

Employee learning in a transient alliance: Exploring learning enablers, facilitators, and obstacles

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Daniela F. Rubio Rius

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Research Supervisors: Dr Joana Kuntz, Dr Katharina Näswall – Psychology Department and Co-founders of the Employee Resilience Research Group
Dr Bernard Walker – Department of Management, Marketing and Entrepreneurship, School of Business and Economics

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Abstract

Aim of the study. The aim of this study is to explore the main contributors and obstacles to employee learning in the context of an alliance using the framework of a complex embedded multiple-case study. The two participant alliance partner organisations (APOs) are natural competitors that are joined to respond to urgent community needs of the city of Christchurch following the major earthquakes in September 2010 and February 2011. At the moment of the in-depth interviews, it had been about four years since those events occurred. There are continuous, unexpected circumstances that still require attention. However, the alliance has an expiry date, thus reinforcing the uncertain work environment.

Method. Employee learning is examined using a qualitative, inductive approach to data analysis. Ten participants were invited, five from each alliance partner organisation with the aim to increase validity of findings as a cross-case analysis was also performed, and current data were triangulated with archival data. Employees were not given a pre-defined definition of learning to allow for a more free flow of conversation while their own views were shared. Emerging themes were then compared to extant literature –mainly from the cognitive constructivist psychology literature, but also organisational learning research.

Conclusion. The main enablers found were participative, collaborative learning encouraged by leaders who embraced the alliance’s “learning organisational culture”. Employees generate innovations mostly in social interaction with others, while taking on responsibility for their learning by learning from mistakes. The main obstacle found is competition, as inhibitor of collaboratively sharing their knowledge out of fear of losing their competitiveness.

Limitations. Given time constraints, it was not possible to continue recruiting participants for this study. Therefore, an uneven number of participants –five from APO1 and 3 from APO2 did not allow for a proper cross-unit analysis, therefore undermining cross-validation efforts.

Introduction

Understanding learning in organisations has been of increasing interest since the expansion of the *knowledge-based economy* at the turn of this century. This is a concept that relates to the emphasis organisations place on developing their human intellectual capacity to maintain their competitive advantage despite high levels of uncertainty (Nonaka, 1991). The reason for such interest lies in evidence found for improved performance (Vera & Crossan, 2004; Li et al., 2008), increased competitiveness (Crick, Haigney, Huang, Coburn, & Goldspink, 2013) and revenues (Marsick & Watkins, 2003; Davis & Daley, 2008). Many scholars have studied learning in organisations from several perspectives, from key enablers of organisational learning such as leadership support (Amy, 2008) and learning organisational culture (Yang, Watkins, & Marsick, 2004); to learning outcomes such as innovation (Marsick & Watkins, 2003) and adaptive capacity or resilience (Weick & Sutcliffe, 2007; Ramnayaran, 2011; Carmeli, Friedman, & Tishler, 2013; Näswall, Kuntz, Hodliffe, & Malinen, 2013). Yet little is known to date with regard to how learning occurs inter-organisationally in alliances (Srivastava & Franwick, 2011).

The purpose of this study is to explore how people learn in the particular context of a transient alliance created in the aftermath of a series of large earthquakes in Christchurch, New Zealand to deal with the insurmountable work toward recovery. In order to capture participants' perceptions of learning, semi-structured interviews were carried out. A brief overview of the learning literature is offered to provide some framework from which to identify or interpret learning elements

found in the data. There are several ways learning has been defined¹. From the cognitive, constructivist perspective, learning is a process in which mental frames are assumed to be actively constructed by individuals in interaction with their environment (cf. Pritchard, 2008).

This means that individuals learn better when they are actively engaged in the process of building knowledge. In addition, given that individuals are socially embedded in some kind of system, they continuously incorporate new information to their existing body of knowledge when confronted with new experiences.

The classical cognitive psychologist, Piaget, developed the concepts of *assimilation* and *accommodation*, which illustrate how young learners assimilate, i.e. incorporate new information into existing mental frames (Piaget & Inhelder, 1984). Although Piaget was mainly concerned with the cognitive developmental stages of children, the aforementioned concepts of the learning process apply to adults alike. When confronted with the need to adopt new knowledge –for instance about the environment–, individuals will accommodate, i.e. adapt their views in an attempt to internalise or incorporate new knowledge to their knowledge base (cf. Martí, 2000). Although Piaget does not exclude the social involvement in processing knowledge, it is Vygotsky who, from his social constructivist perspective, delimits internalisation to the social aspect of constructing knowledge in dialogue with others (Tudge & Winterhoff, 1993).

This means that people internalise constructs that result from socially interacting –not only with authoritative figures –, such as parents, teachers (and managers, in

¹ For a few definitions of learning, read Alan Pritchard's *Ways of learning: Learning theories and learning styles in the classroom* (2008). They have not been included in the main body of this manuscript because it goes beyond the scope of this dissertation.

relation to adult learning), but also with peers (Martí, 2000). Knowledge is absorbed amidst social interactions, not as a passive activity, but with involvement in processing information, such that individuals can contribute to the process as much as take on socially processed information (Tudge & Winterhoff, 1993). Individuals learn by negotiating meanings with peers.

Although there is no mention of learning as such, similar processes can be observed in the sensemaking literature, in which organisational sensemaking is described as a “typically ongoing, unconscious activity that allows individuals to fine-tune their efforts toward immediate and strategic goals [...]” (Kuntz & Gomes, 2012). That fine-tuning seems to refer to the intra-mental processing of new information that attempts to reduce the tension arisen from being confronted with clashing realities.

For instance, individuals may have to make efforts to interpret novel organisational events when there is an important change in the environment. Such is the case of the alliance studied, which was created in the aftermath of the Christchurch earthquakes. The natural disaster that the city suffered brought about new demands, which instilled employees to reflect on, interpret, and deal with internal discrepancies arisen from the realisation that old ways of thinking no longer fit the current situation. The move toward a change in the *knowledge structure*, which occurs as individuals make sense of new information, as well as the creation of new *shared meanings* or *schemas* in their workplace (Kuntz & Gomes, 2012), involve a learning process.

From an organisational perspective, learning is a *dynamic* process defined as “enhanced organizational capability [in which] learning improves the organization’s efficiency and its capability to adapt in the changing environment,

which increases the probability of survival” (Maula, 2006). Employee learning seems intricately related with organisational learning and resilience.

Alliance Context

The alliance was created to respond to the extra-ordinary needs of the community of Christchurch resulting from the devastating earthquakes in September 2010 and February 2011. After about four years since the earthquakes, there is less of an emergency response as in its beginnings, but there is still the urgency in finishing the tremendous task of helping businesses in the city to return to normal operational levels. Despite its transient existence, the impact of the alliance in terms of knowledge gained and innovations made is expected to go beyond its existence. One of the more current and fundamental values of the alliance and its organisational strategies is to leave a legacy behind for other cities that in future struggle with the consequences of a natural disaster.

The alliance under study is a complex system integrating multiple stakeholders and stakeholder agencies: an alliance coordination team (CT), including the CEO, an HR manager and several senior representatives from the alliance partner organisations (APOs), the members of the APOs, organisations that continuously take on projects outsourced by the APOs, and government agencies.

Although the alliance partner organisations are natural competitors given that they operate in the same industry, the main stakeholders of the alliance deemed that a joint effort was necessary to contribute to the Christchurch rebuild effort. Thus the partner organisations are encouraged to collaborate and share their knowledge. Yet the success of this strategic alliance hinges upon the effective collaborative efforts of the members of these organisations to produce time and cost effective results without compromising the quality of their product. Given

that the APOs are competitors outside the alliance context, tension between competition and collaboration across APO teams is to be expected.

This project aims to contribute to the organisational learning literature by examining the extent to which knowledge is shared among representatives from each partner organisation, and how learning is transferred in this highly challenging environment.

Literature Review

Global financial and market crises demand continuous updating and up-skilling. Within this all too common context today, developing “capacity to learn” is of utmost importance to obtain competitive advantage over other companies (Crick et al., 2013). Organisations that embrace learning as part of their core culture are better prepared to face challenging and demanding markets and to cope with the imminent threats of natural disasters (Weick & Sutcliffe, 2007). Organisations whose employees manage to quickly adapt to unexpected changes or even thrive under extreme circumstances are more likely to gain competitive advantage over other organisations, or survive despite turbulent times (Yang, 2003; Weick & Sutcliffe, 2007; Lee, Vargo, & Seville, 2013).

Coping with challenging environments—such as when natural disasters hit—by successfully adapting to unexpected changes requires prior learning about the environment and applying new knowledge in creative and innovative ways (Weick & Sutcliffe, 2007). Harland, Harrison, Jones, and Reiter-Palmon (2005) describe learning as an “improved coping ability, a sense of increased capability, and [...] strength” (p.8). Learning capability seems therefore to contribute to *adaptive capacity*—or resilience, as some scholars refer to it (Sutcliffe & Vogus, 2003; Lee et al., 2013). Given the apparent link between learning capability and

adaptive capacity, it is likely that employees' learning capacity should increase the adaptive capacity of both themselves and their organisations. In fact, Crick et al. (2013) suggest that learning capacity and resilience –or adaptive capacity–, are fundamental to the survival of contemporary organisations.

Research has suggested that given the current knowledge-driven economy, organisations should be open to continuous learning to be successful in times of great change and uncertainty (Davis & Daley, 2008; Li, Brake, Champion, Fuller, Gabel, & Hatcher-Busch, 2008). Although some employees may voluntarily seek out learning opportunities or be endowed with learning capability, which is suggested to predict resilience (Crick et al, 2013), employee learning and resilience are reinforced through organisational learning cultures and leaders committed to that culture (Yang, Watkins, & Marsick, 2004).

Leaders can be key enablers of employee learning and resilience by supporting employees to make the most of learning opportunities, such as by encouraging their efforts, empowering them to take risks or learn from failure (Avolio, 1999; King & Rothstein, 2010; Mehrabani & Shajari, 2013). In addition, employee learning in supportive environments promotes transfer of learning (Yang et al., 2004) thus ensuring that organisation goals are achieved or exceeded (Yang et al., 2004).

Some authors suggest that resilience can be learned (King & Rothstein, 2010; Luthans, 2002; Coutu, 2002). A few researchers sustain that certain personal characteristics enhance learning capability, which in turn increases adaptive capacity, such as proactivity (Chiaburu, Baker, & Pitariu, 2006), positive attitude toward failure (King & Rothstein, 2010), and ability to make down-to-earth, realistic appraisal of difficult situations (Coutu, 2002). By viewing failure as an

opportunity to learn, individuals can “bounce back” in times of challenge whilst continuing to perform at acceptable or improved levels. Employees develop self-efficacy, i.e. the belief or confidence in one’s ability to achieve one’s goals (Bandura, 1991, 2001), as they learn to recover from setbacks (cf. King & Rothstein, 2010, 370).

However, employees are not the sole responsible actors in developing resilience in an occupational setting. Organisations can also contribute to employee resilience by providing learning opportunities in a supportive environment (King & Rothstein, 2010), thus facilitating knowledge transfer in the workplace. A single, conceptual article was located that addresses the relationship between learning and employee resilience (Carmeli et al., 2013), which underscores the need for further empirical enquiry into the linkages between these variables.

The literature on organisational learning in alliances is also scarce. There have been a few studies that examined knowledge accessibility and transfer in this context, mostly during the last decade of the 20th century when joint ventures were in vogue. For instance, Inkpen’s (2000) research of joint ventures focused on knowledge acquisition of parent organisations through open and collaborative interactions with the other alliance partner. The author posits that knowledge accessibility and transfer becomes more attractive to the partners as they see it as a source of potential strategic advantage. A concern in this respect is that some “knowledge spillover” or “knowledge leakage” is likely to occur, so that a threat of losing competitive edge may be perceived especially when there is “high competitive overlap” (Inkpen, 2000, p. 1027). However Inkpen (2000) also argues that resistance to share knowledge may be mitigated by increased trust over time.

According to London and Sessa (2007), learning in organisations may not be properly capitalised on if there are not sufficient resources or mechanisms to capture and disseminate knowledge. The authors suggest that group and organisation-wide learning is more likely to be successful when there is proper coordination and management of all knowledge, old and new. Not only is “articulation and codification of knowledge” beneficial to the learning process, but it also may potentially reduce costs of knowledge transfer in alliances (Contractor & Lorange, 2002). Moreover, alliances offer great opportunity for partner organisations to obtain mutual gains from accessing information and knowledge from each other (Grant & Baden-Fuller, 2004).

Research Questions

The goal of the present study is to explore how employees from the two alliances partner organisations (APOs) view their learning experiences, and what they perceive to be contributors and obstacles to their learning process. The research question is therefore:

How do employees learn in the context of the alliance?

As their learning experience is explored, additional questions will help elucidate the main research question:

- What enables or facilitates learning?
- What hinders learning?
- Are there differences in learning between APO1 and APO2?
- How might the relationship between collaboration and competition influence the extent of sharing and transfer of knowledge?

Method

A well planned research design allows the researcher to maintain focus on the project's goals and objectives throughout the investigative process. Denzin and Lincoln (1994) define a research design as a flexible guideline that assists the researcher in making strategic decisions with regard to appropriate ways to tackle research questions in terms of research methods of inquiry, data collection, and data analysis. From Yin's (2014) perspective, the research design is the *logic*, or string of thoughts, behind the scene that allows the researcher to tie the raw data and conclusions to the initial research questions. The research design proposed for this study is that of an embedded multiple case study design, which provides the framework from which to make decisions about data collection and data analysis (Bryman, 2004).

Why choose a qualitative method? Or rather, why not use a quantitative approach to answer the research questions? The research questions call for a qualitative approach because they enquire about the phenomenon of learning which is not well known in its context, so that the variables—hence called *themes* to adjust to qualitative research terminology—are expected to be discovered during the analytic process.

The reason for not making a prior decision on variables and statistically testing their relationships is that there is only limited research available to inform possible variables related to learning in the context studied. Learning concepts have been borrowed from other areas of research to fill theoretical gaps, and the specific and uncharted nature of the context calls for an explorative qualitative enquiry into the research topic. Moreover, the particular circumstances that brought these companies together may elucidate special learning characteristics

or processes beyond the normal functioning of an alliance, so that new themes are expected to be found.

