Making sense of team integration practice through the “lived experience” of alliance project teams

Che Khairil Izam Che Ibrahim
Faculty of Civil Engineering, Universiti Teknologi MARA, Shah Alam, Malaysia, and
Seosamh B. Costello and S. Wilkinson
Department of Civil and Environmental Engineering, University of Auckland, Auckland, New Zealand

Abstract

Purpose – Team integration is a concept that has been widely fostered in alliances as a way of improving collaborative relationships between diverse organisations. However, deeper insights into the practice of high levels of team integration remain elusive. The purpose of this paper is to develop a deeper understanding of team integration through the “lived experience” of practitioners in an alliance.

Design/methodology/approach – This study employed a qualitative research methodology. Using a phenomenological examination, via the lived experiences of 24 alliance practitioners, the practice of alliance team integration has been investigated based on the key indicators that foster alliance team integration: team leadership, trust and respect, single team focus on project objectives and key results areas, collective understanding, commitment from project alliance board, single and co-located alliance team, and free flow communication.

Findings – The findings highlight that alliancing gives the project teams’ flexibility to change and adapt, to advance the collaborative environment and that successful integration of multi-disciplinary project teams requires commitment to the identified indicators. These findings have led to the development of a framework of leadership for successful alliance integrated practices. It is proposed that to influence the leadership for the purpose of achieving successful integration practice, a team-centric approach is required which includes four elements: task and relationship-oriented behaviours; collaborative learning environments; cultivating cross-boundary networks; and collaborative governance.

Practical implications – As team integration is the central tenet of alliance projects, greater understanding regarding the leadership of integration practice is of value in leveraging the benefits of outstanding performance. Also, the results of the study are expected to be informative and provide insight for alliance teams to help them proactively recognise how the context of integrated teams is influenced by specific indicators, impacting on the extent of integration practice.

Originality/value – This study contributes to the current body of knowledge concerning the insights from the “lived experience” of alliance teams towards achieving a greater understanding of what contributes to the leadership of successful integration practices.

Keywords New Zealand, Team integration, Construction, Alliance, Lived experience

Introduction

For centuries, the architecture, engineering and construction industry has been a highly fragmented industry, with multi-disciplinary teams from different types of organisations, with different characteristics, different cultures and organisational practices forming a temporary organisation working in an adversarial and traditional transactional...
environment (Baiden et al., 2006; Lahdenperä, 2012; Ibrahim et al., 2013). This is especially the case in major and complex projects where broad and increasing expertise, as well as commitments across many national borders, is required. Cross-cultural issues in particular are complex and, hence, further contribute to the difficulty to embrace an integrated environment (Fellows and Liu, 2012).

Previous research (e.g. Ibrahim et al., 2013; Alashwal and Fong, 2015) and government reports (Egan, 2002) highlighted the negative influence of the traditional approach on the achievement of project outcomes. The main impacts highlighted in these studies include project delay, cost and budget overrun, litigation and disputes, lack of integration and adversarial relationships. In fact, the features of the bilateral contract in the traditional approach are believed to inhibit effective integration (Walker et al., 2002; Aapaoja et al., 2013), resulting in an inability for diverse teams to embrace the collaborative culture as expected to deliver complex projects effectively (Evbuomwan and Anumba, 1998; Egan, 2002).

There is considerable debate in the literature over the rationale for the promotion of innovative delivery approaches as a potential panacea for fostering collaborative efforts in the construction industry and, hence, overcoming the frustration and fragmentation of the transactional approach (Lahdenperä, 2012). The project alliance, also known as a relationship-based procurement (RBP) approach, is one approach that was introduced to function and operate efficiently through the fostering of high-level integration practice in delivering complex infrastructure projects (Mills et al., 2012; Walker, 2015). There has been a significant increase in the use of project alliancing in the construction industry, in particular in Finland, the Netherlands, UK and USA, with Australia and New Zealand arguably leading the world in this regard (Walker, 2015). It is argued that the collaborative nature of alliances enhances the opportunity to practice integration attributes compared to the other forms of procurement (Walker et al., 2015). However, there is a common belief (Baiden et al., 2006; Che Ibrahim et al., 2013) that if continuous improvement in alliance projects is to be achieved through the use of integrated teams, then a greater understanding of what makes alliance teams integrate successfully is needed.

Although prior research on team integration has almost exclusively focussed on various types of procurement approaches, little has been undertaken on examining the extent of team integration practice specifically in alliance projects. In particular, Che Ibrahim et al. (2013) attempted to understand what makes alliance teams integrate better by quantitatively identifying the most significant key indicators (KIs) of alliance team integration. However, the identification of the indicators is mainly based on quantitative analysis rather than an in-depth discussion of the extent of these indicators being exercised qualitatively. More fine-grained knowledge of the indicators is needed based on the experiences of alliance practitioners. Using Che Ibrahim et al.’s (2013) indicators as a basis, the central research question posed is:

**RQ1.** What can we learn from the “lived experiences” of alliance practitioners that can help contribute to leadership that results in successful alliance integration practices?

With this in mind, this study aims to examine the lived experiences of alliance team integration, based on a conceptual framework developed by Che Ibrahim et al. (2013), in order to facilitate our understanding of how team integration is achieved in alliance projects. Team integration in this paper should be viewed, based on the definition suggested by Baiden et al. (2006), as the introduction of working practices, methods, attributes and behaviours that create a culture of efficient and effective collaboration by project teams in achieving the project objectives. Within the context of this research, the term project teams refers to teams comprised of multi-organisational (i.e. owner and non-owner) participants that come together to form one organisational entity.
This paper provides an overview of the challenges of integration in project alliancing, followed by a presentation of the existing literature on team integration in construction projects. Then, the conceptual framework of alliance team integration adopted in this study is discussed. Next, the research method is explained, followed by an analysis of the “lived experience” of alliance teams. Finally, a discussion on how this contributes to integration practice is presented in detailed before conclusions are drawn.

**The challenges of integration in project alliancing**

Project alliancing is a collaborative way of working on complex projects and involves the joint management of project challenges. Alliances are an agreement between two or more partners who undertake to work collaboratively on the basis of a behavioural set of contract conditions and collective shared risk and reward, for the purpose of delivering a complex project based on best-for-project criterion (Walker and Jacobsson, 2014; Jefferies et al., 2014). It provides a different approach, ranging from decision-making processes to the working arrangements, compared to the more traditional forms of contracting, and allows the owner to have closer, and a higher degree of, integration with project participants (Walker and Lloyd-Walker, 2014). Integration is vital for alliance teams as it promotes a collaborative culture and the continuity of equitable relationships to improve project performance (Che Ibrahim et al., 2013). Walker and Lloyd-Walker (2014) suggested that the success of a project alliance is built upon project teams that consciously integrate in an atmosphere that is open and non-competitive. In addition, the collaborative environment embraced by the project alliance approach will ensure the team is committed to channelling all talent and energy for the best possible project outcome (MacDonald et al., 2013). However, it should be noted that although team members in alliances build an understanding of the underlying alliance principles designed to create an integrated environment, the ability to commit to and sustain such an environment is essential in achieving the breakthrough outcomes (Ross, 2009). Furthermore, there is no guarantee that the desired behaviour and integrated culture will be continuously maintained, as some individuals display a tendency to revert back to their old mentality when things go wrong, due to a lack of insight and experience into the benefits of alliances (Rooney, 2009; Laan, Voordijk and Dewulf, 2011; Laan, Noorderhaven, Voordijk and Dewulf, 2011; Walker et al., 2015). Teams and individuals possessing substantial diversity in skills, knowledge and expertise, but who may not have previously worked together, make integration more difficult to achieve within the construction period (Baiden et al., 2006). In addition, according to Fellows and Liu (2012), given that the multiplicity of expertise comes from a range of organisations, and from several diverse countries, but form a separate entity, there are significant differences in professional values and commitments which are difficult to integrate.

