

The Case for Project Team Integration

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acif
Australian Construction
Industry Forum



About ACIF

The Australian Construction Industry Forum (ACIF) is the meeting place for leaders of the construction industry in Australia. ACIF facilitates and supports an active dialogue between the key players in residential and non residential building, engineering construction, other industry groups, and government agencies.

Our members are the most significant Associations in the industry, spanning the entire asset creation process from feasibility through design, cost planning, construction, building and management.

ACIF also provides a number of resources for the industry, including twice yearly release of the ACIF Forecasts, the industry's 'compass' to the demand for work over the next decade.

ACIF is focused on creating a competitive construction and property industry that is a leader in building Australia's prosperity. As well as facilitating communication between the different interests that make up the construction sector, ACIF provides governments and other agencies with a central and efficient industry liaison point.

ACIF harnesses the energies of its members to provide leadership and facilitate change within the industry, to increase productivity, efficiency, research and innovation. ACIF is governed by a Board of Directors comprising senior practitioners and chief executives of its member organisations. A secretariat supports the Board and the working groups tasked with developing policies and productivity tools.

ACIF seeks to develop a successful, strong and sustainable construction industry in Australia.

For more information about ACIF, visit www.acif.com.au.

About APCC

The Australasian Procurement and Construction Council Inc (APCC) is the peak council whose members are responsible for procurement, construction and asset management policy for the Australian, State and Territory Governments and the New Zealand Government. Papua New Guinea is an associate member. The APCC is made up of 15 member agencies. View member authorities here.

Over the past 45 years, the APCC has established itself as a leader in government procurement, construction and asset management strategies and practice. The work of the APCC is committed to procurement innovation, solutions and efficiencies designed to create savings and maximise service delivery to the communities of Australia, New Zealand and Papua New Guinea.

The APCC promotes a cohesive government procurement environment and manages national projects for the Council of Australian Governments. It harnesses the benefits of nationally consistent approaches for its members.

The APCC Council of Chief Executive Officers leads the direction of the APCC, while the Leadership Group drives the overall work program.

The projects within the APCC are multi-faceted and collaborative. Each project has a dedicated Working Group, which progresses the aims, with support from the Directorate. The Working Groups meet regularly by teleconference, face-to-face and online.

The APCC community is made up of individuals with a wealth of skills and expertise. Collectively, it represents the hub for procurement excellence. Experts from each member jurisdiction collaborate on projects, creating a knowledge network.

For more information about APCC, visit www.apcc.gov.au

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Acknowledgements

The decision making approach in the *Project Team Integration Workbook*, the companion to this document, is derived from work carried out by Dr Tom Crow and Peter Barda as part of their commission from the Property Council of Australia to produce the 2001 publication *Projects as Wealth Creators*.

1. Foreword

This document has been prepared by a joint working group of the Australasian Procurement and Construction Council (APCC) and the Australian Construction Industry Forum (ACIF). APCC is the peak council of departments responsible for procurement, construction and asset management policy for the Australian, State and Territory governments and the New Zealand government. ACIF's members are the peak national organisations representing the private sector of the construction industry in Australia. The members of both organisations are listed at Appendix A.

Members of both APCC and ACIF are acutely aware of the need for the most efficient and effective delivery of services from capital works assets, whether in the public or private sector. To do so when resources are limited, but demand for services and assets is growing, requires all parts of the construction industry to continually review and improve how community expectations are best met.

This document draws on complementary developments in the USA, UK, and Australia in key design and construction processes, and suggests ways in which those changes offer opportunities to deliver greater value for money to project sponsors¹ and end users. Those developments centre on:

- integrating project teams to create, sustain and encourage the collaborative behaviour required of all members of project teams if optimal project outcomes are to be achieved; and
- the powerful enabling tools presented by Building Information Modelling (BIM), that optimise the process of planning, designing, constructing and operating assets.

Collaboration amongst members of project teams in the construction industry is a good thing. It is a vital input to efficiency and productivity, reduction in wasted effort, and minimisation of disputes.

BIM will produce best results (design to achieve project sponsors' objectives, minimal changes, optimal buildability, designed-in operational efficiency) when all who can contribute are involved in designing and planning for the work they will perform for the project.

Having a main contractor/project manager and bespoke trade contractors (those producing unique elements whether structural, façade or services) as part of an integrated team driving collaborative use of BIM, means they can “pull” the design documentation they need to install, and commission. The wasteful “business as usual” approach is to “push” on to them the documentation designers think they need or are accustomed to producing.

