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Coexistence or operational necessity: the role of formally structured organisation and informal networks during deployments

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Coexistence or operational necessity: the role of formally structured organisation and informal networks during deployments

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Abstract

The military faces an increasingly turbulent environment requiring flexibility and agility of organisational processes and structures. This is particularly prevalent for military forces interfacing with civilian organisations. Furthermore, the current military paradigm of network centric operations (NCO) is reliant on timely information flows, flexible command structures and adaptability to achieve mission outcomes. This paper reports on the findings and implications for organisational architectures and command and control of a study into the role of informal networks within a formally structured organisation in complex operational environments. Based on the analysis of two combat and one humanitarian deployments, this research examines whether informal networks contribute to military mission outcomes and what factors facilitate the co-existence of formal organisational structures and informal networks during operational deployments. This analysis provides understanding of the prevalence and efficacy of informal networks during deployments, and their interaction with formal C2. The interrelationship between three emergent factors – accountability, autonomy and appropriateness of C2 arrangements – is necessary to harness the agility inherent in informal networks and the stability offered by formal structures. Doctrinal, command, and training implications of these findings are also discussed in this paper.

1. Introduction

This paper reports on the findings and implications for organisational architectures and command and control (C2) of a study into the role of informal networks within a formally structured organisation in complex operational environments. This research examined whether informal networks contribute to military mission outcomes and what factors facilitate the co-existence of formal organisational structures and informal networks during operational deployments.

The Australian Defence Force (ADF) faces an increasingly turbulent environment requiring flexibility and agility[1] of organisational processes and structures as operations move from combat to peace keeping, to relief and humanitarian deployments involving coalition and Civil-Military arrangements within Whole-Of-Government operations. In the context of this research, flexibility means the ability to take advantage of a range of options available within the system constrains in order to succeed, and agility means the ability to exercise this range of options within the timeframe appropriate to the prevailing circumstances.

Furthermore, the current military paradigm of Network Centric Operations (NCO) is reliant on timely information flows and flexible command structures capable to adapt to fit changing circumstances. In this context it is necessary to examine the role of formal organisational structures and informal networks in meeting the information needs of NCO and how informal networks expedite information and resource sharing in such environments. Specifically, the aim is to highlight factors that underpin the co-existence of formal organisational structures and informal networks as operations transit from what is familiar to unpredictable.

2. Background

Informal and social networks are a natural part of society and the extent and the types of networks individuals participate in affect many aspects of their life – from one's health, identity and wellbeing to career advancement and power in the organisations (Granovetter 1983; Krackhardt 1990; Krackhardt and Hanson 1993; Kilduff and Tsai 2003; Brass, Galaskiewicz et al. 2004). In the fields of knowledge management, knowledge distribution, and gaining competitive advantage, the importance of informal networks is well supported (Kurland and Pelled 2000; Cross, Parker et al. 2001; Awazu 2004; Hoffman, Hoelscher et al. 2005; Plickert, Cote et al. 2007). In disaster and emergency management, informal networks, due to their flexibility, adaptability and fast information flows, have been shown to be crucial because disaster management seldom works according to standard operating procedures or neatly defined roles and responsibilities (O'Neil and O'Brien 2004; Denning 2006; O'Brien and Ali 2006; Winerman 2009).

Informal networks and organisations

In organisational life, understanding the role played by informal networks has been the focus of considerable research, including relating informal interactions within an enterprise to organisational goals (Cross and Prusak 2002; Ehin 2004; Cross and Thomas 2009) and most of these studies rely on Social Network Analysis (SNA). Back in the 1940s, it was reported that the most fruitful concept to emerge out of social science research was that of informal organisation (Firey 1948) and organisational theorists became aware that formal

[1] Alberts and Hayes (2003) and the NATO C2 Reference Model (SAS-50 2006) define agility as a combination of robustness, resilience, responsiveness, flexibility, innovation, and adaptation. While these together express the capacity to cope with changes in the external environment, for the purpose of this research, the definition reflects understanding of these terms as expressed or implied by the study participants when they referred to them.

organisational structures fail to capture numerous important aspects of communication in organisations (Monge and Contractor 2003). Such theorists pointed out the importance of informal communication and informal networks which provide the quickest means of communication in organisations. These informal groupings develop spontaneously, irrespective of executive orders issued, along and across communication lines of the formal organisation (Jablin and Putnam 2001; Robbins, Millett et al. 2001).

The formal organisational structures represent the norms and expected behaviours and formalisation in organisations is referred to as the extent to which rules and procedures mandated for work are explicitly stated (Jablin and Putnam 2001). Generally speaking, formal organisational structures are primarily normative, since the individual's position in the formal organisation is determined by a given structure in the organisation, as depicted by the organisational chart.

Informal organisational networks, on the other hand, are based on human interactions and usually develop spontaneously as a response to unexpected circumstances (Jaffee 2001; Robbins, Millett et al. 2001); since these networks cannot be dictated but merely observed and influenced at best, they have descriptive properties (Krackhardt and Hanson 1993).

The literature supports the notion that formal organisations are well equipped to deal with anticipated problems, and responsibility, authority and accountability measures are imbedded in the system (Bennet and Bennet 2004; Fairtlough 2005). However, formalisation fails to cope with the non-rational dimensions of organisational behaviour and a changing environment (Rank 2008).

In times of rapid change, organisational agility in terms of the speed of change to suit a situation and the flexibility of organisational processes, and diversity of potential solutions to the problem, are important (Atkinson and Moffat 2005; Kalloniatis and Macleod 2010). Information and feedback needs to be made available at all levels. This requires multidirectional communication flows at much wider bandwidth than depicted by organisational charts so that each unit can react to any environmental turbulence. This type of network can be achieved through a combination of formal and informal means. The quality of links in such combined networks is determined by the degree of trust, reciprocity, and commitment that develops over time in repeated interactions (Dervitsiotis 2005; Siggelkow and Rivkin 2005).

However, while the formal organisation and informal networks are distinct in nature, they are heavily intertwined in organisational life (Han 1983). Therefore, it is not the dichotomy of formal vs informal, official vs unofficial, or prescribed vs emergent structures in organisations that is the issue. It is the co-existence between the two and leveraging of strengths offered by both systems and minimizing their weaknesses while striving to achieve organisational goals.

Complexity and complex adaptive systems

It is broadly accepted that organisations are complex systems (Anderson 1999; Stacey 2001; Kurtz and Snowden 2003; Griffin and Stacey 2005). Organisations are "…dynamic systems of adaptation and evolution that contain multiple parts which interact with one another and the environment" (Morel and Ramanujam 1999: p278). Complexity theory has implications for the framework used to understand complex organisations, given that under certain conditions organisations and structures within organisations will perform in regular, predictable ways. Under other conditions they exhibit behaviour in which regularity and predictability are lost. Since the nature of complex organisations is determined by the interactions of their members, relationships are fundamental because things do not happen in isolation but through interaction (Cilliers 2001). The Cynefin framework (Kurtz and

Snowden 2003; Snowden and Boone 2007) is one tool for analysing organisational processes and command and control in relation to environmental complexity. This framework is applied in this research (Section 4).

When the structure and behaviour of a system changes over time in a way which tends to increase its 'success', continually calibrating itself to environmental changes, such a system is referred to as a Complex Adaptive System (CAS) (Holland 1995; Lowe and Ng 2006; Bolton and Stolcis 2008). Attributes often associated with CAS are robustness, resilience (quick recovery ability), flexibility, agility, and adaptability (McDaniel 2007; Paparone, Anderson et al. 2008) which resonate with Alberts and Hayes (2003) definition of agility. Further, CASs possess distinctive properties that set them apart from other systems. There is no single point of control in terms of centralisation and no 'chief agent' which directs behaviour of all CAS elements. As the elements interact with each other, they construct and reconstruct assumptions, expectations, values and habits that organise their behaviour at the local level (Cilliers 1998; Axelrod and Cohen, 2000; Stacey, 2001). An important characteristic of a CAS is self-organisation in response to external events and this happens through interactions (Cilliers, 2000). Therefore, the structure of a CAS is the result of interactions among agents of the system leading to spontaneous coordination towards achieving a goal, i.e. 'bottom–up' flow on effect and self-organisation is driven by multiple feedback loops, and agents organising and reorganising through non-linear interactions (Cilliers 1998; Anderson 1999). This adaptability and the emergent nature of a CAS renders it better equipped to thrive and survive in volatile, uncertain and ambiguous environments and create a novel response to such situations.

