



DECISION MAKING, TEAM MONITORING AND ORGANISATIONAL PERFORMANCE

Part four: Organisational Performance Research Stream

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Cover: How can organisations best review their performance and implement any changes needed?

Photo by NSW RFS.



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ORGANISATIONAL PERFORMANCE RESEARCH STREAM

This document forms Part four in a series of reports on decision making, team monitoring and organisational performance. It should be read in conjunction with:

- Decision making, team monitoring and organisational performance part one: executive summary
- Decision making, team monitoring and organisational performance part two: decision making research stream.
- Decision making, team monitoring and organisational performance part three: team performance monitoring research stream

All parts can be located at www.bnhcrc.com.au, under the **Practical decision tools for improved decision-making in complex, time constrained and multi-team environments** project page.

The purpose of this stream of the research is to investigate the question: how do organisations systematically review and evaluate their past performance and how do monitor any changes based on any insights that have been learned? Part of the challenge is that, there is no one size fits all when it comes to evaluating organisational performance in emergency management (Boin and't Hart, 2010). Moreover while it is well established that learning lessons from disasters and crises is becoming increasingly important (Borell & Eriksson, 2008; Brower, Jeong, & Dilling, 2009), recording, storing and sharing lessons identified, does not necessarily infer that anything has in fact or will subsequently be learned (Rostis, 2007; Deverell, E. & Hansén, 2009). Typically performance is judged post-hoc and through public inquiry or in the media which does not necessarily have the intention of improving the effectiveness of emergency management systems (Elliott & McGuinness 2002; Owen, Bosomworth & Curnin, 2014).



ORGANISATIONAL PERFORMANCE IN EMERGENCY MANAGEMENT

Drupsteen & Guldenmund (2014) conducted a literature review to identify the elements important for organisations to learn from crises so that organisations might be better able to further improve safety levels and thus prevent future incidents. They identified three themes: (a) learning lessons from incidents; (b) processes supporting learning and (c) factors that are known to influence the learning from incident processes. Learning starts with the collection of information – followed by processing and storing. They point out that it is important to get beyond this stage – that is, it is necessary to go from identifying lessons to implementing.

The need for this kind of post-hoc performance evaluation has been discussed in many formal inquiries and at a government policy level (Teague, McLeod & Pascoe, 2010; Productivity Commission 2015). In addition discussions relating to the need for indicators for organisational review and evaluation have also gained increasing attention within the fire and emergency services industry (AFAC, 2014; Eburn & Dovers, 2014; Owen, Bosomworth & Curnin, 2014).

Public inquiries post an emergency event is sometimes held up as the panacea to make judgements on performance and to remedy misfortune. However they can also offer little more than a placebo “creating the impression that remedies are being evaluated until the incident under investigation slips from the public consciousness” (Elliott & McGuinness 2002, p. 14). Abrahamsson et al (2010) suggest that this is perhaps not surprising given that the motivation behind evaluating an emergency response is typically driven by two types of motives: the search for means to correct or reduce the impacts or consequences in the future and the assignment of guilt or blame by which judgement is made upon the guilty parties. “Given that both types of evaluation commence along the same sort parallel path of seeking to identify the cause of the crisis and how the response of the crisis was handled, it is not too surprising that the missions of cause-and-consequence and guilt blur together” (Heath, 1998 in Abrahamsson et al, 2010, p. 17).

However, Birkland (2009) noted that while media and political critique are important this can frequently degrade into problems and issues being framed by buzzwords “on the contrary, mediatisation and politicisation may cause crisis managers to lose track of operational lessons and underlying organisational lessons and instead pay excessive attention to symbolic crisis learning verbalised and framed in terms of buzzwords that may hamper critical reflection (see Hansen 2006) or documented and laid down in merely rhetorical fantasy learning documents- see Birkland 2009)

Moreover, not all crises and disasters result in reform even when mistakes and oversights have been clearly identified (Deverell & Hansen 2009). Deverell & Hansen (2009) also point out that in addition there are other challenges that inhibit the capacity to learn from incidents. These include under reporting of incidents; inability to identify latent conditions, a tendency to seek a scapegoat. Indeed Drupsteen & Guldenmund (2014) also note that similar incidents can generate very different lessons, depending on the context.



Finally when learning events occurs is important. Learning is typically a post-crisis activity (Birkland, 2009) This leads to outcomes frequently being judged by the outcomes which are also subject to hindsight bias (Abrahamsson et al 2008). This is important that any process of learning post-hoc from incidents in particular has in place strategies to mitigate the effect of hindsight bias. However, as will also be discussed later in this paper there are also challenges for agencies and jurisdictions to exposing themselves to scrutiny and that many agencies are unwilling to take this risk.

