

Enthusiasm, commitment and project alliancing: an Australian experience

D. H. T. Walker RMIT University, Melbourne, Australia

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Abstract: Team leaders require enthusiasm and commitment from their team members to enable them to be agile, adaptable and responsive. This paper uses results from a longitudinal study of a successful building construction project delivered using a project alliancing approach. Results presented use a model pioneered by the US academic Peter Senge. This helps explain the system dynamics that generated the necessary enthusiasm and commitment to support collaboration and co-operation within and between project teams. It became clear that enthusiasm and commitment can be achieved on construction projects provided that a collaborative and co-operative workplace environment is carefully nurtured and crafted, which not only supports drivers for enthusiasm and commitment, but also addresses barriers that inhibit those values. Experience gained from studying the exemplar project illustrated in this paper provides the basis for a model of how to create and maintain the necessary workplace environment.

Key words: change management; commitment; enthusiasm; project alliancing

Introduction

Delivering projects has been described as a change management process (Cleland, 1999). In taking a construction project through the procurement process from project conception to realization and handover requires diverse teams of specialists who combine their effort with considerable enthusiasm and commitment to work collaboratively towards achieving project goals. Each organizational team participating in the project has its own agenda, goals, and aspirations, which may not necessarily be congruent with project objectives. For example, design teams may desire fame and recognition for an award-winning design that may incur unnecessary capital and/or recurrent cost. Similarly, construction contractors may wish to make high profits at the expense of quality or fitness for purpose. In the business-as-usual (BAU—includes both traditional design then build and design and build approaches but implies more commercially motivated and less customer focused attitudes and behaviours that frequently lead to a mentality where claims for ‘extras’ and litigation and disputes cloud the ability to develop more give-and-take self-adjustment behaviours from prevailing) model of project delivery, destructive conflict, litigation-minded relationships and a claims mentality have been criticized as the prevailing norm for many construction projects in the UK, USA, and Australia (NBCC, 1989; CIDA, 1994; Latham, 1994; CII, 1996; DETR, 1998). In

Address for correspondence: RMIT University, Faculty of Business: Research Development Unit, Level 13–239 Burke Street, Melbourne, Victoria 3000, Australia. E-mail: derek.walker@rmit.edu.au

responding to this criticism several relationship-based alternative approaches have been proposed including partnering (Weston and Gibson, 1993; Miles, 1995; Office of Building and Development, 1997; Thompson and Sanders, 1998; Lenard, 1999) and more recently, project alliancing (KPMG, 1998; ACA, 1999; Walker *et al.*, 2000).

There is a common thread linking the arguments that the above researchers of relationship-based approaches offer as their explanation of it being a superior approach. They argue that enthusiasm and commitment in a relationship-based approach is more likely to replace defensiveness and reactionary vicious circles of inter-team behaviours evident in many BAU procurement approaches. Hamel *et al.* (1989), Hamel and Prahalad (1994), Howarth *et al.* (1995), Segil (1996), Drago (1997), Abrahams and Cullen (1998), KPMG (1998) and Bresnen and Marshall (2000) indicate how behaviour in alliances contributes to flexible responses, greater focus on problems to be solved to advance projects as well as generating more highly motivated teams. Specific attention is drawn to project alliances as having a history of success in generating commitment and enthusiasm that has led to otherwise potentially commercially marginal-success projects being successfully delivered (KPMG, 1998; ACA, 1999; Jeffries *et al.*, 2001). The literature clearly links enthusiasm and commitment to flexibility and agility. This in turn contributes to project success where project governance and other management infrastructures provide a supporting framework for people to get on with the job without having to waste energy on defensive actions or pre-empting counter measures against claims and other dispute-orientated activities (Walker and Shen, 2002).

This paper explores the concept of enthusiasm and commitment to changing behaviours from the BAU experience to a more collegial, co-operative and collaborative atmosphere offered by successful project alliancing. A highly successful construction project, the National Museum of Australia project, in Canberra, Australia, is used as an example to illustrate how enthusiasm and commitment was crafted and maintained. The project was opened in March 2001 on schedule, budget, and beyond quality expectations.

The exemplar project

The National Museum of Australia project was developed as a gift to the nation of Australia by the Australian Commonwealth Government and as a 'flagship' project opening the Centenary of Australian Federation celebrations. The project was completed within its budget of Australian \$155.4 million and handed over one day ahead of its fixed scheduled opening date of 12 March 2001. The procurement approach used to deliver the National Museum of Australia project was both innovative and intended to provide a best practice exemplar project for the 21st century (Hampson *et al.*, 2001: 7). Keniger and Walker (2002) report that project quality was judged to be well above the standard normally expected in a BAU setting and exceeded client expectations. The project's sponsor also articulated its status of an exemplar in project procurement (Auditor-General of the Australian National Audit Office, 2000). From this perspective the project was a unique example, which satisfies its investigation as a case study in order that lessons may be learned and considered for application elsewhere (Yin, 1994).

