Collaborative Construction: More myth than reality?

A critical review of the theory and practice of collaborative working in construction

June 2016
Acknowledgements

This report has been written by a team from Pinsent Masons and On-Pole Limited and is based upon our collective experience of advising on collaborative projects, together with a literature review and a number of interviews with clients and noted practitioners.

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- **Stuart Birch** Volker Rail
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Foreword

As the demand for construction and infrastructure services increases, procurers and suppliers are looking at delivery structures which will provide not only sustainable, long term value to the procurers but also, more consistent, better margins for contractors, supply chain members and professional teams.

As BIM and data management technology drives new approaches to the design and construction process, the need to replace traditional competitive procurement and tendering processes with more collaborative structures and arrangements becomes ever more acute.

This report by the leading infrastructure sector law firm Pinsent Masons goes to the heart of the complex dynamics surrounding these issues and points the way towards a more collaborative future.

The drivers for real change and the barriers which have held the industry back for so long are clearly identified. The report highlights the challenges and makes clear and compelling recommendations for fundamental change.

One of those recommendations is the need for greater commitment and leadership from industry bodies and senior industry figures. As this year’s President of the ICE I am pleased to endorse the themes of this report and am grateful to the team at Pinsent Masons for giving further welcome impetus to a subject which is not only highly topical but, in my view, crucial for the future health and well-being of our industry.

Pinsent Masons will be working with the industry to develop some of the key themes emerging from this report and I look forward to their second report next year.

Sir John Armitt
June 2016
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Introduction

As the UK recovers from the worst of the most recent recessionary pressures and the demand for construction and infrastructure services increases, it is evident that some clients in the Industry are looking at new ways of tendering for and delivering construction services which will deliver improved long-term value to clients and more realistic margins to contractors, supply chain members and professional teams.

We anticipate that this trend is likely to accelerate as the true benefits of Building Information Modelling (BIM) begin to become more fully understood by clients and their advisers, as the sector moves towards the Government’s Level 2 BIM target for 2016. We also anticipate an acceleration of this trend as benefits from increased levels of foreign investment in UK infrastructure projects require more collaborative vehicles and contractual structures.

In some areas of the Industry, we also detect a move towards, in the UK at least, the replacement of more traditional competitive tendering methodologies with an increasing use of frameworks, longer term collaborative relationships, joint ventures, partnering and alliancing arrangements. These might become the norm rather than an exception.

It is generally accepted that many existing standard forms of contract and approaches to contracting are not ideally suited to collaborative working, especially in a BIM mandated or enabled world. Whilst much has been written on the subject of collaboration, we have found that there is very little practical and commercial guidance available. In our experience, very few clients, contractors and consultants have turned their minds to consider how various alternative commercial structures, contractual arrangements and procurement strategies might best suit the requirements of the new post recessionary market.

Prompted by our extensive experience of advising clients, contractors, consultants and the wider supply chain, we remain puzzled as to why the pleadings of Sir Michael Latham and Sir John Egan, for example, have largely gone unheeded.

Accordingly, this Report represents our attempt to unpick some of the key factors influencing the use of collaborative working methodologies and to critically review their use and key characteristics. It is not our intention to be critical of the Industry per se; rather, our ambition is to offer some informed thoughts and guidance and to stimulate constructive debate.

We were assisted in the drafting of this Report by Russell Poynter-Brown from On-Pole Limited, an independent management consultancy specialising in project and team performance improvement in the built environment.

Pinsent Masons
Numerous reports and surveys have indicated that the UK construction industry clearly recognises the need for a more collaborative approach if new technologies are to be embraced, if customer requirements in a BIM enabled world are to be embraced and if low margins are to be improved.

The drivers for change have been apparent for some time and there is no suggestion from any section of the industry that they are diminishing or likely to diminish in the future.

On the contrary, it is generally accepted that pressure for change is mounting rapidly on government and the private sector to realise the benefits which the new technologies promise.