Informal organisational networks display properties of a CAS and the nature of self-organising patterns allows them to be resilient and robust, i.e. successfully cope with a large range of situations, and while, at times, there might be a tension between the formal and informal systems, both are essential for the possibility of a transformation to a more flexible and innovative way of working (Smith and Stacey 1997). However, the tenuous nature of a self-organising or spontaneously created organisation is that it may not be enduring. Self organizing happens for a purpose and may be effective for a particular circumstance or for a part of a circumstance. Just as quick as it is created, it can dissipate and accountability may became a casualty in such cases.

Complexity and military organisation

For the military the operational landscape is characterised by constant change and uncertainty, and exposure to the vagaries of the political, societal and economic climate. Paparone, Anderson et al. (2008) describe the military operational environment as volatile, uncertain, complex and ambiguous (VUCA). The type and range of operations that the military is involved in varies greatly and involves more collaboration across services, across nations, government and non-government organisations, and with civilians and reservists. These subsystems interact with each other in formal and informal ways, forming relationships based on both authority and informality. Complexity is further exacerbated by information and communication technologies that facilitate the dissemination and volume of information. The military, therefore, requires the capacity to deal with complexity and requires a command and control system that can respond with agility and flexibility to a changing environment (Kalloniatis and Macleod 2010).

Paparone, Anderson et al. (2008) in analysing and describing the military as a CAS point out implications for leadership of such systems. They emphasise that management of relationships is more important than management of roles. They state that "rather than relying on the doctrine of standardisation to maintain order, drawing attention to the expertise and value systems of the professional community, coupled with allowing the self–

organising properties of complex systems to emerge, is a better way to gain coordination and unity of effort" (Paparone, Anderson et al. 2008: p442).

Since military operations are characterised by uncertainty and unpredictability, responding to such situations requires improvisational behaviour, reconfiguring information and resources to cope with a situation and creating new opportunities. Doing things the 'right way' may not be advantageous; instead, a balance between structure and flexibility, i.e. 'do the right things' to reduce risk and promote creativity through sensemaking and self-organisation will better enable the military to respond to environmental changes (McDaniel, 2007; Paparone et al, 2008).

3. Rationale for the research

Whilst there is a considerable body of evidence and research about informal collaborative arrangements in organisations and achieving results through informal networks (Krackhardt and Hanson 1993; Kilduff and Tsai 2003; Cross and Parker 2004), the research in those areas in the military during deployments appears to be scarce. Moreover, the research reported in literature seems to mainly rely on SNA and while the SNA offers explanations to 'what' type of questions, it does not always provide deep insights into 'why' and 'how' such phenomena arise.

There seems to be sufficient anecdotal evidence (Cause, Ritcher et al. 2005; Chin, Reynolds et al. 2007) and some empirical evidence (Burnett, Henman et al. 2008; Talbot and O'Toole 2008) about the significance of informal networks in the military in operational environments, however, relatively little is known about the dynamics of the co-existence of formal organisation and informal networks, what gives rise to these structures during deployment, and whether these networks contribute to mission outcomes and affect command chains. Therefore, there is a need for theoretical and empirical underpinnings of the role of informal networks in operations in order to effectively harness their power and provide doctrinal guidance for their exploitation during operations. To reach this understanding, three broad research questions were posed for this study:

1. What gives rise to informal networks activity during deployments?
2. Do informal networks contribute to mission goals during military operations?
3. What factors need to be addressed to facilitate the co-existence of formal organisation and informal networks during deployments?

The military in general and the ADF specifically, provide a unique setting to study the co-existence between formal organisational structures and informal networks; the ADF is a visibly hierarchical organisation with a blend of networks and is confronted by a range of involvements of its troops in a constantly changing operational environment. This requires adaptation of organisational structures to emerging situations. The outcomes of this study can have immediate implications for the ADF and other organisations facing an uncertain environment.

4. Research design and study participants

This research is based on qualitative methodology comprising interview and focus group data.

Interview Data

The first step in answering these research questions involved re-examination of an existing data set comprising 146 semistructured interviews with a sample of ADF personnel deployed during 2001-2007. These deployments comprised:

- OP1: 2001-2004 combat deployment one hundred interviews involving all three services;

- OP2: 2004-2005 humanitarian relief deployment, sixteen Army personnel; and
- OP3: 2005-2007 combat deployment, thirty Army personnel.

All interview samples[2] were stratified across rank and gender with the exception of OP3 where the entire interview sample consisted of male personnel. The vast majority of the interviews were recorded with a few summarised in long-hand.

Data Analysis

All interviews were transcribed into electronic form and entered into NVivo, a software for processing qualitative data. NVivo enables indexing segments of text to particular themes (coding scheme), carrying out complex search and retrieval operations quickly, and linking research notes to coding. The data was analysed using thematic (template) analysis and the Cynefin framework.

Template Analysis

The overall analytical approach largely followed the conventions of template analysis, which is a particular way of thematically analysing qualitative data where the researcher produces a list of codes (template) representing themes identified in the textual data (King 2004; Waring and Wainwright, 2008). Template analysis is suited for research that seeks to discover underlying causes for human action and through the use of a template of code terms secures reliability of coding (King, 2004). The choice of this approach for data analysis was based on the type of data that was used for this research as well as on the research questions that arose from the initial examination of that data.

Cynefin Framework

In addition to thematic analysis, the Cynefin framework referred to earlier and shown in Figure 1, was used as a tool for representing interactions between the formal organisation and informal networks and for describing different circumstances of the operational environment and the activity of informal networks in that environment.

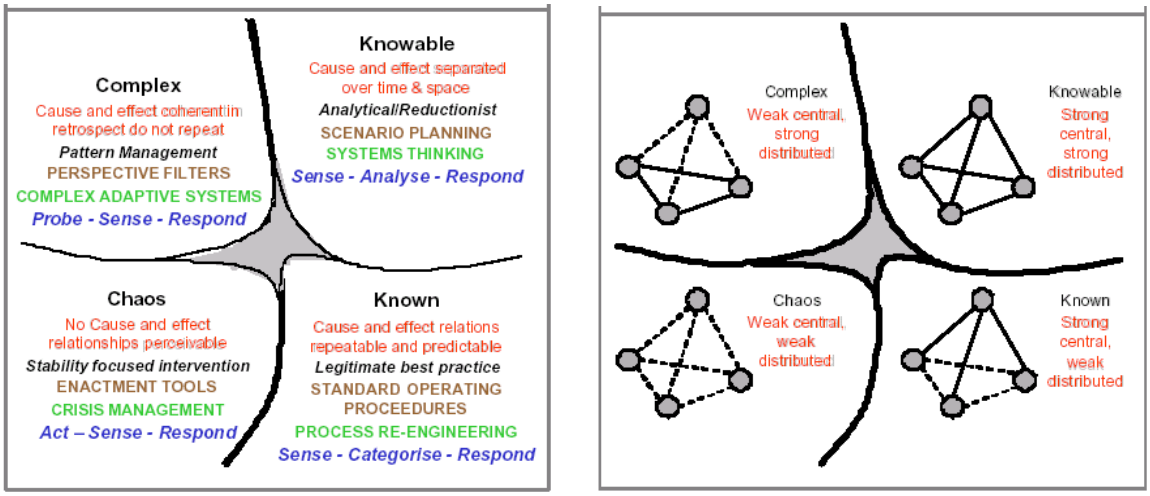

Figure 1 Domains of the Cynefin framework and respective connections strength

[2] The interviews were conducted for a DSTO Task designed to analyse contemporary trends in warfighting and their relevance to the ADF. The Task comprised three interrelated pieces of research: a review of the literature concerning NCW and future warfighting, in-depth interviews with ADF personnel returned from deployment to OP1 (Warne et al., 2004) and OP2. This task was subsequently extended to investigate the Human Dimensions of NCW and the OP3 interviews were conducted for that Task.