Project data was gathered in three ways: surveys; semi-structured face-to-face interviews; and through direct observation from a research resident on-site for 50% of the time (on a two weeks on and two weeks off pattern). The results and discussion presented in this paper are

Table 1 Drivers of commitment and positive change behaviours (Hampson *et al.*, 2001, page numbers indicated within the table)

Question/statement (with page reference)	Relative agreement index (RAI) scores (%)		
	Average to normal BAU	Project alliancing	Improvement from BAU
1) 'We abide by the spirit of agreements with our partners rather than concern ourselves about the detail' (S3 page 202)	50	86	70
2) 'We actively attempt to build trust with our partners through mutual moral and other types of support' (S6 page 202)	51	93	82
3) ' Our actions towards others (in the supply chain who are not our direct partners) reflects how we would like them to act toward us ' (O7 page 202)	58	91	57
4) 'We volunteer help and support to our partners when they need help and we are happy to provide resources in a crisis' (P1 page 205)	45* = 56	87	93* = 24
5) 'We respond to disagreements by rationally debating and discussing ways to resolve conflicts rather than withdrawing or seeking formal remedies' (C11 page 205)	43* = 55	94	118* = 28
6) 'I have been stimulated to learn more technical knowledge as a result of working in an alliance than I would have expected to have in a non-alliance work situation' (B4 page 211)	34	71	108
7) 'I have been stimulated to learn more people handling knowledge as a result of working in an alliance than I would have expected to have in a non-alliance work situation' (B5 page 211)	34	76	124
8) 'The hierarchy provides a lot of support and encouragement ' (E29 page 219)	50	88	76
9) 'We are continually exploring options outside the immediately obvious' (V21 page 219)	48	85	77

Bold text highlights critical behaviours driving enthusiasm and commitment.

* = Best BAU.

based upon data gathered and from a perspective of systems theory that helps explain how commitment and enthusiasm was developed and maintained on that project. The report from which the data is drawn (Hampson *et al.*, 2001) did not present analysis based upon the perspective presented in this paper, so insights presented here provide an original contribution.

The project alliance team (the Acton Peninsula Project Alliance team) were surveyed and interviewed extensively during the two years. Three structured questionnaire surveys of relationship characteristics comprising over 120 questions were administered over the construction period to provide a longitudinal view. Results of surveys compared BAU, Best BAU (representing the experience of respondents based upon the best class of project results they had encountered) and the project alliancing concept. Data presented in this paper relates to the final survey undertaken six weeks before project completion. Results from all three surveys were found to be consistent in their conclusions. The Acton Peninsula Project Alliance team were multi-disciplinary and co-located on site in one building and they were linked by a web-based project information system to other teams within Australia and also museum exhibit design consultants operating from the east coast of the USA. Results presented comprise a small but significant sample size, 14 of approximately 60 available people who were part of the management team at that time.

Respondents were asked to compare their experience of negotiation in the following three situations using a scale from 1 = strongly disagree to 7 = strongly agree, for:

- 1) Average to normal BAU—the most common situation—usually high/constant conflict.
- 2) Best BAU—the occasional project where all parties to the project work exceptionally well together as a team.
- 3) Project alliancing—the project delivery strategy that the parties are currently using on the Acton Peninsula Project for the National Museum of Australia—aim is to force collaboration as the only means to achieve the best outcome for the project and hence all teams involved.

Throughout this paper BAU is compared with project alliancing. In most cases interviewees responded to each question with best BAU responses as being generally closer to BAU but between the BAU and project alliancing rated values. Owing to scope restrictions of a refereed paper, BAU and project alliancing were considered best to form a basis of comparison. A few isolated examples of best BAU are presented in the following tables identified by an asterisk.

A relative agreement index (RAI) was constructed from data gathered in the Hampson *et al.*, (2001) study using the formula:

$$RAI = \frac{\sum W}{A \times N}$$

Where W = weight given to each statement by the respondents from the 1 to 7 range described previously and = 7 (the highest weight) and N = the total number of respondents

The closer the RAI is to 100 the higher the level of agreement with the statement proposed; conversely, the closer the RAI is to 0 the lower the level of agreement with the statement proposed.

Questions and their data reported upon here were presented on the basis of being relevant to the theme of this paper. For example, the nine rows of data presented in Table 1 support the

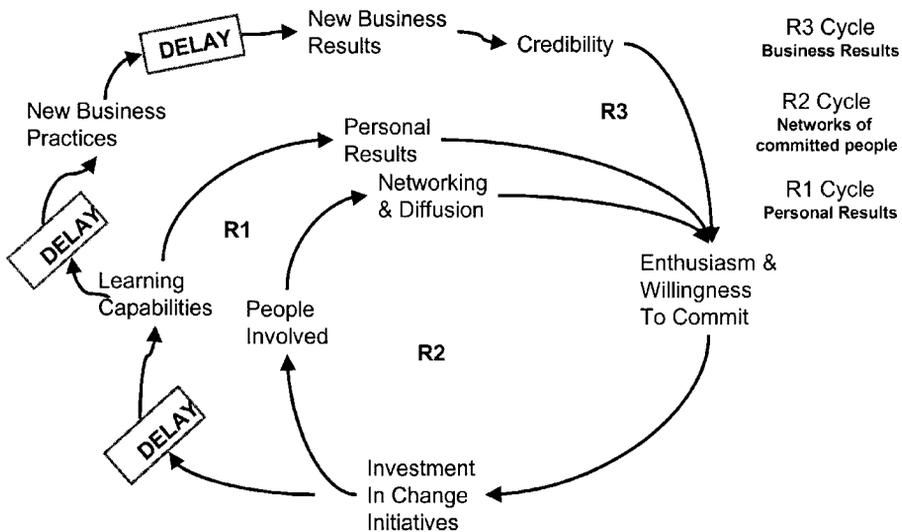


Figure 1. Driving cycles for enthusiasm and willingness to commit (Adapted from Senge *et al.*, 1999, pages 46, 48 and 51)