Yet the barriers to change remain all too evident:
• There is an inertia resulting from the comfort of familiar commercial and contractual structures which do not encourage team-working or collaboration.
• There is a perception that collaboration is likely to be more costly, time consuming and resource hungry.
• Some construction clients are still driven by short term goals and thinking, especially if their own involvement in the project is likely to be short term.
• KPIs still tend to be more 'stick than carrot', often based around one sided requirements dressed up as Partnering or Collaboration.
• Fragmentation within the industry and its numerous bodies and organisations makes it difficult for a clear lead to come from any one consistent source.
• There is a reluctance by clients and their advisers to engage in a process which is likely to lead to a loss of client control if decision making becomes more collective, i.e. by a Project Board as opposed to the client.
• There are still insufficient commercial incentives for industry professionals and contractors to change.
• There is currently a lack of adequate training in the potential benefits of collaborative working techniques and the ingredients required. Very few professional bodies or academic institutions seem truly prepared to advocate and promote new approaches.
• There appears to be a lack of strong Industry leadership with too few high profile Industry professionals prepared to commit to advocating real change and creating an environment where change is encouraged.
• There is an absence of standard form construction contracts and professional terms of appointment truly embracing collaborative working. Most agreements incorporating collaborative techniques are either bespoke or heavily adapted from existing, more traditional forms.

Executive Summary

If we achieve nothing else from this Report, our ambition is to reignite the debate regarding collaboration, in all its forms, and to play our part in moving the industry from talking about collaboration to actually doing it and being able to quantify and articulate the benefits.
Pressure for change is mounting rapidly on government and the private sector to realise the benefits which the new technologies promise.

- Existing insurance models are well established and, for the most part, the insurance community prefers the comfort of the familiar.

So what is the way forward? What steps need to be taken and what structures need to be developed if the fundamental change which the Industry appears to recognise as necessary is really going to happen?

This report highlights a number of recommendations which collectively could make a very significant difference:

**Changing Attitudes**
Greater commitment to change from major Industry clients, the Government and public sector clients and from the Industry as a whole.

**BIM Adoption**
The continued use and development of BIM. In particular, greater clarity at the outset of projects as to when and how BIM is to be incorporated into the procurement, design, construction and operational phases. The Government’s recent commitment to fund the evolution of BIM to ‘Level 3’ is a welcome contribution to its future development.

**Strong Leadership**
Strong and consistent leadership from Industry bodies and key Industry figures.

**Greater Emphasis on Effective Team Working**
Greater attention to effective team working structures and techniques and their role in a more collaborative project environment.

**New Contractual Structures**
Ensuring that contractual structures and obligations enhance and support a more collaborative working environment by focussing on positive project outcomes and reducing the blame culture which dominates more traditional contract structures.

**Changing the Risk Profile**
Challenging whether a risk profile which normally places a significant element of risk on the contractor is sensible in an environment which requires innovation, participation and cooperation of all core project team members in order to maximise client value and long-term cost efficiencies.

**Involving Key Supply Chain Members**
Actively engaging with and involving key supply chain members in the core project team and in the collaborative structures.

**Knowledge Centres**
Creating centres of knowledge for best practice guidance in effective collaboration techniques and structures.

**Training**
Training for Industry professionals, in particular architects, quantity surveyors and project managers, in collaborative techniques and the benefits of effective team working.

**Measuring Success Differently**
Measuring the success of projects on the basis of overall life-cycle cost, sustainability and energy efficiently as opposed to out-turn construction cost against budget / anticipated tender prices.

**Willingness to Devolve Management Control from Client to Core Project Team**
Encouraging construction clients to be prepared to devolve management of projects to a core project team even if this means a reduction in control.

**Evolution of the QS Role**
Development of the traditional QS role to include greater emphasis on long-term asset value and life cycle costs.
Rewarding Success
Encouraging construction clients to be willing to reward and incentivise project team members and key supply chain members by giving all key players a financial stake in the project’s success against agreed benchmarks / targets.