The Cynefin framework identifies five domains which may describe a particular operational environment (Kurtz and Snowden 2003; Snowden and Boone 2007):

- The Known[3], or Simple – characterised by stability and a clear relationship between cause and effect. Simple contexts, once properly assessed, require straightforward management and monitoring. The approach is to Sense - Categorise – Respond (SCR). This suits a vertical way of working with weak horizontal links and adherence to best practices makes sense.
- Knowable, or Complicated – in which the relationship between cause and effect requires analysis or other form of investigation, often leading to several options and/or the application of expert knowledge. The approach is to Sense - Analyse – Respond (SAR). In such an environment vertical and horizontal links need to be strong, and good practice rather than best practice is more appropriate.
- Complex, or domain of Emergence - in which the relationship between cause and effect can only be understood in retrospect. Emergent patterns can be perceived but not predicted. The approach therefore, is to create Probes, then Sense emerging patterns to these probes, and finally, Respond by stabilising patterns that are desirable (PSR). There are no right answers and the need for increased levels of interaction and communication as well as creative and innovative approaches is greater. In this domain, the horizontal connections between individuals ideally need to be strong with weak vertical connections.
- Chaotic, or domain of rapid response - there is no visible relationship between cause and effect at system level and no time to investigate or ask for input. Therefore, reducing turbulence and establishing order is important, and then sensing where stability is present and where it is not, i.e. sense reaction to initial intervention and then respond by transforming chaos into complexity where patterns can emerge. Top-down or broadcast communication is imperative in these situations. The overall approach, therefore, is to Act - Sense – Respond (ASR). The connections between individuals in this domain should be weak or non-existent.
- Disorder (the central shaded area) – a destructive state of not knowing what type of causality exists. In this domain decision-makers look at the same situation from different points of view and they will often revert to their own comfort zone in making a decision. Kurtz and Snowden (2003) postulate that the greater the importance of the issue, the more people will pull towards the domain where they feel empowered and people are usually most comfortable operating in one of the Cynefin domains. Disorder can also be the state of decision paralysis.

The right-hand domains (known/simple and knowable/complicated) are characterised as *order*, and the left-hand domains (complex and chaotic) as *un-order*. None of the domains is more desirable than any other; the framework is used primarily to consider the dynamics of situations, decisions, perspectives, conflicts and changes, and to recognise in which quadrant a given situation resides.

The Cynefin framework was originally developed to aid understanding of interactions between formal and informal communities and of structured processes and uncertain condition. It is suited to study social complexity and to describe problems (Kurtz and Snowden 2003; Verdon 2005; Snowden and Boone 2007) and is, therefore, a suitable methodological tool for this research.

Initially, the three deployments were analysed separately using template analysis to identify issues influencing informal network activity and factors underpinning coexistence between formal and informal structures in the respective deployments. Aggregation of these findings

[3] In the Cynefin framework 'known' and 'knowable' do not refer to the knowledge of individuals. They are used in the context of things that are known to society or the organisation, depending on the interest at a given time.

led to identification of collective factors influencing the formation of informal networks, as well as the overall outcomes of informal network activity during these deployments.

The workshop

The Cynefin framework was used to study dynamic between formal and informal response in a given environmental context and to aid understanding of how individuals and groups make sense of past events and experiences. This sensemaking was exploited further in a workshop involving 26 participants with recent, i.e. 2007-2009 operational experience and representing the three military services. All workshop participants were male ranked Major and its equivalent across services. The aim of this workshop was to:

- determine longitudinal consistency and reliability of the findings and perspectives from data collected between 2001-2004 and 2005-2007 deployments with that of recent operational experience, i.e. in the last few years;
- make contextual sense of the collected data; and
- extend the research by discussing priorities and actions that could be taken to facilitate the coexistence of formal organisation and informal networks in future operations.

The workshop consisted of three parts[4]:

- 'anecdotes' - designed to immerse the participants in the operational situations based on the earlier interviews. The stories, chosen by the researcher to be representative of the themes that emerged from the re-examination of the interview data, were grouped according to these themes and presented to the participants.
- 'reflection and sensemaking' - designed to explore the patterns and perspectives revealed by the stories and to discern to what extent, and how these stories resonated with the participants' own operational experiences. All participants were asked to write a short statement depicting the main message or a feeling evoked by a given story. These statements were then clustered to represent the key issues, as perceived by the participants. Each of these clusters was assigned a title which subsequently constituted an 'intervention theme'.
- 'intervention' - the participants were asked to 'vote' on the relative importance to their practice of a given intervention theme. The aim was not to obtain a consensus but to produce a range of intervention options, as perceived by the participants. Thereafter, they worked in groups on the chosen intervention theme(s) by identifying what is to be achieved and how by suggesting specific actions.

In addition the participants were asked to express their view on what is needed to make the co-existence of formal organisation and informal networks more effective during deployments and to validate the value of this co-existence to operational outcomes. Further, they were asked to indicate, on a sliding scale, whether the dominant issues that emerged from the analysis of the 2001-2007 interview data are adequate to address this co-existence.

5. Findings and analysis

Thematic examination of the interview data paints a rich picture and provides insights into the factors influencing their activity during these deployments and the areas where the networks activity was most prevalent. The analysis focused on what people do and how they network as well as on what factors or functional areas influenced informal network activity in the theatre of operations. These functional areas and relative prevalence of informal networks, based on the coding frequency, for all three deployments are depicted in Table 1.

[4] The workshop was conducted by two facilitators, one of them being the author, and the other being an experienced anecdote circle facilitator with a military service background.

Functional area or activity	Deployment		
	OP1	OP2	OP3
Preparation for deployment	high	high	high
Handovers (getting to know org culture, introduction to networks)	high	low	high
Access to information, information /communication flows	high	medium	high
Intelligence needs	high	medium	medium
Timeliness & accuracy of information	high	low	high
Communication infrastructure / coalition compatible technology	high	high	med-high
Resources / equipment	high	high	high
Logistics /supply chain	high	high	medium
Formal processes and procedures	high	high	medium
Operational imperative	high	high	high
C2 arrangements	high	low	medium

Table 1 Prevalence of informal networks in relation to functional areas or activities

The findings depicted in Table 1 show a widespread prevalence of informal networks in all deployments under study, with the OP1 deployment showing the most widespread informal network activity. Information needs in relation to preparation for deployment and while in the theatre, access to resources and satisfying operational imperatives constituted the areas where informal network activity was most robust for all three operations.

Issues influencing informal network activity

It became apparent that there are other interrelated issues that offer further understanding of self-organising behaviour and provide insights into causes for the formation of informal networks. The data was interrogated by asking why informal networks were so prevalent during these deployments, what was their nature, and how did they contribute to each mission's goals?

Figure 2 represents a summary of the findings from all three deployment cases and is constructed according to the thematic logic that emerged from analysis of the interview data. Due to the different nature of these operations, varying degrees of prominence of these factors were found in each of the deployments. The diagram is divided into five layers with the four top layers representing the sequence of influence factors leading to the formation of informal networks during deployments. The bottom layer, the 'outcomes', represents the collective effect of these influences and their perceived impact on mission/operational effectiveness. It is important to note that due to the nature of the interview program, no direct cause-effect correlation between these issues and the outcomes is attributed, merely a possible influence.

At the top level, these factors comprise authority, laws and policies associated with the Australian government and the US led coalition that prevailed at that time. The next layer or category pertains to overall ADF values and culture. The third layer comprises organisational and systemic issues, and the fourth deals with the immediate environmental (operational) conditions. Based on the data, these factors collectively and individually influenced the formation, pervasiveness, type and extent of informal network activity during these deployments.