According to Phene and Tallman (2014), alliances are usually formed to compensate for knowledge or expertise that can be obtained from collaborating with organisations with complementary areas of expertise and thus potentially obtaining competitive advantage. The alliance studied, however, is composed of same-industry organisations, so that they share similar specialised knowledge. The APOs have been strategically joined to cope with work that no single organisation could handle due to the sheer volume of it. There is only limited research on strategic alliances which allude to learning. Moreover, that literature deals with compensatory models of alliances, so their findings do not necessarily generalise to the inter-group learning dynamics in this same-industry alliance.

As previously mentioned, quantitative studies are appropriate for research concerned with formulating hypotheses and finding causal relationships from predefined factors (Guba & Lincoln, 1994). In contrast, the qualitative approach to research does not aim to generalise findings from statistical inferences, but rather to provide insights into phenomena in specific contexts through analytical procedures that help elucidate relationships inherent to the realities of the fewer social actors involved (Denzin & Lincoln, 1994, 2008). This is yet another reason for the choice of a qualitative method of enquiry.

A qualitative approach to this study is relevant given that the concept of learning is interpreted by participants before rendering their views on the subject. However, in order to reduce researcher bias, a detailed account of themes is produced through a systematic and rigorous analytic process, with memos kept throughout the process to help present and display material in a rational, logical

way (Eisenhardt & Graebner, 2007). Given that surveys would not allow to delve into participant realms and context (Yin, 2014), the choice of method of data collection is that of semi-structured interviewing with open-ended questions, formulated in a neutral tone (Creswell, 2007).

An Embedded Multiple-Case Study

The main framework from which methodological decisions were made is the case study of interpretive, constructivist approach, in which the researcher intends to contribute to existing knowledge by drawing on multiple perspectives about the phenomenon, synthesising those perspectives, and reconstructing knowledge (Hoon, 2013). Yin posits (2014), “Whatever the field of interest, the distinctive need for case study research arises out of the desire to understand complex social phenomena” (p. 2). The case study was the most appropriate for the research goals, because it allows to empirically examine the phenomenon of learning at a current setting, in which the boundaries between learning and the context seems blurred (Yin, 2014).

In particular, this case study is exploratory. It fulfils the three conditions that make a good case for an exploratory case study according to Yin (2009, 2014), which are: (a) the case study aims to answer *how* [and *why*] questions through in-depth interviewing skills; (b) it does not intend to influence or manipulate participants’ narratives; and (c) the topic is relevant to a current reality. Yin (2014) posits that exploratory case studies are explanatory as they seek to explain processes and events.

A multiple-case design is relevant for this piece of research. Case studies are often described as having flexible designs in more current research (Miles et al., 2014; Yin,

2014), as opposed to earlier, when it was recommended to specify the case more by defining the “bounded system” (Stake, 1994) or be concerned with the generalizability of findings (Yin, 1981, in Yin, 2009). Following the current literature, the case study proposed follows a flexible design (Miles et al., 2014).

Unit of Analysis: The APOs

The overarching unit of analysis for the purpose of this research is the alliance, which is composed of an alliance coordinating team (CT), which is composed of the alliance’s CEO, HR Manager, and several leadership groups with a couple of managers from each APOs, and the APOs from which employees are drawn and assigned to work in this transient alliance. The CT interacts directly with government agencies and serves as a mediator between APOs and those agencies. A decision was made to investigate how APO team members learn both within and across teams, search for common themes, and analyse differences through cross-case comparison in an attempt to cross-validate the data. The CT is included in this study insofar as it is related to learning across APO teams.

Figure 1 provides a visual representation of the interrelations and embeddedness of the different components of the alliance. This graphic illustration was adapted and expanded from Yin’s (2009, 2014) single case design with embedded multiple units of analysis (Fig. 2) in order to reflect the more intricate reality of the alliance.

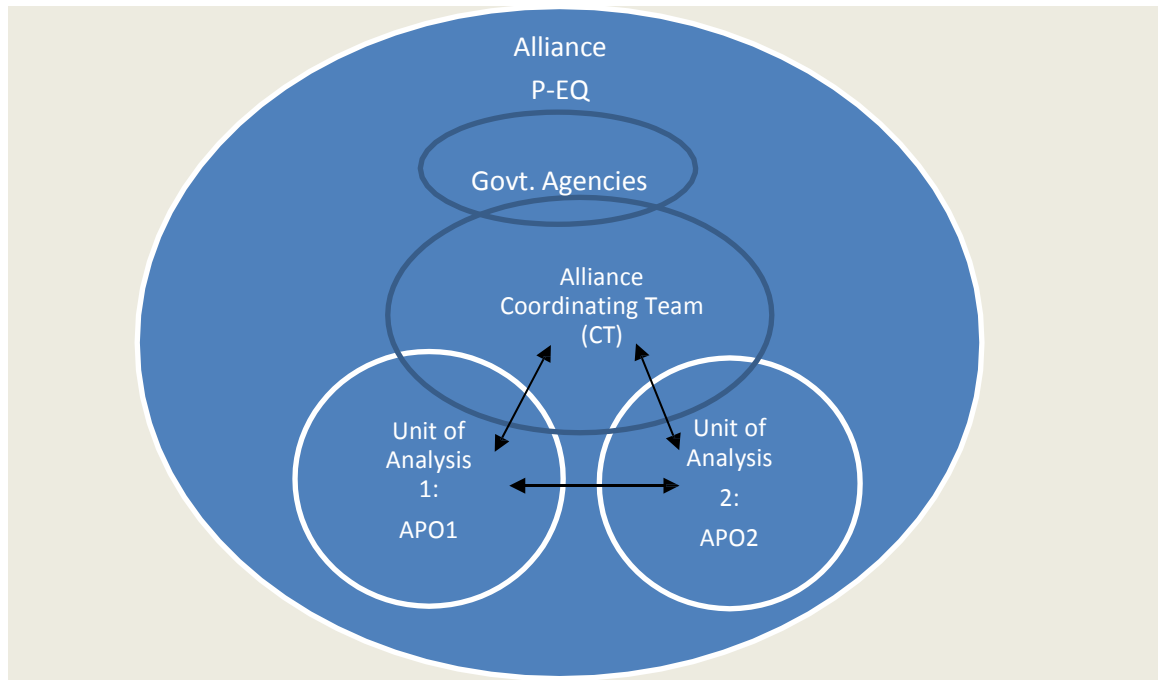


Figure 1: Embedded units of analysis with intersections (CT/Government agencies) in Post-earthquake (P-EQ) alliance context

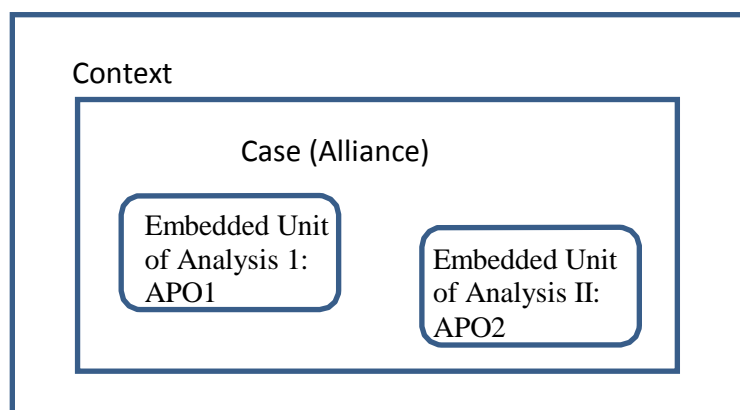


Figure 2: Embedded Single Case Study with two Units of Analysis

Definition of Learning

The criterion for learning is purposefully loose to allow for participants to express what they consider a learning experience without the influence of an outsider. The way they define learning and the themes that emerge around learning are in themselves worthy of exploration. However, a working definition will be provided to ease the process of discovery of their learning process. Some indication of learning may also come from themes that show certain connection to the construct of adaptive capacity, i.e. demonstrating some sort of change in face of challenges, which in the case studied are closely tied with the disruptive environment caused by the major earthquakes in Christchurch. It is pertinent to attempt at a working definition to identify relevant themes or concepts as they arise from the data in the data analysis stage.

As discussed in the previous section, in the constructivist literature from the fields of education and cognitive psychology, learning is defined as a process in which knowledge is assimilated and current mental frames are accommodated in the process of internalisation of new information. A third stage, as described by Piaget and Inhelder (1984) is when a point of *equilibrium* is reached between *assimilation* and *accommodation*. This equilibrium might be seen as a sort of negotiation between newer and older ways of understanding and making a compromise so as to tackle newly arisen issues in a new light, one that is more appropriate to the new situation.

As constructivists posit, knowledge cannot be assimilated without the basic foundations that allow individuals to make sense of new information. Once sufficient base knowledge is present, the individual starts making sense of the information introduced, and once assimilated, he or she can accommodate to that

new knowledge by changing thinking patterns and behaviours. Learning can therefore be seen as the processing of and incorporation of new information when there are appropriate levels of previous knowledge schemes and patterns.

Furthermore, learning can be transferred to novel situations once the new knowledge is assimilated and accommodated, i.e. the equilibrium is reached, so that individuals can call on it and act accordingly.

Upon initial scrutiny of participant responses to questions about learning, a working definition that satisfies the body of knowledge of both interviewees' views and previous research would therefore be:

Learning is the process of incorporating new knowledge and finding ways to respond to it in more strategic and innovative ways when old mechanisms no longer seem to work.

Data Collection

Sampling and Access Issues. How data is collected depends not only on the research strategy but also on the availability of participants (Miles et al., 2014). Initially, a snowball sampling strategy was envisaged. However, given that access was limited, and that the CEO solicited senior managers to recommend individuals for the study, this circumstance made this strategy futile. Senior managers selected only individuals with certain decision-making authority, so that it was not possible to invite employees of all levels to partake in this study.

However, participants were adequately selected to “purposefully inform and understanding of the research problem and central phenomenon of the study” (Creswell, 2007, p. 125). The purposeful sampling method resulted in an adequate option because it is also important to make sure the few interviewees are

subject matter experts who are able to articulate issues around learning in their alliance (Creswell, 2007; Miles & Huberman, 1994).

Ten participants were sought for individual interviews of half an hour minimum and maximum one hour (half an hour was acceptable to the senior management given their tight work schedules). Ten participants were deemed to be sufficient because they represented approximately ten percent of the teams (as recommended by Locke, 2001), i.e. approximately five people from each APO. The final sample comprised of 3 usable participant interviews from one and 5 from the other participating APO. As per Charmaz's (2006) recommendation on reporting interview output, interviews ranged on average from 30 to 60 minutes, producing approximately 240 pages of verbatim transcripts.

Ethical Concerns. It is important to make sure that the interview questions are the least invasive possible and that measures are taken to safeguard the integrity of the participants. Standard measures are to give participants the right to withdraw from the study at any time, maintain confidentiality and anonymity, and seek their informed consent to participate under those terms (Creswell, 2007). Moreover, participants need to be given the assurance that they will be protected from harm; this is crucial in particular when interviewees are in a vulnerable position (Creswell, 2007).

The wellbeing of the participants was kept in mind while crafting the interview schedule. The University of Canterbury Human Ethics Committee reviewed and approved this project. Before commencing each interview this information was provided in written (Appendix A) and the consent sheet was signed once agreed (Appendix B). Participants were given a copy to keep for the event that they needed to contact the researcher(s) or Human Ethics Committee.

Semi-Structured Interviews. A semi-structured interview schedule (Appendix C) was used to ask participants questions in the same order. However, room was left for interviewees to expand beyond a question so as to avoid interrupting the flow, and as long as the information shared was relevant (Mason, 2002). The interview schedule was carefully prepared and interviewing techniques reviewed so as to ensure rich data would be obtained while minimising the risk of leading interviewees in any particular direction and remaining ethically responsible (Mason, 2002). Flick (2007) recommends that the interviewer be trained in listening to “a life story and to support the interviewee in continuing to tell it” (p. 63).

Archival data was used to gain a better understanding of the overall alliance structure, while helping prepare well-informed interview questions. Moreover, additional literature was reviewed from different areas pertinent to themes that were identified as archival data was examined. As knowledge gaps became apparent, literature was reviewed to gain a better understanding of the context, as several qualitative analysis scholars suggest is pertinent (Miles et al., 2014; Yin, 2014; Corbin & Strauss, 2008; Locke, 2001). More preparation prior to data collection is also recommended for multiple case studies (Miles et al., 2014). Researchers are expected to be knowledgeable about the subject of study, either because they have built knowledge over time or because they are, e.g., students who are usually required to do an extensive literature review prior to collecting data as a dissertation requirement (Miles et al., 2014).

Strategies for Validating Findings

“The reliability of the analytic process of case studies hinges upon how well the coding process is documented and accurately reported” (Yin, 2009). Internal validity in qualitative research is obtained by developing theory that is logically linked to empirical evidence, so that it is followed easily and results in plausible theory. Hammersley (1990, as cited in Silverman, 2006) explicates that validity is “the extent to which an account accurately represents the social phenomena to which it refers” (p. 289). Using quotes from verbatim transcripts of audio recordings, as done for this study, increases validity of findings as arguments are presented with evidence (Bernard & Ryan, 2010).

Eisenhardt and Graebner (2007) sustain that case studies can be the most evidence-based and rigorous method if done with discipline and accuracy. As Stake (1994) states “the purpose of the case study is not to represent the world, but to represent the case” (p. 245). Yin (2014) sustains that “good theoretical propositions [...] lay the groundwork for generalising from the case study to other situations, by making analytic rather than *statistical* generalisations” (p. 40). In other words, *analytic* rather than *statistical* generalisations can be made from case studies with sound theoretical underpinnings. An inductive exploratory case study can, in fact, be rendered objectively through empirical evidence from real-life settings that are tightly knit to the underlying logic, as emerging data is thoroughly analysed in constant interplay between inductive and deductive analyses (Eisenhardt & Graebner, 2007).

Memos and annotations serve as guides for reporting findings (Miles et al., 2014; Saldaña, 2013; Bazeley & Jackson, 2013; Corbin & Strauss, 2008), which can increase internal validity by systematically and accurately presenting the case

(Eisenhardt & Graebner, 2007), and also by reaching intercoder (or interrater) agreement on coding and the development of coding guides (Locke, 2001).