Development of New Key Performance Indicators
Developing KPIs which define success and which measure, recognise and incentivise performance above benchmark levels as well as penalising poor performance.

Development of New Standard Form Contracts
Developing standard form construction contracts and terms of appointment for professional team members which encourage and embrace collaborative behaviours.

New Insurance Models
Development of insurance models, including the Integrated Project Insurance model which recognise that collaborative techniques and emphasis on providing long-term solutions for clients may reduce overall project risk whilst, at the same time, placing additional collective obligations on all core team members.

Ultimately, change is likely to be driven by enlightened clients who have long-lasting programmes of work and who have a genuine incentive to achieve real life-cycle value for money and long-term sustained asset value rather than the cheapest initial solution. Those clients will be open to new ideas, will not be steeped in traditional structures and models and will employ advisers who understand and embrace their requirements and who are prepared to challenge the norms of traditional contract structures and forms.
Background

The UK construction Industry is renowned for its short-term focus and a reluctance to take a holistic view of expenditure, often being driven by lowest price at the expense of best value-for-money.

John Glenn, the United States of America’s first astronaut to orbit the earth, captured the obvious weakness in this philosophy in his legendary quote “As I hurtled through space, one thought kept crossing my mind: Every part of this capsule was supplied by the lowest bidder”.

Of course, few if any construction projects commence with any conscious intent to develop adversarial relationships. However, relationships can frequently become adversarial, often because of the ‘bilateral’ nature of many contract structures and the absence of any meaningful attempt to introduce realistic and equitable risk-sharing arrangements. It is still the case that relatively few projects include specific contractual requirements for the parties to behave differently and to work together for their mutual advantage.

Consequently, when challenges or problems arise in “traditional” contractual structures, there is little incentive for the parties to collaborate to resolve them. This has effectively fuelled the historic blame culture that has plagued the sector for years and has exacerbated parties’ natural inclination to act in their own separate best interests.

Of course, most standard forms of contract contain specific provisions for the parties to seek redress by way of contractual claims and various dispute resolution mechanisms. It is hardly surprising that clients, contractors and specialists use the contractual machinery available to them when they consider it necessary to do so in order to protect their commercial interests.

In stark contrast, contracts that also require the parties (including, in some contracts, professional advisers, tier 2 suppliers and specialists) to collaborate actively tend to discourage adversarial behaviours. Some go further, for example, by including specific provisions that result in the parties agreeing to share financial consequences of design, construction and programme risks in agreed proportions. This approach immediately reduces the reason and scope for disputes.

One of the key purposes of a standard form of building contract of course, is to provide a mechanism for the parties to seek redress for non-performance. Many make provision for an entitlement to additional payments or deductions upon the occurrence of certain events. To varying degrees, contracts will naturally tend to drive behaviours and those behaviours can become negative or adversarial.

If a contract were to contain specific provisions which actively discouraged negative or adversarial behaviours so that the parties had to deal with issues on a collaborative basis, then, clearly, the parties would be much more likely to behave accordingly.
A significant majority of UK construction clients regard it as being in their best interests to pass risk down to their professional advisers and to the tier 1 contractor. Unsurprisingly, the tier 1 contractors then feel it necessary to further pass that risk to their sub-contractors and specialists. This raises the inevitable question of whether the party bearing the risk is in the best position to do so. There may be a cursory allusions to collaborative working or partnering in the contract but in reality, the most likely paradigm is something along the lines of ‘we understand why its beneficial to collaborate but we don’t trust you and therefore we still want a robust contract that best protects our position, should you let us down’.

In order to break this paradigm, it will be imperative for clients, their advisers and their supply chain members truly to believe that collaboration will ultimately secure a much more satisfactory long-term outcome for them all, even if that means assuming or sharing in a greater proportion of the construction and commercial risk.