A study by Laan, Voordijk and Dewulf (2011) and Laan, Noorderhaven, Voordijk and Dewulf (2011) found that team members who are versed in more traditional types of contracts may not be able to adopt an attitude of cooperative relationship automatically in order to ensure the success of the project alliance. Another study by Walker et al. (2015) found that individuals who are designated at higher management levels also tend to revert back to traditional practice due to self-interest and a lack of a collaborative mentality. Some individuals may experience culture shock in the new environment, and coping within a new challenging project environment may contribute to the difficulty to integrate proactively, move away from the traditional adversarial approach, and work collaboratively (Reed and Loosemore, 2012). This statement was supported by Lloyd-Walker et al. (2014), where they argued that project participants on traditionally procured projects tend to be risk averse due to their reluctance to engage in open and collaborative problem solving, leading towards self-protecting actions. This phenomenon potentially occurs because the principle and concept of the alliance model is yet to mature for some
industrial players (Yeung et al., 2007) due to the isolation in environments where adversarial cultures and attitudes still exist (Rooney, 2009; Laan, Noorderhaven, Voordijk and Dewulf, 2011) and the need for alliance team members to possess different attributes (i.e. alliance culture) than those involved in business-as-usual (BAU) in order to strengthen the sources of integrated practice (Che Ibrahim et al., 2013). Walker et al. (2015) suggest that insufficient commitment towards alliance principles could lead to the deficiency of attitudes and leadership skills in achieving a high-performing team. As emphasised by Lendrum (2011), alliancing relationships are about fundamental change in attitude, mindset, behaviour, practice and performance.

Against this background, the need for understanding the extent of team integration practice in alliance projects assumes a special significance, given that the key to alliance success is the relationship, and extent of integration, between owner and non-owner participants (NOPs). The need to find a way of integrating with a multiplicity of parties, especially in an alliance environment, is vital to support the shared desire of delivering a high-performing alliance (Lloyd-Walker and Walker, 2011). By considering team integration in this way, the performance of the integration activities can be managed at an earlier stage (Baiden et al., 2006). Moreover, the recognition of performance among project teams is vital to sustain the continuity of the team’s commitment and cooperation towards project objectives (Fellows and Liu, 2012).

**Team integration literature in construction research**

The subject of project team integration has received widespread attention in construction management research due to the fragmented relationships and adversarial nature of traditional procurement approaches (Zhang et al., 2013). Several scholars highlighted the increasing research interest in understanding the concept, features and elements of team integration practices in construction projects as a way to embrace collaborative environments. Consequently, a number of studies are reported here to provide insight into the extent of team integration research that has been undertaken. A summary of these studies is presented in Table I.

Particular attention has been given to Baiden et al. (2006), who made one of the first attempts to assess the extent of team integration in design-build (DB) and construction management procurement approaches. Ten dimensions of integration are used for the assessment, as follows: single team focus and objectives, seamless operations, mutually beneficial outcomes, increased time and cost predictability, sharing information, team flexibility, single co-located team, no blame culture, equal opportunity for inputs, equitable relationship and respect. The findings indicated that the level of integration among project teams could differ due to the characteristics of the procurement model. They concluded that either an integrated team is necessary, or the industry must overcome the existing adversarial culture, for project performance to be improved.

In another study, Mollaoglu-Korkmaz et al. (2013) focussed on measuring the level of integration in affecting sustainability goals in the DB procurement approach. They measure the level of integration in terms of attributes, such as early collaboration of the project’s participants, method and timing of communication and the chemistry among participants. They also found that some other delivery attributes such as owner commitment and team characteristics influence the level of integration achieved. Mollaoglu-Korkmaz et al. (2014), in another study, examined the dimensions of inter-organisational project teams in integrated project delivery (IPD) that could influence the effective implementation of IPD as an innovation. By using a qualitative approach (e.g. observations and interviews), they found that several mechanisms that are fundamental to successful joint collaboration (e.g. communication, information sharing, trust and commitment) can lead to innovation implementation success in IPD.
**Table I. Summary of related studies on team integration practices in the construction research domain**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Country</th>
<th>Procurement</th>
<th>Focus of the study</th>
<th>Outcome/contribution of the study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baiden <em>et al.</em> (2006)</td>
<td>UK</td>
<td>Design-build, cons. management</td>
<td>Determining the extent of project team integration practice</td>
<td>The level of integration is affected by the team practices adopted, set within the procurement approach</td>
</tr>
<tr>
<td>Mollaoglu-Korkmaz <em>et al.</em> (2013)</td>
<td>USA</td>
<td>Design-build, Design-bid-build, cons. management</td>
<td>Examining the influence of project delivery methods on integration and project outcomes</td>
<td>The level of integration in the delivery process affects final project outcomes, particularly sustainability goals</td>
</tr>
<tr>
<td>Mollaoglu-Korkmaz <em>et al.</em> (2014)</td>
<td>USA</td>
<td>IPD</td>
<td>Examining the key dimensions of inter-organisational teams in IPD influencing the innovation success</td>
<td>The influence of climate, value-fit construct and interaction of inter-organisational teams in IPD</td>
</tr>
<tr>
<td>Ibrahim <em>et al.</em> (2013)</td>
<td>New Zealand</td>
<td>Project Alliance</td>
<td>Developing a model to assess the team integration performance</td>
<td>An index for measuring alliance team integration performance</td>
</tr>
<tr>
<td>Aapaoja <em>et al.</em> (2013)</td>
<td>USA</td>
<td>IPD</td>
<td>Analysing the level and challenges of team integration</td>
<td>Characteristics of an integrated project team and cornerstones for cohesive stakeholder integration.</td>
</tr>
<tr>
<td>Zhang <em>et al.</em> (2013)</td>
<td>China</td>
<td>IPD</td>
<td>Examining the flexibility of the integrated project team and exploring its antecedents</td>
<td>Linkage model from tacit knowledge sharing to integrated project team flexibility</td>
</tr>
<tr>
<td>Mohamad <em>et al.</em> (2014)</td>
<td>Malaysia</td>
<td>Various types of procurement</td>
<td>Evaluating the current status of the collaborative working environment</td>
<td>New matrix measurement guidelines</td>
</tr>
<tr>
<td>Senaratne and Hewamanage (2015)</td>
<td>Sri Lanka</td>
<td>Traditional</td>
<td>Exploring the role of team leadership in achieving LEED certification in a green building project</td>
<td>Framework for effective team integration and leadership in green building projects</td>
</tr>
<tr>
<td>Che Ibrahim <em>et al.</em> (2015)</td>
<td>New Zealand</td>
<td>Various types of procurement</td>
<td>Identifying the most significant KIs and providing suggestions on how to influence team integration</td>
<td>Framework for key relationship indicators of team integration</td>
</tr>
<tr>
<td>Cheng (2015)</td>
<td>USA</td>
<td>Design-Build</td>
<td>Highlight the collaborative best practices to advance the development of high-performing buildings</td>
<td>Commercial strategies, leadership strategies, logistical and process tools to influence team performance</td>
</tr>
<tr>
<td>Ujene and Edike (2015)</td>
<td>Nigeria</td>
<td>Various types of procurement</td>
<td>Evaluating the types and level of relationships, as well as factors that influence working relationships among the internal stakeholders in construction projects</td>
<td>Establishment of factors with significant influence on good relationships</td>
</tr>
</tbody>
</table>
Che Ibrahim *et al.* (2013) conducted a study to identify the most significant KIs of team integration in alliance projects. Their findings proposed team leadership; trust and respect; a single team focus on project objectives and key results areas (KRAs); collective understanding; commitment from project alliance board (PAB); creation of single and co-located alliance team; and free flow communication as the KIs for assessing alliance team integration. Their findings indicate that alliance team members must possess different attributes from those involved in BAU in order to strengthen the sources of integrated practice.