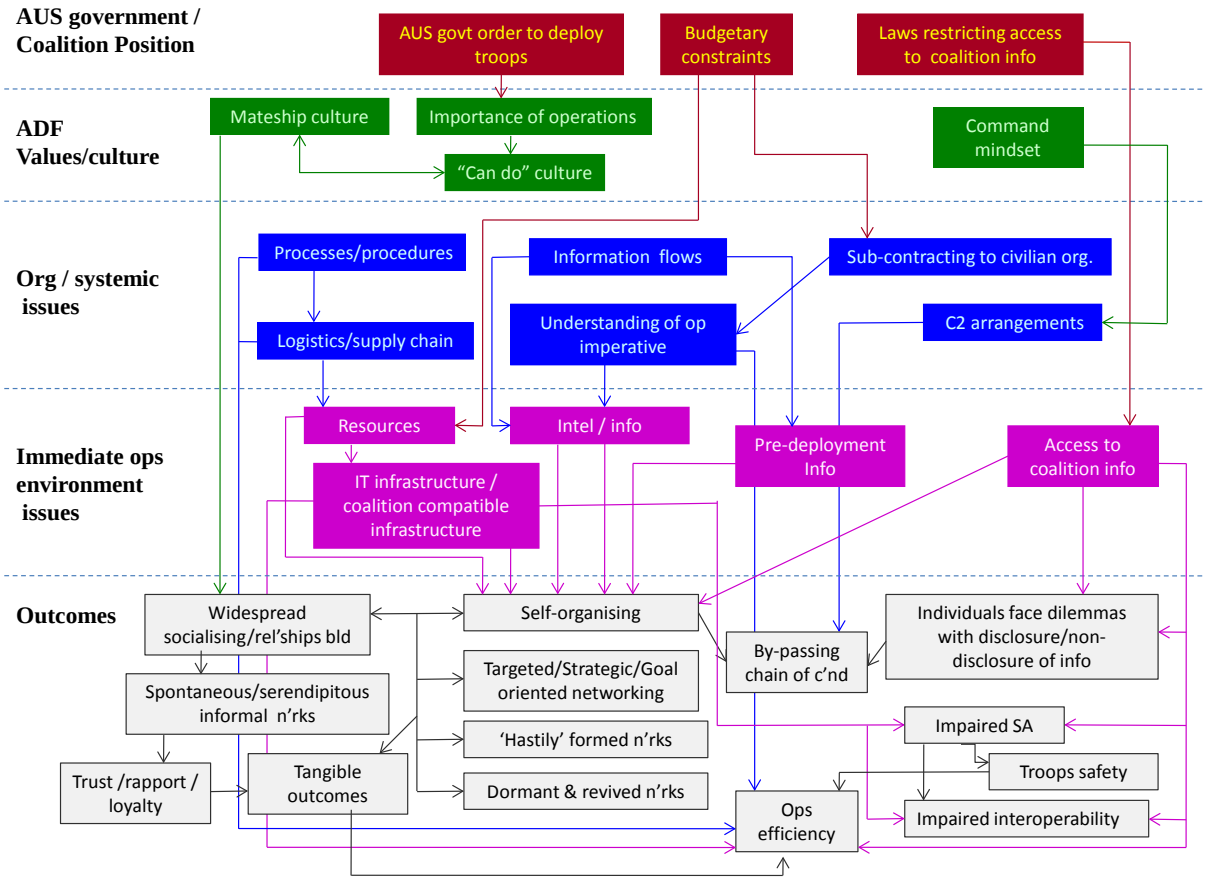

Figure 2 Aggregate findings - Factors influencing formation and activity of informal networks

Australian Government and US led coalition

The sequence of these influences is initiated by the Government decision to deploy Australian troops. In the case of the OP1 deployment, the US laws then prevented Australians from having access to secret coalition information, e.g. '*A lot of information was not really available to the Coalition side*'; see also Zelibor (2005). Access to unclassified coalition information was achieved only via satellite communication links (SATCOM) but for the Australians this was either inadequate and in some cases, non-existent, e.g. '*Our phones, satellite phones, were very intermittent...*'; see also Scales (2006); Mitchell (2009). Based on the implied evidence from the data, it is possible to say that budgetary constraints may have contributed to the shortages of suitable and adequate resources during deployment, rendering the Australian troops relatively poor in resources and compatible infrastructure. Similarly, it is possible to infer that the lack of certain specialised equipment used mostly for humanitarian operations could be dictated by policy or budgetary constraints.

ADF values and culture

Generally speaking, military cultures give prominence to and instil organisational loyalty and obedience. The culture of military organisations is characterised by hierarchy, tradition, rituals and customs, and distinctive dress and insignias (Boatner 1976). These cultural aspects correspondingly impact on the way that military personnel behave, conduct business and work together in organisations (Fairtlough 2005). This is no less true for the ADF; however, ADF culture has additional aspects, as shown in Figure 2. The ADF culture of 'mateship', rooted in the ANZAC tradition, transcends service and hierarchies and permeates to other militaries the ADF happen to be working with and it impacts on the way the Australian troops build relationships. The data clearly shows that this culture continues

to be prevalent amongst ADF troops, e.g. '*…the best part about Aussies, you get mateship pretty quickly when you start talking to people and doing things*'. The phenomenon of making do with what's available at hand and 'can do' philosophy, sometimes manifesting itself in deviating, if necessary, from required procedures in order to get a job done, was very much in evidence in this data set. The interviewees pointed out that - due to the relatively small size of the ADF and, sometimes, scarcity of resources - improvisation, innovation, initiative, solving problems at their own level, and being resourceful are unavoidable to get a job done *'…let me know how you're going to do it and I'll tell you if I don't like it, but basically just get on and do it'*. This attitude drives self-organising behaviour. Earlier studies on social learning the author was involved in also provide evidence of this phenomenon (Warne, Ali et al. 2003).

The other important aspect of military culture is the importance of operations and this is so also for the ADF. Troops train for operations and the status system within the ADF seems to emphasise the priority of operations *'…it is important to try and get some operational experience'*. The data suggests that the 'can do' culture and the importance of operations seem to be closely associated.

Although the ADF embraced the concepts of Network Centric Warfare, characterised by an increased adaptability of command and control processes and shifting 'power to the edge' (Alberts and Hayes 2003), the interview data indicates that devolution of authority was only occurring but to some degree. Many expressed the opinion that the extent to which commanders devolved authority was a matter of "personality" or an individual command mindset/style and ranged from managing by mission command to command-by-detailed-orders. This command mindset impacted on the overall formalised C2 arrangements in theatre. In cases of perceived convoluted or restrictive command structures, e.g. '*We became so strictly supervised and controlled in what we were doing that you lost all confidence to make a correct judgement…*' the individuals resulted to self-organising behaviour and, in some cases, to by-passing of the chain command in order to get a job done more speedily. Military doctrine makes a distinction between command and control with command being about guidance and intent and control relating to the rules and directives (Australian Defence Force Warfare Centre, 2008). However, exercising command is a personal business and a philosophy that influences individual's personal life, life of their subordinates and the way they work. Pigeau and McCann (2002) point out that control comes at a price, and once adopted it restricts flexibility. Its function is to manage mission problems through structures and processes and to minimise risks of not achieving satisfactory solutions. The function of command is to seek novel solutions to mission problems and to provide conditions for starting, changing, transferring and terminating control and thus overcoming control restrictions on flexibility (p 56).

Organisational systemic factors

The interview data for all three deployments provides explicit evidence of the organisational processes and procedures that were perceived to be poor, inefficient and not meeting operational requirements, e.g. '*I found the formal network quite obstructionist*'. Stacey (1996) points out that the inability of bureaucracies to handle environmental ambiguity and uncertainty gives prominence to informal structures within organisations. The data clearly demonstrates that this inability of the formal system to adjust to the demands of the operational environment provided an impetus for the reliance on informal networks for achieving mission goals. The ripple effect of non-agile or inflexible processes and procedures affected the logistics and supply chain, often rendering the troops with insufficient resources, or untimely supply, e.g. '*They didn't want to go through the system because it would take time*'. This in turn, resulted in self-organising behaviour demonstrated by collaboration of individuals or groups through informal relationships.

While the predicament of flawed logistics and supply chain was reported to be present, at least to some degree, in all three deployments, this issue was of particular relevance to the humanitarian relief operation, e.g. '*…my observations were that every line of communication, every logistic support chain is flawed*'. In such operations the success or otherwise of the mission, to a large degree, hinges on an efficient supply chain (Oloruntoba and Gray 2006; Kovacs and Spens 2007).

Another contributing factor resulting in self-organising behaviour pertains to information flows. The interview data indicates that a poor information flow concerning pre-deployment preparation impacted on perceived deployment readiness and a vast majority of participants reported this as a significant factor influencing robust informal network activity, e.g. '*In my case there was a lot of help yourself training. I teed up - started liaising with the guy I was replacing*'. In the theatre of operations itself, information and intelligence needs were reported to be affected by sometimes incomplete, delayed, contradictory, or inaccurate information, e.g. '*We had a formal process of stuff coming to us … and always 24 hours a day, but it was a few days old sometimes and it wasn't as accurate*'. Ehin (2004) points out that if people find a formal system is not satisfying their information needs or find it confusing, ambiguous and/or cumbersome to access, they will simply ignore such a system and self-organise in order to fulfil their information needs. The research data corroborates this argument.