Reaching agreement includes –but is not limited to—categorising concepts and their dimensions and properties (Miles et al., 2014), using strategies and making decisions on context and intervening conditions to be included into a category or creation of new categories (Creswell, 2007).

Reliability is not generally the purpose of a qualitative case study; however, there are some techniques that may improve reliability in a qualitative sense, such as *intercoder* (or interrater) *reliability* and *triangulation of data* (Yin, 2014; 2009). The two techniques are explained further below.

Intercoder Reliability. When two coders analyse data separately and afterwards discuss and compare their analytic procedures until they reach agreement on themes and categories with their respective assigned content (text samples), reliability of findings is enhanced (Strauss & Corbin, 1990). Several authors concerned with qualitative methodologies suggest that a second coder be used (Bryman, 2004; Locke, 2001; Hodson, 1999), including in smaller projects such as dissertations and theses (Bernard & Ryan, 2010).

Hodson (1999) recommends that ten percent of the texts be coded by two different people to check for reliability (Hodson, 1999). Reliability of findings increases when codes created by two independent coders describe the same concepts (Bernard & Ryan, 2010), so that the agreed upon coding system is more likely to be replicated (Locke, 2001). In this study, initial coding for the first interview transcript was performed by the research student and an independent coder, after which the coding schemes were discussed and compared. The main themes were identified, and sub/category names negotiated as appropriate (Appendix E). The reliability of the core concepts was

increased as clear agreement on the core emerging concepts was reached with ease, suggesting that potential coders should be able to replicate the coding system.

Triangulation. Triangulation of data refers to combining methods to investigate a phenomenon, or using different sources to obtain multiple perspectives about a same subject, so that convergence of results increases validity while divergent results caution against possible spurious interpretation of results (Silverman, 2006). Triangulation of data will be sought to provide different perspectives that may shed light on aspects that are not so clear by taking a single approach to data. The research methods and procedures proposed for triangulation are:

- Semi-structured (individual) interviews with 8 participants from multiple embedded cases: Comparing multiple cases increases the confidence that themes and relationships found are trustworthy (Miles et al., 2014) as convergence of themes between the two APO members' is observed;
- Archival data: Comparison of interviews from the current study with existing data (individual interviews and focus group transcripts), which may either support evidence from this study or point to alternate explanations;

In order to interpret archival data more accurately given that data had been collected in previous years, and to draw possible relationships between prior knowledge about the alliance and data collected for this project, knowledgeable researchers who were conversant with the archival data were approached to help understand the complex context and issues of which to be aware. Their insights helped interpret the data in a meaningful way, pertinent to the current research topic.

Data Analysis

Initial Considerations

Given the exploratory nature of the research project, theory will be built from concepts that emerge from the data (verbatim transcribed texts from audio recordings) after rigorously analysing them in an iterative process of “constant comparison method”, in which emerging concepts are contrasted with relevant literature in an attempt to develop new theoretical models (Denzin & Lincoln, 2003; Charmaz, 2001; Strauss & Corbin, 1990, 1994; 1998; Glaser & Strauss, 1967). While conferring data with pre-existing theories, previous models can be verified or questioned.

In the first stage of analysing raw data, emerging concepts were explored with an as open and receptive mind, trying to subdue any preconceptions or personal agenda. Although significant literature review was undertaken to be informed about current knowledge on the topic and to prepare for the data collection and data analysis phases of this manuscript, the focus is on obtaining participants’ perceptions of elements that are conducive—or not— to learning in the broader alliance context.

Subsequent to generating codes and themes as transcripts are examined and codes are re-assessed (recoded, transformed, or deleted as necessary), data are deductively analysed as far as possible as they are compared with relevant literature. There is a constant interplay between inductive and deductive analysis as a coding structure is developed and theory elaborated.

Locke (2001) cautions against producing unilateral reports owing to selection of examples that illustrate notions according to the interests of the researcher, which may reduce credibility. To reduce researcher bias, the author (Locke, 2001)

recommends following Glaser and Strauss's (1967) technique of constant comparative method, in which researcher "observations" are exposed together with quotes from empirical data.

The interpretative qualitative methodology proposed for this research is expected to assist in discovering learning elements in the data. The phenomenological aspect of this approach permits to capture more in-depth understanding of the essence of meanings ascribed to phenomena (Denzin & Lincoln, 2008). Learning experiences in such complex context are likely to be perceived diversely by the different members, so that it is essential to try to understand the experiences of participants from their perspective; in other words, gain insight into the way they ascribe meaning to their learning experiences (Creswell, 2007).

The interpretative, phenomenological approach for this project is appropriate given the special interest in trying to capture learning and its impact on organisational outcomes in the context of the participating alliance. Some grounded theory techniques and procedures (Strauss & Corbin, 1990) will be used as cross-unit (APO1/APO2) data analysis is performed on semi-structured interviews and focus group discussions among members of the partner-organisations (APOs).

Analytic Procedures

Computer-assisted Qualitative Data Analysis Software (CAQDAS). The CAQDAS used for this study is NVivo10, which assisted in the analytic process by organising and storing data for easy access, as well as helping in the progression of the analysis (Saldaña, 2013; Bazeley and Jackson, 2013). Using a systematic

approach to data analysis, the section that follows articulates the analytic process in stages, which were mainly aided by the analytic features of this CAQDAS.

Coding Stage One. In this stage, text is closely examined as data are coded with the understanding that they may be changed as the analytic process evolves (Miles et al., 2014). Codes –or *nodes* (Bazeley & Jackson, 2013) –, are mnemonic labels or name tags for themes and concepts that the researcher applies to sections of text, which then facilitates retrieval of information (Bernard & Ryan, 2010). Given the complexity of the embedded multiple-case studied, at first it was useful to try to obtain a general view of what the text was informing, without losing sight of the particular details in each passage. As Strauss and Corbin (1990) state, ‘phenomena are important analytic ideas that emerge from our data. They answer the question ‘What is going on here?’”(Strauss & Corbin, 1990, p. 114).

For that purpose, the text was meticulously examined in view of gaining an understanding of the essence of each segment, whether it was informing about the particular, systemic context, or both, i.e. individual perceptions about learning, learning within an APO, across APOs, or related to the broader context, such as the alliance structure, culture, and other stakeholders. The *simultaneous* coding procedure was adopted to reflect meanings pertaining to different contexts simultaneously, i.e. segments of text were given multiple codes to reflect their multiple meanings (Saldaña, 2013). Table 1 provides an example of this type of coding. Larger chunks are analysed together to provide a broader context of each code.

Table 1**An Example of Simultaneous Coding**

Text Segment	Codes (<i>Nodes</i> *)
<p>So we do a, we do a do a meeting... our team, ohh my team, we, we have a performance plan so we have a high performance mentor that came down and ahh, we sat and umm, I did a vision. Okay, I see my vision, where I want [APO1] to, where I choose to be in the next, by the end of the project. We had a meeting with the team. Right, this is, this is my view, you know, [a person's name] view. You know, let's get a team on so that we're all going the right way. So, so then we all bought into it and we, we built ourselves a team one and then we, we then sat down and said, right, you know, that's where we want to be. We all know that's where we want to be. We all agree, that's where we want to be. How are we going to get there? Umm, what, what are we going to, so we tried to look at things and once every three months, we'll sit down for an hour and we'll, we'll say, right, what do we want to look at and what's going to be good for us? You know, and then we'll all agree, yeah.</p>	<p><u>At alliance level:</u> Alignment with alliance vision and culture;</p> <p><u>At team level:</u> Participation in goal setting;</p> <p><u>At individual level:</u> Vision for the team; Soliciting participation from team</p>

**Nodes* is the term used in NVivo to refer to codes.

Often lengthy descriptive codes were made to improve visibility of themes and concepts, as well as access to them, because of the sheer volume of data (on average 25 pages per transcript). Too brief descriptions seemed to potentially detract from finding core concepts related to the research questions, or make further coding cumbersome.

Some examples of initial codes are provided in Table 2, some of which are quite lengthy. Tagging or labelling can vary in length, as Bernard and Ryan (2010)

remark. Creating lengthy descriptive codes was a strategic decision that also made sense intuitively².

Table 2

Examples of Initial Codes

Cross-unit discussions and experts drawn in
Culture of continuous improvements
Some buy in to 'upskill', others 'don't care too much'
Knowledgebase registry exists yet limited in utility due to lack of time
Lack of common specialist language
Lack of sharing across APOs
Lack of time to prepare for meetings
Learning by 'watching people working'
Learning through participative interaction with experienced members
Learning through trial and error
Manager support of informal knowledge and learning transfer
Personal or direct interaction with team
'Proactive' participation and networking encouraged.
Proactive personal initiative to collect knowledge from other APOs
Reluctance to share IP across APOs*
Regular knowledge sharing sessions

In vivo codes are transcribed between single quotation marks, yet they are adapted as they are part of the code, not a code on their own, which is the definition of an *in vivo* code.

*IP stands for Intellectual Property.

By initially giving codes a broader name tag, e.g. Proactive personal initiative to collect knowledge from other APOs –and at times also linking concepts, e.g., Knowledge base registry exists yet limited in utility due to lack of time, the themes that emerged became more easily traced as new transcripts were analysed. Memoing, i.e., linking comments about insights and observations to text passages (Corbin & Strauss, 2008) was done alongside coding, although memos were produced more extensively by linking researcher comments to codes, as the coding process progressed and a coding template, i.e. codebook, was further

² Using intuition in the discovery process is commonly accepted in qualitative research (Miles et al., 2014;; Corbin & Strauss, 2008; Denzin & Lincoln, 1994).

developed. At the initial stage, creating more lengthy code names proved helpful because the more descriptive codes increased the visibility of emerging themes.

The first transcript selected for analysis was also the lengthiest and seemingly richest in content. Several relevant codes were expected to be identified, which should provide solid grounds for the analysis of subsequent transcripts. As the second transcript was processed, its data were compared to the first transcript, then the third with the first two, and so on. In an iterative process of *constant comparative analysis*, similarities and differences among categories and subcategories were sought, as well as identification of new themes or patterns, until theoretical saturation was reached (Corbin & Strauss, 2008).

Themes emerging from new transcripts were either added to previously discovered categories, or new codes were generated as new concepts emerged. As Strauss and Corbin (1990) state, previous categories are assessed against incoming data, so decisions must constantly be made as to whether to accommodate them to previous categories, broaden concepts within categories or delete certain categories to make the data more coherent.

Some memos were written to make observations of overlaps. Given the detailed line-by-line, or rather, paragraph-by-paragraph, coding (Strauss & Corbin, 1990), and the proximity to the data (which had only been recently collected by the time the first transcript was analysed), it was not surprising that there would be overlaps. The need for tolerance with ambiguity was experienced on a few occasions –as qualitative researchers forewarned, e.g. in Miles et al. (2014)–, when data seemed related to the same but different themes simultaneously (e.g., *‘Proactive’ participation and networking encouraged* and *Manager support of informal knowledge and*

learning transfer), so that deciding on a name tag or label was not straightforward during this initial stage.

Other memos are critical reflections about the (initial) coding experience and progress, for instance:

Glad I reviewed my coding by looking at the broader context, i.e. viewing longer chunks of text, because I found a few coded nodes were plain wrong because I had assumed something else or made inferential leaps. Being more detached from the data now, after some time after data collection, and less involvement because not [doing] line by line coding (got too bogged down in details or coded with a general impression in mind). In this second phase, I am more detached and objective and more focused on [my] research questions.

The initial strategy taken allowed for the generation of a large amount of codes, yet on observation of the newly created codes, soon the top emerging themes could be identified and further analysed in the following two stages of the analytical process.

Coding Stage Two. In this stage, data are condensed by identifying underlying themes (Miles et al., 2014; Saldaña, 2013). ‘Once a category is identified, it becomes easier to remember it, to think about it, and (most important) to develop it in terms of its properties and dimensions and further differentiate it by breaking it down into its *subcategories* [author’s font], that is, by explaining the when, where, why, how, and so on of a category that they are likely to exist’ (Strauss & Corbin, 1990, p. 114). Strauss and Corbin (1990) provide a clear definition of properties and dimensions, which is as follows:

Whereas properties are the general or specific characteristics or attributes of a category, dimensions represent the location of a property along a continuum or range. [...] This qualifying of a category by specifying its particular properties and dimensions is important because we can begin to formulate patterns along with their variations. [...] Patterns are formed when groups of properties align themselves along various dimensions. (p.117)

While new data are collected and they are analysed, a coder begins with the “interplay” between inductive and deductive analyses. Emerging concepts are compared with literature. This interplay continues until theoretical saturation is reached, i.e. no more themes can be identified through that constant comparative method (Strauss & Corbin, 1990).

Not only are data recoded as they are refined during this stage, but an attempt is also made at reducing, or condensing them into a manageable size. According to Miles et al. (2014), “data condensation” is a process in which data is transformed to make data “stronger” (p. 12). From a different angle, data condensation refers to “conceptual ordering”, i.e. organising data by classifying them, putting them into categories “according to their properties and dimensions and then using description to elucidate those categories” (Strauss & Corbin, 1990, p.19). Locke (2001) describes this same process as “comparing incidents applicable to each category” (p.46).

During the second stage of coding, categories and subcategories were revisited, recoded and rearranged to help make better sense of the data. Although codes evolved as more data was analysed, the main themes identified with the second coder stayed constant. Most changes concerned the creation of new categories –as

new insights were obtained– and codes were modified to blend overlaps or deleted when they did not add to the project.

The structure changed to facilitate understanding of the coding structure as recurring patterns and relationships became more evident. Insights that were written in memos assisted in making structural changes that organised the data in such a way that data were more easily understood and retrieved as necessary. In a memo, the following rearrangement of categories was suggested:

Folder re-arrangements: I think I could use the following: 1) Learning strategies; 2) Learning motivations and attitudes; 3) Formal vs Informal learning (and the 2 subfolders); 4) Learning culture; 5) Organisational structure supporting learning culture; 6) Competition vs collaboration (and the 2 subfolders); So basically arranging learning enablers and obstacles according to the different facets that are emerging from the data.

The overall structure was changed a third and last time as it was split into Learning enhancers and Learning obstacles, regardless of APO membership, because there were uneven numbers of participants and numbers were low (only 3 interviewees from APO2, and 5 from APO1), and themes became more salient as both APO members were grouped together.

