry are not fully operational with varying levels of progress. Several departments have yet to consider whether declarations under their community protection act are necessary and while police have listings of critical infrastructure, three of their departments which were audited were not aware of critical infrastructure listed on the critical infrastructure register for their sectors; thus effectively compromising their ability to work with owners and operators.

The State of Single Points of Failure (SPOF) in Australia Every State has their problems and in WA the issue is that there is no hazard declared for failure of critical infrastructure. We do have command and control structures in place in the form of Hazard Management Agencies similar to Control Agencies in Victoria and Combat Agencies in NSW. HMA as they are referred to in WA have responsibility across the spectrum of prevention where applicable, planning, response and recovery also where applicable. There are only four Hazard Management Agencies at present under the control of Police, Fire & Emergency Services Authority, Health and Agriculture. There are other Hazard Management Agencies awaiting regulation for the likes of country rail, city rail, water corporation and others but this change is expected to take months to formalize. Hazard Management Agencies are supposed to work in the full spectrum of prevention, preparation, response and recovery but the reality is that some Hazard Management Agencies cannot cover all disciplines as they are simply not structured to do so. The complicating issue in making all of this happen is that the hazard must be declared first, and only then can a Hazard Management Agency be appointed. The fascinating situation that we face at present is that the Fire & Emergency services Authority is the Hazard Management Agency for the hazard known as urban fire but bush fire has not yet been declared a hazard. One would like to think that common sense will prevail in any bush fire response but we cannot be assured that prevention and planning is being coordinated in any consistent way. The Victorian fires are testimony to this. There is also concern that the definition of a hazard is too limiting as in the aftermath of Varanus Island commercial laundries were on the cusp of going under, which would have caused grief for the hospital system to say the least. It is too ridiculous to say that there should be a Hazard Management Agency for commercial laundries or like the Varanus problem should it be left to market forces to resolve? There is also a concern that many of these single points of failure, long favoured by saboteurs are in the hands of government and that not enough money is being spent on their protection or indeed on the upgrading of infrastructure. There is also a completely opposite concern about nonsensical national standards being applied. The classic example is the recent national standard on dam break which would require the Water Corporation in Perth to spend significant amounts of money, estimated at \$500m over ten years to achieve compliance. The Corporation has rightly rebelled. There are also community hazards such as from the town of Ravensthorpe and the impact that the BHPBilliton mine closure had on the community and the efforts by Government to prop up or compensate the supporting businesses in the community and State, just as moral hazards have now entered the lexicon of the finance sector.

Some of the Questions that Osama Bin Ladin and Blind Freddy the Miner were afraid to Ask! We all come from different States so let me sensitize you to the state of single point of failures in WA as after all we are the engine room of Australia. You can draw parallels to your own places of origin. We only have one Traffic Operations Centre known which sits above the major north-south freeway