There are numerous reasons as to why organisations decide to outsource services and labour. Possibly the most well known reason for outsourcing anything regarded as not a core organisational competency, is to access cheaper labour and cut costs (Eliot 1998). Although the interviews did not probe this issue and the data does not provide specific reasons for the Australian Defence Organisation's contracting out certain functions/services, it was inferred that budgetary constraints might have played a role in this. However, what strongly emerged from the data analysis are the perceptions amongst the uniformed personnel that outsourcing and 'civilianisation' of some of the military functions and services means lack of appreciation of operational imperatives, e.g. '*The rhetoric is that we are supporting operations, the reality is a different work ethic - a lot of manning of civilians and they don't understand the operational imperative*'. This, in turn, causes delays in processing of and fulfilling operational requests. The data demonstrates that during deployments the absence of trust in agencies supporting the operations was inextricably linked to the formation of and reliance on informal networks and self-organising behaviour.

Immediate factors in the theatre of operations

Regardless whether it is fighting an insurgency, combating terrorism, rendering humanitarian assistance and disaster relief, or participating in peacekeeping operations, etc, military deployment is always a challenging task requiring preparation, resources, appropriate infrastructure and intelligence information.

Although to a different degree, the data for all three deployments explicitly substantiates perceived lack of resources and/or appropriate IT infrastructure, e.g.' *… we were pretty reliant on the Americans… And this is where the informal networks came in*'. The lack of access to secret coalition intelligence was reported to be the biggest hurdle during the early stages of the OP1 and this is where the informal and social relationships paid dividends, e.g. '*Informally we ourselves tapped into this [intelligence] with the local American brigade and they would feed us from their own int sources*'. For the OP2 and OP3, access to appropriate resources meant being able to conduct their mission. All of these factors within the theatre of operations influenced people's behaviour and impacted on human-to-human networking. This type of networking allowed for linking of ideas and resources, seeking and sharing information and, overall, it had played an important role in every aspect of deployment, and thus in contributing to mission goals.

Outcomes

The final layer in this influence diagram, Fig 2, represents the culmination of all the above categories of issues and their relationship to the final outcome. In this context, the outcome that precipitated from the interplay of these factors can broadly be labelled as informal networking. However, the overall outcome is more than just networking and forming of relationships. There are other important 'outcomes' identified from the data, than broaden and enrich the final picture and that ultimately impact on operational efficacy. The data analysis led to identification of tangible and intangible products of informal networking and issues surrounding situational awareness, interoperability and disclosure of classified information, as well as the types of informal networks that prevailed in these deployments.

Tangible and non-tangible outcomes of informal networking

While organisational charts define people's formal positions and their job titles or work units, in reality it is the roles people play in the activity itself and the associations they develop that define them (Krackhardt and Hanson 1993). The research data demonstrates that alongside formal organisational structures there were other 'structures' which spontaneously emerged because of the human need for association and belonging, e.g. '*it is really about making sure that your network exists*'. This innate human need to form relationships is reinforced by the prevailing ADF culture of 'mateship'. Apart from the need for socialising, these networks also emerged in response to what was perceived as non-agile or inflexible, formal systems, e.g. '*the chain of command was always used, but there was also a side channel used as well*'. The social networks enabled individuals to draw on a wider knowledge and experience that would have otherwise been difficult to access. Many innovative solutions and other tangible outcomes, i.e. obtaining equipment or gaining access to information, resulted from such informal networking, e.g. '*… we formed an office - we called it the KAMCO, Kandahar Air Movements Control Office - and what we did was we invited all the coalition all around…we open up the possibility of sharing information…you wanted something moved, we could move it.*' There were also intangible benefits of informal networking that are important for the military operating in a complex environment. These are the communication and support that sustain human relationships, human generated knowledge, wider connections, confidence and trust building, e.g. '*Without the trust and interaction on a social level, where they were happy to respond to any requests we might make, it would have been much more difficult*'. They were all seen as important interoperability enablers.

Trust, rapport and loyalty

The literature on NCO points out that information sharing lies at its core as it enhances quality of information and shared situational understanding (Alberts, Garstka et al. 2000; Alberts 2002; Warne, Ali et al. 2004). Atkinson and Moffat (2005) further state that sharing of information is based on trust developed through social interaction, shared values, and beliefs. A human is a node in such interactions and a link is a bond that people develop which is based on mutual trust. Therefore, a significant component of a person's information environment consists of the relationships he or she can tap into for various informational needs.

Trust building resulting from those associations and relationships was identified by most study participants as an essential factor for any future operations and information sharing. Sharing of information has a behavioural component and the emphasis is usually on one-to-one networking initiative and effort. It requires time and space (physical, cognitive and social) to develop the sense of safety and trust that is needed for information sharing. People spoke about trust as the glue that kept human networks and interconnections aligned and it was also seen as an underlying foundation for collaboration, e.g. '*if you build an element of trust with someone…with the little bit of rapport that we had, the results were astounding – the*

things they were willing to do for us'. Atkinson and Moffat (2005) point out that in the absence of trust, rules are needed and rules are inherently inflexible, and time and space constrained. While they may set conditions, they do not have agility and usually do not engender fidelity needed in a dynamic environment.

Cynefin analysis

All three deployments and their various instances were analysed using the Cynefin framework, however, only one example, Fig 3, of this analysis is provided in this paper. The example in Figure 3 illustrates the issues faced by the ADF upon arrival in a disaster zone and the subsequent approaches used to deal with unfolding situations.

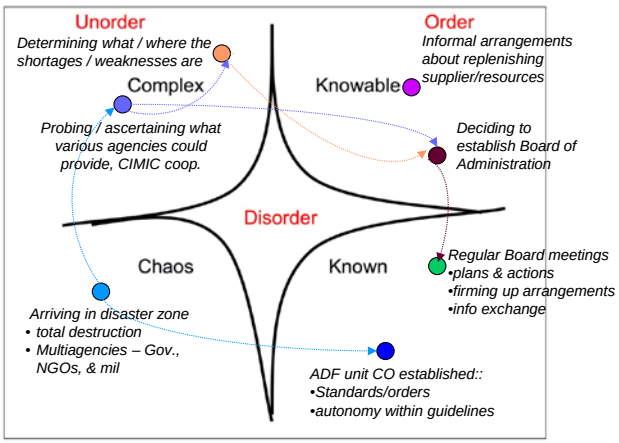

Figure 3 The chaos of total destruction - what to do next

In this figure, the 'dots' represent a state or a situation at a given point in time whereas the lines and arrows represent individual or collective actions. The essence of the Cynefin analysis shown in this figure is to depict the dynamic nature of interactions amongst the various agencies and the operational environment and to represent the evolutionary path of the informal network that emerged in response to the changing environment.

Prior to the disaster, the relief agencies had no linkages to each other and had no reason to collaborate; however, to operate effectively in those circumstances, they had to shift from a state of co-existence to a state of collaboration and self-organise to provide effective relief. Attending to the medical and health needs of the victims and establishing a hospital was a highest priority. Faced with the total destruction of infrastructure and communications, one of the first steps that the relief agencies undertook was to start an informal dialog amongst themselves, to pool their knowledge, and to understand what resources and capabilities the individual agencies could offer '*Informally, the Germans and the Australians got together. They both realised singly they could achieve somewhat, but together they could achieve a lot more. So that was an informal arrangement which became more formalised'*.

Subsequently, these informal talks were formalised by the establishment of an administrative board chaired by the local authorities and comprising ADF's and the civilian agencies' representatives (interview data, May 2005). This board met on a daily basis to discuss the needs, as they presented themselves, and to allocate resources '*…key people in their departments would talk, so that was the official board meeting. Everyone had to be represented, but all those big key areas, they would informally meet and talk about some of the issues, some of the problems'*. This immediate action in the form of establishing a relationship and sensing what emerged from that action, and then responding and making decisions in a new context led to shifting the situation from the *Chaotic* space to the *Complex*-collaborative domain. By

collaborating on action plans, conducting intra-agency cooperation, and coordinating execution of these plans, they shifted the problem solving space to the *Ordered* domains.