Table 2 Time, reflection and relevance related gap factors acting as barriers to enthusiasm and commitment (Hampson *et al.*, 2001, page numbers indicated within the table)

Question/Statement (with page reference)	Relative agreement index (RAI) scores (%)		
	Average to normal BAU	Project alliancing	Improvement from BAU
1) 'I feel that I am expected to work too many hours ' (I37 page 218)	46	51	- 11
2) 'My immediate supervisor firm encourages me to develop my skills through structured learning activities (courses, training etc)' (F11 page 211)	44	64	45
3) 'My employer expects me to develop my skills but this is on my own time so I have to catch up on work activities' (F12 page 211)	42	52	- 24
4) ' Our goals and those of our partners do not conflict' (P8 page 205)	36* = 45	80	122* = 25
5) 'Our goals and those of our partners are in harmony with project goals' (P9 page 205)	33* = 44	73	121* = 33
6) 'I am confident the majority of time that I understand what is expected of me ' (C1 page 217)	56	86	54
7) ' Achieving what is expected of me for work-related objectives for the project is very important to me' (C4 page 217).	66	92	39
8) 'There are few conflicts between project and company objectives' (C6 page 217)	47	73	55
9) 'I believe that there is large gap in our team between what we say/commit to do and what we actually intend to do ' (I9 page 218) NOTE: negative question	32	28	18
10) 'I feel part of the project community ' (I35 page 218)	47	92	96

Bold text highlights critical behaviours driving enthusiasm and commitment.
 * = Best BAU.

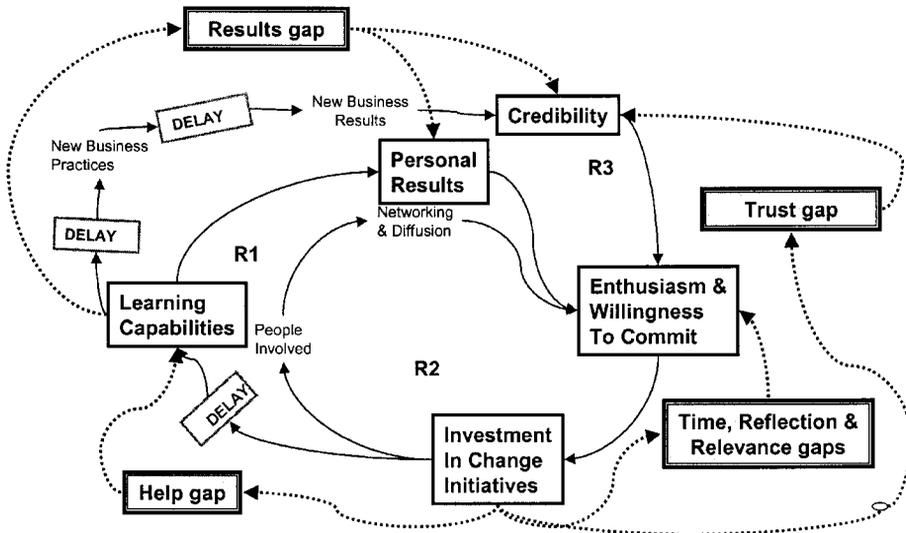


Figure 2. Restraining forces acting upon the reinforcing cycles generating enthusiasm and willingness to commit (Adapted from Senge *et al.*, 1999: 105)

drivers described in Figure 1. Table 2 data relates to time, reflection and relevance inhibitors illustrated in Figure 2. Full reporting of data gathered in the survey is considered beyond the scope of this paper.

Systems that create enthusiasm and commitment

The use of systems thinking has been recognized as an effective way to visualize complex interactions that influence behaviours. Soft systems methodology for example is one sense-making approach that allows people to explore the way in which people in specific situations create for themselves the meaning of their world and act (behave) intentionally (Checkland, 1999: A4). Consciously knowing how particular behaviours are triggered and how they interact and impact upon management performance has been referred to as sense making (Weick, 1995), that is, navigation by means of a compass rather than by a map (Weick, 2001: 93).

System drivers

Peter Senge is one of the more authoritative writers on links between enthusiasm and commitment and performance through change management. His work on identifying patterns that control events is based upon systems thinking (Senge, 1990). He provides some useful insights into drivers and inhibitors of change that are useful for helping us understand how an environment for improving project performance can be created and maintained. These insights will be briefly reviewed. First the driving cycles that generate enthusiasm and commitment are explored using the framework developed by Senge *et al.* (1999) together with evidence from the National Museum of Australia Project research data. Next, each of four identified restraining forces is introduced to show how it may impact upon enthusiasm and commitment. Evidence from the National Museum of Australia Project research data are then presented to illustrate how these restraining forces affected the exemplar project under investigation. The purpose of doing so is to identify how success on that project was achieved from the perspective of enthusiasm and commitment. The rationale of focussing on this particular success driver has been argued elsewhere (Burgess and Turner, 2000) as pivotal and significantly drives intrinsic motivation, which can change behaviour from mere compliance to commitment. The data presented with Figures 1 and 2 together help to explain how changes between a BAU approach and project alliancing occurred not from the project procurement choice but from underling management and leadership values that encourage and sustain enthusiasm and commitment.