tunnel. Is one acceptable even in a small capital city? Are the various Australian standards and handbooks on Business Continuity sufficient in terms of self regulation for control of highway traffic should we loose the centre and go back to lollypop men? Similarly is one Train Control acceptable for the Public Transport Authority even if supplemented by manual train orders for mass transport? Is self-regulation appropriate or should government have more intrusive power when it comes to rail hazards? How many other gas plants have single connections to the grid like Apache still does from Varanus Island or Woodside does from the offshore North Rankin platform? Malaysia has 5% of its GDP going through one riser on an offshore platform so there is plenty of international precedent. Could I ask if the pipeline beach valves for all subsea pipelines coming ashore should they be deemed critical infrastructure? Should the WA Gas Emergency Coordination Group, a market-driven mutual aid organization, be given authority as a Hazard Management Agency for the probable next gas outage? The Dampier to Bunbury pipeline that runs down the WA coastline is duplicated but still comes together at multiple single-point compressor stations along its route. Should we be concerned about that and leave that decision in the hands of business? On the subject of gas, does it worry us that there are limited stocks of medical oxygen in WA and that the supply of specialist medical gas is in the hands of one operator at Kwinana? There is a crucial electrical power distribution node in the southern suburbs and any outage could happen to the southern suburbs for weeks if it was to fail? A bit like what happened in the Sydney CBD recently but for weeks on end. Is it acceptable to reply on Singapore for fuel during a refinery shutdown in Perth or is that commodity not hazardous enough with literally trainloads of fuel transported to Kalgoorlie each day. Who knows about the vulnerability of the Mount Wongama communications tower on the Burrup Peninsula and the depending that also all of Karratha has on it? Is loss of communication a hazard for a vital export port? There is a critical rail culvert in the Pilbara and a critical Y shipping lane junction in Dampier Harbour which could also cripple the ability to export iron ore for months. At what point in classic risk management does a shipping channel like the one in Port Hedland become a single point of failure or be considered critical infrastructure. Should iron ore and gas export emergencies in the North West be left to business to sort out with the Chinese and Japanese? There is a very tight shipping turning circle at Kwinana Bulk Terminal for large vessels with deep draughts. There is a single aviation fuel pipeline to Perth airport which runs alongside the road into the airport and it is clearly visible to all and sundry. There is only one water pipeline into Sydney Airport. Should there be a HMA for data centres? What about for call centres or is it sufficient for them to be considered just a business continuity problem for the affected owner? It begs of course whether the ability or inability to manage public information is considered a hazard or not. The Council of Australian Governments has moved quickly on the issue of public notification systems in the wake of the Victorian bushfires but there is still no effective wide area State or National Warning Systems in Australia other than the goodwill of the ABC. Social networking is not about notification and collaboration nor a

substitute for multi-channel Virtual Crisis management environments. The Telstra white pages are not the answer either.

Resolving the Energy, Power and Water Supply Chain Conundrum There may be only seven days supply of yeast at any one time in Australia but power failure is the largest and most significant single point of failure across the nation, with SA currently under generating capacity and purchasing from the eastern States. The explosion at Casuarina Zone Substation in Darwin last November dropped power off to all of the Northern Suburbs in Darwin. It cost them \$85m to purchase a number of small generating sets to place all around Darwin in the event of it occurring again. It's still not corrected and another wet season is approaching. South Australia only has three days of stored petrol at any one time at Birkenhead. On four occasions in the past 12 months the tankers from Melbourne were late and service stations ran out of fuel. This is a high risk for the SA economy. Orica is the only supplier of chlorine gas for all water companies in Australia and they only produce it at one plant in Brisbane. We can discuss and find weaknesses in singular assets or supply chains all day but power and water virtually underpin society but their loss are not deemed hazards in WA as they are in Victoria. Common sense tells us this, let alone any detailed critical Infrastructure survey that has been done. It is a fact in Australia that over 80% of critical infrastructure is owned by the private sector, and many traditional government service functions such as local government engineering and social services are now being provided by business. What may not be so clear is how many supply chains are inter-connected or where exactly the touch points and interdependencies are. This is where the concept of tipping points arises with multiple points of failure; all independent. If you look at the recent meltdown of the power system in Victoria earlier this year, the system collapsed to such an extent that the normal response of selective load shedding was no longer possible. The best that the controllers could do was to manage a rolling blackout on an hourly basis. With some very careful analysis as the TISN is now doing for critical infrastructure across sectors it is possible to clinically determine the many single points of failure across Australia. That said it is not all that complicated and long ago when I was both an engineer and a saboteur in the SAS we would routinely bring parts of Australia to its knees in covert exercises with a few well placed explosive charges and selective killing of owners and operators of critical infrastructure.

How do you manage secret stuff? We are clearly discussing a sensitive subject here. Right now knowledge of the critical infrastructure surveys in WA is protected information with controlled access by those that need to know. I do not know the situation in other States. The question remains as to how to best manage this information to achieve the diversity and third party involvement required to achieve resilience? One could argue that Australia has not experienced all that many colossal disasters so why change the status quo at all and we do have some controlling mechanisms in place anyway. The TISN is in place federally to manage many sectors as silos, albeit an information vacuum