Overall, the Cynefin analysis of the operational problem solving space encountered upon deployment indicates that, in most cases, the organisations in OP1-OP3 cross back and forth between the *Un-ordered* and *Ordered* domains. Some of the personnel displayed behaviours indicating that they assumed they were operating in the *Known* and *Knowable* spaces, while in reality they were in the *Complex*, if not *Chaotic*, space. In many instances, the response of the formal system followed 'business as usual' principles thus exacerbating the situation and shifting the context further into a *Chaotic* space. Efforts to shift the situation from uncertainty (*Un-ordered* domains) require extensive information sharing, trust, and a diverse set of interactions, both formal and informal amongst the individuals and agencies involved. These continuous interactions between and amongst coalition partners, other civilian agencies, individuals, and within ADF were necessary for collective sensemaking and contributed to forming a richer picture of the situation, and to maintaining a shared understanding of what is required. This in turn led to the development of broad plans of action. This zig-zag path through the Cynefin domains also suggests that planning in these deployments represented responses to 'wicked problems' (Rittel and Weber, 1973), where the path from problem formulation to solution is not straightforward. Surowiecki (2004) points out that in a complex landscape, aggregating the collective wisdom is important and diverse groups will consistently make better decisions than an individual will. Further, Alberts and Hayes (2007) state that in complex environments, shared awareness and good ideas are more important for success than the source they come from.

Organisational architectures in view of Cynefin analysis

The recent literature on organisational transformation required to operate effectively in an uncertain environment (Stacey 1995; Verdon 2005; Uhl-Bien, Marion et al. 2007; Ulieru and Verdon 2008; Ulieru and Verdon 2009) puts forward conceptual models for organisational architectures to facilitate adaptive survival in a particular environmental context. Based on the Cynefin analysis of the data and on the literature, the proposed organisational architectures and the command and control approaches are depicted in Figure 4.

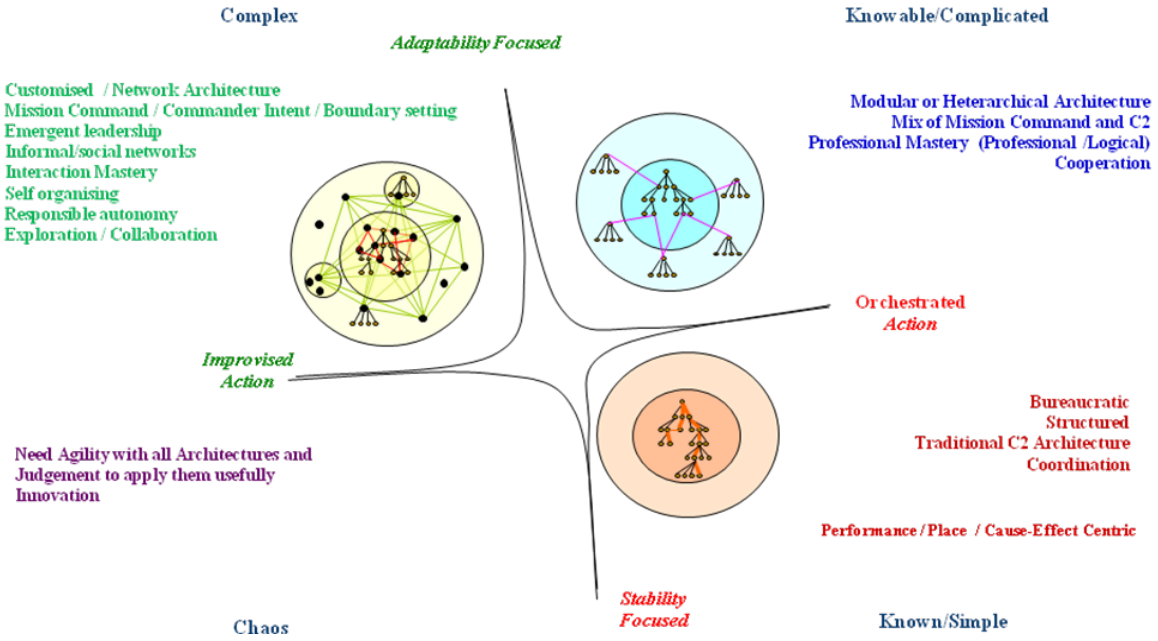

Figure 4 Organisational architectures in relation to the operational environment (adapted from Verdon and Wang, 2009)

The Known environment is relatively stable, e.g. base environment; problems are familiar with known responses. Cause-effect relations are repeatable, perceivable and predictable. Centralisation, standardisation and task accountability makes the centralised command and control hierarchy the most efficient and effective.

In the complicated context, cause-effect relations span time and space, e.g. certain base or operational context. Problems are solvable through analytical, reductionist and systems thinking approaches. Solutions require constellations of expertise and decision rights are embedded in roles. It is a domain of professional mastery. The most suitable architecture is modular or heterarchical, a mix of traditional command and control with mission command.

In a complex environment, e.g. theatre of operations, cause-effect relations are non-repetitive, non-linear and only coherent in retrospect. Problems need innovative solutions and agile collaboration across boundaries and norms to configure customised approaches at the local level. While professional mastery is important and implied here, this is a domain of interaction mastery and responsible autonomy to self-organise to respond to unforeseen circumstances.

In chaos, e.g. disaster situations, cause-effect relations are not perceivable. Interventions are stability-focused and crisis management is the rule. Agility is needed to shift from imposing the order of a control hierarchy to accepting modular adaptation to bringing customised capabilities. Thus a context or operational environment can be understood as one that will generally generate certain types of problems – stable environments will generate routine problems and complex environments will more likely generate a stream of unique problems (Verdon and Wang 2009).

Coexistence of formal organisation and informal networks during deployment

The aggregate analysis of the research data demonstrates that informal networks have been instrumental in attaining mission goals, and those networks have been mobilised by a variety of causes and relied on for desired outcomes. The data also indicates that the individuals involved in informal networks were bounded by shared values and beliefs in the purpose of their mission.

While many individuals used the formal and informal structures in a complementary way, the formal organisation with its processes was seen as a default structure. Clear lines of authority and formal mechanisms documented in doctrine provided some comfort as they are well known to all, e.g. '*I would use some sort of formal information process because the formal processes have checks and balances*'. However, the participants clearly saw the benefits of the co-existence of informal with formal elements of an organisation in achieving better performance during deployments, e.g. '*you would always start with informal, but the formal would be always after…'* Many participants expressed concerns about what is needed to balance formal and informal systems. The issues that emerged to be of greatest concern and needing addressing in order to achieve the benefits of both formal organisation and informal networks during operations, fall into three themes: accountability; autonomy and responsibility (responsible autonomy); and appropriate command structure. These three themes seem to resonate with current literature pointing out that the strategies used by the formal system in periods of stability are less effective in a changing landscape. To avoid a friction or tension between the evolving and adapting informal system and the formal organisation, which may be detrimental to organisational success, accountability and responsibility issues require consideration (Dervitsiotis 2005, Fairtlough, (2005). Therefore the themes of accountability, responsibility and command structures were further examined during the workshop.

Sensemaking workshop

Workshop participants were asked whether the three themes mentioned above would adequately address the co-existence of formal organisation and informal networks during deployments. Seventy two percent agreed/strongly agreed that accountability, responsible autonomy, and command structure are inclusive of the issues needing addressing to draw on the benefits of this co-existence. When asked, based on their operational experience, what else is required to make this co-existence more effective during deployments, the qualitative responses were grouped under the following categories:

- Education (6 responses), e.g. '*Greater education and understanding of when and how to use such networks and how they can best complement formal networks'*
- Doctrinal guidance (7 responses), e.g. '*Acknowledgement that informal networks exist and doctrinal guidance on how best to approach informal networking'*
- C2 Arrangements (10 responses), e.g. '*Clear direction of left / right of arc; command understanding of informal networks'*
- Organisational systemic issues (4 responses), e.g. '*Culture of feedback to fix broken formal networks'*
- Handovers and LOs (3 responses), e.g. '*Improved liaison methods - i.e. early embedding of LOs'.*

Some of the comments in the 'doctrinal guidance' and 'C2 arrangements' categories are clearly related, indicating a close relationship between these two areas.