While there are attempts to develop self-review processes internal to the industry (AFAC, 2014) there will continue to be a strong community desire to ensure external inquiries are conducted, particularly into large scale events. These issues represent considerable challenges for those developing a systematic approach to how such events can be reviewed such that evaluation leads to learning and improvement. This research stream (Stream 3) aims to contribute to the development and improvement of learning through performance review and evaluation approaches in use by agencies and in identifying strategies that may improve learning from evaluation in the future. This report outlines the findings from a needs/environmental analysis about what personnel working at a state or national level of an emergency response system perceive is important in managing emergency events. It draws on secondary source data analysis to discuss some of the issues surrounding how systemic emergency management performance is evaluated from the point of view of practitioners and what they see as key indicators and issues that need to be taken into account.

METHOD

The research methods included conducting interviews with end-user agency personnel to ascertain what strategies they currently have in place to assess performance following an incident, or season of events. Having established that, whilst there is much localised activity occurring within agencies, there are challenges and no overarching framework in use to provide a cohesive approach across the industry, a secondary analysis was conducted on survey data collected from 36 fire and emergency services agencies in Australia and New Zealand on questions included in a national survey to investigate perceptions about measuring emergency management performance. In addition a pilot workshop with an end user agency was conducted to test a consultation process that can inform the next stage of the consultation process.

In terms of the secondary survey, the data reported here was collected as part of a wider consultation which included a survey into seven challenges faced by strategic-level emergency managers one of which was measuring emergency management effectiveness. At the time of survey development this research project had been funded and in anticipation and to be efficient we included three additional questions about measuring emergency management effectiveness to inform the needs analysis phase of this research. These included:

1. At a strategic level, what constitutes an appropriate set of objectives for out-of-scale events?



2. At local, regional or state levels, what are the indicators of "trouble" that may signal movement toward vulnerability in emergency response and its management?
3. How would we know that major/out-of-scale events had been well-managed?

The survey was internet based and hosted through the Survey Monkey platform and was distributed to the leaders of all 36 fire and emergency services organisations in Australia, under the sponsorship of an Australian national peak body (the Australasian Fire and Emergency Services Council, AFAC). The CEO of AFAC invited the leaders of the fire and emergency services organisations to nominate at least two personnel well placed within their agency to consider challenges in emergency management and what needs to be done. The potential pool of responses therefore was 76 persons, and 38 responses represent a response return of 50%, which is in keeping with response rates for organisational surveys of this type (see Baruch & Holtom, 2008).

The respondents were all senior emergency services leaders within their own agencies with considerable experience within the emergency services sector. The median number of years that contributors have been in the industry was 24, and the median number of years within their agency was 13. All of the respondents were currently working at the state or strategic level of emergency management coordination. In addition, there was a good representation of different types of emergency service organisations with rural services (n= 10); urban services (n= 7), land management agencies (n= 8) and agencies responsible for different kinds of hazards (n=12) including natural hazards (fire, flood, storms, cyclones, earthquake, tsunami) and human hazards (oil and gas explosions; maritime collisions/oil spills).

In terms of the interviews, 34 were also conducted either face to face or over the telephone using a question guide and were between 30 and 90 minutes in duration as part of the 2010-2013 research project. Data from this phase was audio recorded. One participant stated that they did not want the interview recorded and in this case notes were taken. Interviews were then transcribed and imported into NVIVO, a qualitative data analysis software tool. Once the survey data was analysed the interview data was re-examined for insights into the challenges associated with evaluating emergency management performance.

DATA ANALYSIS

The coding for survey and interview data and analysis was guided by an interpretational qualitative approach that begins by first gaining an understanding of the entire collected material and then looks for key topics or themes (c.f. Braun & Clarke, 2006). The comments were then coded by examining the topics addressed in them. Where a statement made by a participant covered multiple topics these were separated so that each individual sentence or topic segment could be coded. We refer to these individual sentences and topic parts as "data segments" in our discussion below. Once codes were identified these were then discussed by all authors to identify a number of themes which are discussed later.

WHAT ARE AGENCIES CURRENTLY DOING?

All agencies engaged as end users in this research project were mindful of the need to develop a systematic approach to capturing lessons that may be learned, documenting these and developing strategies for continuous improvement. Nearly all agencies are developing their own localised processes to evaluate performance and to learn. These included

- Developing processes and strategies to systematically review data and insights collected from other forms of monitoring, including team monitoring .
- Appointing personnel to be responsible for ensuring there are regular reviews undertaken to ensure alignment between organisational policies, procedures and training.
- Establishing lessons learned databases and lessons management systems.

For example, Tasmania Fire Service has appointed an officer responsible with implementing processes for review and to ensure that doctrine and organisational processes are integrated. New South Wales SES have established a branch to review and evaluate all after action reviews conducted in the organisation, and have articulated a lessons learned model (see Figure 1)



Figure 1 – NSW SES LESSONS LEARNED MODEL

In another example Queensland Fire and Rescue Service, have initiated a shared lessons learned centre has been established to collect experiences of personnel (as well as research) to assess and validate in order to turn into knowledge that is usable across all parts of the organisation. The processes of which are illustrated below.