However, the key inhibitor remains inertia coupled with a fear of the unknown and an inherent distrust of active collaboration. This is often perpetuated by unenlightened leadership and anachronistic behaviours. Project teams are reluctant to step out of their ‘comfort zones’, preferring to focus on their professional silos and wary of engaging early with contractors and their supply chains or transgressing the numerous restrictions often found in professional indemnity insurance policies, rather than harnessing their collective expertise for the ultimate benefit of clients and their end users.

In a market where client influence remains high, it is easy to understand why such behaviours are more prevalent, although it should be noted that in recent years, the dynamic has changed and that contractors are now increasingly more selective as to which projects they bid for, the basis on which they bid and which clients they prefer to work with. As a result, the Industry has reverted to greater use of the two stage tender process which was prevalent until the financial crash of 2007-8, when it disappeared overnight virtually to be replaced by single stage tenders with lengthy tender lists.

The literature on collaboration makes extensive reference to the need to engage with the supply chain at the earliest opportunity. However in an Industry riven by a culture of unsustainably low bids and poor margins, it is hardly surprising that the gulf between clients and their supply chains is exacerbated by limited investment in training and development. This is especially so in core skills and the behaviours required to collaborate successfully.

That said, there are some notable exceptions, most prominently in transport and infrastructure. We discuss these in detail later in the Report.
Defining Collaboration

So what do we mean by “collaboration”?

Whilst concepts such as collaboration, partnering and alliancing have been in the construction Industry lexicon for many years, the terms are often confused or interchanged without much consideration of their distinctive features and characteristics.

We believe that collaborative working is not merely a vehicle for cost reduction (although that is often one valuable outcome) but more significantly, a structured means of enhancing team performance and value-added returns from investment in construction.

There is a significant body of opinion within the Industry that suggests that these various forms of cooperation and mutually beneficial working are well established and are delivering tangible and significant results. It must be acknowledged, however, that others take the view that such methods of working are largely discredited and are either a figment of imagination or simply do not deliver the benefits claimed. Interestingly, the British Standards Institution refers to anecdotal evidence suggesting that up to 80 percent of partnering/alliancing arrangements fail to deliver the desired outcomes, due to “unclear expectations and undefined business processes that [do] not create an effective environment for collaboration”.

Notwithstanding the above, there is increasing evidence indicating that project teams, i.e., clients, contractors and the wider supply chain, are actively seeking opportunities to form structured collaborative ‘networks’. This is typified by the work of Partnership Sourcing Limited.

But do project team members all have the same idea and understanding about the nature of their collaboration?

At its most basic, collaboration might be defined as “the act of working with another or others on a joint project, or something created by working jointly with another or others”.

However, it is in the numerous definitions of partnering that we begin to see a much greater emphasis on integration, mutual objectives, improved efficiency and effectiveness as well as collective performance management, typified in Thomas and Thomas’s definition of partnering:

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1 BSI, 2013
2 Partnership Sourcing, Future Connections Collins, 2015
3 Collins, 2015
4 Thomas and Thomas, 2005
“An integrated team-working approach to achieve better value for all partners by reducing duplication and waste of resources, based on mutual objectives, a robust approach to issue resolution and a proactive approach to measurable continuous improvement”.

In their reference to the work of the CIB Working Group 12, Bennett and Jayes describe partnering for example, as a “structured management approach to facilitate team-working across contractual boundaries”.