Others (*Aapaoja et al.*, 2013), by contrast, examined the level of team integration practice in building projects procured by the IPD method. By using characteristics almost identical to *Baiden et al.* (2006) with one additional dimension, namely, results and innovations, they emphasised that due to the integrated nature embedded in the IPD method, projects can be successful although some of the integration characteristics are not fully achieved.

*Zhang et al.* (2013) focussed on assessing team flexibility as one of the important elements of team integration practice. They were measuring two main aspects of team flexibility: response extensiveness to attended/unattended dynamics and response efficiency to attended/unattended dynamics on a case study of an IPD project. The findings indicated that, in responding to the changing environment of construction projects, team flexibility is of greater importance for the integrated team and it intrinsically depends on tacit knowledge sharing at the early stage of construction projects.

On the other hand, based on a study by *Baiden et al.* (2006), *Mohamad et al.* (2014) conducted a questionnaire survey and interviews to develop new matrix measurement guidelines (MMG) for assessing collaborative teamwork environments in the Malaysian construction industry. The MMG was characterised by six elements: cross-functional factors, autonomy, contractual approach, communication, collocation and information sharing. They concluded that MMG is able to demonstrate the gradual process of achieving a collaborative teamwork environment based on six levels of interval scale.

In a study of two green building projects, *Senaratne and Hewamanage* (2015) found that team integration practice and team leadership for both projects was at a higher level compare to typical building projects based on examination of four key elements: common project objectives; collective implementation; teamwork for win-win; and continuous learning and knowledge sharing. They also emphasised that not only team integration, but also shared team leadership, is required for achieving LEED certification in a green building project, specifically in Sri Lanka.

Che Ibrahim *et al.* (2015) conducted a study to identify KIs influencing the management of team integration, based on the opinion of an established construction peer group in New Zealand. Based on an initial study by Che Ibrahim *et al.* (2013), they summarise that there are a total of 17 indicators influencing the management of team integration in construction projects. Their findings also indicated that there are five key relationship-oriented indicators: single team focus on goals and objectives; trust and respect; commitment from top management; free flow communication; and no blame culture have a strong influence towards successful team integration. A framework for influencing these relationship indicators was proposed based on four elements: team formation, contractual model, teamwork principle and operational monitoring.

Cheng (2015) documented three case studies to highlight collaborative strategies, processes and tools used by teams to develop high-performing buildings. From the comparative case studies, using a qualitative approach, the findings indicated that team performance could be influenced by three categories: commercial strategies, leadership strategies, and logistical and process tools.

Finally, Ujene and Edike (2015) completed a recent study on assessing relationship-oriented indicators of team integration in construction projects in Nigeria. Their study proposed 20 relationship-oriented indicators of team integration among four groups of stakeholders.
(i.e. professionals, clients, contractors, workers). Although their research shows that significant variations exist in the priority placed on relationship-oriented indicators among the four groups of stakeholders, they did find that two highly significant indicators communication and trust and respect affected the four groups of stakeholders.

The above studies, summarised in Table I, all focus on the subject of team integration, or more specifically on the elements of team integration in a construction context. It is worth highlighting that the findings from these studies indicate that regardless of the geographical location of the study, there is a collective understanding among scholars that human relationships and a collaborative culture are critical to break down fragmented and adversarial barriers between the different players in the industry, hence improving the integration practice. In countries such as the USA and New Zealand, the focus of the studies is more towards highly ordered collaborative procurement (i.e. alliance and IPD), where the performance of the team would be significantly higher due to collective harnessing of all project participants’ talents and insights towards more collaboration. In developing countries such as Nigeria and Sri Lanka, the level of uptake of collaborative procurement remains to be seen, although the industrial players seem to be positive on the importance of integration practice in the industry.

Apart from similarities in terms of their methodology (i.e. using quantitative analysis), the above studies also emphasised the need for more qualitative research to be conducted in order to gain a greater understanding of the elements of team integration being practiced in real projects. While studies such as Mollaoglu-Korkmaz et al. (2014) and Cheng (2015) used a quantitative approach to investigate the integration practice, their focus was limited to certain aspects, and on different types, of procurement approaches. In addition, although numerous sets of elements, indicators or factors have been derived in the literature to cover most aspects of team integration practice, a detailed examination of these indicators in terms of the “lived experience” of alliance practitioners, remains elusive. Current perceptions of team integration practice are largely built around individuals, peer relationships, collaborative environments and skill-based practice. By its very nature, team integration is characterised by tangible and intangible elements. Nevertheless, due to the subjective nature of team integration practice, it is difficult to develop, assess and quantify. The need for increasingly collaborative environments in construction projects necessitates an understanding on the extent of team integration practice in RBP, especially in alliancing. Although there have been attempts to understand team integration in alliance projects (see Che Ibrahim et al., 2013), the focus is mainly on identifying quantitatively the indicators rather than examining the “lived experience” of alliance practitioners to help understand how these indicators are being practiced. Therefore, this study is focussed on examining the KIs of alliance team integration derived by Che Ibrahim et al. (2013), in order to gain a better understanding of how these indicators are being practiced based on the “lived experience” of alliance practitioners.

Conceptual framework of successful alliance integrated project teams
A conceptual framework, based on Che Ibrahim et al.’s (2013) KIs of team integration in alliance projects, has been adopted in an effort to better understand what makes alliance teams integrate. The current study is an extension of Ibrahim et al.’s (2013) research on KIs which were developed specifically for alliances. They also went through several rounds of validation and testing (see Che Ibrahim et al., 2016). According to Che Ibrahim et al.’s (2013) findings, which are based on the experience of an expert panel used in four rounds of Delphi questionnaire survey, it can be concluded that the best practices of alliance team integration are characterised by seven ranked KIs (see Figure 1): team leadership; trust and respect; single team focus on project objectives and KRAs; collective understanding; commitment from PAB; creation of single and co-located alliance team; and free flow communication. A brief definition of these indicators is included in Table II.
The findings from their study show that team leadership is ranked as the most significant KI of alliance team integration. This shows the importance of project participants engaging in authentic leadership across the hierarchy of the alliance team, especially in complex projects (Walker et al., 2015). The development of team leadership enriches collaborative culture (Love et al., 2010) and could be key to successful high performance relationship management (Lendrum, 2011). Trust and respect is ranked the second most significant KI for successful alliance team integration. Trust is recognised as a key element of alliancing (Yeung et al., 2007) in terms of empowering the team to take responsibility and to be accountable for their tasks and to generate commitment and constructive discussion for better integration (Walker et al., 2002). It is also argued by many scholars (Mills et al., 2012) that one of the most fundamental differences between the relationship-based and traditional contracting is the precondition that requires team member to develop trust and mutual
respect among them. Single team focusses on project objectives and KRAs, then collective understanding are ranked third and fourth, respectively. Shared commitment to common goals and objectives of a project could lead the alliance team to move towards more consistent integration in delivering high performance outcomes (Walker et al., 2002). The establishment of objectives that all parties could clearly understand and adhere to is important for continual progress of integration in achieving “best for project” outcomes (Love et al., 2010). One of the main principles of an alliance is collaboration through collective problem framing and solving (Walker et al., 2015). It is essential to ensure that as one integrated team, all participants adopt a collective approach to resolving problems caused by mistakes and negligence (Rooney, 2009). Joint problem solving, decision making and learning are greatly improved in an integrated environment, which enables a greater proclivity for innovation (Love et al., 2010).