To exemplify how codes evolved, the first transcript (also the longest), was assigned 131 codes and 205 references (quotes/text segments) at first. Saldaña (2013) suggests the generation of between 120 and 300 total number of codes, which seemed to indicate the coding was done appropriately. However, the difficulty in organising the thematic content of the data lay in the large amount of data. Interesting contextual themes were found, e.g., cultural identity, home organisation, and government agencies. Although the peripheral information

allowed for more global understanding of the alliance and its different relationships between stakeholders, they slightly detracted from the main research goal.

Further to how concepts were borne, the codes were organised in *node trees* with *parent nodes*, *child nodes*, and *sibling nodes*, or categories with one or more subcategories, and a further sub-level with properties, referred to as *grandchild nodes* in NVivo manuals. Then they were transferred to a classical folder and subfolder system, and finally back into a new parent-child-grandchild node coding system using NVivo, which assisted in the construction of a more meaningful hierarchical structure for the data as the categories and properties became more organised.

Inclusion and exclusion criteria to the grandchild nodes were descriptions of the properties of sub/categories. For instance, with regard to 'Sharing across APOs or other' (Figure 3), the boundaries were described:

'Other' meaning alliance clients or suppliers, not subcontractors, which are more like internal or directly related to one APO (so subcontractors would be considered 'within APO'. When sharing is clearly of an informal or formal nature, the references will only be included in 'informal... interactions' or 'formal...interactions' to avoid duplication.

Formal alliance-based interactions referred mainly to fortnightly meetings, training programmes organised by the alliance, and similar opportunities for social interaction with other members, especially of the other APO, and members of the CT.

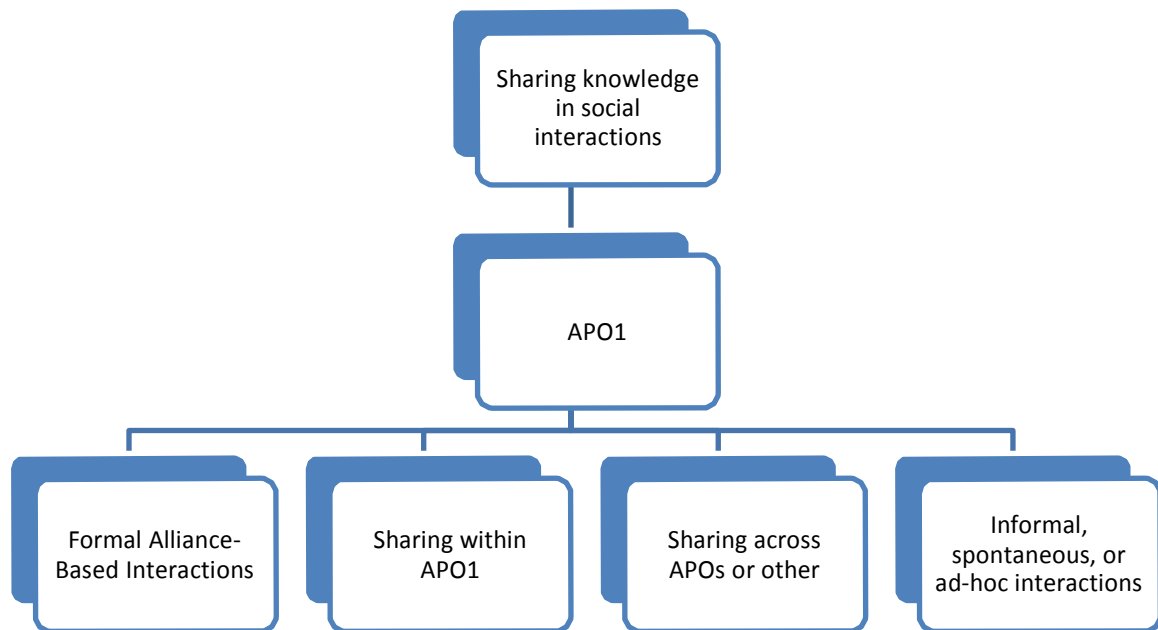


Figure 3: Sharing knowledge in Social Interactions – APO2 is subdivided the same way.

Last coding stage. In this stage, themes related to current literature findings are further identified (deductive analysis), as empirical data are compared and linked with previous knowledge. This deductive analytic process was started in the second coding stage, but it was more thoroughly done in this stage, as the structure of the codes became more definitive. This final analytic process – although usually described as part of the second cycle or second stage coding – reduces, expands on concepts, or explores alternate explanations (Saldaña, 2013; Corbin & Strauss, 2008).

Memos and annotations were kept throughout the analytic process to help track the lines of thought and how the data analysis evolved, as recommended by several authoritative researchers (Miles et al., 2014; Saldaña, 2013; Bazeley & Jackson, 2013; Creswell, 2007; Strauss & Corbin, 1998; Locke, 1990). *Memoing* helped to process larger data bases, condense the information into fewer

categories and subcategories, interpret emerging themes, make links between concepts, and ultimately, build a model.

The analysis of data was a reiterative process in which the coding structure was reviewed and refined. As Strauss and Corbin (1990) explain, it is a “process of integrating and refining the theory” (p.143). It is in this stage that incipient theory is presented while leaving space for modifications as new data are incorporated. In this final stage, results were obtained as concepts and their relationships became more consolidated.

Results

How the Alliance Operates

It is relevant to start by answering this question to have some understanding of the ways in which the alliance partner organisations interact with the different stakeholders of the alliance. The APOs are embedded in a wider system, in which the CT coordinates the alliance’s activities. The coordination team interacts with Government Agencies, which support, or delay, the alliance’s activities, as will be elaborated in short. The APOs do not have direct contact with those agencies but are represented by the CT, as illustrated in Figure 4. A participant from APO1 explains the APOs’ relationship with the CT, the Government Agencies — via the CT—, and the incidence on APOs’ jobs.

The CT is basically a mix of people from the APOs and the [Government Agencies]. There are [specialists], predominantly [specialists] in there, and sort of supervisors, specialist people in [the industry]. [...] So we deal with them and they deal with [a Government Agency], so we weren’t allowed to deal direct with the [Government Agencies]. [...] We had to go through CT.

So that then meant that CT had full control over what was out there and they knew what was going on in the network, how it impacted everybody. (P1) P1 further explains:

So predominantly, we deal with umm, the CT office umm, who are classed as the approval [specialists]. So a lot of our work goes to the [specialists] for approval. Once they agree, then that goes to [a Government Agency] for acceptance. Once they're happy with that, then basically our work gets deployed. So we've got a sort of a two-step process. Very early on, we had, there was a lot of issues with the CT's [specialist] who would approve it, so [the Government Agency] would decline it and vice versa. [...]

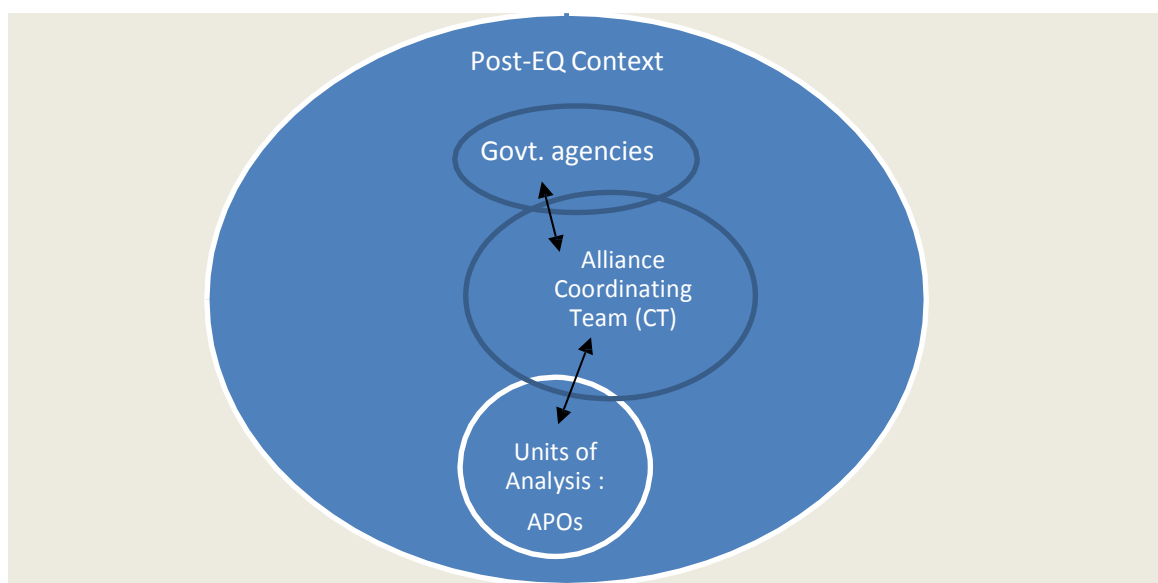


Figure 4: CT mediating between APOs and Government Agencies

A participant from APO2 describes the same inter-relationships:

At the centre of [the alliance] is that part that is called the [CT] office [...] and we interact through, that's our conduit to the [Government Agencies], [it's] is through that [CT] office. (P7)

Interactions between APOs are not always direct. In fact, several middle-level managers and employees do not commonly interact with the other APO team. The CT therefore not only acts as a mediator between the APOs and the Government Agencies, but it also coordinates social interactions between APO representatives. A forum for discussions between APOs is facilitated by the CT, which organises several fortnightly meetings with representatives of the APOs, in order to enhance sharing of ideas and collaboration between them. Figure 5 shows how APOs interact with each other, either directly or through the CT.

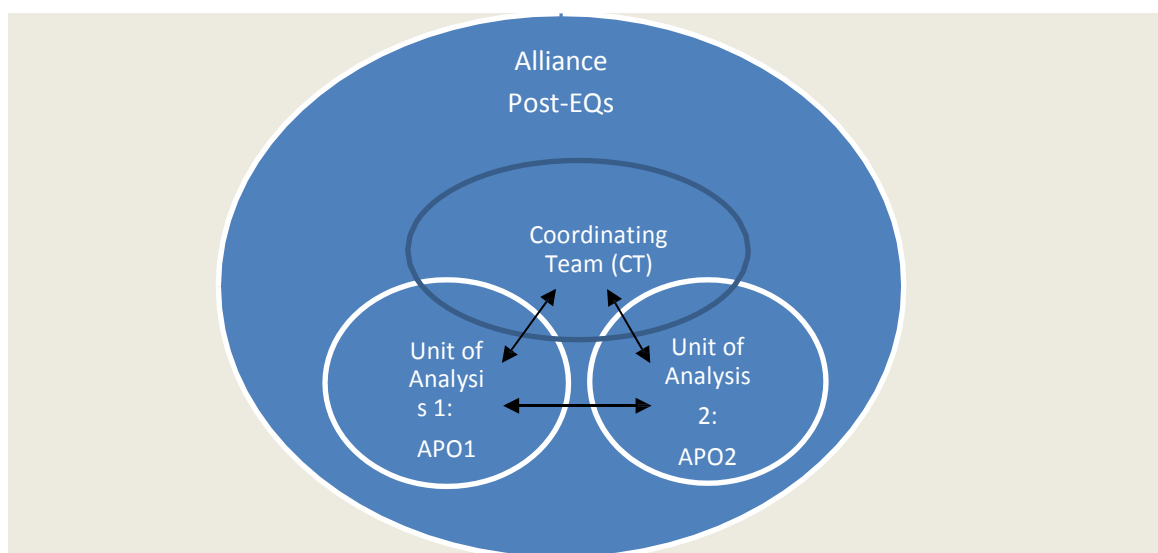


Figure 5: Inter-APO relationships partially mediated by the CT

However, it becomes evident from some narratives that there are less cross-APO interactions between its members, except for those who are members of the CT leadership team.

So we, we deal with umm, those guys [APO2]. We also deal with [stakeholders]. Umm, so a lot of the work we aren't geared up to do so we have to [outsource some of our work] and so we deal with them and then we

also deal lesser with the other APO team in some of the monthly meetings that we have a get together with those guys. But, but predominantly, it's [division] based, direct with CT and then they forward on to [a Government Agency], so it's pretty structured. (P1)

Learning Perspectives

In view of exploring learning from the participants' perspectives, it is pertinent to now attempt at responding to the question, *what is learning from the participants' perspective?* The main concepts as provided by participants are discussed as follows, yet a broader sample of quotes is found in Appendix D. Most participants from both APOs³ described their learning in the alliance as a new process or innovative way to do things. Participants talked about “discovering” [P8], “creating” [P2, P5, P7], “inventing” [P7], or “coming up with” [P8] novel approaches to their work as what they knew was “not necessarily relevant” (P5) in the post-earthquake environment.

Their views denote pro-activity, which is not an inherent characteristic of the cognitive learning literature, in which learning occurs almost as a matter of fact when new information or new knowledge is compared with existing knowledge patterns and the latter are modified to adjust, or assimilate and accommodate the new information (cf. Piaget and Inhelder, 1984). Instead, the pro-activity toward updating their knowledge is likely to be explained by the need of organisations to obtain or maintain competitive advantage, so new knowledge or innovations are pro-actively sought (Joia & Lemos, 2009; Prusak and Matson, 2006; Nonaka, 1991).

³ Participants one to five (P1-P5) are from APO1 and six to eight (P6-P8), from APO2.

All participants mention innovations as an outcome of learning and provide concrete examples for them. These will not be transcribed to ensure confidentiality is maintained. However, by sharing information about their innovative processes, it became apparent that their teams had obtained tangible results from their learning efforts.

Innovations, in fact, were part of their key responsibility areas (KRAs), against which their performance was evaluated as alliance team members. The word ‘innovation’ was therefore used extensively. Innovation(s) came up in all discourses, on average approximately 17 times on a transcript (Table 3), or took up approximately 0.6% of the talking time (considering that the interviewer used the word once or twice in each interview). Thus there is evidence that creating innovations is a key component of the alliance culture (which will be touched upon later in this chapter).

Table 3

Use of the Term ‘Innovation’ during Interviews

Participant / APO membership	Reference frequency “innovation(s)”	Percentage text coverage
P1_APO1	24	0.36%
P2_APO1	5	0.26%
P3_APO1	13	0.36%
P4_APO1	4	0.14%
P5_APO1	22	0.50%
P6_APO2	20	0.86%
P7_APO2	17	0.59%
P8_APO2	41	0.99%

One of the participants elucidates the relevance of innovations within the alliance.