This in turn means that designers should have more time, and fees, to produce what is needed and valued, without wasteful iterations of documentation that are not needed.

Both developments have demonstrated significant improvements in time, cost and quality outcomes, when used separately. The full benefits of BIM will not be realised without a delivery methodology in place that facilitates the integration of contractors, trade contractors and suppliers in the design process.

If “twinned” to complement each other, they have the potential to realise even greater benefits. That potential is unlocked when all those who can contribute to design of assets are involved, as team members, as early as possible in the design process, ideally before designs are “frozen” to gain local authority or other relevant approvals, or used to fix the scope and price in tender pricing.

¹ Project sponsors are the client, financiers, and end users who, individually or jointly, determine the risk allocations and terms of the head contract offered to the head contractor. Whilst during design and construction there will usually be only one organisation acting as the client under a contract with a head contractor, its ability to determine all relevant commercial and technical conditions may have been influenced or even controlled by providers of finance, or the requirements of end users.

2. Executive Summary

The conventional approaches taken by the construction industry in Australia and overseas lead to it wasting over 30% of its efforts.

Much of this wasted effort could be eliminated, or at least reduced, if the client, designers, head contractor, specialist trade contractors, cost planners, and others could work together as a team and share responsibility for the successful delivery of a project. The greater the level of project team integration from the initiation of a project, the greater the team's ability to collaborate on the design, cost plan and allocation of risk before construction begins.

Everyone involved in the project team should have a shared interest in ensuring its success in terms of the client's declared objectives.

The higher the level of integration of team members at the early design stages, the greater the opportunities to get maximum benefit from the use of BIM. BIM promotes clearer, more accurate, up-to-date communication by consolidating currently disparate project information. It also allows all team members to contribute to the establishment and population of the databases underpinning the planning, design, construction and operation of the asset.

All project sponsors need to decide how much integration or collaboration is appropriate or possible on their projects. However, there are commercial, policy, or legislative issues that will determine the appropriate degree of integration for a particular construction project. There are straightforward approaches that can be used to enhance collaboration amongst project team members, and identify issues to be addressed to increase effective team integration.

Throughout this document, and its companion the *Project Team Integration Workbook*, the term 'project team integration' is used to describe the desired state or function of integration that can be achieved in a project team. The **function** of integration is the objective, rather than the **form** of an Integrated Project Team (IPT). All teams may be integrated to some extent, however only some will be able to be described as Integrated Project Teams.

The critical challenge for project sponsors and project team leaders is to understand and address the cultural and behavioural change needed to do things differently. The Cooperative Research Centre for Construction Innovation in its *Guide to Leading Practice for Dispute Avoidance and Resolution*¹ identified this as the key challenge for both avoidance of disputes and achievement of outstanding project outcomes. It also highlighted that without cultural and behavioural change the significant wastage from disputes in the construction industry would continue.

The imperative is clear – collaboration is driven by teamwork, in turn achieved by integrating otherwise disparate organisations and people, and these are the key to achieving outstanding project outcomes. Whether an idealised IPD is capable of being put in place for a particular project (or wanted for that matter), working on the six legs of the challenge will deliver benefits to the project sponsors and the project team.

The *Project Team Integration Workbook* provides a checklist for project sponsors, designers and constructors to assess the degree to which they are able to integrate a project team, and identifies issues that need to be addressed to deliver optimal project outcomes. The focus is on the behaviours needed to ensure the project team works collaboratively and efficiently, with each member respecting the contribution of other members.

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The *Workbook* also provides a framework for the decision-making required by the project team to enable the collaborative behaviour that needs to become the norm - "the way we do things here".

¹ *Guide to Leading Practice for Dispute Avoidance and Resolution*, Cooperative Research Centre for Construction Innovation, 2009, p7

3. Integration drives successful projects

“The starting point of this document is the belief that the more effectively a team is integrated, the better it can perform.”

“The higher the level of integration of team members at the early design stages, the greater the opportunities to gain maximum benefit from the use of BIM.”

The construction industry in Australia, the US and the UK, is changing in response to four key drivers of change.