Next, commitment from PAB and the creation of single and co-located alliance team are ranked fifth and sixth, respectively. A high degree of commitment leadership from the alliance board and management is required in order to inspire the development of a collaborative and participative culture as well as influence the intensity of the integration process towards best for project (McCormick, 2010; Mills et al., 2012). Forming an integrated office is critical for project teams to enhance and improve their interaction and collaboration in real time (Jefferies et al., 2014). Finally, in relation to free flow communication, several scholars (e.g. Mills et al., 2012; Jefferies et al., 2014) emphasised that the intense integration of alliance partners through the effective collaborative process requires excellence in interaction and communication between alliance participants. Alliance participants must communicate consistently at a variety of levels of management and move forward in agreement to improve relationships towards a collaborative environment (Lloyd-Walker and Walker, 2011). For a detailed discussion and evaluation of these indicators, the reader is referred to Che Ibrahim et al. (2013).

Research method
This study adopted a phenomenological research method in which the purpose is to describe the meaning for several individuals of their lived experiences of a concept or a phenomenon (Creswell, 2013). In particular for this study, it attempts to understand alliance practitioner’s perceptions, perspectives and understanding of successful alliance team integration practice based on an existing framework. According to Merleau-Ponty (2013), phenomenology studies the structure of various types of experience ranging from perception, action, thought and memory in our “life-world”. As Van Manen (1990) described, the aim of phenomenology is to reduce individual experiences with a phenomenon to a pure description of the universal essence.

Following the phenomenographic approach, the main data were collected by in-depth interviews. The interview questions were as open-ended as possible to give freedom to the participants choose the perspectives of the question. In line with the objective of this study, the qualitative interview was adopted, as the method has a direct interaction and in-depth discussion with the interviewees (Meng, 2012). Due to the nature of the information solicited, requiring in-depth knowledge and wide-ranging experience about the seven KIs of team integration, a purposive approach to sampling was adopted to select the group of interviewees. Three predefined criteria were used in identifying suitable candidates for this study including: having broad working experience in alliancing projects in New Zealand; having recent/ongoing and direct involvement on a PAB/alliance management team (AMT)/wider alliance team (WAT); and having sound knowledge and understanding of team integration concepts. Accordingly, the views of different stakeholders, including owner and each NOP’s representative, were sought. The interviewees were selected from different types of alliance partners and projects.
Initially, 34 individuals were contacted, based upon recommendations made by
the researchers’ established contacts within the industry (snowballing method). All the
recommended individuals met the selection criteria to determine whether they would be
suitable to participate in this study. However, their availability to participate in such an
exercise was limited by their work commitments and from these, a panel of 24 recognised
practitioners confirmed that they would be available to participate in this survey. The
selected alliance participants are not individually identified in this study, for confidentiality
reasons, although the nature of their designation is described together with their respective
portfolio, as shown in Table III. The responses indicated 8 of the practitioners (33 per cent)
were owner representatives, 16 practitioners (67 per cent) were from NOPs in which 11 were
from contractors and the remaining 5 were from consultants. The majority of the
practitioners held AMT positions in their respective alliance projects. Given that the first
alliance project in New Zealand started 15 years ago, in 2001, and currently about six
projects are still ongoing, it was assumed that having an average of eight years of
experience, as well having been involved in more than one alliance project, reflects the fact
that the candidates have sufficient experience to be selected as interviewees. In addition,
having a broad mix of designation and relevant organisations provides a balanced view and
helps ensure the validity of this study.

The interview session with each interviewee was conducted at the project site office and
lasted for about one to two hours. Throughout the interview process, participants were
emphasised to describe and explain their experience as fully as possible. The interviews

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td></td>
</tr>
<tr>
<td>Non-owner participant</td>
<td></td>
</tr>
<tr>
<td>Contractor</td>
<td>46</td>
</tr>
<tr>
<td>Consultant</td>
<td>21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Designation</th>
<th>Organisation type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alliance Manager 1</td>
<td>Contractor</td>
</tr>
<tr>
<td>Deputy Alliance Manager</td>
<td>Owner</td>
</tr>
<tr>
<td>Key Relationship Manager</td>
<td>Owner</td>
</tr>
<tr>
<td>Construction Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Senior Project Engineer</td>
<td>Contractor</td>
</tr>
<tr>
<td>Alliance Manager 2</td>
<td>Contractor</td>
</tr>
<tr>
<td>Risk Manager</td>
<td>Owner</td>
</tr>
<tr>
<td>Senior Project Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Project Service Manager</td>
<td>Owner</td>
</tr>
<tr>
<td>Design Manager</td>
<td>Consultant</td>
</tr>
<tr>
<td>Construction Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Design Delivery Manager</td>
<td>Consultant</td>
</tr>
<tr>
<td>PAB Board Member</td>
<td>Owner</td>
</tr>
<tr>
<td>Pavement Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Senior Manager</td>
<td>Consultant</td>
</tr>
<tr>
<td>Alliance Culture Manager</td>
<td>Consultant</td>
</tr>
<tr>
<td>Urban Roads Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Project Director</td>
<td>Consultant</td>
</tr>
<tr>
<td>Communication Manager</td>
<td>Owner</td>
</tr>
<tr>
<td>Quality Assurance and Systems Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Sub Alliance Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Consents Assurance and Key Results Manager</td>
<td>Owner</td>
</tr>
<tr>
<td>Project Controls Manager</td>
<td>Contractor</td>
</tr>
<tr>
<td>Owner Interface Manager</td>
<td>Owner</td>
</tr>
<tr>
<td>Average years of experience in alliances</td>
<td>8 years</td>
</tr>
</tbody>
</table>

Table III. Profile of alliance practitioners

Team integration practice
were conducted in-person, recorded digitally with the verbal consent of each participant, and transcribed. The research study was approved by the University of Auckland Human Participants Ethics Committee (No. 2011/255).

In addition to the interviews, secondary sources of evidence were examined. The alliance provided relevant documents including the project’s summary (i.e. the Alliance agreement), in-house guidelines for implementing the alliance approach and relevant project reports. The documents were examined before, during and following the interviews. Secondary sources of evidence were used to support the primary source and minimise bias in data collection during interviews.

**Evaluation of interviews on the KIs**

The phenomenological method involves a rigorous analysis of life descriptions. Based on guidelines from Ekstedt and Fagerberg (2005), some important steps were adopted: careful reading in order to comprehend a sense of the whole; perception of meaning indicators within the chosen perspective, focussing on the phenomenon under study; every indicator was reflected on with free imaginative variation and transformed into a statement that can provide better understanding, the participants’ lived experience of the phenomenon (Table IV); when all meaning had been transformed, reflecting on the variations of meanings the analysis brought out an essence of the phenomenon, the insights reached were synthesised and integrated into a descriptive structure comprising seven most significant team integration indicators.

**Team leadership**

There is widespread acceptance among interviewees of the importance of team leadership in influencing the success of alliance team integration practice. Building upon the basic principle of collaborative culture, the very existence of team leadership attributes can be responsible for setting a strong foundation for all indicators to be successful. The concept of multi-disciplinary team leadership remains a critical role for construction professionals to be successful in collaboration (Koutsikouri et al., 2008).