There’s also a KPI [Key Performance Indicator] which is influenced by innovation. So if we come up with innovative ways of working [...], we put

that to a committee and we get points scored for that. Points mean more work. You know, if we can get more points, we get more work, and that drives it to a certain extent but really, because we're part of the alliance, we want to share anyway even if there weren't points for it. (P7)

Furthermore, P1 illustrates the importance of innovating in the alliance, albeit providing a different perspective to innovations:

When you were reading the innovations, because [CT] used to produce innovation [records] each month, you were reading it and it's like well, that's not an innovation. We're already doing that. It's just all this, you know, so the innovations, majority of the innovations that they've done are not innovations. It's just something that we're doing better. We've thought about it. We're going to tweak it. It's just a better understanding of it.

In summary, the main themes identified for the construct of learning are:

- A process that it continuous, sometimes slow and iterative;
- Evaluating past working practices, e.g. through feedback mechanisms, and determining whether new approaches are needed;
- A socially constructed process, in a collaborative environment;
- Innovating, i.e. discovering or creating new processes, or adapting and changing current processes to do things the realistically best way.
- A result of trying out novel procedures, including by learning from mistakes, as they are fed back into the learning loop.

To expand on the prior attempt at reaching a definition, learning in the context of this alliance may be summarised as:

A cyclical process in which knowledge is continuously updated as a result of collaboratively evaluating current (and past) work processes and procedures,

adapting them as necessary to adjust to the challenging environment, trialling novel procedures and feeding them back into the learning system.

The Learning Process

It is useful to examine the question of *how* employees learn in the complex, embedded context, without straying from the general issue of defining learning from their perspectives. The main related themes found were that they construct their knowledge base in social interaction with others as they discuss and evaluate past and current practices, they problem-solve together, and make decisions – sometimes in negotiation with others –, as they try and find the ‘best’⁴ solutions.

Participants propose solutions which can be trialled in their APO teams, after which the results can be fed back into the learning loop. This process is illustrated below (Fig. 6). Once the loop is closed, a new one begins, yet with a new learning obtained through the feedback system. It is pertinent to point out that the learning cycle applies to the upper levels of management, which are involved in both the SMT (part of the alliance coordinating team) and their own APOs.

On observing the learning cycle, it would seem that learning also implies improvements or innovations after reflection of present and past knowledge and experience, which seems linked to Piaget and Inhelder’s (1984) assimilation and accommodation concepts. As individuals make sense of new knowledge because they have the ground knowledge to make sense of it, they can change their behaviours to adapt to that new reality. Managers’ pro-active search to improve work processes or procedures (evaluation and discussions) illustrates their capacity to assimilate new information and accommodate to relevant information by proposing adjustment in behaviours as solutions are trialled thereafter.

⁴ A couple of participants use this qualifier.

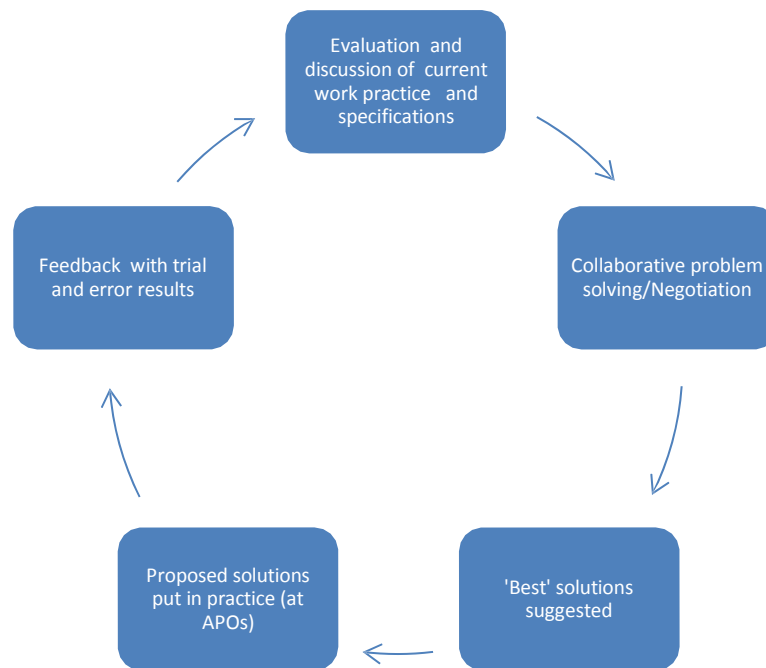


Figure 6: Learning Cycle at Upper Management

Learning as a socially constructed process—following Vygotsky’s constructivist approach to learning—, is also apparent in other, lower levels of management and supervision. Participants narrate how they learn from others (e.g., P8), seek “background knowledge” from others (P3), or share innovations and lessons across APOs (e.g., P4).

Next it is pertinent to try and understand why, or under what conditions, employees learn. Themes from the data suggest that the learning process was often triggered by the realisation that known processes were no longer sufficient or appropriate to deal with the current circumstances. The following stories tell how the uncertain environment induced them to learn to adapt to novel situations.

We have to come up with all the innovations and new ideas, new ways of doing things because what we knew, what we already used for other jobs wasn’t necessarily relevant for this.” (P8);

The situation of the earthquakes helped learning on the topic [...]” (P3);
and

We never did anything like what we did here because it’s such a unique umm,
situation, and where old ways of doing things are no longer valid. (P5);

There are several more examples. However, these will be presented as the
different learning enablers, or facilitators, are discussed in what follows to avoid
repetition.

Learning enablers, enhancers, and facilitators

The core themes that emerged are presented with their properties, inclusion and
exclusion criteria where necessary to clarify how they were grouped, and
relationships found between concepts. These themes and relationships will be
elaborated in the next pages as arguments are interwoven with supporting
evidence.

The following learning enablers, enhancers, or facilitators were the most
recurrent in the data:

- Supportive Leadership & Organisational Learning Culture
- Motivation
- Positive Behaviours, Attributes, Personality

Supportive Leaders and Learning Organisation Culture. The combined theme
Supportive leadership and “learning organisation” culture is the first of the
learning enablers to present given its appearance in all participant discourses.
Initially, leadership and organisational culture were coded separately. However,
given that most managers interviewed clearly bought into the organisational
vision promoted by the CEO and SMT, and that several passages of text referred

to both concepts simultaneously, it eventually became clear that there was too much overlap between the two concepts. Moreover, most leaders clearly embodied the so called “learning organisation” culture.

It is pertinent to clarify the difference between “organisational learning” and “learning organisations” at this point, given the emergence of a “learning organisation” culture in the alliance. Organisational learning is an outcome of strategic changes introduced to ensure the organisation remains competitive and healthy (Lines, Johansen, & Døving, 2004). Although the data show evidence of organisational outcomes –in particular innovations–, performance outcomes go beyond the scope of this dissertation. In contrast, the concept of learning organisation is closely related to how employees learn, because it provides favourable conditions for continuous learning at all levels of the organisation, such as empowering employees to reach strategic goals aligned to the organisation’s vision, and encouraging social interactions to “share learning” (Davis & Daley, p. 53) .

Lines et al. (2004) also distinguish individual and organisational learning. Individuals, they posit, process goals cognitively as they develop new knowledge while organisations are more concerned about their strategies and formal structural components, e.g. internal communication systems. Lines et al. (2004) also sustain that individual learning, in its collective form, is instrumental to organisational learning. The characteristics of the participants as both individual learners and promoters of organisation-wide learning because of their alignment to the vision and strategies of the alliance, justifies the choice of combining leadership and culture support to learning.

The culture of the alliance is described by one of the managers as follows:

The culture of the alliance more would be on change, would be on, on umm, changing things, umm, learning. They're, they're looking at new ways to do stuff. So they're, they're, I suppose, pushing the change and their whole [unintelligible] was hoping that the APOs get on board with them. They see all this earthquake as a chance to change methodologies, change codes of practice, change the way that we do things. (P1)

The pervasiveness of the learning organisation culture is illustrated by the alliance's emphasis on innovations, to which leaders seem to align. An APO manager makes it clear that the alliance has a learning organisation culture that places high value on innovations, through his comment: "there is a committee, well there, they [CEO/SMT] wanted innovations and so there's a committee. "There's an innovations' committee, innovations' team, whatever you want to call it". (P1). As another participant recounts, "It's quite a good drive, I mean, innovations. I think [the alliance] encourages innovations quite a lot" (P5), and another interviewee talks about how supportive the management is about their innovations: "We developed [an innovative idea] and we took it to the [SMT] and presented what we wanted to do, and everyone was pretty supportive of the idea" [P2]. The leadership-alliance culture connection becomes even more apparent as other examples are provided when introducing the properties or subthemes under this category.

The main components found in relationship to this dual concept are participation, collaboration through social interactions, trial and error, and resource availability.

Participation. The subcategory participation as described in a memo linked to this category includes: “Participating in planning and goal setting, sharing/exchanging subject matter expert (SME) knowledge within each APO and activities such as workshops at intra-unit level (departmental/within APO)”. *Participation* encompasses activities that are more related to how people make sense of their work processes, what they think about them and how they interact in their groups as they reach agreement on activities on which to take action. As such, it excludes across-APO level interactions, or professional development activities in formal alliance-wide workshops.

Below is an example of how a leader influences the team to think, analyse, and problem solve within their team, i.e. participate in problem solving in discussion with each other.

We’re fortunate, we’ve got a very good leader in our team. He’s very instrumental in getting together people.[...] what he did was [he] got the senior managers together and presented the facts of the investigation without any corrective actions [...]. [He said] “I asked them what they were going to do about it. So what are you, you know, here’s all the facts. They’re smart, intelligent people. I don’t need to tell them, they need, I want them to draw their own conclusions somewhat with what we should be doing to start to fix the issue”. [...]. So we do, we network and meet, I would say brainstorm and mind map and do all those sort of things to get where we want to get to.

(P4)

In the example below, employees are expected to participate as they are consulted about a system.

You know how we can get [a process] to work efficiently and so we, and we talked to the guys, sort of the guys below me who are the ones that are out [in the frontline] but feed in information into the [process tool] to make it valid because the key with it was, it relied heavily on human input. (P5)

Although feedback is discussed further below as part of another category, the example that follows is given here because of the implied culture of seeking participation from others within the team. The account below refers to employees at lower levels of the organisation:

I suppose we try to involve everyone with the project to, sort of, we try to collect feedback from everyone, not necessarily the ones who have a bit more power, which I think is quite good. (P8)

Participation of all employees seems to be encouraged from the very beginning. Diversity was sought to bring in different perspectives which would help them learn "new ways of doing things".

Anyone with a bit of experience and keen to contribute was more than capable enough to go and help us come up with new ways of doing things, like typically we'd just involve whoever had enough knowledge of the project because it was quite specific compared to other [...] projects. (P8)

As seen earlier, the alliance has typical features of a learning culture. The same is true for the individual APOs. This becomes more evident as further examples are presented under different categories and subcategories.

Employees are encouraged to share their knowledge and experiences in “knowledge sharing sessions”.

Most projects I’ve been on with [APO1] have had that knowledge sharing session. I mean, it sort of serves two purposes. I mean, firstly it’s a way to pass on information and upskill people, but it’s also like you know, a good chance to just catch up with, like you know, have, bring everybody together and sort of nurture a bit of, sort of a tem bond, bit of team bonding, I suppose, sort of thing. (P5)

The interdependence of individual, group, and organisational learning appears evident in those knowledge sharing sessions. Knowledge sharing when facilitated by formal structures of the or

ganisation (e.g., workshops and meetings) enhances individual (and team) learning, which in turn supports organisational development of knowledge, i.e. organisational learning (Vera & Crossan, 2004).

Collaboration through Social Interactions. This second subcategory linked to leader and organisational support refers to “collaboration with other alliance stakeholders, mainly with another APO and the CT (including cross-unit training), or collaboration as part of the active implementation of activities” (Memo, Jan. 6, 2015). Below are some examples:

We’re rolling out a lot of change in how we do things financially at the moment, and we’re getting, we’re asking for some input from the other APOs and we’re getting some as well. [...] Well, it’s all [...] teams in there. [...] Ahh, we’ve all been at the table all the time so the information’s just been shared. (P7)

Within our company, we've got our forms [which identify] opportunities for improvement. So this could be either positive or negative but at least it gets reported. Something that's worth reporting, then how do you improve on that, then gets updated into our system, gets shared with the alliance team. (P6)

Another participant talks about meetings that are informally or spontaneously set up, which points to an organisation that cultivates social/work interactions:

We had a few meetings at the CT office on [technical procedure], on a whole lot of aspects of each project. So when the meeting with other APO members, with the [specialists] at their location, or project managers or whoever was involved in, in them, in these projects [...] just sharing experiences and that. It was, it's quite open. We'd just ring them. (P8)

APO1 members share similar positive experiences when describing cross-sectional discussions with another APO, CT, or other stakeholders:

It's getting people together, a cross-section of the workforce together to get that buy in and get the understanding and the ownership so that they problem solve rather than having solutions thrown at them. (P4)

Yeah, I mean definitely, I mean the design was, was put forward by umm, you know, the design part of [the alliance] and so we didn't really umm, and we had collaboration with them as well in terms of, you know, because they were putting forward an idea, we were looking at what the [plans] and the specifications and saying, "ohh, you know, that's going to be difficult". It's going to be costly, you know, and so we sort of feed all that into this little workshop and were able to come up with umm, you know, different ideas and different solutions to try and make that whole thing cheaper and easier to

deliver. So that was a good, an example of where that sort of collaboration worked very well and I think one of the things that did make it successful was, it involved quite a lot of the younger members of the team. (P5)

These last results support the social learning theory, a social cognitive theory, which posits that learning is constructed in respectful social interactions (Bandura, 2001), as well as Vygotsky's constructivist theory.

So far the elements of a learning organisational culture that have been exemplified are those of participation within and collaboration across units, as encouraged by leaders who support the mission and vision of the organisation, represented by its SMT. These social relationships are specified in the characteristic of a "shared leadership", in which leaders encourage employees to take initiatives and participate (Yang et al., 2004, p. 33).