These definitions highlight (or infer) key aspects of collaboration, namely,

- Joint working
- Effective communications
- Trust
- Openness
- Common objectives
- Agreed problem resolution methods
- Proactive focus on continuous measurable improvements

**Characteristics of Collaboration**

Blending best Industry practice and lessons from other industries and sectors, most successful collaborative construction projects and teams exhibit characteristics from the following model:

- **Behavioural:**
  - Building the right culture (organisations and individual behaviours)
  - Using psychometric profiling as a means of ensuring that team members exhibit complementary traits and characteristics
  - Adopting team coaching as a means of promoting high performance
  - Recognising the importance of relationships:
    - Positive/negative contributors
    - Emphasis on value-added activities
    - People, behaviours and trust

- **Integration:**
  - Common goals and objectives
  - Early engagement with supply chain
  - Effective communications
  - Collective performance management

- **Leadership:**
  - Committed leadership
  - Core groups and project boards
  - Driving change and performance

- **Commercial:**
  - Risk and reward systems
  - Integrated project insurance
  - Transparency and open book accounting

- **Organisational:**
  - Adopting the principles of BS 11000

The model reflects characteristics that we both recognise and advocate based upon our collective experience of advising upon a diverse range of projects and contract forms which nevertheless have a common theme, namely a necessity for effective collaborative relationships.

Table 1 summarises similar key characteristics but from an organisational and relational perspective.

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5 Bennett, J and Jayes, S, 1998
6 Adapted from HM Treasury (2014), Improving Infrastructure Delivery
7 BSI 2013
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Key Characteristics of Collaborative Working

**Organisational**
- Teamship
- Vision-driven leadership
- Commitment
- Early engagement with team members and supply chain
- Effective communications
- Mutual goals and objectives
- Equitable risk and reward structures
- Formal and informal networks
- Defined accountabilities
- Structured problem resolution
- On-going performance management
- Responsiveness (agility and flexibility)
- Structured debriefing (including regular lessons learnt exercises)

**Relational**
- Trust
- Honesty and openness
- Empathy
- Attunement
- The ability to confront issues without being confrontational
- Avoiding the need to feel invulnerable (e.g. admitting to mistakes)
- Influencing skills
- Inspiration
- Curiosity
- Team coaching

Later in this Report, we discuss key aspects of these characteristics and also provide some suggestions as to how their benefits can be better harnessed in the future.

**Collaborative Working**

If clients and their teams at least understand the characteristics of collaboration, they then need to appreciate how these play out in highly dynamic project environments.

In their paper “Which Kind of Collaboration is Right for You?”11 Gary Pisano and Roberto Verganti rightly highlight the temptation for organisations to endeavour to establish collaborative working relationships without proper consideration of their purpose, structure and key objectives.

In their “four ways to collaborate” model12 (Figure 1), in this case based upon an innovation project, Pisano and Verganti very effectively summarise the key issues that project teams should consider when deciding how to collaborate, namely should membership of the collaborative network be open or closed and should the governance structure be flat or hierarchical?

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9 Katzenbach and Smith (2008), The Discipline of Teams
10 Katzenbach and Smith (1993), The Wisdom of Teams
11 HBR Press, 2013
12 HBR Press, 2013
This model reflects the principal attributes of the most sophisticated forms of collaboration that the Industry increasingly recognises as alliancing:

- Governance:
  - Hierarchical (‘Kingpins’ control direction and value creation)
  - Flat (Participants share the costs, risks and technical challenges)
- Participation:
  - Closed (Limited input and solutions from a restricted number of participants)
  - Open (Numerous inputs from a much wider range of participants)

Given the above, it is evident that forms of collaboration range from very informal and unstructured ad-hoc working practices, through to highly sophisticated ‘alliancing-style’ arrangements managed by permanently constituted teams, led by a governing body such as a project board or similar.

Notwithstanding the above, we acknowledge that many elements of the UK construction Industry are reluctant to fully embrace collaborative working methods. This is prompted by deep-seated mistrust between the key parties and inertia fuelled by historical and outdated working practices.

Effective team-working is at the heart of successful collaborative working relationships. However very few construction clients and their supply chain members apply a structured approach to building and maintaining high-performing teams.