1. Clients seeking greater value from their investment in capital works - wanting better value for money outcomes;
2. Recognition that there is considerable waste and wasted effort embedded in the way the industry has done things for years;
3. Technological change, in particular the use of BIM in the broadest possible way and across all stages of the project; and
4. Changes in the insurance industry enabling better integrated delivery models.

Increasingly the industry is adopting delivery strategies that use greater collaboration amongst project team members and is using BIM to drive out waste, wasted effort and avoid disputes, to deliver outstanding project outcomes. Outstanding projects meet and deliver the service needs of end users and those that manage the assets on their behalf.

Outstanding projects are characterised by:

- i. end users expectations being met or exceeded;
- ii. the client’s strategic and financial objectives being met;
- iii. project team members achieving their financial objectives;
- iv. the project delivery team having enjoyed working together, and want to work together again;
- v. community and stakeholder expectations of the project in terms of safety, design, environmental outcomes, and social objectives, being met or exceeded; and
- vi. ongoing management of the asset is efficient, streamlined and cost effective.

The collaboration required to deliver such outcomes requires alignment of goals across the project team, including key project sponsors. That alignment in turn is a product of the degree to which the team members are indeed a team – that is to say, the extent to which they are integrated.

The starting point of this document is the belief that the more effectively a team is integrated, the better it can perform. There is a continuum of levels of integration commonly seen within the industry, with varying levels of matching collaboration and cooperation amongst members of the project team.

The higher the level of integration of team members at the early design stages, the greater the opportunities to gain maximum benefit from the use of BIM. BIM promotes clearer, more accurate, up-to-date communication by consolidating currently disparate project information allowing all team members to contribute to decision making and the establishment and population of the databases underpinning the planning, design, construction and operation of the asset.

The powerful combination of modelling and analysis tools with integrated, collaborative processes is creating a sea change related to BIM. As adoption of these tools and processes spreads, teams will continue to find new productivity-enhancing ways to leverage the power of BIM for better project outcomes.

“There are commercial, policy, or legislative issues that will determine the appropriate degree of integration for a particular construction project. The more important challenge is how to increase the degree to which teams are integrated, and adopt the appropriate delivery strategy for the selected level of integration.”

An important consideration in the selection of a consultant team is an awareness of the ability of each discipline to collaborate effectively on the creation of a single, integrated model. This is best achieved if the consultant team is selected and commissioned as a whole and on the basis of their demonstrated ability to create the integrated model required for collaboration between team members and across project stages. It is likely that this will lead to the formation of strategic and enduring partnerships between individual disciplines or potentially, a significant increase in the growth of multi-disciplinary practices.

The powerful combination of modelling and analysis tools with integrated, collaborative processes is enabling a sea change in the potential for excellent project outcomes. As adoption of these tools and processes spreads, teams will continue to find new productivity-enhancing ways to leverage the power of BIM for better projects.

The USA construction industry has developed its thinking along similar lines, and taken it a step further in advocating for a delivery strategy built around Integrated Project Delivery or IPD. Four levels of IPD are promoted to reflect the degree of integration a client wishes (or is able) to use. The third level takes the form of a multi-party contract model not unlike the Alliance model now common in Australia, with early appointment of contractors to help design and model the asset to be constructed, using BIM.

IPD can and does exist in a variety of ways from a formal contractual structure described above to other more limited forms which are nevertheless focused on greater collaboration and shared responsibility and early involvement of part or the whole of the team. Integrated Practice is a term sometimes used to describe a form of integration for the design team alone which, while beneficial does not realise the potential for integrating the whole team, including some specialist subcontractors.

This document however stops short of advocating the creation of a full and formal IPD. It does so recognising that there are commercial, policy, or legislative issues that will determine the appropriate degree of integration for a particular construction project. The more important challenge is how to increase the degree to which teams are integrated, and adopt the appropriate delivery strategy for the selected level of integration.

All project sponsors must decide how much integration or collaboration is appropriate or desired on their projects. There are straightforward approaches that can be used to enhance collaboration amongst project team members, and identify issues to be addressed to increase effective team integration.

4. What are the drivers?

4.1 Clients wanting better value for money (the efficiency dividend)

The United Kingdom Government, in its *Government Construction Strategy*, produced by the UK Cabinet Office in May 2011, has adopted a strategy calling for fundamental changes in the way capital works are procured, and for reductions in construction costs of 20%.