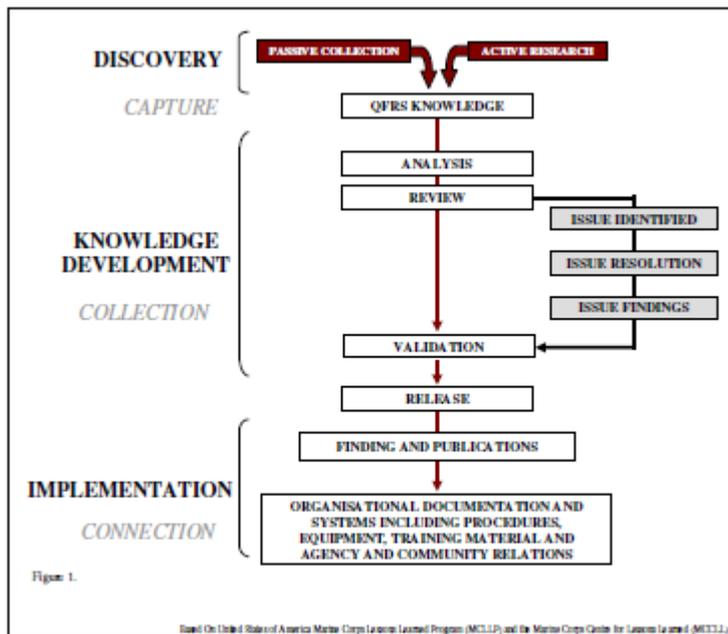


Figure 2 Discover, Development Implement model of knowledge management, Queensland Fire and Rescue Service

Some are going further into enabling “just cultures” to encourage a reporting culture so that learning opportunities can be identified. In addition considerable attention is being given to simulation exercises in order to test people, technology and systems and to identify areas for continuous improvement.

CHALLENGES

All of these initiatives are important based on our work with agencies to date, we suggest the following challenges remain.

The ways in which agencies are evaluating previous incidents, or periods of activity is highly variable. Moreover there are concerns by practitioners that some of the reporting of lessons learned were either contradictory of other organisational doctrine or un-actionable. It is important to acknowledge that just because a lesson has been identified, the lesson is not learned until some change or reframing has occurred. This can be consolidating good practice that needs to be sustained or modified a practice that needs to be improved. Moreover in some cases there are concerns expressed by agency members that the “recommendations” made in review reports may not be based on analysis but are simply observations that are immediately turned into a suggestion – that in fact the analysis of patterns phase is skipped. While capturing knowledge is the first step – it is just the beginning. A second step requires the means by which such knowledge is transferred or shared.

In addition it appears that there is high variability in the training provided to personnel to conduct evaluations of performance. One participant expressed the view that sometimes the wrong people are chosen for this role. Personnel are sometimes chosen for their expertise in the problem area (e.g., hazardous

materials) but this expertise is not the same as that needed to draw out key insights from a debrief or a review.

There appears to be limited systematic sharing of learning from evaluations across the sector. This is in part is a cultural issue because agencies are not keen on airing their problems with others. In addition, there are structural impediments to sharing reviews and evaluation of performance across the sector. These include agencies using different terminologies and no shared language with which to aid collective understanding.

FINDINGS- NEEDS ANALYSIS

Understanding practitioner concerns about their own environment through asking questions about what they believe constitutes effective emergency management objectives, indicators of trouble and indicators of successful emergency management provides useful insights into what needs to be included in any systematic post event performance review and evaluation process.

These issues have also been discussed at length in the attached papers, so a synopsis is presented here highlighting the five core themes that have emerged across each of the three questions.

THEMATIC NEEDS INDICATED

The comment segments across all three questions were coded into five themes (which are summarised in Table 1, together with the number of comment segment coded to each theme within each of the questions asked). In all there were a total of 651 comment segments made by the participants for all three questions. Table 1 shows the distribution of comment segments according to theme and question. These themes illustrate needs expressed by practitioners that will be require articulation in any evaluation system.

A brief review of the distribution shows that most of the comment segments related to the perceived need to assess performance in the response phase to ensure that the emergency response system is working as it should. This accounted for 47% of all the comments coded. In addition, and again during the response phase there is a concern to ensure that the confidence of the general public, communities at risk and elected leaders are maintained. This accounted for 40% of all the comments coded. As the comments highlight while the emphasis is mostly on how well the response phase is managed, it is also important to see this within a broader context of preparedness and recovery.

Table 1: Thematic needs found in data and number of times each was mentioned in each question

Thematic needs found in data	Data segments coded to theme			Total
	Q1: Approp objectives?	Q2: Indicators of trouble?	Q3: Well managed?	