Specific comments from practitioners that reinforced the above include:

Leadership is three times more important than the sum of everything else. Where the team fails, generally it comes from lack of leadership and when I say leadership, in that sense of the word, I mean across the hierarchy of the alliance teams. (Design Manager)

Although normally leadership is associated with higher levels of management, often we know, particularly in the implementation phase, we rely heavily on leadership at all levels. You need leaders across the organisation and if you can get it right, that trumps all of those (other indicators). (Alliance Manager 1)

<table>
<thead>
<tr>
<th>Interview excerpt</th>
<th>Imagination variation</th>
<th>Integration perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>...setting an example, an example that people will follow, I try to make myself perfect and except people to follow the lead, you can’t do that by having a big ego, need to be humble person, need to know what you’re talking about, treat all people equally, no favouritism, be consistent, reliable in decision making</td>
<td>Describes how he has experienced being a leader in a diverse project team and his humanistic engagement, how positive relationships could influence the decision making</td>
<td>Team leadership emerges through a relationship-driven environment and individuals who can stimulate collaborative culture within the workplace</td>
</tr>
</tbody>
</table>

Table IV.
Example of overview analysis
It is worth highlighting that although the alliance model embraces the function of high-level management from every NOP, it is not sufficient to ensure positive decision-making outcomes. Rather, it is the integration and collaboration among networks of multi-tiers of management that is important. Some interviewees expressed their view that the success of the collective leadership depends not on the PAB and AMT, but rather on the level of wider team participation in aligning the values and visions of the alliance. The following statements from practitioners support the above arguments:

Vision and direction is obviously defined by the PAB, implemented by the management and the whole team but they also need ownership and leadership at each level to ease the integration practice. (Senior Manager)

Leadership can be exhibited by the wider alliance members, be they AMT, or Alliance board members. The key to success is that you’ve got leadership all the way down the chain. (Senior Project Manager)

While not all individuals have the attributes to work in the alliance environment, the commercial environment in an alliance provides the platform to use advanced leadership practices to help teams to nurture their full potential. Interviewees who advocated such an environment indicated that an alliance is able to provide an opportunity for teams to show their leadership through creating innovations; for example, a general manager stated that “Leadership is about doing something differently tomorrow than you did it yesterday. If there is a lot of innovation, or changes are being identified, then the project is developing a leadership culture where they are looking for ways to do things better”. This was also reiterated by an urban road manager who made the following comment: “The design team, probably for them that’s been harder because they’re not used to having leadership skills because they just usually sit down and do the job and hand it in. While here (in an alliance), all employees work as a team, and at one point in time. Because we got all different kinds of jobs, sitting under one roof and in an integrated environment, everyone has to take the lead”.

It is clear that the ability to think differently and adapt to certain situations is a crucial leadership skill, as it could help the dynamics of the team. In addition to that, continuous learning from the alliance coaching sessions, close interactions across the governance structure and top management being visibly engaged with the WAT are some of the processes that could help alliance teams adopt the required leadership skills.

Single team focus on project objectives and KRAs
One of the important elements of alliance team integration is the single team focus on project objectives and KRAs. The alliance practitioners indicated that overall project success lies with the team’s ability to focus and integrate together towards common objectives and agreed KRAs within an alliance governance system; for example, a construction manager made the following comment: “The objectives and the mission statement on the big picture target needs to be as clear as it could be and easier for the team to buy into, so that it could help the performance of the team”. On the topic of having KRAs, the Alliance Manager 2 and Design Delivery Manager provided the following comments:

The whole point of having KRAs is to show that this is what’s important to us, and if it is important, we are going to measure it and we are going to get results that allow us to take some action to respond to whatever the measure is telling us. This will help us to monitor the performance and how integrated the team is in focusing on the project objectives. (Alliance Manager 2)

The purpose of having a KRAs score is the client organization want to incentivise the project team to continue to focus on the kind of behaviours that give a good outcome towards project objectives. (Design Delivery Manager)
The commercial framework in the alliance model strongly incentivised the team in the context of aligning the team around the core objectives and helping to progressively focus the team not only on the standard “iron triangle” measures, but also on the triple bottom line measures. In that sense, the focus of the individual alliance participants within different functional groups (e.g. designers and stakeholder team) could certainly be improved towards achieving the same alliance objectives. Nevertheless, although the nature of alliances, as well as having KRAs, play a vital role in aligning the team around the objectives, interviewees indicated that the ability of each member to behave as part of a multiparty organisation is vital to ensure the consistency of the practice. Specific comments from practitioners that reinforce the above include:

If everybody keeps their home boundaries alive, then the focus will be directed to their parent company instead of for the best for project and it will affect the objectives and even the KRAs of the project. (Construction Manager)

We started by not calling ourselves one organization. When we talked about the design team early on, it was easy to say Company A, and when we talked about the construction team, we talked about Company B. We stopped that straight away, you are part of the construction team, design team or management team, so we took out all the calling people by their home organization, so removing the boundaries itself helps everyone realize they’re part of one integrated team focusing on the same objectives and visions. (Pavement Manager)

Forming an alliance team takes time and, often, the team needed to go through several stages as they changed from being outsiders to an integrated team with common goals and objectives. From the interviews, it can be seen that as teams work to fulfil project objectives, their focus could shift from accomplishing the project’s objectives to completing their parent organisation’s tasks. Reminding them of the value and importance of the project’s objectives over time, coupled with frequent discussions on the benefits of the alliance, encouraged them to commit. In addition, although the Alliance Manager and AMT members were appointed as KRA champions to actively promote outstanding cost and non-cost outcomes, ensuring discussions about KRA performance extend beyond ALT and AMT meetings is vital to enhance the WAT’s desire to work on the project.

**Trust and respect**

Successful alliances build upon sharing resources and experiences as well as nurturing human relationships. It must therefore be based on trust and respect, maintaining honesty at all times. Throughout the interviews, it was clear that generally such trust and respect existed among the alliance teams due to previous experience in working in such collaborative environments, as well as understanding that the building of successful team integration practice requires mutual trust and respect.

Development of trust in teams is essential but challenging in the context of cross-functional project teams and prior ties can have an influence on the team’s ability to create trust (Buvik and Rolfsen, 2015). The following statements from practitioners support the above arguments:

Trust and respect is a fundamental building block for any alliance team. It is very challenging to create, but if you’ve got trust, you can move mountains and you can achieve great things. (Deputy Alliance Manager)

Trust and respect is about how well people are working together, and doing what they said they’ll do, not withholding information, building mutual long-term relationships and making an effort to understand and integrate with each other, and all of that is part of the integration process. (Risk Manager)

A basis for stimulating trust and respect in alliances is provided by continuously embracing the collaborative principles between the teams rather than within the specific teams.
Teams from different parent organisations must be encouraged to value their experience working in a collaborative environment as learning and personal growth, rather than solely as the means to a career goal. They are responsible for rendering an atmosphere of trust among themselves by consistently performing as a high-performing team. For example, an alliance manager suggested that “Most arguments, debates and unhappiness in the teams comes from when somebody doesn’t trust another person and doesn’t respect them. Trust and respect have to be earned. We can’t just ask everybody to trust and respect each other”.

Many scholars described that one of the most fundamental differences between the collaborative and traditional approach is the requirement to trust other team members and recognise that they are trying to achieve the very best results of which they are capable. This was also reiterated by a key relationship manager who stated “Lack of trust is one of the five features of a dysfunctional team. If you haven’t trust in the first place, you’ll never move past that consensual agreement that you need for proper integration”. The combination of interaction of project teams and organisational culture to support relationships over time can help develop trust within the team.

**Commitment from PAB**

The governance arrangement of an alliance, where the team is being led by the top management from all alliance participants, requires transparent decision making and leadership. This was seen by the experts as absolutely essential for alliance success, but also critical in influencing team integration practice. As one PAB member described:

> The PAB is a project management board made up of directors from every alliance parent company and sets up the governance of the alliance. What’s its doing is its setting directions, making sure the vision, the principles are up and clear and defined to the integrated team.