Three reinforcing or driver cycles were identified for sustaining enthusiasm and commitment (Senge *et al.*, 1999)—these have significant implications for designing a work environment that supports commitment within and between teams. All three cycles begin with enthusiasm and commitment as an outcome from a positive working environment that supports and motivates individuals and teams.

Cycles R1 and R2 lead to an investment in change initiatives by both the organization and individuals—primarily the investment is in education and training including mentoring and both official and unofficial support. Cycle R1 then moves after a delay in absorbing the investment into an increase in learning capabilities. These generally lead to personal results including expansion of competencies, making tasks easier to accomplish, and building confidence and generating feelings of self-worth. Reward systems may provide concrete

benefits. These build enthusiasm and commitment because the initiative is proved to be of value.

Cycle R2 leads from the change investment to greater involvement with people, which leads to networking and diffusion of the change initiative. This positive socialization of tacit knowledge helps to make knowledge explicit (Nonaka and Takeuchi, 1995; Nonaka *et al.*, 2001) and this further reinforces a sense of worth and value for knowledge workers, which builds enthusiasm and commitment.

Cycle R3 builds upon the learning capabilities after some time delay. Benefits of the changes are realized and absorbed into the workplace culture after a short time delay, translating into changed work practices. After a further delay, this drives improved business performance. This boost to productivity and other positive outcomes drives organizational confidence in the change initiative, which in turn builds upon the enthusiasm and commitment of team members. If the cycle is not subject to atrophy then success will build upon success. This would be an ideal condition that is rarely fully experienced because of restraining cycles that adversely impact upon this virtuous cycle. The National Museum of Australia case study provides insights into how the above cycle may have worked in practice for successful project alliancing.

Table 1 RAI findings provide a sample of results from this project that indicate the extent of influence of some of the reinforcing cycle elements at work. The RAI scores indicate that for commitment-related factors (Rows 1 to 4) there are improvements of 57 to 93% between a BAU and project alliancing approach. Similarly for learning capabilities (Rows 5 to 7) improvements of 118, 108, and 124% are indicated. Organizational empowerment and support for new business practices (Row 8) and new business results (Row 9) indicate 76 and 77% improvement, respectively. The significantly large difference between BAU and alliancing RAI values suggest a major impact upon the way in which enthusiasm and commitment were built through team relationships. Rows 4 and 5 indicate that collaborative behaviour had far greater impact upon any improvement for project alliancing that even Best BAU.

System inhibitors

Enthusiasm and commitment are unlikely to be sustainable unless there is positive behavioural change in the way that people interact to realize project improvement. Senge *et al.* (1999) identify a number of restraining cycles inhibiting effective change initiatives. Figure 2 illustrates several restraining forces impacting upon trust and commitment. These traps to building positive change momentum are indicated by dotted lines with a double-lined box border. They link associated support system gaps. These comprise: a time, reflection and commitment gap; a help gap; a trust gap; and a results gap. These gaps indicate how enthusiasm and a willingness to commit undermine a change initiative—in this case, behavioural change to deliver an effective team-working environment to build the project using a project alliance approach.

System inhibitors: time, reflection and relevance gaps. Reflection and commitment to changed behaviour indicated in Figure 2 is influenced by insufficient time being given to provide the necessary investment in changed initiatives. A gap is experienced between the time required to reflect upon the changes (so as to accommodate their impact) and the available time provided for reflection. Thus the perceived relevance of the proposed

changes may not be reinforced. Two problems are identified. One is providing insufficient time for staff to take advantage of the investment made in training and development. The other is providing inadequate support for developing sufficient energy and effort to build effective team relationships.

A time gap may develop through a combination of lack of flexibility of time and unavailability of time. This leads to frustration, and enthusiasm and commitment being dampened. This in turn leads to a reduction in effectiveness of learning capabilities. Evidence from the National Museum of Australia Project revealed mixed organizational support behaviour. Some examples are illustrated in Table 2 below.

Results from Table 2 are probably typical for many organizations. There was a greater commitment to enhance skills on project alliancing than BAU projects (Row 2 up 45%) but participants felt that the 'time' cost was born by them. Rows 1 and 3 indicate that they experienced 11 to 24% deterioration in their RAI due to expectations that employers had of them. While there should be intent and policies in place to support learning in tangible ways, including providing organizational slack in terms of time for learning and work relief for those participating, the reality was evidently somewhat different on the project studied.

A further identified trap that restrains a reinforcing virtuous cycle is a commitment gap emerging through perceived lack of relevance of the commitment either to the team participants or more commonly by those in leadership positions on projects (Senge *et al.*, 1999). Relevance may be perceived as diminished if either personal or business benefits appear marginal or negative. This is the 'what is in it for me or my organization' syndrome. Commitment to change or changed approaches requires continual positive feedback that either leads to improvement though identified ways to improve or confirms the nature and/or extent of benefits derived.

From the business driver perspective, clear motives for the change need to be understood and probably articulated through a sound business case. The reason for enduring any 'possible pain' needs to be clear for management to support the initiative; therefore feedback on what works or does not appear to work is important. Benefits need to be demonstrated, as much of the motivation to continue putting energy into the change initiative is both intrinsic and extrinsic. Tangible benefits and rewards will help to satisfy extrinsic motivational factors including praise and celebration of success. Intangible benefits need also to be addressed. These may include the job being easier to do, the development of additional useful skill sets, or satisfaction of individual interests with aspects of the work being treated as if it were a hobby.