To ensure that the emergency response system is functioning appropriately (achieving objectives, managing risks)	111 (48%)	117 (48%)	78 (44%)	306 (47%)
To coordinate with other emergency services stakeholders	24 (10%)	16 (6%)	3 (2%)	43 (7%)
To maintain the confidence of the affected and general public and its elected leaders	85 (37%)	85 (35%)	90 (52%)	260 (40%)
To support whole of government strategic decision making for consequence management	1 (0.5%)	14 (6%)	3 (2%)	18 (3%)
To be prepared and ready (including learning from earlier events)	9 (4%)	13 (5%)	2 (1%)	24 (4%)
TOTAL	230	245	176	651 (100%)

The final 14% of comment segments were focussed on coordination with other emergency services stakeholders; being prepared and ready for response and concerns for broader consequence management and whole of government decision making (see Table 1).

The responses to these questions will now be summarised and where emerging themes will be highlighted.

To ensure that the emergency response system is functioning appropriately (achieving objectives, managing risks)

Nearly half of the responses to this question could be grouped into a theme of *ensuring that the emergency response system is functioning appropriately (achieving objectives, managing risks)*. In terms of the operational response, an emphasis on the value of the sanctity of life of responders and community members is paramount and should guide all other deliberations. As one participant noted: *"The critical issues must revolve around community safety" [#27]*.

Unsurprisingly, participants considered that appropriate objectives should include strategies to minimise losses (life, property, and environment), with the strategies documented within the formal systems (e.g., IAP). As one participant noted: *"there are clear strategic plans in place to manage both the event and consequences" [35]*



Maintaining a common operating picture was particularly important in coordinating with key participating emergency services stakeholders: *“Comprehensive, timely information flows up, down, inward and outward by a variety of channels”* [#30] and *“State risk /asset owners involved in decision making on a daily basis”* [#31]

In relation to being able to manage an operational response, some of the indicators of "trouble" mentioned by participants included unanticipated surprises that indicate that planned objectives are not matching the event or are inadequate as the following participant noted:

“The incident continues to escalate faster than the escalation of effort (or control), resulting in an increasing capability shortfall. The risk in these situations is that incident managers may narrow their focus to a heightened operational awareness, at the expense of considering potential impacts beyond the immediate theatre of operations (i.e. a community that might be impacted in the next 3-4 hours, critical infrastructure etc.)” [#13]

In addition, conflict or disconnects within the incident control structure are other signs of trouble. *“Disconnect between the commander’s intent, the events mission and the actions of practitioners through their tactics at the event”* [#6] *“There is conflicting information /intelligence”* [#4] This is likely to lead as one participant commented, to: *“an inability to articulate the situation and to predict immediate and future outcomes and resource needs”* [#30].

Some felt that indicators of trouble could be quantified in for example *“between 50-66% of state capability have already been assigned”* [#31]. Another indicator of trouble would also be if *“there was no plan for commencement of recovery activities”* [#32]

Many of the segments in the third question (*“how would we know that major/out-of-scale events had been well-managed?”*) could be grouped under the theme that related to *ensuring that the response system is functioning appropriately*. An effective response is indicated when there was an understanding of the personnel involved and what they are doing, as the following participant noted.

“At all times each ESO [emergency services organisations] should have no problems articulating the following: Exactly who from the agency is involved in every level of the response? (this means full details including names, addresses, positions etc.). Exactly where are they at any moment in time during the response? Exactly what are they doing in relation to the Incident Action Plan? and Exactly who is supervising them? If these questions can't be answered in exact detail, the strategic level is not even connected to the rest of the organisation and operating with these unknowns = vulnerability” [#13].

Monitoring and safety assurance also means looking ahead for planning in anticipation of what might be unfolding, as the following participant noted:

“the incident status needs to be constantly monitored and current priorities for resourcing etc. is set for each 24 hr. period. This means that capability and capacity can be mapped against demand daily and reasonable worst case scenarios modelled daily. It is also important that



current information on existing and forecast conditions are available to the community in a range of media and also that State risk /asset owners are involved in decision making on a daily basis [#31].

Given that much emergency management involves coordinating with other agencies and teams this too was a common theme in the data.

To coordinate with other emergency services stakeholders

Participants highlighted the need for an explicit goal to promote shared situation awareness of the full impact of the current and emerging situation (including worst case scenario modelling) so the best decisions can be made within the emergency management response structure and coordinated with other participating emergency services stakeholders: *“there is a shared understanding and common operating picture as to the current and emerging situation” [#30].*

In terms of engagement with emergency services stakeholders, indicators of trouble can also be that *“plans or priorities between stakeholders are in conflict” [#6].* This can occur as different organisations struggle to align their activities to meet the unusual demands of unanticipated events (Ansell, Boin, and Keller 2010; Boin, Ekengren & Rhinard, 2014; Rimstad, Nja, Rake & Braut, 2014).

All of these activities influence the degree to which significant others are informed and have confidence in the activities occurring.