Trial and Error. This is one of the most mentioned learning methods related to leadership and organisational culture. This method is evidently widespread in the organisation, probably reinforced by the supportive environment. This permission to make mistakes while experimenting is another typical element in a learning organisation culture, which Yang et al. (2004) explain as a "culture that encourages experimentation" (p. 33). In fact, as Tjosvold, Yu and Hui (2004) posit, "Open problem solving is an approach to learning that is more likely to generate positive team outcomes, including learning from mistakes (p. 1225); they also sustain that having open dialogues among team members allows for the creation of learning environment, in which they make sense of error and problem solve toward an improved solution. Members of both APOs talked about trialling or using trial and error as a method to generate innovations, as seen in the examples below:

There was an interaction with a raft of different people and it was also sort of a trial and error thing as well, you know, and sort of refining it. I found the whole thing quite interesting. (P5)

There's quite, they really encouraged innovations and new ideas, and trying them. So it was quite good working in that sort of environment rather than having, it was not hugely conservative because a lot of the projects we worked on were reasonably new for New Zealand or at least Christchurch. (P8)

I think, just having the support from management, and from the wider organisation to try new things, and yeah, just their support to actually just go out and try things, because I think that's often the main way you learn, is by doing, and by having pretty good debriefing around processes or new things that we are trialling, spending time to see how it's working and how we can use it. (P2)

So to get around that, is you tell them, well, you just have to tell them, things happen that you don't expect and you need to get on with it and something that you have to, you learn from others' mistakes, saves, saves you making that mistake basically. (P6)

From the recurrent themes across APO members' discourses, trial and error as a way of constructing new knowledge can be considered one of the core components of learning.

Resource availability. This is the last fundamental link to *supportive leadership and learning organisation culture* found in the evidence. Resources were found to be facilitated by managers to their teams, as well as by the CEO and SMT through CT-coordinated activities. Beyond the evident utility of physical resource s, such as books and manuals and IT systems, organisations can also

facilitate employee learning by allowing for networking opportunities in which knowledge is shared and transferred (Tsai, 2001), e.g. in using new systems such as IT products, or SMEs brought in from outside the alliance, including people from the APO's home organisation, as managers stretch their boundaries to help their teams learn.

It made sense to group human and physical resources together after examining the knowledge management literature, which literature suggests that tacit knowledge is often manifested in social interactions (Nonaka, 1991). Tacit knowledge refers to internalised knowledge and skills that are deeply ingrained through years of experience, and which are often not easily explicated (Joia & Lemos, 2009; Garrick & Clegg, 2000).

According to Sirmon, Hitt and Ireland (2007), this internal knowledge is particularly beneficial for the transfer of “technical and managerial knowledge” from partner organisations in alliances (p. 279), in which its members can strategically learn from each other. In addition, as Ambrosini and Bowman (2001) sustain, that tacit knowledge is an internal resource which enhances organisations' capacity to gain competitive advantage. Li and Gao (2003) further posit that employees, unaware of their knowledge capacity, can furnish organisations with continuous innovations, which in turn lead to organisations' enhancing their competitive advantage. Knowledgeable employees who interact with others are therefore an asset to the organisation, thus a valuable resource. Several illustrative examples are provided below, starting with physical resources which allow for opportunities to learn:

With, with the innovations, there's a, there's a magazine, well it's really, I guess it's emailed around every month with all the new innovations on it, lots

of pictures. So that's, I mean that's pretty basic but you'll, you'll get a few things out of that maybe. (P7)

P1 says, "We've got our books and resources there that we can feed back on". And P7 comments, "Watching videos on YouTube cannot be "dismissed".

Formal learning opportunities, such as workshops, are developmental opportunities that provide employees with physical (e.g., training materials) and human resources (e.g., knowledge transfer occurring in personal interactions).

P7 shares : "Just in APO2 we do that every two months ["sharing knowledge sessions"]. It's, you know, all these little things together and maybe every now and then we'll do a presentation on an innovation.

Yet from the number of times informal meetings came up, it would seem more learning experiences were taken from those opportunities.

P1 says, "we got our [IT SMEs] from [our parent/home organisation] to come down and help us, and we basically produced a procedure for [work activity]". Also, "we've got a guy who's really good on computers and programming [...] six, seven times out of ten [...] we get a, somebody will say something and we'll, someone else will just latch on."

P8 tells a story about sharing knowledge with another APO, which rang him and they met spontaneously to discuss how to work with a complex system that they hadn't worked with previously. He said, "It was good sharing that knowledge and the things that were critical and they needed to focus on which might not be obvious when you have no experience on these systems". Evidently, had there not been a supportive learning culture with supportive managers, it is likely that those kinds of conversations would not take place.

Participant 7 recounts, “so what helps us if we want to get into that [work activity], we need to learn all about it, so in the first instance, we can watch people working [...] So anything we do is on display [...]. Usually, if anybody’s got a trick, everybody else has learnt it pretty soon”.

P7 describes the learning experience by observing others’ work: “So what helps us if we want to [learn], we need to learn all about it, so in the first instance, we can watch people working. [...]” He then commented on employees exposure to other areas of work: “A lot of people have done a stint working in the alliance, either been rotated through it or they’ve had some exposure to it and all our senior managers have been involved. Further, P7 comments: “So there has been a lot of rotation so that’s lots of people from [parent organisation] have been able to have exposure to what’s been going on in [the alliance].” The participant’s account suggests that employees are transferred in and out of the alliance. This rotation was, in fact, corroborated with archival data.

Motivation. The second most relevant property that emerged from the data related to people’s motivations. Employees, from some managers’ perspectives, were motivated to learn. Components of this theme are explained below.

Competition. One of the main reasons given for this was that they had a competitive spirit. Competition, as will be seen later in this chapter, has also a negative aspect in relationship to learning. However, in some people it gave them the drive to succeed, to be innovative, and to be the ‘best’.

Innovation is, in fact, a key component of the alliance’s (alias APO’s) activities, as it is part of the “KRAs” (key responsibility areas, or key performance indicators, KPI). This is reflected in their concern to promote innovations across the APOs, and provides another motivation to share their knowledge with others, which in turn provides more learning opportunities.

Generally everybody shares, everything is shared and, the other thing about this, umm, if you want to chase the points, which, you know we do as well, one way that points system has changed is if you adopt somebody else's [e.g., the other APO's] innovation, you score points as well. It used to be if you just gave up an innovation to the group, you got a point, but now you get a point for adopting one as well (P7).

And there's definitely a competition within [the alliance], within the APOs, you know, and that's been set up by the, this KRA framework within our team. So that's a factor that would drive the passing of knowledge. (P5).

When observed that competition as described by the interviewee sounded like a healthy competition, he responded, "Yeah", and then he added:

Those that actually umm, are passionate about their, their job probably don't always see it that way [as competing]. They just like to umm, make their, you know, have their company look good. It, it, there is a umm, probably competitive nature as well umm, because you're coming up with innovations umm that are probably cost effective means that you can do jobs at a cheap, cheaper price. You end up winning more, more work, maybe. (P6)

Needs and Demands. Another motivator is the fact that there are *needs and demands* for novel process or products that need to be met. Participant five clearly enunciates this as he describes how learning and innovation needs arise.

[APO1 members] are involved with generally quite large projects, a small number of large projects and the way in which new ideas and innovations are generated is a little bit, it's not something that happens across the whole

business. It's very much certain people or certain needs arise that sort of allow or, or bring together an opportunity for innovation to develop, so there usually isn't either, there's either somebody, well I guess the, the trigger is that there's a need to do something different. [...] I think a lot of people have, in our organisation have got, there's probably a lot of people with good ideas but usually they don't come to the, come to the surface unless there's a, a need for it, you know. (P5)

Organisational needs and demands are cascaded down to employees via their managers, who break them up into achievable goals which are negotiated in interaction with their employees (Pulakos, 2009). A constructive learning environment, as observed in both APOs, seems to point in the direction of good leader-member interactions, as well as social interactions between peers. The leader-member exchange theory expands on the social exchange theory as they incorporate the concept of followers (members of a group) who feel the moral obligation to support their leaders in their missions when they feel fairly treated (Song, Kolb, Lee, & Kim, 2012).

Sometimes the motivation stems from the need to resolve a conflict. Conflict of interests may lead to the need to learn to assimilate a challenge and accommodate to the current situation. A story told by one of the participants elucidates this point. He explained how there was a conflict due to some project overlaps between the APOs. The [project managers] said, "Come and sit down. [...] Can we try and sort out, work out, well, if we push ours, bring ours forward, yours back...? [...]. So it's that sort of talk once there's really a clash" (P1).

Work Engagement. The last of the core themes related to motivation is work engagement, which is defined as a positive state of mind characterised by *vigor*—feeling energised, probably through a sense of achievement in meaningful tasks, *dedication*—being highly involved at work, and *absorption*, i.e. being engrossed in work activities (Schaufeli & Bakker, 2004). In response to the question, what factors do you think contribute most to learning of all these things, one participant shared that his “guys” were “all genuinely interested in what [they] were doing and [they] were keen to “be the best”. “We want to be up there”, he concluded.

This competitive attitude is likely to be related to their work engagement, or motivation at work. Among several definitions Latham and Ernst (2006) provide in their review of the literature on motivations two concepts are worth comparing with the data. One is that employees are likely to feel engaged when they are satisfied with work, e.g., as a consequence of feeling valued (subjective perception), or because they feel that their job is meaningful and think they are making useful contributions to their organisation. The other motivator is monetary rewards.

It is noteworthy that participants did not give any indication of dis/satisfaction with salary or rewards, but rather, enthusiasm was perceived as they shared their experiences with learning. It rather seems likely that the alliance engages people by motivating them to participate and collaborate, try out new ideas, generate innovative solutions, and ultimately to proactively seek to learn, all of which indicate more intrinsic values. Furthermore, the fact that the alliance is there to help the whole community to return to normal activity may provide a sense of satisfaction beyond any monetary reward. This could not be identified in the

interviews for this project, but it is a theme that arose from the archival data consulted.

One participant explicates the relationship between work engagement and employees' motivation to work and learn.

I suppose it's umm, it's knowing that you're going to improve your system or, or improve your performance. You know, there's a [professional/SME] there to get better, then if we're genuinely interested, if I'm interested in something, I'll go and, I won't have to be told to go and do that. I'll just go and do it because I'm interested and I think that's probably a big part of, of my team is that we're all genuinely interested in it. [...] We're all interested in what we are doing, so it's a lot easier to go off and just sort of I'll have a look at that or I'll have a read about that and [...] maybe this is something we can use or adapt and change and bring into our system. (P1)

Positive behaviours, attitudes, and personality. The third and last of the learning enablers resulting from the data analysis is the category “*positive behaviours, attitudes, and personality*”, with its corresponding subthemes: proactivity, positive attitude (e.g., toward sharing), and openness to learning and flexibility. These themes are less recurrent than the ones above, but they are still clearly present in at least two interview transcripts. They have been included because they seem apparent in more than two interviews, but are harder to pinpoint because they may relate more to another category or may be inferred from much longer text passages, which cannot be transcribed here.

Pro-activity is one of the recurrent themes observed in the data. Prusak and Matson's (2006) state that learning in strenuous situations is mainly devoted to finding time and cost-effective solutions to the overwhelming community needs.

Although they refer to a different context, some parallelism can be found in terms of the urgency in their strategic goals. Participant 7 describes how processes needed to be ‘invented’ to fill gaps in NZ specifications for the alliance’s activities.

New processes have been created since day one in [AN] because it started with nothing really. There was an alliance agreement and umm, that’s been, that’s pretty basic. That’s how we all interact with each other and how we get paid but umm, we had to build on that. So in recent times, umm, we’ve moved a lot towards, what, what [AN] does really is, is [main industry activity], I mean we, we didn’t have a specification in New Zealand for that so we’ve written a [AN] specification and we’ve come up with processes which I guess, I imagine will be copied elsewhere. Umm, so that lining is, is an example of how we’ve had to invent processes. (P7)

Some managers seem more proactive than others. Yet in general, all managers/supervisors seem to be quite proactive in helping their employees, e.g., to obtain the necessary resources or help them deal with new problems, as seen above. They also instil in employees this positive behaviour by encouraging them to interact directly with others as they try to find novel solutions to problems.

I think it’s a little bit is based on personal initiatives and whether each [APO] actually makes the effort of trying to collect all that knowledge and, and experience from [the] other [APO]. (P8)

I mean we, you know, we just basically got together different people that had umm, a different umm, different experience or different input, you know, so because I’m involved more at a planning level, sort of higher level stuff, I

would, I would have brought somebody in who was involved with, you know, actually setting up the logistics of setting up traffic management, you know, or the logistics of operating a construction site, you know, and we would, we got together and talked about, you know, how can we make this work.

A manager is keen on creating a self-initiated innovation team with assistance of the other APO.

So we are quite proactive within sort of our little team umm, but we're not really pushing that out to the other [APO]. Umm, we, we, we sort of, we're going to try and set up our own innovation team and, and just write to the other [APO] and say, right, what do you want to change? [...] What do you think's going to be good? You know and then we'll use that idea. If everyone agrees, then yeah, this is going to be good, then we'll probably just take it to SMT and say, well look, we all agree [...]. (P1)

Another participant took an initiative: "I took it a step further in our organisation by developing a [specialist knowledge] analysis around the incident". (P4)

Positive Behaviours, Attitudes, Personality. The next learning enabler or enhancer that was identified in the data, although to a lesser extent, is *positive attitude, e.g., positive response to feedback*. An example of positively responding to feedback was given above, thus it will not be repeated here. Several participants demonstrated positive attitude toward sharing, not only within their group (APO and home organisation) but also with their counterparts.

For example, a participant describes sharing knowledge as an ‘enjoyable’ experience:

I was meeting quite often with [professional/specialist] in [her location] to basically tell her how we did things, how we worked and umm, try and help them, help her umm, basically get up to speed on the [work activity/procedures], and try and have some consistency in the way we worked with the [clients] as well. It was quite enjoyable. I mean, in general, I quite enjoyed umm, sharing whatever I’ve learnt on anything really but it was quite umm, it’s quite a good feeling to just, to pass it on and help, help another [APO] team deliver the job sort of. (P8)

Openness to learning. This has also been identified in the data, in fact, on several instances. A participant who is back at the home organisation but worked in the alliance in its early days recalls:

And happy to risk it which, which works quite well especially at the very beginning of the project because it was so new to Christchurch that umm, being conservative just wouldn’t cut it. We just had to learn and try things umm, which is a, a great umm, time to be involved in, in these projects because there’s so much to learn. Everyone was learning so everyone was quite open to discussion and innovation. Yeah, so it was quite open-minded then. (P8)

Openness to learning is also apparent from the initiative to look up tutorials online.