cleaner, but we are yet to see a State equivalent. Do we also want State mechanisms to be a one way information sucker? WA does have a Lifelines Group as part of the State Crisis arrangements with a focus on communications and other linkages but it is not really effective as a cross-silo organization as many businesses who control critical infrastructure are not represented. One can also argue that it is a toothless tiger because it does not actually control any hazard. A good example is the flood in Carnarvon that led to an electrical fire that led to the loss of all communications north of Carnarvon for 12 hours. The solution? Market forces! Yet another example is the recent floods that washed away 17km of optic fibre north of Broome. If that had been left to market forces, it would have taken over a week. Even though 000 failed for 12 hours without the knowledge of Emergency Services. There was no Hazard Management Agencies involved. It was finally resolved through State and Federal Government intervention with Telstra then able to rectify the situation in just a few days. One has to ask if this is the best way to manage critical infrastructure hazards? Still another example again is any train derailment east of Kalgoorlie. Westnet has responsibility on the Perth side of Kalgoorlie but the east side all the way to the SA border is a Commonwealth rail reserve and the State has no control over the Commonwealth Company that is responsible and that answers to two Federal Ministers. The real issue here is that the line has either been washed out or taken out by a variety of forces at least three times on the last six or seven years. It is classic linear single point of failure but no Hazard Management Agency is involved. The solution once again to Indian Pacific rail hazards is market forces! I am a businessman and I relish market forces provided people act responsibly and do not exceed tolerable risk but as we have seen with the triggers for the global financial crisis the cash hazard was based upon a mountain of debt underpinned by speculation. I have no doubt that common sense will generally prevail when it comes to Emergency Response but it does not necessarily work when it comes to prevention and planning for redundancy in national energy availability. Sovereign approaches to diversity and third party involvement are required.

What must be done to achieve resilience? In terms of a people first approach WA like all other States already have loss of people identified as a hazard through the label of a human epidemic. Precedent has been set and so we just need to extend this approach to achieve diversity and third party involvement. Creating a TISN structure at State level will just add a layer of bureaucracy that will not necessarily achieve anything other than consume valuable time. The crux seems to be that we must decide to make the loss of critical infrastructure particularly single points of failure or choke points a hazard. This is the decision that needs stimulus just as the global financial crisis has forced the financial community to identify and root out all moral hazards. We can divide, split up and separate critical infrastructure as much as we like, but it must be considered a hazard in any shape or form and a Hazard Management or Control Agency appointed with responsibility for prevention, planning, response and recovery. In some cases there maybe Hazard Management Agencies for a single asset. In

other cases the energy and power sectors generally should have an overarching Hazard Management Agencies perhaps split into upstream and down stream but with crossover, even hot pursuit HMA responsibility. In WA the Office of Energy Safety or some other hard hitting organization must be empowered with some real teeth. In achieving full diversity and third party involvement the loss of an agency delivering or operating a service should also be considered a societal hazard and a HMA appointed. The separation of prevention, planning, response and recovery within anyone HMA also needs careful thought. In principle they should not be separated although practicalities may require otherwise. There is also a powerful precedent with an Internet connected society to make loss of data a hazard or for Data Centres collectively to be labeled as critical infrastructure at least. Some of you may be thinking that this is going too far. Market forces solved Varanus intuitively so why change anything? The reality is that we are now in a situation where society is so interconnected that the recognition of tipping points is difficult; damned difficult. The only way that the recognition process can be best dealt with is through empowerment of prevention and planning responsibility as part of Hazard Management Agency functionality. Late last year the US financial cash reserves came under incredible run of funds over a few hours. It was a damn close event as Wellington often remarked. It was solved by a rapid injection of cash over several hours and the situation went away as rapidly as it had started. One could argue that cash failure should be a hazard be it from low doc and no doc loans or pipeline explosions.

In the long history of Humankind (and animal kind too) it is those who have learned to collaborate and improvise most effectively have prevailed

Charles Darwin In summary it is obvious that we must learn from the past to prepare for the future. It is obvious that we must toughen up Australia to withstand increasing disaster intensity, increasing disaster frequency, increasing disaster impact zone size and the increasing number of people affected by a disaster. While we have not had sophisticated mechanisms to respond effectively, we have just gotten by. I put that government, society and business now needs sophisticated single point of failure mechanisms in order to respond effectively. We already have enough understanding. We already know where the choke points and single points of failure are. We do not need any more understanding. We are no longer misguided. What we now need are Hazard Management Agencies, be they private or public or both, and action plans