To maintain the confidence of the affected and general public and its elected leaders

A number of other comments could be grouped into a qualitative theme of *maintaining the confidence of the public and elected leaders.* In relation to this theme participants noted the tensions that sometimes arise in relation to what responders can do, as this participant outlines:

“I think we need to be settling on a realistic outcome and that may at times not necessarily be a palatable outcome...it may for instance include some loss of property and in fact loss of life but given the circumstances on the day that in fact may have been a great result... I don't think we are of a mindset to ensure that the public knows just how difficult a task is undertaken at times and perhaps we need to use the media more to our advantage” [#28]

This comment raises a number of important issues. Firstly, the degree to which there is alignment with the public and elected leaders on what a “realistic outcome” might be. For example, industrialised societies often have unrealistic expectations that essential critical infrastructure services will continue to be available even during disastrous events (Beccuti et al., 2012; Boin & McConnell, 2007). Secondly, there is an expectation in some communities that, having paid levies and taxes for emergency services, that the emergency services will be supplied forthwith and have the ability to manage any event successfully regardless of its scale (Owen et. al., 2013). Finally, this participant highlights the necessity to utilise the media to the emergency services advantage. This is,



however, a double edged sword. It is the media who create the narratives and popular rationale on which the successful performance or failures of the emergency services can be evaluated (Miller and Goidel, 2009). When emergencies are managed successfully the media frequently portrays responders as “heroic” and when expectations are not met as failures. While emergency managers have, in recent times, attempted to moderate this popular public perception there are still tensions evident in the way the media portrays success and this historically facilitated a professional cultural identity for some emergency services providers to be altruistic and saviours (Elliott, & McGuinness, 2002; Owen et. al., 2013). There is still a need to ensure the providers, the public and government and political leaders what can and cannot be achieved to develop *realistic* public confidence in the emergency services.

For the community, indicators of trouble include *“Inaccurate or non-timely information provided to the community resulting in loss of life. Not recognising the requirements of maintaining primacy of life”* [#21]. And/or that *“We lose, or fail to establish, contact/engagement with the community at risk”* [#2].

Maintaining confidence of the public and its elected leaders is indicated in timely information to communities, which includes informing communities of developing risks, as the following participant commented *“communities, media and politicians say ‘well done’, particularly with regard to information flows”* [#4]. Elected leaders and other areas of government need to be kept well informed so that they too can make good decisions about direct and indirect consequences.

Participants also indicated the importance of the normalization of community conditions, as one participant noted:

“The level of community recovery - a comparative analysis of the capacity of a community before and after the event; can it do/provide what it did before the event or has there been a change in that capacity and if so what is the size of that change. Ongoing and adverse psychological, social and physical effects on the community and individuals impacted - long term studies required” [#10].

These elements feed into how well emergency managers can provide intelligence to support whole of government strategic decision-making to support related consequence management.

To support whole of government strategic decision making for consequence management

This theme pertained to the need for a longer term strategic view from the whole of government. One participant observed: *This pre-supposes that response is where we should focus. I would argue that an out of scale response should be perceived as a failure to manage risk.”* [#31].

Before an event the levels of preparedness and the efficiency of a transition toward recovery were mentioned as needed in any articulation of emergency management objectives. *“Strategic level forward planning is undertaken and implemented as appropriate”* [#22]; *“Contained property loss, restoration of*



"normality" as soon as possible [#4]; and "the timeliness and smoothness of the recovery phase" [#10].

From this perspective emergency management objectives need to be contextualised within the environment that has either contributed to (or mitigated) the level of community impact. It is important then, to recognise the inter-relationships between the way in which governments in their strategic decision-making for consequence management engage in disaster risk reduction strategies and thus indirectly assist also in enabling emergency response organisations to be better prepared and ready.

This issue raises concerns about the disconnection between funding for different Disaster Risk Reduction strategies and emergency management response in practice at all levels of government (Bosomworth & Handmer, 2008). Populations, housing and infrastructure continue to develop in hazard-prone areas, leading to a range of consequences. Some research also points to the problematic disjunct nature of various policies that limits actions to address complex and multi-disciplinary problems such as climate change and emergency management (Howes et al., 2012). According to Howes et al (2012), state governments have traditionally divided up their responsibilities into discrete areas (e.g., emergency services, the environment, public health, infrastructure etc.), which have had the consequences of leading to silo mentalities within organisations and sometimes horizontal rivalries guarding responsibilities and resources (Howes et al., 2012). This has implications for how complex multi-sectoral issues needed in emergency management may be addressed.

To be prepared and ready (including learning from earlier events)

The need to learn from these events and to be prepared and ready was the final theme emerging in the data. There were also comments included in the indicators of trouble question that also related to the need for appropriate preparedness. These included: "Increasing loss of experienced staff within agencies. [#10]; "Lack of implementation of lessons learnt into doctrine and practice. [#10]; "Rationalising resources - i.e. removing a surge capacity from an organisation" [#16].

This last comment highlights that emergency services are not immune to the changes happening within broader socio-political contexts where workforce restructuring and economic cut backs have taken their toll on the availability of physical resources. Alongside other organisational and institutional changes (such as local governments downsizing their core business, outsourcing and relying on contractors for plant and operations). This has consequences for how complex multi-sectoral issues in emergency response because additional resources needed may not be available.