Table 2 results strongly indicate that on the National Museum of Australia Project, the factors that might impact upon relevance are highly supportive for project alliancing as opposed to BAU. High RAI score improvements from BAU to project alliancing are evident. Measures 4 and 5 indicate that there seems to be very high goal alignment between individuals, their immediate team organizations, and the project (121 and 122%). The project alliance establishment of a clear charter of behavioural expectations was not only developed but also clearly expressed and broadcasted throughout the site office. RAI results for measures 6 to 8 were high, with substantially increased scores of 54, 39 and 55% respectively for project alliancing over BAU. The ninth RAI measure result, in which the statement was expressed in the negative, indicates high integrity for both BAU and project alliancing with the alliancing being very low and an 18% improvement. The 10th measure indicates very strong commitment to the project with very high levels of personal and project sense of identity and this was indicated at 96% better for project alliancing than BAU.

This indicated that on the National Museum of Australia Project there was a very high degree of relevance for alignment of goals and behaviour to support the project alliance concept at both the organizational and personal level. The improvement in RAI scores between BAU and project alliance helps to explain how the virtuous cycle of improvement illustrated in Figure 2 was less adversely affected on the National Museum of Australia Project than on BAU projects.

System inhibitors: the help gap. Senge *et al.* (1999) hypothesized the existence of a help gap barrier to the virtuous cycle that influences commitment. This results in a help gap (through insufficient quality or quantity of help provided) that in turn impacts upon the effectiveness of the support for a change initiative.

Existing or temporarily available resources can be positively used to reduce the help trap by potentially developing compensating forces that reduce the impact of the time gap. The help gap can (and usually does) negatively influence commitment. The link between the time gap and help gap is subtle. It is essential when designing systems to provide resolution to the help gap problem so that the time gap is not exacerbated.

Frustration and burnout are serious consequences of the time trap that may be caused by positive efforts to address the time trap through providing inappropriately or poorly thought through help. Mutual adjustment (colleagues providing help through informal mechanisms based upon effective negotiation techniques) may help resolve some of the time trap problems without raising additional burdens associated with reallocating resources. Such mutual adjustment may also be assisted by an ability to call on additional help or resources to be applied seemingly outside the help trap identified area. The mindset of a project 'pool' of resources (rather than individual team pools of resources) may be of assistance because self-adjustment and help can be switched in more creative ways. This is very difficult in nonpartnering or nonalliancing environments.

The first five findings illustrated in Table 3 clearly indicate an environment where the time gap has some chance of being obviated by providing help in a self-adjustment informal manner. The difference between BAU and project alliancing averages ranges from 82 to 128%. Additionally, close proximity of teams and a willingness to help other teams in this environment reinforces self-adjustment help that can be provided (indicated in Row 4 by an 11% improvement). This requires considerable empowerment of the teams. In a study of co-located project teams, Newcombe (1996) observed the positive effect that co-location may have on team empowerment and processes of mutual adjustment. Results in Rows 3 and 4 strongly indicate collaborative behaviour with a fivefold difference between increases for project alliancing RAI values over Best BAU when compared to BAU.

Table 3 also draws upon the National Museum of Australia study relating to the role and implementation of information and communications technology (ICT). This part of the study investigated the web-based browser technology (ProjectWeb) used for integrated project management and control on the project. Bovis Lend Lease, the managing contractor in the project alliance, developed ProjectWeb and used the National Museum of Australia as a demonstration project for its use. The project manager stated at several seminars (these formed part of the dissemination process for fulfilling the performance criteria of innovation dissemination and were held in Melbourne (30 April 2001), Canberra (8 May 2001), Sydney (1 May 2001) and Brisbane (9 May 2001). Of the 400 attendees, most comprised professional, educational, and industry people) that over a million dollars was spent on providing the

Table 3 Help-related gap factors acting as barriers to enthusiasm and commitment (Hampson *et al.*, 2001, page numbers indicated within the table)

Question/statement (with page reference)	Relative agreement index (RAI) scores (%)		
	Average to normal BAU	Project alliancing	Improvement from BAU
1) 'We believe that by co-operating with our partners openly we reduce the likelihood of opportunistic behaviour' (S5 page 202)	42	87	107
2) 'We actively attempt to build trust with our partners through mutual moral and other types of support ' (S6 page 202)	51	93	82
3) 'We share resources through contributing to the general resource pool available to us and our partners' (P4 page 205)	39* = 46	89	128* = 18
4) 'We believe that close physical proximity to our partner organizations for extended periods of time on site is of vital importance in maintaining a good team relationship' (R6 page 208)	44* = 53	93	111* = 20
5) 'We generally like to help other teams when possible' (I14 page 218)	51	90	76
6) Managers feel that level and frequency of training is below average (page 240)	N/A		
7) User utility measures — which tracked the support as well as technical support of the supporting information technology system ProjectWeb (page 242)	65		
8) For designers	70		
9) For managers	55		
10) For administrators			

Bold text highlights critical behaviours driving enthusiasm and commitment.