This strategy ~ calls for a profound change in the relationship between public authorities and the construction industry to ensure the Government consistently gets a good deal and the country gets the social and economic infrastructure it needs for the long-term. There is a detailed programme of measures Government will take that will reduce costs by up to 20% by the end of this parliament.

This strategy means that the public sector will become a better client - more informed and better coordinated when its requirements are specified, designed and procured. The strategy also challenges industry business models and practices. It will replace adversarial cultures with collaborative ones; and will demand cost reduction and innovation within the supply chain to maintain market position – rather than innovation that is focussed on the bidding process - with a view to establishing a bargaining position for the future.

The UK Building Information Modelling (BIM) Task Group (www.bimtaskgroup.org) is supporting and helping deliver the objectives of the Government Construction Strategy and the requirement to strengthen the public sector's capability in BIM implementation with the aim that all central government departments will be adopting, as a minimum, collaborative Level 2 BIM by 2016.

In Australia too, all levels of government are facing growing demands for additional social and economic infrastructure but considerable budget pressure, and are looking for better value for money outcomes.

4.2 Getting rid of waste and wasted effort

The construction industry in Australia and overseas wastes over 30% of its efforts.¹ Landmark studies point to the common denominators in reducing wasted effort.² The sources of wasted effort are diverse and include:

- designs typically require multiple information inputs, which are obtained progressively from different sources, leading to several iterations of the design;
- when the cost budget is unknown or uncertain, several iterations of a design may be required, leading to (not uncommonly) between 3 and 10 design cycles being required to bring the design within budget;
- up to 40% of the design produced by architects and engineers is not used by

“If that wasted effort were to be reduced by only one third, it would lift Australian construction output by more than \$10 billion annually.”

¹ *Getting it Right the First Time*, The Institution of Engineers Australia, October 2005. Ireland, *VT40 Process Re-engineering in Construction*, Sydney, 1995.

² Koskela, L. *Lean Production in Construction*, Lean construction workshop paper, Finland, 1993

² *Projects as Wealth Creators*, Property Council of Australia, 2001

Relationship Contracting, Australian Constructors Association, 1998

Constructing the Team, UK Department of the Environment, 1994 *Rethinking Construction*,

Construction Task Force, 1998 *Accelerating Change*, Strategic Forum for Construction, 2002

Construction Matters, House of Commons Business and Enterprise Committee, Ninth Report of Session 2007-2008, July 2008

“A collaborative environment is required, where all team members are encouraged to contribute to problem solving, and those contributions are respected - in other words, a genuine team environment.”

the trade contractors for whom it is intended – the architects and engineers “push” on to trade contractors the design documents they think trade contractors want, rather than the trade contractors “pulling” the drawings they require for construction;

- poor coordination of designs by different designers (architects and engineers) and trade contractors and the resulting clashes can add 5% or more to costs;
- the cost of re-work because defective work typically accounts for between 5 and 10% of construction cost.

This is not a peculiarly Australian issue. Rather, it is a product of the structure of the construction industry, the increasing complexity of its services, and the creation and operation of “silos” within that structure. A 2004 Construction Industry Institute/Lean Construction Institute study suggests that as much as 57% of time, effort and material investment in construction projects does not add value to the final product, as compared to a figure of only 26% in the manufacturing world.

If that wasted effort were to be reduced by only one third, it would lift Australian construction output by more than \$10 billion annually. If the changes required to achieve that reduction were to “ripple” through the industry, it is conceivable that within a few years the improved output would be substantially higher. The studies cited at Footnote 1 under 4.2 include case studies of the cost savings achieved by focusing on elimination of wasted effort.

Research studies in Australia and overseas all point to the need for a change in the environment in which project teams are appointed and operate, if this waste is to be reduced. A collaborative environment is required, where all team members are encouraged to contribute to problem solving, and those contributions are respected - in other words, a genuine team environment.

4.3 Building Information Modelling

In Australia BuildingSmart has continued to advocate for the use of interoperability amongst software platforms. With funding from the Australian Government it has produced a cost benefit analysis explaining the direct financial benefits flowing from the use of BIM.¹

Using BIM has the fortunate ability to reduce time, cost, material consumption and carbon emissions while improving quality. BIM is a highly effective way of capturing and sharing accurate, digital, three dimensional information regarding the design, construction and operation of a building.

An Australian survey has found that using BIM is estimated to improve the productivity of the Buildings Network by a very significant 6-9% with an extremely high benefit cost ratio (BCR) of ten.