In the next step of the workshop the participants examined, in view of their recent operational experience, the 'stories' extracted from the interviews. The outcomes of this step were the thematic clusters that were subsequently used for designing possible interventions: a cluster representing a type of intervention. Fifteen stories in each of the 'accountability' and 'C2 arrangements' themes generated six and three clusters, respectively. The eight stories in the 'responsible autonomy' theme produced three clusters. The doubled number of clusters in the 'accountability' theme is perhaps indicative of the perceived importance of this issue to the co-existence of formal and informal structures during operations. The participants were asked to express their level of agreement with the relevance of the topics expressed by a given cluster. Strong agreement/agreement was most common for clusters dealing with issues of informal network activity in relation to obtaining resources, information, and planning for operations. As shown in Table 1, these issues emerged as a string of factors influencing reliance on informal networks in the earlier data set. This correlation between the 2010 workshop and the 2001-2007 interview data set seems to indicate that these aspects in relation to accountability are still of concern to those with more recent operational experience.

In the theme of 'C2 arrangements', the rating of strongly agree/agree pertained to the importance of building of relationships, personal handovers and supporting the chain of command through informal network activity. The 'responsible autonomy' clusters reflected the need for higher command to provide clear statement and guidance on its intent and thus engender responsible autonomy. Table 3, provides a summary of the issues that resonated with the workshop participants in the 'accountability', 'responsible autonomy' and 'C2 arrangements' themes where SA/A indicates strong agreement or agreement, N – neutral, D/SD – disagreement or strong disagreement, and C - confusion.

Category	Clusters	Rating frequency			
		SA/A	N	D/SD	C
ACCOUNTABILITY (15)	Development of formal network once operation matures then informal/formal networks co-existence (co-existence emphasised)	25	0	0	0
	Establish levels, not in a restrictive way, between authority–autonomy.	11	9	0	3
	Inherent risk of informal	9	3	4	6
	*Poor planning and resourcing require greater reliance on initiative and informal networks to enable functional outcome	24	1	0	0
	*Fallback when formal doesn't work	19	2	3	0
	*Quality of information from informal means must be considered carefully	21	0	1	0
RESPONSIBLE AUTONOMY (8)	Training is essential: however, informal training in use of networks complement this with greater effect and synergies being the result	15	8	1	1
	*Guidance and understanding higher commander's intent facilitates responsible autonomy	22	1	1	0
	*Balance required between formal and informal networks	24	0	1	0
C2 ARRANGEMENTS (15)	Relationship establishment and maintenance is important	24	0	1	0
	*Handover/takeover in person (in situ) meeting people, travelling the ground, identifying lessons is essential	24	0		0
	*Need to underpin chain of command, not undermine it	25	0		0

Table 2 Clusters of issues in the respective themes

Some of these clusters were worked on to design possible interventions aimed at achieving more effective co-existence between the formal organisation and informal networks during deployments. These are marked with an asterisk in Table 3. In terms of the 'accountability' theme, two clusters, one pertaining to the quality of information and the other dealing with shortcomings of the formal system, were worked on. In the case of the former, all participants strongly emphasised that securing the quality, reliability and validity of information obtained through an informal network is of crucial importance. Therefore, the recommended actions reflected this by stipulating that such information needs to be validated by formal means and caution needs to be exercised concerning sources of such information. With regard to reliance on informal networks as a fallback when the formal system does not respond adequately, the overall intervention discussed by workshop participants emphasised training in the development of relationships and education to recognise when informal dealings need to be formalised, e.g. after the initial crisis requiring the agility of the informal system has subsided. Details of the recommended interventions in the realm of accountability are given in Appendix 1.

In the theme of 'responsible autonomy' two clusters were worked on. One of these clusters dealt with the clear intent statement and a guidance needed to understand it and thus to facilitate responsible autonomy. The other cluster emphasised a need for a balance between the formal structures and informal networks. The emphasis by the workshop participants on explicit and clear guidance about command intent corroborates interview findings that understanding commander's intent is crucial, as most elaborate plans often go out the window once the first shot is fired. The empowerment that stems from working according to a statement of intent rather than a detailed program or orders means that an individual is truly given the power to deliver on a job and it is a by-product of solid leadership. The intervention,

therefore, recommended greater education in this area for both higher command and their subordinates. A detailed summary of the proposed interventions is given in Appendix 2.

In the 'C2 arrangement' theme, also two clusters were developed further. The issue of personal handovers of minimum one week duration was seen by all workshop participants as very important. Similarly, the same opinion was also strongly held by the interviewees. The other cluster reflected a view that the chain of command needs to be supported through informal networks. As in the earlier intervention, education on the use of informal networks, on understanding command intent and empowerment were seen as required interventions. A higher profile of and more attention paid to the importance of liaison officers (LOs) was also emphasised. This view corresponds very strongly to the opinions expressed in the interviews where success of many endeavours with the coalition forces was attributed to having LOs in place, e.g. *'with the Americans…part of the success was having those liaison officers in the right places, without a doubt.'* Appendix 3 provides details of what is aimed to achieve in the theme of 'command and control arrangements'.

Overall synthesis of the study

Synthesising the results from the interview program and the workshop shows that in an uncertain environment the strengths and guidance offered by the formal organisational system and the flexibility and agility of informal networks need to be to taken advantage of. In fact, these two need to have a symbiotic relationship, rather than just to co-exist to effectively respond to novel situations. The research findings also indicate the interrelationship of the three factors, i.e. accountability, autonomy and appropriate C2 arrangements. While formal organisational structures are important and assist more with control based approach, the informal assist more with an approach based on trust relationships and a sharable intent that allows for self-organising. Figure 4 illustrates the interplay of these factors in promoting a symbiotic relationship between formal and informal organisational structures.

The terms accountability and responsibility are often used interchangeably in the literature. "Accountability" has its origins relating to accounting, i.e. what has been done, how it has been done, what level of completion and what it means to be held to the consequences of the outcome (Mulgan 2000; Romzek and Ingraham 2000). "Responsibility" denotes the ability to respond, is there something that can be done about a given situation. It implies the ownership of a given endeavour. Accountability tends to connote instrumentality and external controls, whereas responsibility, to a greater extent, connotes inner controls, i.e. the individual feels obliged to consider reflectively what is a reasonable action in the situation at hand (Mulgan 2000; Lindkvist and Llewellyn 2003). While accountability generally relies on agreements of some sort, in case of responsibility, agreements may stand in the way, as behaviour is motivated by achieving a greater principle. Moreover, responsibility is shared while accountability often pertains to an individual (Uhr 1999). Responsible autonomy therefore, is where the scope of responsibility is more encompassing involving consideration of a longer and wider trajectory of events, rather than merely discharge of assigned duties, where sequences of decisions are called for without recourse to a superior but with the exercise of discretion.

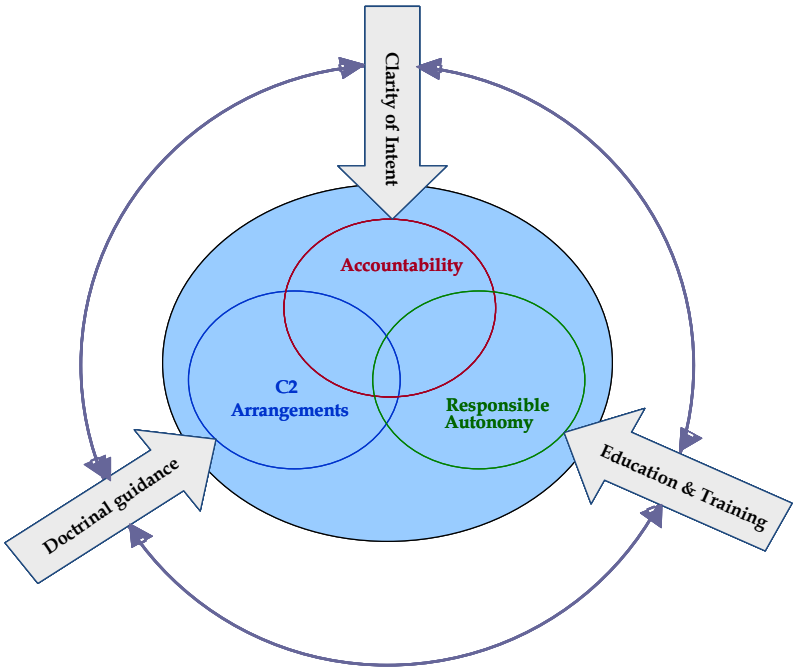

Figure 3 Interrelationship of factors promoting a symbiotic relationship between the formal and informal organisational structures

The relationship of the three factors should be supported by doctrinal guidance, clear and explicit commander intent, and education and training at all levels. This will result in a mutually supportive and mutually beneficial relationship of the two systems.