* = Best BAU.

infrastructure (hardware and training and support) for the project. The alliance partners committed this considerable investment as part of a deliberate policy to demonstrate and learn how ICT could more effectively be used on construction projects. Despite this considerable investment, the survey conducted by the Commonwealth and Science Research Organization (CSIRO) representatives of the National Museum of Australia Project research team revealed that the project team managers felt that insufficient training was undertaken (the result shown in the seventh row in Table 3 was not based on a question comparing BAU with project alliances, hence the not applicable, N/A, result indicated). The CSIRO part of the study on ICT implementation also revealed some very positive aspects of the way in which ICT helped project team members carry out their work. The seventh row in Table 3 indicates high support for the ICT tool ProjectWeb. Design team and managers were somewhat more ambivalent about its usefulness although there was a positive response by administration staff to the utility of supporting information technology tools.

System inhibitors: the results gap. Investment in change initiatives such as training and development naturally leads to expectations of results at both the personal and organizational level within the implicit time horizon. A problem that often occurs is that this time horizon is too optimistic. In change initiatives concerning project work (such as the engagement of various teams and their joint operation, perhaps from a communication and decision-making perspective) the level of trust and co-operation necessary for this to happen takes

considerable effort over a long period of time while team members build a trust bank (Walker *et al.*, 2000: 49). Evidence of success may be expected far too soon when change initiative investment are introduced. These might include training programmes to align project objectives with those of the various teams and individuals or ICT systems for shared communication and decision making. The time gap, help gap, or one of the other gaps identified later in this paper may well exacerbate this. This will lead to a results gap between what was expected of the new business results and what was delivered. When this occurs within a blame-oriented organizational culture, the natural reaction will be a search for a scapegoat, defensive routines and systems of deception aimed to mislead and obfuscate (Loosemore and Chin, 1999; Loosemore, 2000). These outcomes have been well described in some of the texts on organizational behaviour and organizational learning. One of these has been Type I and II behaviours (Argyris and Schön, 1996) in which espoused theory (or that which is put forward as the operating paradigm) can be contrasted to theory-in-use (or the actual behaviour based upon theory as used). When this occurs, defensive routines (through negative assessment behaviour reducing credibility) are quickly established. These undermine the virtuous cycle of building commitment and this then leads to a dampening of enthusiasm and commitment.

Even if expectations were realistic, credibility of business results can be undermined by the use of inappropriate performance metrics for measuring business results. This frequently happens when small business units or teams have their performance assessment based upon short-term output or efficiency outcomes relating to a small part of the system rather than their contribution to the whole system or the long-term impact of the change initiative. The change initiative may be likely to produce a temporary drop in perceived efficiency (perhaps it is part of a learning curve effect) or because the cycle time of the output or outcome lengthens. If the metrics used to assess results are wrongly aligned then the reward/punitive system may actually penalize effective adherence to the changed process, thus undermining the change initiative.

BAU behaviours that encourage defensive routines such as developing paper trails used for making claims or counter-claims exemplify this vicious cycle. In a project alliance scenario the expressed ethos is one of cross-team help and support to overcome problems rather than reverting to defensive blame-laying and associated administrative effort to document and support arguments for laying blame or deflecting blame. On the National Museum of Australia Project, as with many other alliancing projects, profits were isolated and placed at risk along with the rewards for success and these tied to project success rather than individual team success. The separate teams and organizations taking part in the alliance had an incentive to ensure that if any teams or team members were experiencing difficulty, others would step in and help them for the good of the project. The metric 'project success' was deemed more appropriate than an individual team 'efficiency' metric under the project alliancing ethos prevailing on this project.

Table 4 clearly indicates high differences between BAU and project alliancing. A constant theme that emerged from the report of the project (Hampson *et al.*, 2001) was a best-for-project ethos that underpinned decision making from the top management down to operatives on site. The first two rows of results confirm this theme with close to and over 100% improvements indicated. The third row indicates a very high learning focus, 95% improved over the BAU experience. The fourth row indicates the extent of intrinsic mental stimulation that provided high satisfaction feedback for personal results with a 58% improvement over BAU. Row 5 indicates that individuals felt that they had achieved positive results for project

Table 4 Results-related gap factors acting as barriers to enthusiasm and commitment (Hampson *et al.*, 2001, page numbers indicated within the table)

Question/Statement (with page reference)	Relative agreement index (RAI) scores (%)		
	Average to normal BAU	Project alliancing	Improvement from BAU
1) 'We recognize our partner's contribution as of equal importance in achieving project goals ' (A7 page 205)	43	85	98
2) 'We maintain open lines of general communication with our partners in order to prevent hesitation, reservation or other defensive behaviour ' (A1 page 208)	49* = 56	92	108* = 14
3) 'We take considerable effort to learn from our partner's experience' (B2 page 211)	39* = 47	76	95* = 21
4) 'One of the reasons I was attracted to this project was to be mentally stimulated to learn new things ' (B15 page 211)	45	71	58
5) 'I believe that I get good recognition for my contribution' (I34 page 218)	44	85	93
6) 'I feel that this project is good for my career plans' (I35 page 218)	52	77	48
7) 'I get fair reward for my contribution for the work I do relative to others' (E32 page 219)	52	78	50
8) 'We get little feedback on our general performance' (E31 page 219)	52	52	0

Bold text highlights critical behaviours driving enthusiasm and commitment.