The Airconditioning and Mechanical Contractors Association (AMCA) has established BIM-MEP^{AUS} to address some of the barriers that limit the effective take-up and use of BIM within Australia. In particular it is working with key industry stakeholders and software developers, to establish a series of vendor neutral customised BIM modelling packages for the mechanical services sector.²

¹ Allen Consulting Group, 2010, *Productivity in the buildings network: assessing the impacts of Building Information Models, report to the Built Environment Innovation and Industry Council, Sydney, October 2010.*

² *Building Information Modelling and Integrated Project Delivery, www.amca.com.au, February 2011*

5. What needs to be done?

5.1 What needs to be changed?

“The hierarchical structure of the industry effectively excludes specialist trade contractors and manufacturers from contributing to the optimal way of satisfying a project’s functional objectives, and is a substantial cause of wasted effort.”

“The specialist trade contractors involved in manufacture typically represent between 20% and 40% of capital cost, and have the capacity to contribute significantly to reduce whole-of-life cost.”

In the building industry head contractors and trade contractors generally first see the design of an asset when invited to tender. That approach to tendering limits the ability of contractors to suggest alternative designs, because they:

- are reluctant to give away good ideas for nothing, nor risk embarrassing design consultants on whom they are dependent for future work;
- generally have limited time available to review and price tender designs and documents; and
- have a typical tender success rate of less than 20%, making the cost of adding intellectual property prohibitive.

The current approach to tendering also results in the original design perhaps becoming wasted effort. The Institution of Engineers Australia, in their landmark study “*Getting it Right the First Time*” (October 2005) found that parts of design documentation contribute 10-15% of unnecessary cost. Having contractors and “specialist” trade contractors involved in the design of a project would assist in reducing this wasted effort by nominating the essential design information they would “pull” rather than having designs “pushed” onto them. For the purposes of this paper “specialist” trade contractors are those, generally involved in delivering the structure and services, whose work is not “off the shelf” and which, once designed and made, cannot be used on another project. If not used on the project for which it was designed it must be thrown away.

Even with design and construction tenders, where specialist trade contractors undertake a design development and documentation role, the core design is generally locked away, with clients and design consultants reluctant to re-open design and incur additional effort/fees other than for relatively minor enhancements.

This reluctance is understandable – the designs upon which contractors and trade contractors are asked to tender also have set project budgets and programs, which, subject to contingencies, have been the basis for establishing project financing arrangements. Redesign delays, even if a lower cost solution is found, can have a net cost increase from delays with the potential for new authority approvals being required.

The hierarchical structure of the industry effectively excludes specialist trade contractors and manufacturers from contributing to the optimal way of satisfying a project’s functional objectives, and is a substantial cause of wasted effort.

The solution lies in increasing integration of the key specialist trade contractors, head contractor, designers and project sponsors. What does this alternative approach achieve? It is not uncommon for many disciplines, appointed competitively on price, to be involved in the design of a project. It is also true that few designers have manufacturing or procurement experience which is essential, particularly when structure and mechanical elements are concerned. The specialist trade contractors involved in manufacture typically represent between 20% and 40% of capital cost, and have the capacity to contribute significantly to reduce whole-of-life cost.

The change this situation creates calls for a rethink of procurement strategies, with a greater focus on life-cycle value rather than lowest initial cost. The early engagement of structural and services sub-contractors to contribute to detail design is essential, even before the appointment of a head contractor at times.

5.2 An alternative approach

“The higher the level of integration of team members at the early design stages, the greater the opportunities to get maximum benefit from the use of BIM.”

“Team members must believe that they are working for the project instead of their respective companies. Individuals must accept responsibility jointly, with a “we’ve got each other’s backs (covered)” mentality instead of the “cover yourself’ mentality.”

Much of this wasted effort could be eliminated, or at least reduced, if the client, head contractor, designers, specialist trade contractors, cost planners, and others could work together as a team and share collective responsibility for the delivery of a project. The greater the level of such project team integration established at the outset of a project, the greater the team’s ability to work together on the design, cost plan and allocation of risk before construction begins. Everyone involved in the project team has a collective interest in ensuring its success.

The higher the level of integration of team members at the early design stages, the greater the opportunities to get maximum benefit from the use of BIM. BIM promotes clearer, more accurate, up-to-date communication by consolidating currently disparate project information allowing all team members to contribute to the establishment and population of the databases underpinning the planning, design, construction and operation of the asset.