It might sound, it might sound pretty pathetic but there’s some really good stuff on You Tube in terms of umm, ahh, specialist[...] techniques. Umm, obviously people out there like to share what they do and, and they upload

this, you know, basically tutorials on how to do things so umm, that's not to be dismissed anyway. (P7)

The fact that managers and their employees (from managers' accounts) are willing to share their faults and mistakes and learn from them denotes an openness to learning. It seems plausible that in today's continuously changing world, more jobs, if not all, will require openness to learning and flexibility, as well as certain level of personal resilience.

Learning Obstacles

Two main learning inhibitors were found in the data. These were organised into: (a) Alliance Administration Issues and (b) Feelings and Emotions.

Alliance Administration Issues.

Four main themes were classed as alliance administrative issues of the alliance:

"Circular meetings", Knowledge Management System, Human Resource Capacity, and Innovation Scoring System.

"Circular Meetings". The first obstacle found probably relates more to the overall functioning of the alliance. However, insofar as it affects the work climate, the learning obstacles presented may help to gain an understanding of the particular difficulties and challenges employees face in the alliance. The circularity of fortnightly meetings was the most common theme related to learning obstacles.

We talked about something, and it just used to go around in a big circle.[...]

There was probably too much on the agenda and we would talk about something and then that would go for, we'd talk about it for two months. Nine

times out of ten, there wasn't a resolution and the next couple of meetings would be something else and the next meeting would be something else and then we'd be back to what we were talking about six months ago or four months ago.

The meetings were often referred to as a slow process in which things were repeatedly discussed, meeting after meeting, and over several months without reaching a resolution. This was a common theme also in interviews from archival data consulted, indicating that the issue pre-dated the interviews for this current research project.

Knowledge Management. This seems to have evolved positively with time. However, due to the busyness of projects and daily activities, some complain that they do not have the time or resources to do research. One manager suggested standardising the language used across organisation partners because “things mean different things” to people [APO, other stakeholders]. Yet another issue mentioned by a few participants is that there was a rotation of personnel in charge of the coordination of innovations, which affected their knowledge management. At times the position was vacant for several months, so that it became difficult to find information they needed. In those times, resources related to innovations and knowledge inventory and , in general, was less available.

Human Resource Capacity. A few participants talked about their employees being “overworked”. There were some turnover issues, especially with employees from the younger generations, who they found difficult “to get them interested”. This theme was present in both present and past (archival) interviews.

Innovation Scoring System. The last of the alliance administration issues found in the data regards the innovation scoring system. This alliance function was explained clearly by one of the participants:

There's KPIs [Key Performance Indicators] for the community but there's also a KPI which is influenced by innovation. So if we come up with innovative ways of working, umm, we put that [forward] to a committee and we get points scored for that. Points mean more work. You know, if we can get more points, we get more work and that, and that drives it to a certain extent but really we're, because we're part of the alliance, we want to share anyway even if there weren't points for it.

Some were cynical about that system, or laughed as they told stories about “things” that were accepted as innovations in earlier days (things that were not at all relevant to their work activities). The point scoring system seems to have improved, as analysed from their narratives. For instance, a mention was made about an additional feature to the scoring. Points are now also gained when innovations from an APO team are implemented at another APO. So satisfaction with the innovation incentives seems to have improved over time, although conclusions cannot be made because not all acknowledge any improvement.

Feelings and Emotions. The second learning inhibitor or obstacle was related to *feelings and emotions*. These were split into three components: Frustration, overwhelming, and fear.

Frustration. One of the sources of frustration stemmed from the lack of control over processes, as they made efforts to persuade the Government Agencies –

through the CT– about the appropriateness of their innovations. Another frustration came from perceiving a lack of or limited access to the other APO’s innovations (in control of the alliance management team). What concerned an APO manager was the lack of control over information shared across APOs when it was relevant to do their work time and cost effectively, as it was the CT’s responsibility to decide what would be shared across the alliance. Although this was mentioned only by one participant, it is worth mentioning because he was one of the two APO members who were both an APO manager and a member of the CT management group.

Not having access to all innovations from the other APO because they were withheld or not easily accessible for different reasons, –a few of which were presented earlier, also frustrated a couple of managers. This frustration was related to competition and, in particular, to intellectual property issues.

Yeah, well that’s how it’s, this is how it’s wrong. This is why I don’t, I don’t agree with it. So you know, we, we said at a meeting, well you know, we can go on to a [location] and we can, because we’re in little [areas] and we[’re] work in [areas], as soon as we get to the boundary of our [area], we’re on a boundary of another.[...] So I said we’ve then got to phone that person up and get hold of them [...]. Why can’t we just, here’s a number, why can’t we just go on the website, open the number and [...]? Ohh, no, no. You can’t do that. I said well, why not? Well, it’s privacy involved, this, that and the other. But we’re all under the alliance and everything.

Several participants felt frustrated about the competition between the two APOs. A few said they felt it went against the spirit of collaboration instilled by the alliance SMT. One of them gave a specific account that proved his reason for

perceiving unfairness of a competitive system in the early days of the alliance.

However, there was no comment about an improvement in time.

Competition in its negative aspect has existed since the beginning of the alliance. A former seconded employee comments, “Now, at the beginning I think it was a bit lost, the whole thing. But they’ve still got that competitive element. However, it seems to make certain sense that there should be some IP-related problems.” As one participant appropriately remarks, “You know, one day it’s going to be over [...] you’ve got different CEOs [...]. I mean, in that alliance thing, definitely we’re all competitors. So why, if you are trying to get work off each other, why would you help your rival?”

Some of the obstacles are particular to this alliance, especially in terms of the way they set up a KPI and scoring system, that on one hand requires the APOs to compete against each other –as they would naturally do in normal circumstances–, and on the other hand they are encouraged to collaborate to increase their levels of performance for the benefit of the community of Christchurch.

Overwhelming

Feeling overwhelmed mainly because of work overload.

It is, there’s that much work, you haven’t got the time to research as much to do, I mean, I’ve stepped down from [working on research and innovations] now because I’m just bogged down with meetings and paperwork for other stuff, so if there was more time or there was, you had two more people in your team, you could say to those guys, go and research that, go and you know, go and speak to X, Y and Z., but we just don’t have the people. (P1)

Like some of these junior guys are not interested, or don't seem interested, and it's pretty overworked working at the [work location] sometimes. Long hours [...]. (P3)

This situation may have changed over time. However, there is not sufficient evidence to support this. Yet it is relevant to mention because it is plausible that only managers responsible for staffing issues might provide insights into this matter.

I think we've, previously we weren't sufficiently resourced to do that [activity] properly, but now we've got a few more people and we're able to do it now. We're able to work on the business, and change things [...]. (P7)

Fear or apprehensiveness. Managers of all levels are concerned about sharing too much intellectual property (IP), as briefly mentioned above, or losing their 'competitive edge'. A few verbalise their fear of losing competitiveness if they shared too much of their knowledge and innovations with the other APO. They are aware of the imminent end to the alliance, in which they will return to their natural competition. Other inclusion criteria for this item were general fear, e.g. "people are scared to see what other people are doing", auditing measures that inhibit creativity, and fear of being compared to others. Only one example for each was as found, so that this item lacks power. However, the combination of the different ways certain fear or apprehension is expressed is what makes this characteristic noteworthy.

Conclusions

The aim of this research project was to tap into participants' views on learning in their complex embedded system, explore the variables that enable and hinder learning, and how the collaboration-competition relationship between natural competitors influences their learning process. Several concepts from the learning organisations literature have found support in the findings of this research, such as the role of a supportive learning organisational culture embraced by leaders who promote a psychologically safe environment for employees to share their mistakes and learn from each other (Garvin, Edmonson, & Gino, 2008).

An attempt was made to bridge the gap between employee learning and organisational learning by incorporating knowledge from the area of cognitive psychology and education, in particular concepts from cognitive-constructivist psychology applied to the learning context. Piaget's theory of assimilation, accommodation, and equilibrium served as a starting point to understand the individual learning process. In fact, assimilation of new information could be linked with evidence gathered from several discourses, which described new situations, how they were pondered, discussed (intent to accommodate to new reality), and acted upon, e.g. as they generated innovative solutions (and equilibrium was reached).

This research contributes to the sensemaking literature by linking mainstream organisational issues with this challenging post-earthquake environment. When old ways of doing things do not provide adequate solution, employees –with support from managers and peers–, try to make sense of new realities (e.g., new challenging markets) as they decide to act upon the new information (Kuntz & Gomes, 2012). Although the situation in Christchurch was initially more extreme,

as smaller earthquakes followed the big ones, learning was essentially the same with regard to the sensemaking process, only more accelerated given the dire needs of the city. Learning opportunities are more proactively sought, especially to accommodate to the continuously arising challenging circumstances.

Not only Piaget's cognitive constructivist concepts were supported by the evidence, but also Vygotsky's social constructivist theory, which proves to remain current, as evidenced by the extensive use of social networks and interactions as innovative solutions are created in dialogue with others. The concept of social construction of knowledge pervades in texts, to such extent that relatively few quotes could be entirely isolated from social interaction, whether part of the formal structure or informal communications.

A slight misrepresentation of the relationships between stakeholders was identified as the Data Analysis and preparation for the Results chapter progressed. Therefore another figure (Fig. 7) is designed to more accurately represent those differences. The overlaps with arrows indicate where there is direct communication between the different stakeholders. There is little evidence to provide a better illustration of how all parties inter-relate. In fact, this may well be a simplified version, but it illustrates the findings more accurately than the model proposed at first.

From the evidence found related to obstacles to learning, the major and most convincing obstacle found is competition, which is contrary to what the alliance most advocates: sharing knowledge and collaborating. A proposed model for competition as an obstacle is therefore as drawn in Figure 8.

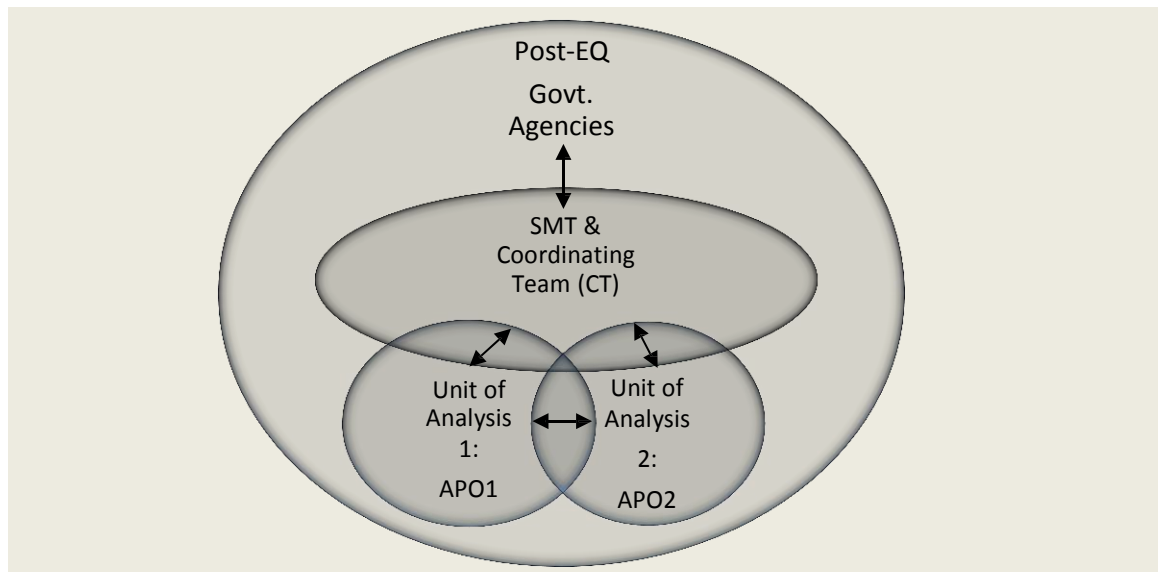


Figure 7: Modified embedded multiple-case study for the alliance

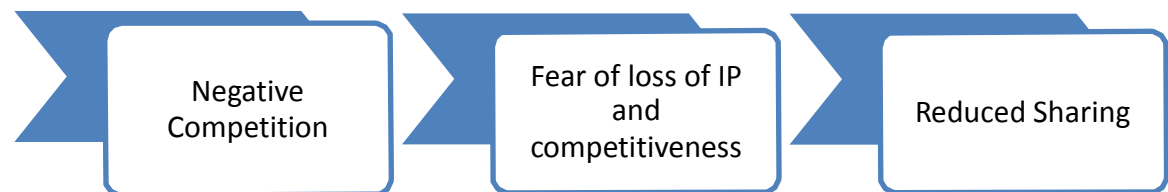


Figure 8: Negative impact of focus on competition vs collaboration

Limitations

Due to time constraints to work with such a complex alliance, a proper codebook for reference could not be developed as intended. However, the inclusion and exclusion criteria and the use of several examples throughout the data analysis and results chapters should provide sufficient information to replicate the coding system, if needed. More importantly, it was not possible to continue trying to recruit two more participants from APO2 once certain time elapsed, so that the uneven number reduced cross-case validation efforts.

Further Considerations

With regard to the alliance's administration, having a knowledge or information coordinator intermittently is major drawback, because it interferes with accessing adequate information. Managers and employees are very busy, at times overworked, so that a coordinator or facilitator of knowledge may help employees to resort to the proper training or information in a timely fashion. An enhanced knowledge management system (KMS) and expert would probably help alleviate their innovation access problems, once intellectual property issues are set aside or IP concerns clearly and openly communicated across the alliance.

Interestingly, the home organisation's culture of both APOs seemed to be that of a learning organisation, the same or similar to the alliance's culture in terms of promoting learning in a safe environment to share knowledge, even if coming from one's own mistakes. Sharing the same or similar culture is, in fact, another facilitator which was not expected to be found.

An additional, closed question was asked to participants at the end of interviews to inform whether they have had previous experience working at an alliance. As two participants from one APO1 revealed, their home organisation has been part of an alliance before. Therefore it would seem plausible that they should present less resistance to sharing than those in APO2. No further questions related to prior alliance experience were asked, thus this conclusion is tentative, but would be worthy of further study.