Safety assurance monitoring is needed to support whole-of-government strategic decision making for consequence management as well as supporting critical emergency services stakeholders in assessing their own risk and vulnerability. Indicators of successful emergency services stakeholder engagement within a prepared and ready phase include "having already established memorandums of understandings between relevant stakeholders defining needed relationships and having response plans that are understood and have been practiced" [#12].



A number of comments related to the capacity of the industry to learn from these events which underpins a theme can be characterised as *to be prepared and ready for the next event*. This required having support and confidence to be able to name up what really happened, which may include mistakes. As one participant noted “we need to be able to create a learning environment where triumphs and mistakes can be shared in blame free environment for future benefit” [#3].

EMERGING IMPLICATIONS – VALUES AND COMPLEXITIES

A useful way forward to support the development of a holistic approach to performance evaluation at an organisation or system level is to adopt an approach that articulates the articulate core underpinning values in any performance evaluation system. This is because, as (Abrahamsson, et al., 2010 p, 17) note “without values on which to assess the system performance, there is no way of determining whether the response operation was successful or not”.

Value-based approaches to the management of complex industrial/workplace systems are not new (Mearns et. al., 2003). Indeed a value system is a central component of an organisational culture (Schein, 2004) and therefore also of a sub-set of the organisation's culture known as 'safety' culture (Guldenmund, 2000). However, in most workplaces the drive to produce an outcome will often lead to this 'value' coming into conflict with other values (such as protecting assets, or working safely). This leads to a suggestion that it is not sufficient just to make the values explicit, but that we also need to examine when and how values come into conflict with each other and how that conflict is resolved. The challenges of making the values explicit should also not be overlooked. While many organisations will create value statements, or have them embedded in policy and operational documents (such as emergency priorities), it is also possible that other values can be implicit, deeply buried, or as Schein (2004) suggests, are 'underlying assumptions'. These can be difficult to tease out. Doing so brings its rewards however because articulating untested assumptions, tensions and contradictions can be the driving forces for constructive change (Engstrom 2000).

Abrahamsson et al (2010) suggest that a systemic approach to evaluating emergency management must take account of the following:

- First, there is a need to make the value judgements upon which the evaluation of performance is based explicit.
- Second, there is a need to acknowledge and address the complexity involved in the work. This involves needing to map out the various interdependencies between various tasks.
- Third, in developing a framework for measurement and evaluation it is important to carefully separate analysis of what happened from evaluation (they suggest by separating these two functions) as well as to explicitly address the effects of hindsight and other biases.



- Finally, there is a need to make the limiting conditions explicitly visible under which the emergency response system operated. This includes examining whether, for example, there might have been some negative consequences that could not be avoided as well as considering if there were other ways of achieving the objectives in a positive way that were not utilised.

In keeping with the framework proposed by Abrahamsson et al (2010) to articulate the values and complexities, the data identified earlier within the five themes were re-examined to identify what they revealed about potential values and complexities. Each segment was examined and analysed to identify the underpinning value or concern. In addition data from 34 interviews conducted with practitioners were also re-examined in order to further tease out the issues and complexities inherent in making decisions in significant events and these are summarised Table 2. Table 2 highlights the values and complexities that we could identify based on the participant comments that have been included in the examples discussed earlier.

Table 2: Values and complexities within the themes

Themes	Values	Complexities
To be prepared and ready	<ul style="list-style-type: none"> • A healthy, capable, resilient workforce • Cultures of learning 	<ul style="list-style-type: none"> • Workforce restructuring • Economic cutbacks • Limited attention to disaster risk reduction
To ensure that the emergency response system is functioning appropriately (achieving objectives, managing risks)	<ul style="list-style-type: none"> • Safety of personnel, trust and empowerment; 	<ul style="list-style-type: none"> • Emergent and dynamically interacting external conditions that may or may not be controllable • Bureaucratic accountabilities;
To coordinate with other stakeholders	<ul style="list-style-type: none"> • Respect and integrity 	<ul style="list-style-type: none"> • Technological interoperability limitations; legislative restrictions
To maintain the confidence of the affected and general public and its elected leaders	<ul style="list-style-type: none"> • Primacy of life and public service; • Safety and security 	<ul style="list-style-type: none"> • Managing and modifying expectations, particularly in the face of more extreme events; adversarial nature of inquiries



To support whole of government strategic decision making for consequence management	<ul style="list-style-type: none"> • Contribution to public service 	<ul style="list-style-type: none"> • Bureaucratic policy silos and horizontal budget-based rivalry
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The participants comments reveal the value placed on developing and sustaining a healthy, capable and resilient workforce in order to be able to rise to the challenge of increasingly complex and interdependent events, for example: *"We need to make sure we have surge capability, and the ability to pre-plan, pre-position for rapid response"* [#4].