The Australian construction industry has been exploring alternative approaches to project delivery that facilitate more collaborative project team management since the early 1990s. By the time the Australian Constructors Association published its Relationship Contracting document in 1998, there had been examples of alliances being formed to manage substantial engineering projects, early contractor involvement delivery strategies were being trialled, lean construction methodologies were being developed, and 2-stage managing contractor strategies had been tested. All these initiatives were intended to promote collaborative project cultures that would lead to better project outcomes.

In Australia and other countries the moves to more collaborative working were given added impetus by the rapid growth in cheap, readily available computing power, and the development of increasingly sophisticated computer aided design software systems in the first decade of the 21st century. The technology has worked as an enabler of greater collaboration, and the improved collaboration is helping to unlock the creative potential of integrated teams as never before.

Delivery using integrated project teams has been taken a step further in the United States. The US publication *Integrated Project Delivery for Public and Private Clients*¹ uses a model with 4 levels of collaboration, rising from the basic Level 1 to Integrated Project Delivery (IPD) documented in multiparty contracting at Level 3. It suggests some actions that help to increase collaboration and integration.

Some of the potential areas include:

- *Design team involvement in performance incentives and risk sharing*
- *Construction team incentivised for productivity*
- *Subcontractor participation in performance incentives and risk sharing*

Team members must believe that they are working for the project instead of their respective companies. Individuals must accept responsibility jointly, with a “we’ve got each other’s backs (covered)” mentality instead of the “cover yourself’ mentality. By “owning” design intent as well as budget and schedule performance, the entire team is compelled to focus on quality instead of making changes for the individual company’s best interest.

¹ National Association of State Facilities Administrators (NASFA); Construction Owners Association of America (COAA); APPA: The Association of Higher Education Facilities Officers; Associated General Contractors of America (AGC); and American Institute of Architects (AIA), 2010

5.3 It's about the journey as much as the destination

“The critical challenge for project sponsors and project team leaders is to understand and address the cultural and behavioural change needed to do things differently.”

“The imperative is clear – collaboration is driven by teamwork, in turn achieved by integrating otherwise disparate organisations and people, are key to achieving outstanding project outcomes.”

The **function** of integration is the objective, rather than the **form** of an Integrated Project Team (IPT). As noted earlier, there can be policy, legislative, or commercial issues that prevent the full blown adoption of Integrated Project Delivery by project sponsors. They may not, for example, be able to contract with trade contractors without sufficient design to go to a tender. They can though use the project tools described in the *Project Team Integration Workbook* to increase integration and thus enhance collaboration.

The critical challenge for project sponsors and project team leaders is to understand and address the cultural and behavioural change needed to do things differently. The Cooperative Research Centre for Construction Innovation in its *Guide to Leading Practice for Dispute Avoidance and Resolution*¹ identified the key challenge for both avoidance of disputes and achievement of outstanding project outcomes.

- i. *Recognition that each construction project involves the creation of a new group of people with diverse interests. There is thus the need to create a culture within the group which is project oriented but which recognises the financial and social requirements of each participant, and facilitates the building of trust between them.*
- ii. *In selecting project participants, significant weight should be given to the attitude of a participant, as well as its capacity and pricing.*
- iii. *The early involvement of head contractors, specialist subcontractors and designers with the client and other project sponsors.*
- iv. *Sensible risk allocation.*
- v. *Appropriate delegation of authority, including financial authority, to problem solve rapidly.*
- vi. *Selecting a project delivery mechanism and contractual framework that reflects the matters above.*

Without the cultural change inherent in adopting the concepts above, the Australian economy will continue to suffer wastage from disputes in the construction industry estimated at approximately \$7 billion per annum.

Achieving cultural change will not be easy, but it is achievable and obviously worthwhile. It will require leadership and direction from the most senior executives of all industry participants.

The imperative is clear – collaboration is driven by teamwork, in turn achieved by integrating otherwise disparate organisations and people, are key to achieving outstanding project outcomes.

¹ *Guide to Leading Practice for Dispute Avoidance and Resolution, Cooperative Research Centre for Construction Innovation, 2009, p7*

6. Achieving Integration and Collaboration

“It is important to involve project team members in setting the objectives, and the strategies and actions that are included in the project management plans that describe them.”