In addition to trying to establish more links between learning and the sensemaking literature, the connection between learning and resilience through its common definition of "adaptive capacity" is worthy of further exploration.

Evidence was found for learning to be conceptualised, at least in part, by

employees' capacity to adapt and change, which has been recently used as an employee resilience measure (Näswall et al., 2013).

Also related to resilience is knowledge gained from past failure (Näswall et al., 2013). Because of the openness to accept failure as an opportunity to learn, it may be inferred that leaders may help employees be prepared to learn and adapt to new challenges, thus exhibiting increased resilience. Variables such as learning from mistakes, immediate leader support, preparedness to change and changed behaviours would be interesting to measure in order to investigate possible relationships among the variables.

The current results would also need further corroboration and analysis of possible relationships between employee views on learning and innovation, especially with regard to the effects of competition and learning from mistakes. The affective-level and psychological safety aspect of learning should also be considered. Alternatively, following up with a survey for quantitative analysis of supervisees' responses regarding the core components found in this study would provide additional information about this special embedded multi-case alliance.

Hopefully in future learning is incorporated into new research, because it could help prepare programmes for the community to help people learn to become more resilient through learning to learn. In a world that is becoming increasingly challenging as the population ages worldwide, learning to become more resilient seems to be as relevant as ever.

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Appendices

Appendix A

Information Sheet

Project: Employee learning in a transient alliance-based organisation: Exploring learning enablers and obstacles.

You are invited to take part in a research project investigating how people learn in the context of an alliance. In particular, I am investigating personal and team perspectives of how knowledge is created and shared, as well as team dynamics or organisational factors that seem to contribute to or hinder transfer of learning in this context. This follows on from the research that has already been done by the UC Leading and Managing Resilient Organisations team. My focus, however, goes on to look at the transfer of learning within the APOs and between APOs and their parent organisation.

Your participation in this project will involve a face-to-face interview, which is a discussion on the topic outlined above. The interview should take approximately 45 minutes. With your permission, the interview will be audio-recorded to provide an accurate representation of the information shared. However your name and identity will be removed and only the researcher and supervisors will have access to these. You will be offered a copy of the interview transcript to review and amend if necessary. Additionally, you have the right to withdraw from the project at any time, including withdrawal of all information provided, prior to the project's submission. Once the project is completed, you will have access to a summary of the research results.

The results of the project will be included in the Master's dissertation and may also be published, but you can be assured of the complete confidentiality of data gathered during this study. To ensure anonymity, your interview scripts and tapes will be coded, so no names will be included in the publications generated from this study. Please note that a Master's thesis is a public document and will be available through the University of Canterbury Library.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee and participants should address any concerns to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)

Thank you for your time, it is greatly appreciated.

Appendix B

Consent Form

Department of Psychology

Researcher: Daniela Rubio Rius

Supervisors: Drs Joana Kuntz; Bernard Walker; and Katharina Näswall,

Date: July 2014

Project: Employee learning in a transient alliance: Exploring learning enablers and obstacles.

I have read and understood the description of the above-named project in the Information Sheet provided. On this basis, I agree to take part as a participant in this project, and I consent to the publication of the results of this project with the understanding that my confidentiality will be preserved. I understand and agree to the audiotaping of the interview.

I understand that I may at any time withdraw from this project, including withdrawal of any information I have provided, prior to the project's submission.

I understand that I can contact the student researcher or senior supervisor at any time if I have any questions about the study.

I note that this research has been reviewed and approved by the University of Canterbury Human Ethics Committee and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)

Participant's Name:

Participant's Signature:

Date:.....

Appendix C

Interview Schedule

The aim of my interview is to understand better how people learn new things in an alliance, and in this particular case, in [Alliance Name (AN)]. I would like to hear stories or examples of instances when you or your team learned something new, i.e. when you came up with something new—such as an innovative process or procedure. I would like to know what helps your team learn, what helps you in particular, and what things might not be so useful. I would also like to know the context in which new things were generated, e.g., whether new knowledge was shared and learning generated in collaboration with other teams. Finally I will ask you about whether –and what –things learned at [AN] are being transferred back to your home organisation. Before beginning with the actual interview, could you please tell me a little bit about yourself and your role in [AN], and also who you regularly do business with? give me a few examples that are typical of learning in [AN]?

1. Could you tell me about how new knowledge is created in your home organisation? Is it different or similar to [AN]?
2. What is your experience like working with other [AN] Delivery Teams? How do you and your team interact with other [APOs]? Could you give me an example that reflects that dynamic? I would like to hear one story about a time when something worked particularly well and if you could think about another when collaboration was not so effective. What made interactions with other teams effective/not so effective?
3. Is new knowledge or expertise always shared between [APOs]? How much about innovative processes or procedures are typically shared with team mates or other teams? How much information is withheld? Can you think of a few examples and briefly tell me about them?
4. What helps you or your team most to learn, for instance to apply new procedures? What factors contribute to learning/transferring knowledge? (Prompting for more: Is there anything else that you think might contribute to learning that you haven't mentioned?)
5. What kinds of things might get in the way of learning? What difficulties have you found? Could you tell me about a time when you had to sort out a problem to be able to progress? How did you or your team get around those difficulties?
6. Just for my information, have you worked in an alliance before? Yes / No.

Thank you very much for sharing your experience with me. Your time is also greatly appreciated.
 ☺

Appendix D

Interpreting Meanings of Learning from Participants'¹ Views

Question 1: How are new processes or innovations generated in [the alliance name (AN)]? Could you give me a few examples that are typical of learning in [AN]?		Learning Component
P1	<i>It's a sort of a, we, we found it's a bit of a <u>trial and error</u> umm, and it's a <u>collaboration</u> to an extent where not everybody will agree, but there'll be an agree[ment] to do it, so early on we had, I think they were <u>fortnightly meetings</u> where there'd be two people from the [division]team from each of the APOs would go in and they'd sit down with the manager and the [specialist] from [CT] and there we would just basically <u>talk about, right, what's going on? What's working? What isn't working? What do we think we need to do? What do we think we shouldn't do? And so we got an agreement of what we wanted to do but then we had to convince the [government agency]of it, that was a good thing to do and that was the issue that was very circular. [...] we'd talk about it and talk about it for three months, four months and then [...] go away and then in another six months' time it would come back again and it would come back from the [government agency]and we would also, well, we talked about it a year ago or six months ago, [...]. So it was very, the meetings were very circular.</u></i>	Trial and error Collaboration Fortnightly meetings Evaluation Negotiation Slow process Reiterative process
P2	<i>Umm, I think <u>processes and innovation</u> is, it's, it's hugely encouraged umm, and I think umm, especially if like, if a(n) APO] umm, if, or if there's a <u>new idea or, or sort of process</u> that, that wants to be <u>trialled</u>, I know in the [Department]context, you would, there's a sort of fortnightly meeting with, with all the managers and wider group and you would bring an idea to that, to that sort of forum and you would get kind of <u>agreement</u> on the best way to <u>trial</u> that and then you might go out and, and kind of implement it and then a lot of really kind of good <u>innovations or processes</u> [...].</i>	Innovation; Trialling of a new process Discussion and agreement on ways to trial/implement innovations
P3	<i>[...] the situation of the earthquakes helped learning on the topic, but didn't, it wasn't a speedy process. And it was quite [pause], it was quite mild, <u>seemingly slow</u>[...]if anything, are getting <u>new [activity]</u>, and somebody said '[do] it', so I have to go and <u>figure out how</u> I'm going to [do] it. So that's how I would go about it. It's like a specification. I get [Govt. agency] specifications and the way I go, and then I try to hire someone who has [done] them previously, <u>get some background knowledge</u> of it [...]. So in terms of that it was the same</i>	Slow process; Problem-solving, Innovative thinking; Obtain background knowledge; New learnings

	<p>process. What was adopted in [APO1], so we got joined specifications, we read them, we asked them questions. But the <u>learnings of new things</u> probably came more, deciders gained more of it.</p>	
P4	<p>[...] new processes, well they've got an innovation arrangement that's part of the KRAs [Key Responsibility Areas] and normally they'd, <u>anything new that's generated</u> within a, a [(n) APO] and then that is umm, <u>shared back across with the [CP's] team</u> and then that's networked back across the other [APOs] and the idea is that those <u>innovations and things are shared</u> umm [...] [And] we quite often <u>share directly across the network between the [APOs] and include the [CT]</u>. So we might have an incident where we have umm, a <u>set of learnings</u> come out of that and then we'll <u>share that back through the other [APO] as well as the [CT]</u>, any umm, lessons or things that we've picked up. [...] each month there's a report with the, that's generated around what have been <u>new innovations or ways of doing things that appear to be a better way to do things</u>.</p>	<p>Innovation Generation of new processes; Sharing of innovations and lessons with the different stakeholders (e.g. CT, APOs);</p> <p>New, innovative or better ways of doing things</p>
P5	<p>I started off in, in the [alliance] project management office to try and, I guess, create, look, <u>look at how the things were being, were operating</u>. So as I said umm, I did a lot of work, a lot of focus was on understanding what projects needed to be done. So the early, early part of the project life cycle and umm, so I was looking, I was sort of sent in there to try and see [work activities] and see whether or not I could, or we could assist the project management office to <u>try and improve efficiency and try and get things moving quicker [...]</u>. [...] we never did anything like what we did here because it's such a <u>unique umm, situation</u> [...]. So I was sort of there as a little bit of a, a <u>problem solver</u>, you know, just to sort of different perspective [...].</p>	<p>Observing & understanding operations; Trial (e.g. time) efficiency improvements ; New, unique situation; innovative problem solving; Bringing new perspectives</p>
P6	<p>I think the main thing that sort of drives it is learning. You, you learn from your <u>current project or past project and think of ways to be cost effective or more safe or more environmentally friendly</u>. So they always have <u>group meetings</u> before we start work. There's weekly ones, monthly ones or daily ones and [...] usually a task will, what needs to be done is described during the toolbox meetings, and generally someone will sometimes come up with a <u>smarter way of doing something faster</u> here if we do this here. [...] we had a big <u>meeting</u> with all our [stakeholders], so internal and external and we basically <u>encouraged</u> them to give us <u>feedback on anything</u>, any innovation that they come up [...] or cost effective.</p>	<p>Learn from past experience; Ways to improve outcomes (cost, safety, time); Preparatory group meetings; Quick and 'smarter' way of doing things; Open feedback</p>

P7	<p><i>Umm, so <u>new processes have been created since day one in [AN] because it started with nothing really.</u> There was an alliance agreement and umm, that's been, that's pretty basic. That's how we all interact with each other and how we get paid but umm, <u>we had to build on that.</u> So in recent times, umm, we've moved a lot towards, what, what [AN] does really is, is [main industry activity], I mean we, we didn't have a specification in New Zealand for that so we've written a(n)[AN] specification and we've <u>come up with processes</u> which I guess, I imagine will be copied elsewhere. Umm, so that [industry activity] is an example of how we've had to invent processes.</i></p>	<p>Designing new processes from scratch (in the beginning); Building knowledge /capacity; Invent new processes (vanguard)</p>
P8	<p><i>[T]hey really encouraged <u>innovations and new ideas and trying them</u>, so it was quite good working in that sort of environment [...] because a lot of the projects we worked on were reasonably new for New Zealand or at least Christchurch. So there's quite a lot of learning and we have to <u>come up with all the innovations and new ideas, new ways of doing things</u> because what we, <u>what we knew</u>, what we already umm, used for other jobs <u>wasn't necessarily relevant for this.</u> [...] talking with umm, whoever had had a little bit of <u>experience in the field</u> and discussing it really with the project manager, with the [stakeholders], whoever was involved really and sort of seeking that those ideas, innovations and then sort of run a wee <u>assessment of their feasibility</u> and, and <u>trying some of them.</u></i></p>	<p>Innovations, trying new ideas; Discover new ways of doing things because prior knowledge not relevant (in post-EQ environment); Learning from others' experience; Assessing solutions and trying them out</p>

Notes: ¹Participants one to five (P1-P5): from APO1; P6-P8: APO2

Appendix E

Intercoder Agreement Process: Initial Categories, Subcategories, & Properties

Student- Researcher	Second Coder	Agreed-upon Categories
Category: Learning enhancers and facilitators Subcategory: Learning strategies Properties: <u>Trial and error</u> <u>Direct</u> <u>interactions</u> <u>Collaboration in</u> <u>regular meetings</u> <u>Tacit knowledge</u> <u>shared</u> <u>Participation</u> <u>Intranet</u>	Category: Learning enhancers Category: Learning mechanisms Properties: <u>Trial and error</u> <u>Networks</u> <u>(including Home</u> <u>Organisation)</u> <u>Regular meetings</u> <u>Personal</u> <u>interactions with</u> <u>knowledgeable</u> <u>members</u> <u>Participation</u> <u>IT knowledge</u>	Category: Learning enhancers and facilitators Subcategory: Learning strategies Properties: <u>Trial and error</u> <u>Social networks</u> <u>(APOs, Home</u> <u>Organisation, and</u> <u>others</u> <u>Participation in</u> <u>regular meetings</u> <u>Learning through</u> <u>direct interaction</u> <u>with others</u> <u>Within-team &</u> <u>across-team</u> <u>participation</u> <u>Internal resources</u>

<u>Intrinsic motivation</u>	<u>Drive for competition</u>	<u>'Be the best'</u>
<u>Feedback</u>	<u>Feedback</u>	<u>Feedback</u>
Category:	Category:	Category:
Learning	Learning	Learning
obstacles	hindrance	obstacles
Subcategory:	Subcategory:	Subcategory:
-	<u>Lack of trust</u>	(Omitted because ambiguous)
<u>Lack of sharing knowledge</u>	<u>Lack of sharing information</u>	<u>Lack of sharing of information and knowledge</u>
<u>Insufficient collaboration</u>	<u>Lack of collaboration</u>	<u>Limited collaboration</u>
<u>Lack of comprehensive knowledge of alliance affairs</u>	<u>Lack of access to information</u>	<u>Intellectual property (IP) issues and concerns</u>
<u>Workload & Lack of time</u>	<u>Lack of time</u>	<u>Lack of time</u>
	<u>Workload</u>	<u>(Potentially also Workload separately)</u>