Whilst collective responsibility from the PAB to oversee the whole governance structure is inevitable, a number of experts believed that the degree of commitment and support from the PAB over time is critical to take decisions that integrate the alliance but, at the same time, the decisions must be unanimous. The ability of the board to put the time and effort into building relationships with the project team members and acknowledging their synergies is essential. The interviewees also emphasised that the board ensured ongoing development and application of innovative alliance management practices to ensure their continued visibility. Specific comments from the practitioners that reinforce the above include:

> If you look at the team, we are a self-contained team; we have got all the skills we need here to perform and integrate, all the drive, engine and enthusiasm to build this job. If we can get consistent support from the PAB, it definitely will make our job easier. (Alliance Manager)

> Interaction with the team is vital, they (PAB) come in the morning, go for a site tour and sit in the meeting room for most of the day. You will get some of the PAB members walking around and interacting with the team and some that won’t. It’s important for them to show their commitment and belief to the teams as we’re in it as one integrated team and as an alliance. (Senior Project Engineer)

> When the environment around you is changing due to political, social and economic pressures, the role of the PAB, to keep you (the team) on track and keep you focused on what’s important, is essential. (Senior Project Manager)

The issue of consistent commitment is of central importance to integration, as construction projects involve complex organisational and technically challenging design/construction systems. Having a PAB who are continuously challenging the team’s decisions, to ensure that they best meet the vision and objectives of the project, is vital to ensure that project teams can bring tangible benefits (e.g. saving cost, stakeholder satisfaction, etc.) to the project environment. A high degree of leadership from the PAB is needed in order to
Enhance the integration process and determination of transparent and mutually beneficial processes for all team members in the supply chain (Dainty et al., 2001). As McCormick (2010) stated, board members need effective leadership attributes to inspire the development of the collaborative and participative culture at the heart of the alliance. This is important to ensure effective and consistent corporate commitment in initiating, leading and direction of the alliance in achieving its objectives.

**Free flow communication**

Experts acknowledged that free flow communication is one of the core indicators that affect the practice of alliance team integration. It was suggested by experts that the collaborative philosophy, in terms of generating consistent energy and engagement, that involves communication between project teams can contribute to effective integration; for example, an urban road manager made the following comment: “Here we have a team meeting every Friday for the whole team, a pre start meeting every morning on site with teams, alliance management team, weekly programme meeting, weekly integration meeting with all the different areas on site, so we do communicate very well, we communicate directly, by emails, we've got a big office that helps teams integrate with each other by open communication because everyone is talking to everybody all the time”. In an alliance, many platforms were introduced to ensure the flow of communication between teams, for example through “world café” communication where the team was trained to participate in small group conversation and idea generation. In the case of having continuous and consistent interactions between teams, a senior manager and communication manager provided the following comment:

In the project alliance, you’ve got some formal interactions set up. Not just the PAB meeting, you’ve got AMT meeting, work bench meeting, tool box meeting and there’s a lot of flow of information that happens that can assist the team integration over time. (Senior Manager)

One of the successful features of an integrated team is ability to communicate quickly and effectively to get the message across, especially when there’s been changes, why the changes are necessary and how they can be managed. (Communication Manager)

Communication levels within alliance teams were not static. It is worth highlighting that integrated information and communication technology systems, such as “Project Link” and “Darzin”, were introduced in some of the alliance projects in order to enhance the digitalization of information and, hence, improve the flow of information within the alliance. In addition, virtual means of communication (e.g. video and teleconferencing) were engaged to facilitate remote communication between organisations.

Apart from having enablers to assist the communication, encouraging the project team to have valuable face-to-face relationships and interaction is indeed critical to ensure the free flow of communication. The following statements from practitioners support the above argument:

I share everything that I know with other people, there are no secrets. Most information can be shared, you have to remember to share it, if you forget to share it then everybody assumes that you’re holding onto it. (Senior Project Manager)

As we get more mature over the course of the project, we can easily foster our communication pattern as part of learning and growth of the relationships. (Project Director)

Changing and switching team members and reorganizing office space could help the team to improve their communication. (Owner Interface Manager)

The extent of communications in the alliance was seen as a two-way dialogue, in both upward and downward directions, ensuring that the alliance team (from PAB to WAT)
were kept informed of any project developments. The openness of the alliance environment (e.g. proximity of each participant organisation) encouraged teams to communicate openly and freely, which facilitated communication flows in the project alliance.

Creating a single and co-located alliance team

It is widely acknowledged by experts that in order to overcome the complexity of an integrated alliance team, the team members need to be forced to work in close physical proximity. Often, the challenging tasks in a complex project require rapid integration of individuals from diverse engineering backgrounds. Normally the alliance team was completely self-contained and located on site, which assisted with dissemination of knowledge resulting in positive insights and innovations. Specific comments from practitioners that support the above include:

It’s a key driver because it generates the subsequent ones. We know that co-located teams work and integrate significantly better than when you don’t have a co-located team. So, when you’re trying to do works simultaneously at different offices, the separation and distance can get in the way. (Risk Manager)

Generally, it’s an essential part of an alliance. Because of the intensity of work and specialist jobs, especially in an infrastructure mega project, in principal you want your core team, leadership and management team to be co-located to get them towards more consistent integration in delivering high performance outcomes. (Alliance Manager)

It is evident that co-located teams have multiple means of initiating the integration and coordination required, since direct interaction opportunities are readily available under one roof. In addition, alliance team members have more visible means of monitoring and assessing the others and they use these direct cues to help establish the relationship of other team members. Although having a single co-located office is now standard practice in every alliance project, maintaining parent company boundaries in a co-located environment could create cross-fertilisation that sparks high integration activities and establish direct dialogue without sparing feelings, that lead to decisions that are best for project; for example, a construction manager stated that: “Engineers from different organisations are sitting in different places in the office but more defined by disciplines and roles rather than which company they belong to, which is quite good. The way you see how integration actually works is not when things went very well but when you’ve got a problem and people from different organisations as well as the client solves the problem together for the best for project”. The deputy alliance manager added: “If you fail to take into account the environment in which you’re working, you will not realise how important integration practice is in affecting performance”. Having the entire project team in the same location provides an opportunity to unify teams from different organisations and to promote team practices and behaviours. It also reinforces the collaborative culture and provides an opportunity for all to interact and provide support, meet new staff (who regularly join the team) and provide communication and management skills that could improve organisational productivity.

Collective understanding

The creation of a highly integrated team is important to the success of an alliance, and it could be achieved by having a collective development of a common understanding among the teams. Bringing the team into the norming stage is essential as individuals could start to resolve their differences as well as respect and appreciate partners’ decisions. Specific comments from the practitioners that reinforce the above include:

This is also part of getting to know the people relationship. We tried to involve those who are important to our decisions, for example, design issues, resourcing issues. We also are trying to bring people into sharing the solution and spirit of understanding. (Quality Assurance and Systems Manager)

It is about joint decision making, i.e. making a decision with consulting other key members of the project team, and ensuring there’s buy-in into the solution or decision. (Sub Alliance Manager)
Providing a platform for teams to interact and socialise could strengthen their relationship and develop a stronger commitment to the project goals. Ensuring that collective understanding and transparent decision making is achieved from the perspective of the client, users and other stakeholders directly involved with the project is clearly important, as this can contribute to project success (Jørgensen and Emmitt, 2009). As described by Love et al. (1998), the formulation of, and collective agreement on, project goals within a multi-disciplinary team environment at an early stage can develop a creative, innovative and functional team. Forgues and Koskela (2009) added that in achieving collective decision making, it is expected that all team members have their “voice” heard and that all ideas are open to discussion. For example, the alliance manager made the following comment: “We had a series of workshops when we first set the team up, had professional facilitators, went through a process of understanding what is important to everybody in terms of quality of work, effort required, communication standard, environmental management where everybody has their own opinion, discussed everyone’s opinion together, and then if there is a difference, we sit and discuss during the workshop and set the standard to accept”. This was also reiterated by a senior project manager who stated: “It’s always a challenge in any alliance team arriving at a consensual decision with enough debate and discussion but then still at the end arriving to the decision that everyone at least feels they played a part in, as one integrated team. One of the reasons was because of the collaborative culture that has been developed and emphasised at an earlier stage”.