Maintaining good relationships, and teamwork, is hard enough in conventional business settings – those with a permanent workforce and settled business relationships with a group of suppliers and customers.

For teams within a single organisation, each team member’s commitment to a common purpose and set of related performance goals for which the group holds itself jointly accountable, is critical. Without this internal team discipline, the team’s potential will come up short.

Within an organisation, no single factor is more critical to the generation of effective teams than the clarity and consistency of the organisation’s overall performance standards—or “performance ethic.”

The truly committed and integrated team can be the most productive performance unit management has at its disposal—provided there are specific results for which the team is collectively responsible, and provided the performance ethic of the company demands those results.¹

In a project-based industry, every project creates and is dependent on, a unique team of people. The work involved is undertaken by a mix of project sponsors’ staff, contractors, and consultants. Teamwork is harder to achieve than in a conventional business setting, because of the following challenges:

- the team is assembled for one project, and is then disbanded;
- it is made up of multiple organisations and bosses;
- on site staff owe primary allegiances/responsibilities to their bosses, not the project;
- contractors and consultants join the team when they have tasks to perform, and then leave it;
- teams are selected afresh for each project without regard to whether individual team members have worked together before; and
- by and large, teams are selected with more regard to price than the ability of individual team members to work collaboratively.

The aim is to create a common set of objectives for the project, that everyone is committed to achieving. How to do this? The procurement strategy chosen by the project sponsor can be a key enabler together with selecting the ‘right’ project team members. It is important to involve project team members in setting the objectives, and the strategies and actions that are included in the project management plans that describe them e.g. quality management plans, safety plans, material handling protocols, communication plans.

This initial involvement is critical to all members of the team feeling that they own those plans. Why? Because involvement is necessary to achieve ownership. Ownership leads to commitment and achievement of the common project objectives.

Projects as Wealth Creators² identified the top 10 drivers common to excellent projects as behavioural. It went on to describe, in a “*Roadmap to Project Excellence*”, the decisions common to all projects that determine project outcomes, the stages of projects when they are taken, and the team members responsible for making them.

¹ *The Wisdom of Teams*, J R Katzenbach and D K Smith, McGraw Hill, 1994

² *Ibid* p 5

“This initial involvement is critical to all members of the team feeling that they own those plans. Why? Because involvement is necessary to achieve ownership. Ownership leads to commitment and achievement of the common project objectives.”

The *Project Team Integration Workbook* develops that approach further and refines the description of the decisions required at different stages of the project. It lists 18 decisions, and groups them either as decisions for project sponsors, or project team members.

The earliest and arguably most significant decisions, are taken during the early stages of project initiation. By definition, these early strategic decisions are taken by project sponsors, and set the culture or environment within which the project team will operate. Later decisions are taken by the project delivery team.

Project sponsor decisions	Project delivery team decisions
1. Environment & culture	7. Client business integration
2. Trusting relationships	8. Scope management
3. Project leadership	9. Team selection
4. Client risk tolerance	10. Team integration
5. Financial management	11. Project start up
6. Project delivery strategy	12. Stakeholder involvement
	13. Collaboration & communication
	14. Wasted effort
	15. On-the-job learning
	16. Project control standards
	17. Technical, OHS, environmental
	18. Continuous improvement

Details of the decisions and alternative outcomes are described in the *Workbook*.

The decision making approach in the *Workbook* is derived from work carried out by Dr Tom Crow and Peter Barda as part of their commission from the Property Council of Australia to produce the 2001 publication *Projects as Wealth Creators*.

Appendix A. Members of APCC and ACIF

Australasian Procurement and Construction Council Member Authorities

New South Wales

Department of Finance and Services

Western Australia

Department of Finance

Department of Treasury

South Australia

Department of Planning, Transport and Infrastructure

Department of Treasury and Finance

New Zealand

Ministry of Business, Innovation and Employment

Victoria

Department of Treasury and Finance

Queensland

Department of Housing and Public Works

Australian Government

Department of Finance

Defence Materiel Organisation

Department of Defence

Northern Territory

Department of Business

Department of Infrastructure

Australian Capital Territory

Commerce and Works Directorate

Papua New Guinea

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Australian Constructors Association

Association of Consulting Architects Australia

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Australian Institute of Building

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Housing Industry Association

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NATSPEC /Construction Information Systems

National Precast Concrete Association

Property Council of Australia

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