* = Best BAU.

alliancing well over that of BAU with a 93% improvement over BAU. Rows 6 and 7 indicate encouraging rewards with a 48 and 50% improvement in RAI respectively. The response indicate that in Row 8, respondents felt that they had an equally mediocre level of feedback for their general performance for both BAU and project alliancing. This suggests room for improvement, but there was plenty of evidence of on-site celebration of significant team culture events such as individuals joining or leaving the project team, births of team member's children and even one funeral of a team member's partner. Letters of thanks and appreciation, which were part of a team member's exit process, provided emotional feedback. Rows 2 and 3 provide a strong indicator of collaborative behaviour between project alliancing and Best BAU with an over fivefold difference in RAI results when each is compared to BAU results.

System inhibitors: the trust gap. Fear and anxiety undermining trust stems from the learning capabilities part of the reinforcing virtuous cycle being restricted in its effectiveness by a lack of candour and openness. Psychological safety and trust has a direct impact upon the individual and team capacity for openness. When this gap is wide there is an atmosphere of hidden action, of saying one thing but meaning another, of hidden agenda and a swamp of murkiness that engulfs the ability to discuss rationally and openly difficulties and to offer praise when appropriate. The hidden nature of vital communication about what is really valued and appreciated results in a no-man's land of second-guessing of what might really be happening. Lack of time to reflect and develop trust also leads to a trust gap. This undermines credibility and saps enthusiasm and commitment, often leading to people aspiring to mediocrity but failing to achieve even that modest level of performance.

Table 5 Trust-related gap factors acting as barriers to enthusiasm and commitment (Hampson *et al.*, 2001, page numbers indicated within the table)

Question/Statement (with page reference).	Relative agreement Index (RAI) scores (%)		
	Average to normal BAU	Project alliancing	Improvement from BAU
1) 'I believe that some level of conflict , disagreement and different ways of seeing issues is inevitable ' (C10 page 205)	66	86	30
2) 'We respond to disagreements by rationally debating and discussing ways to resolve conflicts rather than withdrawing or seeking formal remedies ' (C11 page 205)	43* = 55	94	119* = 28
3) 'When problems arise we concentrate on solving them rather than trying to find somebody to blame ' (C12 page 205)	43* = 55	93	140* = 28
4) 'We see our partners and us sharing risk on the basis of mutual competence , whoever can best control risk volunteers to accept and manage it' (C13 page 205)	36	89	147
5) 'We communicate openly with our partners when problem solving and are not afraid to own up to mistakes made' (A2 page 208)	39	88	126
6) 'We know what is an acceptable behaviour to our partners' (A8 page 205)	49	80	72
7) ' Our partners know what is an acceptable behaviour to us' (A9 page 205)	43	76	77
8) 'I feel that the working atmosphere between groups is mainly characterized by conflict and point scoring ' (I40 page 218). NOTE: negative question	39	28	39
9) 'I feel a lot like I am manipulated ' (I41 page 218) NOTE: negative question	28	18	111
10) 'We trust our partner's integrity to be able to discuss sensitive issues with them in order to resolve disagreements over such issues without fear of appearing a 'non-team' player if these issues are important' (O8 page 202)	36	84	133
11) 'We trust our partner's integrity to be able to discuss sensitive issues with us in order to resolve disagreements over such issues without fear of appearing a 'non-team' player if these issues are important' (O9 page 202)	35* = 50	84	140* = 29
12) 'We are alert to issues that our partners may find sensitive ' (A4 page 208)	39	83	113
13) 'We consult with our partners before making key decisions affecting them ' (A5 page 208)	42	87	107
14) 'I regularly share ideas from my colleagues from my firm ' (C9 page 211)	57	82	44
15) 'I regularly share ideas from my colleagues from different companies ' (C10 page 211)	41	77	88
16) 'I feel that I have insufficient authority to make contractual or ethical obligations' (I39 page 218) NOTE: this is a negative question	26	19	37

Table 5 illustrates a number of supporting data for the model presented in Figure 2. On the National Museum of Australia Project there was clearly a high level of openness that contrasts sharply with BAU. Results presented in Row 1 indicate a high level of recognition of conflict as inevitable and unavoidable for both BAU and project alliancing with a 30% greater expectation for project alliancing. This is healthy as conflict leads to exposure and exploration of numerous points of view and this enhances the potential for innovation and organizational learning (Nonaka and Takeuchi, 1995; Pedler *et al.*, 1996; Hampden-Turner and Trompenaars, 2000).

The presence of conflict is not a problem; it is the way that conflict is handled that is the main issue (Loosemore *et al.* 2000). Rows 2, 3 and 4 illustrate differences from BAU to project alliancing of well over 100% for aspects of problem solving in which many contrasting and conflicting views are sought and thought through to build solutions from a variety of perspectives. The way that risk sharing was handled on the National Museum of Australia Project is a particularly good example. Openness exemplified in results shown in Row 5 is also supportive of trust. Openness can also be measured in terms of behaviours between partners—understanding each partner's expectation of treatment is an important element of building the capacity for psychological safety and trust. Results indicated in Rows 6 and 7 show the stark difference between BAU and project alliancing with a 70%+ increase in the RAI for project alliancing over BAU. Results in Rows 8 and 9 posit a negative question; the responses revealed low values for a toxic atmosphere experienced by teams. The project alliancing RAI values were very small, indicating a healthy environment that reduces fear and anxiety. The main thrust of Table 5 results indicates how a fear and anxiety gap may be developed and maintained and how, in the case of the National Museum of Australia Project, this restraining force on the virtuous cycle of enthusiasm and commitment was dampened.