Project alliances involve a variability of decision-making process in which various owner and NOP teams contribute relevant information during the project delivery process. Thus, the ability to have individuals with the collaborative culture and philosophy will ease the process of achieving the collective understanding. For example, the alliance manager emphasised that: “You need people who are suitable to an alliance environment, you need people who can get their head around and understand what an alliance means. Some people are much better for rough and tumble type of contracts. In an alliance, you, as one integrated team, need to have a very good understanding of trying to deliver high performance, not contract obligations. You don’t have to build a road to a certain standard. You have to build the best road you can”.

From an organisational culture perspective, collective understanding in an alliance is framed in such a way that it serves as a platform for enhancing organisational learning. Every team builds a collective understanding of project goals in order to collectively commit to achieving them. As pointed out by Culmsee and Awati (2012), alliance procurement can foster a holding environment where it provides individuals the support they need to understand (lead to a similarity of understanding) and tackle challenging issues that confront them. The interviewees also highlighted that having collective understanding would enable different teams engaged in explorative or exploitative learning to collaborate across functions.

**Framework of leadership for successful alliance integrated practices**

Integrated organisations underpinned by integrated teams, such as in alliances, are about maximising the potential of leadership to influence team integration practices. The key to successful alliance integrated practice is the process of developing a vision, guiding and securing alliance team engagement. Drawing from the “lived experience” analysis based on the seven indicators, it is proposed that a team-centric approach is necessary to ensure that leadership results in successful alliance team integration practice (see Figure 2); these include: task- and relationship-oriented behaviours; collaborative learning environments; and cultivating cross-boundary networks and collaborative governance. The main purpose of this section is to describe the distinctive nature of the leadership elements influencing successful alliance integrated practices. The way each KI formed a structure of leadership for alliance integrated practice is shown in Table V.
Task and relationship-oriented behaviour
The importance of leadership behaviour towards the integration practice cannot be overstated, as it will help shape the culture of diverse practitioners to the team's needs. The reconfiguration of alliance team behaviour over time, especially in the context of task and relationship behaviour, is vital to ensure the team is in pursuit of the common purpose. The findings revealed that alliances invest in relationship-based practices; they make a visible investment by encouraging collaborative behaviour as well as ensuring the integration activities needed to support the collaborative culture are undertaken. As emphasised by Fellows and Liu (2012), construction industry has a tradition of individualism and opportunistic behaviour and, hence, requires consistent integration and collaboration in order to be successful.

Specifically, compared to other types of procurement approaches, alliance teams are focussed more on understanding the goal, clarification of their responsibility and commitments, together with building enduring relationships and leadership among team members, consistently over time. A very positive aspect found is this study is that the teams sense leadership that is both integrative and synergistic. The ability to create an environment where team leadership emerges through the distribution and collective expertise from the PAB to WAT could initiate active leadership, active listening and acceptance of different views (due to mutual trust) and, hence, produce a perfect solution for encountered problems (Nurmi, 1996). It is acknowledged that alliance teams must possess an authentic leadership skill set to facilitate collective learning and capability building for integrated practice to flourish. Buvik and Tvedt (2016) further suggested that trust has both direct and indirect impacts on cross-functional project team performance through alleviating conflicts and easing the way for integration in the form of risk and knowledge sharing, as well as collective decision making.

Performance obligations in an alliance are collective where teams, wearing the hat of the alliance, commit to work together in good faith on a best for project basis. A set of clearly defined alliance team objectives and KRAs provide a means to help the teams focus beyond the task framework, thereby enabling them to commit to developing better inter-organisational relationships. The sense of ownership in goal setting was communicated early in the projects, and throughout the project lifecycle, in order to ensure its flow on effects to the alliances in facing the challenges of technical- and human-related interface issues and also uncertainty about unknowns and ambiguous conditions (Walker, 2015).

Collaborative learning environment
It is well acknowledged that the success of a project alliance is built upon project teams that consciously integrate in an atmosphere that is collaborative (MacDonald et al., 2013;
### Key indicators of successful alliance team integration

<table>
<thead>
<tr>
<th>Team-centred elements</th>
<th>Description</th>
<th>Team leadership</th>
<th>Trust and respect</th>
<th>Single team focus on projects objectives and key results areas</th>
<th>Collective understanding</th>
<th>Commitment from project alliance board</th>
<th>Single and co-located alliance team</th>
<th>Free flow communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task and relationship-oriented behaviour</td>
<td>Direct influence on the relationship between project teams</td>
<td>Alliance teams have the sense of integrative and synergistic teamwork of leadership</td>
<td>Mutual trust and respect are prerequisites to fulfilling the complex relationships in diverse organisations</td>
<td>The sense of ownership in task and goal setting</td>
<td>Unanimous decision making is vital, as collective effort commits all teams in one direction</td>
<td>Create a platform for a sense of community (i.e., working intensively together)</td>
<td>Constant direct and indirect communication able to increase efficiency and reduce conflicts</td>
<td></td>
</tr>
<tr>
<td>Collaborative learning environment</td>
<td>Platform to actively promote desired collaboration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultivating cross-boundaries network</td>
<td>Embracing the seamless operation with no organisational boundaries</td>
<td>Promote trustful relationships by cross-boundary information sharing about values, goals and expectations</td>
<td>Integration of expertise that cross-fertilisation towards collective decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative governance</td>
<td>Concept that engaged in joint effort to orchestrate the collective action towards common goals</td>
<td>Ensuring the flow of leadership responsibilities into the team</td>
<td>Shared understanding and collective effort that commits all teams in one direction</td>
<td>Create ways of working and share learning to enhance decision making</td>
<td>Driving cultural changes to enable maximum performance</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Walker and Lloyd-Walker, 2014). The collaborative environment is crucial for some teams, particularly where they had the right culture but were not skilled in the practice of integration in a diverse environment (i.e. less experienced in collaborative procurement). One of the ways of working towards achieving the collaborative learning environment is by establishing an integrated alliance office. This initiative is essential as it helps to create a platform for a sense of community in the context of working intensively together right from the inception phase. Further, creating a learning environment that draws on the experience of teams (capitalising on pre-existing relationships) will maximise the potential for innovation in the project. Walker (2015) emphasised that substantial co-location is a platform for foundational facilities for any form of collaboration. Individuals from diverse organisations are able to stay in close physical proximity, and this sharing of identity enhances the learning within the social system and, hence, moderates the effect of interpersonal and task conflict. It is important to note that it is easy for team members to feel isolated and to lose their sense of identity and belonging due to an inability to have regular contact with individuals from other organisations. By having a co-located team, frequent communication and interaction among a network of individual’s (from AMT to WAT) could greatly accelerate and improve the collaborative learning, as well as raising the reliability of the relationships and, hence, cultivate their shared commitment to the project.