Yet this needs to be tempered by pressures of economic cutbacks that remove reserve capacity in many agencies as the following participant explains: *"Complacency on behalf of the organisation that resources are adequate to address response despite clear indications to the contrary"* [#30]. In addition the job of many emergency managers is being made harder due to insufficient attention to disaster risk reduction strategies. *"An indicator of trouble is that frequent high consequence events that could have been avoided or mitigated"* [#10].

When in response, the comments by participants highlight the underpinning values of supporting personnel safety as well as trusting people on the ground to make the right decisions for the conditions that they face. However, as discussed in the introduction, these values are put under pressure by bureaucratic accountabilities for control and quality assurance that in fact can inhibit effectiveness (Scholtens, et al., 2014).

As previously identified large scale emergency events involve multiple stakeholders, each of which will have their own values-based priorities and the tensions between managing these different values-based priorities must be acknowledged. In addition there is a popular assumption that information sharing to support multi-stakeholder coordination can occur through an information warehousing data system however this fails to acknowledge the meaning making that must occur to contribute to a common operating picture (Wolbers & Boersma, 2013). There are also complexities that need to be overcome in some of the privacy and security constraints that impinge on the sharing of information between organisations at a strategic level (Rahm & Reddick, 2011).

Emergency services responders and managers are servants for public good and these values underpin the whole raison d'etre of such organisations and, in part, also contribute to the motivations for why many personnel join these service organisations. The findings also show however that emergency management practitioners still have concerns about whether the public and elected political leaders are prepared to accept risk and vulnerability as well as to acknowledge that managers of emergency events sometimes make mistakes, exacerbated by the adversarial nature of inquires that in turn can lead to an under-reporting of incidents within emergency response (Drupsteen & Guldenmund, 2014). This was also emphasised in the interviews as the following participant explains:



I mean one of the elephants in the room seems to be this expectation that we will come and fix it all. I mean at what point do we need to recognise that there's some community expectations that need to be managed?

More recently attention has turned to the concept of resilience as one that may enable a more integrated and proactive approach. However, as Howes et. al. (2012) note, one of the problems is that there is not a common understanding of what constitutes resilience and that there are different perspectives on what this means. From the point of view of those managing in emergency service organisations, resilience has within it a tacit assumption that the organisations will provide for and meet the communities' needs:

How do we reduce the expectation on the community that we're going to feed them and water them and look after them every second of the day when we don't have the resources to do that? That's a huge challenge and I think we're only just starting to see the tip of the iceberg there.

However, attempts at enhancing self-reliance are also undermined by mixed and sometimes contradictory messages which both emergency services organisations and the government have historically provided. The following interviewee discusses the mixed messages provided by governments and emergency service organisations in the way some emergency events have been managed:

We tell people that they've got to be self-reliant in the case of flooding but here's [name of emergency service] with a couple of helicopters that are on permanent stand by and so of course the minute there's a flood anywhere, they're filling them up with milk and bread and going around doing air drops to houses. So on the one hand you tell people to be self-reliant and on the other hand what you're actually demonstrating is there's generally no need to be self-reliant. We will come and fix things up for you and you also generate the capacity for resentment, aggravation and argument if a person happens to be one of the few who didn't have the helicopter arrive and drop the bread, "so why did it go down the road and it didn't come here?"

In major events it is inevitable that there is political attention and engagement. Political and operational arms need to work together to ensure realistic understanding and expectations of how the emergency can be managed are in place. This requires good communication and understanding between Government and elected representatives of communities and emergency managers. The following interviewee suggests however, that not all of the emergency services sector recognise the subtle but important shift of political engagement:

There is a failure within emergency management in its broadest sense, to understand that political-strategic interface and how it affects us because we're very, very comfortable with our [internal emergency management] operations where we're doing our bit. And there's not



a lot of engagement or involvement with the political chain because it's "business as usual". Even quite large incidents can be regarded, as that, but once you start to get a multiple, or very, very large scale or catastrophic type events, particularly in [name of State] , we saw very powerful engagement of the former Premier and showing very direct political leadership in probably a way that most jurisdictions haven't seen.

The interviewee goes on to suggest that the tacit assumption that it is "business as usual" by some personnel has not recognised the shifts in political engagement in emergency management, in part because of the insularity that sometimes characterises emergency services operations and the level of comfort such personnel have with traditional modes of operation.

Things have changed; fundamentally changed. The paradigm has changed about large scale operations. I'm not saying it's good or bad. But if sometimes we are slow to sniff the wind, you'll get caught right out and as we've seen, many of my colleagues have lost their job around Australia. So, and they're the scapegoats. That's part of the difficulty we've got.