Clarity and credibility of management values and aims can also define the level of trust management required. If this is poorly handled then it adversely affects credibility; this in turn impacts upon enthusiasm and willingness to commit. The trust gap also impacts upon a reflection gap. In this cycle, if the investment in the change initiative does not encourage reflection (and this may be exacerbated through a management value system that fails to support reflection), then the reflection gap emerges. Reflection is vital as it allows us to re-evaluate the systemic drivers and inhibitors to action. The literature indicates that reflection is a key core professional competency and the ability to frame and reframe questions, problems, and issues are the hallmark of intelligence (Schön, 1983; McNiff and Whitehead, 2000). This reflection gap clouds the clarity of personal values and aims, which dampens enthusiasm and willingness to commit.

Results in Rows 10, 11 and 12 relate to integrity and an ability to discuss sensitive issues, which is a real measure of trust. These provide results with a difference of well over 100% between BAU and project alliancing. Results in Rows 13, 14 and 15 illustrate how this is manifested through a consultative framework. Rows 13 and 14 indicate increases in the RAI score of well over 100% between BAU and project alliancing and Row 14 has a very high RAI for regularly sharing ideas with project alliancing. These rows contain results relating to sharing ideas to facilitate reflection for project alliancing. They indicate a willingness to share ideas across teams as well as indicating a large increase in both sharing ideas and perceptions. The last result in Row 16 indicates a high level of empowerment and trust in individuals to be given the authority to make contractual or ethical commitments. Results for Rows 2, 3 and 11 indicate that collaborative behaviour strongly influences trust and commitment. There was a fourfold increase in the difference between RAI values for project alliancing over BAU when compared with Best BAU over BAU.

Conclusion

Organizational factors that affect trust and commitment have been discussed in considerable depth. The adapted Senge *et al.* (1999) model, while based on change management issues, is

relevant to the study. It helps explain how organizations may be best framed, structured and developed to 1) sustain the driving virtuous cycles indicated, and 2) inhibit the restraining impact of vicious cycles that present barriers to enthusiasm and commitment. Evidence presented in Tables 1 to 5 illustrates an overwhelming and pertinent contrast between BAU and project alliance behaviours for the case study project, which helps to explain how the Senge *et al.* (1999) model is relevant to the study of organizational and individual trust and commitment.

Clearly a major challenge facing project teams using any project procurement system is to develop the driving cycles for enthusiasm and willingness to commit illustrated in Figure 1. This is often achieved, but implementation of the results presented here indicate that the combative nature of BAU project delivery approaches tend to develop and sustain the restraining forces resulting in the gaps illustrated in Figure 2. These must be minimized to avoid dampening enthusiasm and willingness of team members to commit to project goals.

Evidence presented in this paper indicates that this is achievable using an alliancing approach on at least the exemplar project. While results from one case study cannot be generalized they can provide a best practice model to be emulated. The National Museum of Australia Project provides a useful demonstration project example for this purpose. Exemplar projects do tend to attract a 'Hawthorne' or 'halo' effect where the very focus on the project as a landmark or pioneering exercise builds its own dynamic for success. People working on that kind of high profile project would naturally feel pride that engenders and supports enthusiasm and commitment. The evidence is nevertheless compelling in the way that enthusiasm and commitment was conspicuous, despite this being an exemplar project. A changed mindset in the project alliancing approach from BAU is clearly demonstrated from results presented in Tables 1 to 5 and indicates that the way in which the project was led and the underlying philosophy had clearly supported the theory of enthusiasm and commitment proposed by Senge *et al.* (1999). For example the indications of BAU against Best BAU imply around 25% improvements in RAI values whereas for project alliancing the comparable improved RAI values are generally well over 100%. This strongly indicates a different dynamic taking place than merely a BAU situation compared to a high-morale or high-performing project.

The halo effect is difficult to quantify and extract from the data gathered. We cannot be reasonably certain of the extent to which improvements in RAI scores are attributable to the high-profile nature of the project. What is evident from the results and the design of the research instruments that sought relationship quality data on BAU and project alliance experience is that the application of relationship-based improvement strategies on this particular project yields convincing evidence that enthusiasm and commitment can be explained in terms of the drivers and inhibitors illustrated in Figure 2. The impact of inhibitors to enthusiasm and commitment on the National Museum of Australia Project was clearly minimized by the organizational culture that embraced the project alliance teams-as-one spirit. Best-for-project objectives were clearly evident.

Enhancing a workplace culture that accentuates the drivers indicated in Figure 1 and 2 is clearly consistent with best practice management. This applies to project alliancing or any other form of project procurement. Similarly, reducing the impact of the inhibitors in Figure 2 also accords with best management practice. It can be strongly argued that the defining aspect of the project studied was that by focussing on a relationship-based approach to project procurement, best practice treatment of team members significantly contributed to enthusiasm and commitment.

Project alliancing may not, of itself, provide an improved workplace culture that engenders and maintains commitment. The values and philosophy of collaboration, co-operation and self-adjustment facilitated by the project alliancing approach may however provide the model that should be applied on other projects. This behavioural innovation is indeed what was called for in the many government reports cited earlier.

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