The value of relationships and knowledge sharing are generally seen as necessary ingredients for achieving high levels of communication. The adaptation to a multi-disciplinary environment and visualisation in the sense of being co-located certainly improves the patterns of communication, i.e. the flow of communication becomes more fluid and dynamic to allow unrestrained and continuous interaction. Practical tools and processes were introduced in the form of specific communication techniques (e.g. small group conversations, morning teas, etc.) to enhance relationships in preparation for everyday tasks. Constant direct and indirect communication (via vertical and horizontal channels of communication) are key means to increase efficiency, clear decision making and reduce conflicts in facilitating organisational communication (Mollaoglu-Korkmaz et al., 2013; Cheng, 2015).

Cultivating cross-boundary networks
Most of the alliance teams need to be able to operate seamlessly due to the ability to work within their boundaries of organisational identity and within an agreed set of alliance principles. The teams need to willingly suppress their organisational or individual agendas in support of the best for project. Buying early into the understanding of role clarity and task ambiguity early on will contribute to a compelling direction for the team and, hence, increase the cooperation and reaching, or indeed stretching, the targets. In an alliance, they take measures to cultivate networks that cross boundaries while maintaining the professional identity through one common platform, so that teams can switch in and out without disrupting collaboration. In such complex projects, the integration of expertise that crosses organisations and functional boundaries are crucial to cross-fertilisation that sparks insight and innovation. Bringing together the frontline workers will empower the team to take ownership of the project, be more engaged with the vision, as well as drive alliance peak performance by connecting with the interests of the stakeholders over time.

Cross-boundary networks can be nurtured by promoting trustful relationships through cross-boundary information sharing about values, goals and expectations. The findings indicated that alliance teams recognise that being in a diverse organisation is an advantage to encourage discovery and creativity. When the trust is present, both respect for individuals and respect for team values could increase the level of cooperation, relationships and co-ordination of the activities (Rahman and Kumaraswamy, 2008).
Collaborative governance

The essence of collaborative governance in integration practice is about the engagement of alliances that orchestrate a more collective action towards common goals. Developing a much wider base of people with leadership skills to operate effectively across the governance structure is crucial to provide higher visibility of professionalism to the project (engineering, stakeholder management, community relations, etc.) and enable teams to innovate, take risks, create ways of working and share learning to enhance practices. Owner and NOPs need to be capable of developing and exercising the necessary levels of behaviour and collaboration, and to work within a rigorous governance framework to enhance the leadership in an alliance (Walker and Lloyd-Walker, 2016).

The governance arrangement of an alliance is a coalition of senior management members from parent organisations. In the spirit of collaboration, the board (known as PAB) commits to providing leadership and direction to ensure that the alliance achieves or exceeds its mutual objectives (McCormick, 2010). They also lead through driving cultural changes to enable maximum performance from the collective actions of the alliance. The board members must be able to develop both task and relationship-oriented attributes with the project teams. They need to be accessible to affirm their interest in, and the importance of, the team’s work. Focussing on task at the outset of a project and shifting towards a relationship orientation among the teams at a later stage will lead to complacency over time. As Lloyd-Walker et al. (2014) described, apart from behavioural factors, having governance such as PAB and AMT structures formalise norms and practices of team leadership. Every individual within the team may serve as a leader in both formal and informal capacities, and the flowing of leadership responsibilities into the team is essential as it could produce innovative and collective decisions on a best for project basis.

In alliances, compelling targets inspire and challenge the team and give a sense of urgency. They also have a levelling effect, requiring members to focus on the collective effort rather than individuals (Katzenbach and Smith, 2013). The requirement for unanimous decision making in an alliance is inevitable, as collective effort commits all teams in one direction. Among other things, sense making in a group decision is a highly collaborative process. Individuals will engage in a process to share their understandings with the purpose of accomplishing a task, synthesising perspectives in an evolving subject and through such integration capture decision rationale (Culmsee and Awati, 2012). Lloyd-Walker et al. (2014) further emphasised that such an environment greatly distributes the team interaction in shaping decisions and taking action for problem resolution.

Conclusions

Team integration is a concept that has been widely fostered in alliances as a way of improving collaborative relationships between diverse organisations. However, deeper insights into the leadership practice of high levels of team integration remain elusive. Furthermore, understanding the team integration practice, which is a collaborative process in project-based organisations, is clearly difficult. The research presented in this paper attempts to develop a deeper understanding on fostering team integration through the “lived experience” in an alliance environment based on a framework of successful alliance team integration by Che Ibrahim et al. (2013). Based on the lived experiences of 24 alliance practitioners, who are currently working in a number of alliance road infrastructure projects in New Zealand, it has shown that team integration is a relationship practice which emerges from the specific circumstances of activities. The identified indicators of alliance team integration were found to have an explicit and implicit influence in the development of the team towards leadership of successful integration practice. The findings highlight that alliancing gives the project teams flexibility to change and adapt, to advance the collaborative environment and that integration of multi-disciplinary project teams requires the additional attributes of behaviours and
orientation of ability and motivation to be committed to collaborate. The findings also indicated that the existing underlying collaborative principles embedded in the alliance model enable project teams to stimulate the integrated environment and, hence, provide a game breaking performance to achieve outstanding outcomes. These findings have led to the development of a framework of leadership for successful alliance integrated practices. It is proposed that to influence the leadership for the purpose of achieving integration practice, four elements, namely, task and relationship-oriented behaviours; collaborative learning environments; cultivating cross-boundary networks; and collaborative governance, are required. The framework will be of use to help academics and industry organisations to respond to the needs and prepare a project team towards achieving successful integration practices especially in collaborative environments.

It is worth highlighting that the diversity of practitioners in this study displayed similarities in perceptions and understanding of the indicators; often, the formation of integration is greatly embraced due to matured relationships and principles embedded in the alliance model. Similarities between the participants’ experiences of the integration practices may be influenced by embedded collaborative culture within themselves (i.e. having experience in many relationship-based procurement approaches) and the fact that the scale of New Zealand’s alliance industry is small and individuals tend to be more cautious in building relationships and their reputation.

While the findings are valid in the New Zealand setting, similar studies are required internationally to determine if the team integration practices observed here hold elsewhere. That being said, if projects were being procured and governed similarly, it is hard to imagine that the results reported here would not hold. Further research is warranted to test this proposition. A limitation of the study is that it examined only the project alliance procurement approach; further research could also focus on the other variants of the alliance model (e.g. program alliance, design alliance, planning alliance) as these variants differ significantly.

References


About the authors

Che Khairil Izam Che Ibrahim is Senior Lecturer of Construction Engineering and Project Management at Universiti Teknologi MARA, Malaysia. He holds a BSc in Civil Engineering and MSc in Civil Engineering (Construction) from Universiti Teknologi MARA (UiTM), Malaysia, and his PhD degree from The University of Auckland, New Zealand. Che Khairil Izam Che Ibrahim is the corresponding author and can be contacted at: chekhairil449@salam.uitm.edu.my

Dr Seosamh B. Costello is Associate Dean in the Faculty of Engineering at the University of Auckland. He is also Senior Lecturer in the Department of Civil and Environmental Engineering, where he carries out research in construction and infrastructure asset management. He received his BEng (Civil) from the National University of Ireland, and his MSc (Eng) and PhD from the University of Birmingham in the UK. He is Chartered Member of the Institution of Engineers of Ireland and has almost 20 years’ experience, as both an academic and consultant.

Dr S. Wilkinson is Professor of Construction Management in the Department of Civil and Environmental Engineering at The University of Auckland. Suzanne currently teaches and undertakes research in disaster management, construction management, construction law and construction procurement strategies. Suzanne recently published two books: Management for the New Zealand Construction Industry (co-authored with R Scofield) and Construction Mediation (co-authored with P. Brooker).