The comment highlights that attitudes toward and expectations of emergency services personnel have shifted and suggests that continuing to operate in ways undertaken historically will no longer be necessarily acceptable. Finally, while these public service values also support a whole-of-government response to consequence management there are also tensions between administrative areas of responsibility within and between levels of government (Howes et al. 2012), all of which can undermine coordinated efforts. Policies and plans discussing a whole-of-government all hazards approach frequently note the need to also connect disaster risk reduction and response. Yet for the participants interviewed this connection is not adequately addressed in action and also needs to be taken into consideration when evaluating performance. The attention needed to provide planning to mitigate emergency events was lagging and the senior emergency managers interviewed perceived they were left to deal with the consequences:

We're expected to arrive on the day of the disaster and somehow hold back the waters, stop the catastrophic mega fire and we can't do it. And then we get blamed because the town planning or the building infrastructure laws were not enforced and people build on the flood zone and the local council caved in to the developer and all of that.

This disconnect between attention to emergency event mitigation is of particular concern to participants who discussed the inequities in funding, noting that every dollar spent in mitigation is worth every cent, given what it might save in response. Those interviewed found it frustrating to be held accountable, in part, for the lack of foresight or courage needed by others in spending on mitigation, as the following interviewee explains:

You know, we've got portable levy banks now that we might put up at [name of town] They built three temporary levy banks that cost X million over the last two odd years. So if you'd have given them the money to



build a permanent levy bank two years ago – problem solved. Unless it was an absolutely super-duper flood but, and that's a fundamental failure. We're the ones that end up getting held accountable for the failures or omissions of others.

While emergency services personnel are frustrated they are also caught up in the same public service policy silos that compete against other departments, in part because of their focus and identity attached to being responders. Similar observations were made by others in the industry and included the need for a longer term strategic view from the whole of government. One participant observed: *This pre-supposes that response is where we should focus. I would argue that an out of scale response should be perceived as a failure to manage risk.*" [#31].

From this perspective assessing emergency management performance needs to be contextualised within the environment that has either contributed to (or mitigated) the level of community impact.

EMERGING NEEDS AND REQUIREMENTS

The final part of the environmental scan was to conduct a pilot workshop to test the veracity of the values and competing trade-offs identified in the survey and interview data. This was held in late 2014 with nine participants from emergency services agencies (police, fire SES as well as Dept of Premier and Cabinet) and sponsored by the Tasmanian State Emergency Service. The workshop took the following form. Participants were emailed the questions prior to the workshop and asked to bring along any relevant documentation to was used to manage complex events (e.g., doctrine, guidance notes, principles to be applied in decision-making) as well as any documentation that was used to assess and evaluate emergency management performance effectiveness.

Individuals first engaged in a silent writing exercise around two questions:

- Why do we do what we do (i.e. what motives us and other to be part of the emergency services network), and
- What would constitute a failure in service delivery?

From these the group were then asked to extract and discuss the values underpinning the emergency services work as well as the complexities and tensions that need to be managed. These were then compared with the framework outlined above. In addition the group could identify a number of indicators that would be appropriate in an evaluation (See Table 3).

Table 3 Examples of values identified and their indicators at a pilot workshop

Example values	Example indicators
To Enhance community safety	<ul style="list-style-type: none"> • evidenced in the type of feedback received for their services from the community; • outcomes such as limited (or no) deaths and injuries



To build community resilience	<ul style="list-style-type: none"> • The number of downloads from websites on what to do to prepare • How many people had in place home fire/flood plans • Self-sufficiency indicated by, people cleaning their own gutters; having their own sandbags; • Levels of engagement in community education including numbers turning up to meetings
To contribute to society.	<ul style="list-style-type: none"> • Retention rates- esp. keeping volunteers • Having good levels of satisfaction with service • Having broad support for the Service
Example complexities	Example indicators
Resourcing	<ul style="list-style-type: none"> • Levels of personnel available • Not having the right equipment
Managing stakeholders groups	<ul style="list-style-type: none"> • Competing interests of different stakeholder groups
Learning	<ul style="list-style-type: none"> • Failure to learn from past events

Also discussed was how existing reviews and evaluations undertaken do not tap into these kinds of indicators.

The pilot workshop has demonstrated three things. First it suggests that examining values and complexities identified in the first phase of the needs analysis is appropriate. Secondly it supports the use of a similar method to continue to develop indicators for an evaluative framework that may be used in by agencies. Finally these discussions can inform the development of tools needed by agencies that will be part of the next phase of the project.

To this end the next phase will include consultative workshops to develop the values and complexities that need to be taken into consideration when developing tools.

SUMMARY OF ORGANISATIONAL PERFORMANCE

Agencies across Australia and New Zealand are all working towards developing processes for organisational review of performance in order to identify lessons that can be learned and to inform continuous improvement.

We suggest that establishing an overarching framework underpinned by a values base would be beneficial to the industry. This also needs to acknowledge the complexities of operating in large scale emergency events because if these are not managed they will become conditions that potentially limit effectiveness. It is therefore important to consider the trade-offs between articulated values and these complexities because these trade-offs provide the background conditions under which strategic-level emergency managers operate.



The findings reported here provide insights into what practitioners believe are important indicators of the success and failure of emergency management and establish a foundation for future collaborative development in the next stages of the research.



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