For the most part, leadership and project/programme teams within the sector dismiss the benefits of a structured approach to collaborating together in favour of a focus on delivery. The construction Industry is, of course, a very practically-based discipline and so it is perhaps unsurprising that what some might call the ‘softer skills’ of highly effective team working and relationship-building are not prioritised to the extent that they should be.

**Figure 1: The Four Ways to Collaborate (adapted)**

<table>
<thead>
<tr>
<th>Innovation mall</th>
<th>Innovation community</th>
</tr>
</thead>
<tbody>
<tr>
<td>A place where a company can post a problem, anyone can propose solutions, and the company chooses the solutions it likes best</td>
<td>A network where anybody can propose problems, offer solutions, and decide which solutions to use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elite circle</th>
<th>Consortium</th>
</tr>
</thead>
<tbody>
<tr>
<td>A select group of participants chosen by a company that also defines the problem and picks the solutions</td>
<td>A private group of participants that jointly select problems, decide how to conduct work, and choose solutions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governance</th>
<th>Participation</th>
<th>Open</th>
<th>Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchical</td>
<td>Flat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the endeavour to chase often exacting deadlines and performance targets, construction Industry teams frequently overlook the need to actively manage their relationships with the same degree of diligence as they do their operations on site. The ‘opportunity cost’ of this in terms of increased tensions with the team, duplication and associated inefficiencies was adroitly summarised by professional basketball coach John Wooden in his famous quote “ If you don’t have time to do it right, when will you have time to do it over?” Some organisations in the high-volume manufacturing sector for example, took this principle and rephrased it as “we never have the time to do the job properly but always have the time to do it again”.

Effective Team-Working

Valuable lessons as regards collaboration can be learnt from other sectors, not least of which are the military and elite sport. For example, in his book “Winning!” Sir Clive Woodward refers to the principle of ‘teamship’, defining it as “the collective standard of behaviour understood by everyone in the team environment”, in essence the “skills in interacting as a group”.

In his book “Team of Teams”14, General Stanley McChrystal turns to game theory to explain how his experiences with the Joint Special Operations Task Force graphically illustrated how effective teamwork produces superior results as opposed to more insular competitive or non-collaborative working. Specifically, McChrystal cites beating the ‘Prisoner’s Dilemma’ as a significant contributor to the Task Force’s superior performance.

McChrystal argues that the Task Force faced a real-life prisoner’s dilemma. Each agency within the Task Force feared that sharing intelligence would work against its own interests. Sharing that intelligence was vital and so McChrystal set about beating the dilemma by instigating highly structured collaborative working founded on transparency and trust, culminating in the concept of a “Team of Teams”.

Notwithstanding the collaborative logic of the Prisoner’s Dilemma and the robust economic and game theory that supports it, one would have to acknowledge that, where there is a strong commercial imperative (such as the need to protect Balance Sheet performance), there might also be a significant inhibitor to collaborative working in the absence of other tangible incentives.

14 General Stanley McChrystal (2015)
So why do teams fail?
The literature regarding effective team working is extensive but why do teams so often fail to achieve this? Arguably, Patrick Lencioni best encapsulates the fundamental reasons in his seminal work “The Five Dysfunctions of a Team”\textsuperscript{15}. Lencioni describes these dysfunctions as follows:

**Absence of Trust**
In this context trust is defined as the confidence amongst team members that their peers’ intentions are constructive and that there are no reasons for the remaining team members to feel the need to be protective or otherwise suspicious of intentions.

Such fundamental trust requires team members to show varying degrees of vulnerability to each other, most especially open declarations on issues such as:
- Weaknesses
- Skills deficiencies
- Errors and mistakes
- Requests for assistance to resolve problems

The ability of teams to openly acknowledge their vulnerabilities is a major pre-requisite to improving performance in the sector, allied with appropriately worded and structured contracts that clearly describe roles and accountabilities as well as equitable risk sharing arrangements for example.