6. Conclusions

Thematic analysis of three military deployments demonstrated that informal networks were the key to enhancement of capability and these networks contributed positively to achieving mission outcomes. Three themes were identified from the interview data: accountability, responsible autonomy, and appropriate command and control arrangements. These were tested for their adequacy in securing effective co-existence of formal and informal structures during deployments. Both the interviewees and the workshop participants were cognisant of the importance of achieving a balance between formal and informal organisational structures and held strong views that informal networks served to enhance the formal command and not to replace or undermine it. While both groups of study participants strongly believed that a strict hierarchical coordination through restrictive policies hinders individual contributions and stifles innovation, they saw mission command with explicit command intent as being paramount in an uncertain context.

The identification of mission command as providing the scope for introducing informal networks raises the relevance of this study to further refinement of military doctrine, particularly in view of the increasing collaboration between the military and the civil agencies where commanders must take into account the presence of increasingly large numbers of international and non-governmental civilian organisations. The demanding circumstances the military operates is further complicated by differences in culture, strategic planning, command and management style, and modes of information flows between the military and civilian organisations concerned. Forging effective relationships between the military, civilian authorities, government and agencies and populations is essential. Furthermore, suiting command style to the prevailing circumstances and exploiting flexibility of informal systems is crucial to the success of operations. Study findings indicate that placing liaison officers with other coalition forces paid dividends and paved a way for informal contacts that subsequently facilitated access to resources and information. This

practice could be extended to placement of officers to other government and non-government agencies to facilitate interagency understanding and building of networks.

The theoretical and empirical evidence of this research supports the position that in an uncertain environment, a balance between the formal organisation and informal networks is most desirable for achieving goals. This balance does not mean the formal and informal are present in equal parts, but rather relies on having the knowledge of when and how to call upon the logic of the formal system and when and how to exploit the flexibility, agility and innovation which are characteristic of the informal system. The concept of responsible autonomy (Fairtlough, 2005) is an important aspect in determining how much one can relax command and control structures and organisational policies. The role of the command is to seek novel solutions to mission problems and in order to do so, competency (intellectual, emotional, and interpersonal), authority (legal and personal), and responsibility (extrinsic and intrinsic) needs to be addressed (Pigeau and McCann 2002). It is through education at all levels in all aspects of informal networking and further refinement of guidance that autonomy, accountability and adept use of command structures appropriate to the context can be enhanced in the military organisations. This will further nurture the capacity of military organisations for healthy self-organisation and the clustering of valuable social capital around emerging situations.

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8. Appendices

Appendix 1 Accountability - Interventions for the respective priority issues

Appendix2 Responsible Autonomy - Interventions for the respective priority issues

Appendix 3 C2 – Interventions for the respective priority issues

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Appendix 1

Accountability - Interventions for the respective priority issues

Theme	Priority Issue	Strength of agreement	What do we think we are facing	What do we want to achieve	Specific actions to be taken	Concerns
Accountability	Quality of information from informal means must be considered carefully	SA: 18 A: 3 D: 1	Information gained informally is generally gained during time of constrained periods; therefore, there may be occasions when the quality of information has been validated. Information gained maybe from a narrow view without greater/wider understanding.	• Passage of quality information through informal means • Reliability of information passed through informal means.	• All information gathered by informal means is validated by formal (other) means • Know your informal counterpart and how reliable they are and placed to know that information • Clarify source of info	• Risks associated with solely relying on informal means without validation • Is all informal information worth validating via formal means (gain initial understanding)
	Fallback when formal doesn't work	SA: 10 A: 9 N: 2 D: 2 SD: 1	• Lack of resources, information and a red tape. • The chain of command may not be able to respond in a timely fashion • People may have a level of understanding of the formal process and look at using a local solution	• The formal system has not worked and we use local or informal network because we want to achieve a result. It still requires informing your higher HQ of what you are doing.	• Build networks • Understand formal system and its limitations • Training in developing networks/relationships • Recognize when it needs to be formalized • Need to make the formal system work	• Location and context of network • Balancing authorities • Understanding that the formal system is broken and needs to be fixed
	Poor planning and resourcing require greater reliance on initiative & informal networks to enable functional outcome	SA: 15 A: 9 N: 1	• Informal network fills the gaps caused by poor planning • Not all 'knowns' will be addressed during planning • Key contacts only established when on the ground	• Resource requirements in short turnaround • Improve planning recognizing that 'gaps' will exist • Recognize initial contacts/networks are an asset to planning		

Appendix 2

Responsible Autonomy - Interventions for the respective priority issues

Theme	Priority Issue	Strength of agreement	What do we think we are facing	What do we want to achieve	Specific actions to be taken	Concerns
Responsible autonomy	Guidance and understanding higher commanders' intent facilitates responsible autonomy	SA: 14 A: 8 N: 1 D: 1	• Having clear guidance of higher commanders allows personnel to act independently with authority and confidence. Problems with this are lack of proper briefing and /or need-to-know causes confusion.	• Want top achieve greater situational awareness, greater awareness of informal networks throughout the organisation • Greater timeliness of message passing potential SA increase • Greater mutual support to achieve greater Joint effect	• Greater education of pros/cons and implication of commanders intent • Formal liaison officer training • Understanding commanders intent facilitates better initiative a the lower levels	• Potential command loss of situational awareness due to much delegation • Informal outcomes are not relayed through command chain • Potential to undermine command decisions – if commanders' intent is not understood properly
	Balance required between formal and informal networks	SA: 10 A: 14 D: 1	• Both networks exist • Formal network consists of legitimate data & ground truth • Informal networks provide a 'heads up' and workarounds, especially early in operations	• Recognise that the informal network exists and the commander provides the left and right of arc (the boundaries). • This exploits the benefits of the network whilst continuing to monitor / regulate the risks involved • Once formal networks catch up, then informal networks can be 'wound back'	• Command guidance – quantify balance • Empowerment to establish the networks • Establish a level of indemnity, if deemed necessary • Report on the measure of information/goods/service provided by the network	• Informal networks taking over and decisions being made and not retained by formal command chain • Degree of accountability • Excuse slow implementation of formal networks • Abuse of LOs/Embedded – improper use

Appendix 3

C2 – Interventions for the respective priority issues

Theme	Priority Issue	Strength of agreement	What do we think we are facing	What do we want to achieve	Specific actions to be taken	Concerns
Command and Control	Handover / takeover in person (in-situ) meeting people travelling the ground identifying lessons is essential	SA: 24	• Handovers / takeovers are not as effective when simply written as notes instead of a face-to–face in situ handover / takeover	• Greater sharing of information and existing relationships – personal handover / takeover maximises sharing of information and the informal networks previously in place • Avoid relearning; continuing growth and development • Relearning is ineffective and introduces an unnecessary initial period of risk with each transition period	• In situ handover / takeovers essential. Written ones on their own are ineffective and potentially dangerous • Minimum 1 week handover / takeover required • Must be introduced to existing networks to initiate own rapport / understanding other's points of view and context • Identify the weaknesses, if any, of existing formal networks • Identify which processes are best done formally and these that can / should remain informal	Insufficient emphasis on the handover / takeovers in most roles. Many organisations believe a written series / notes will suffice, which is largely driven by cost / budget limitations
	Need to underpin chain of command, not undermine it	SA: 13 A: 12	• Informal networks vital to informal planning but not to be used for execution • Perception that informal networks undermine chain of command	• Reduce decision making cycle to inform planning process using informal networks • Within higher command guidance / intent • Higher command needs to recognise a need for networks • Encourage ADF personnel to foster networks to support achievement of mission aim	• Educate • Empower – commanders provide framework / guidance, but not micromanage • Ensure full understanding of higher command intent • Improve liaison networks nominate LOs • Need to ensure informal is followed up by formal means	• Degree of risks • Relies on personal judgment • Lack of auditability of informal