**Fear of Conflict**
Historically, the construction industry has suffered from a reluctance to raise issues or concerns at project or programme team level for fear of being judged amongst the peer group or otherwise considered as a negative or disruptive influence. Whilst this might appear as naive to many, the more traditional forms of contract and procurement methods often exacerbate these behaviours.

The reality is that “productive conflict”, as Lencioni describes it, can be a positive influence on the development and effectiveness of project/programme teams. High performing teams depersonalise discussions, focusing on issues not individuals (to blame) and are thus better able to confront issues without being confrontational.

**Lack of Commitment**
Again, historical precedents suggest that most construction contracts seek consensus on key decisions and other matters materially affecting the project or programme.

Whilst this is laudable and desirable in some instances, Lencioni argues that it is not essential in order for teams to obtain buy-in on key decisions. There are many examples from other industry sectors where teams have delivered highly successful projects or programmes where there has been a measure of disagreement amongst those team members. The difference is that such teams openly air their views and suggestions, thereby encouraging a commitment to adhere to the most persuasive line of debate, even if some individual team members’ views differ from the majority.

That said, it must be noted that the Project Board/Core Group provisions of contracts tend to require a unanimous decision of the members.

\textsuperscript{15} Patrick Lencioni (2002)
Lencioni also cites the military adage of “better to make a decision than no decision” as an illustration of the fact that better performing teams unite behind decisions, even if there is some uncertainty about the outcome. Such commitment also promotes a greater degree of confidence amongst those outside the project or programme team that the team is willing to sacrifice some entrenched positions in favour of a collective commitment to resolve a fundamental problem or conflict for example.

**Avoidance of Accountability**
Notwithstanding the fact that most standard forms of construction contract have mechanisms to monitor and measure the performance of the tier 1 contractor and supply chain, very few apply the same rigour to the project team.

Too many construction project teams are reluctant to openly hold each other to account in terms of their behaviours or performance, for fear of jeopardising established working relationships and rapport; this can breed frustration and resentment.

In highly developed project teams the members form a coalition, any one member of which is reluctant to let its peers down; this encourages a healthy respect amongst all team members.

**Inattention to Results**
Lencioni further argues that inattention to the collective results of the team, encourages individual team members to focus only on their own position to the detriment to the performance of the team as a whole.

In contrast, teams that emphasise the status and performance of the team as opposed to that of individual members, utilise tools such as the Balanced Scorecard\(^\text{16}\) to establish and monitor a range of collective measures such as:
- Financial performance
- Internal business processes
- Learning and growth
- Customer satisfaction and feedback (internal and external)

In summarising the Construction Industry Board’s Working Group 12 report “Partnering in the Team, Bennett and Jayes\(^\text{17}\) highlight that effective team working (partnering in this instance) is “only appropriate between organisations whose top management share the fundamental belief that people are honest, want to do things that are valued and are motivated by challenge”.

The importance of Lencioni’s dysfunctions therefore, although not directed specifically at the construction Industry, lies in helping teams and leaders to better understand the fundamentals of effective team performance and how to realise their full potential, both for their and their clients’ benefit.

The lessons for the construction Industry extend far beyond the battlefield and sporting stadia of course and in the following Sections we describe where the Industry is now, the benefits and challenges it faces in achieving true collaboration and what needs to happen to bring about a fundamental cultural shift.

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16 Kaplan and Norton (1996)
17 Bennett, J and Jayes, S, (1998)
Key Initiatives
As far back as the “Constructing the Team” (Latham)\(^{18}\) and “Rethinking Construction” (Egan)\(^{19}\) reports, the UK construction industry, prompted by government interventions, was tasked with seeking fundamental and robust performance improvements, accompanied by an agenda for change.

In “Constructing the Team”, Sir Michael Latham proposed a series of key initiatives aimed at encouraging and improving collaboration across the industry, including:

- The Government committing itself to becoming a best practice client
- An improvement in project and contract strategies, prompted by the use of a definitive guide to briefing for clients and a “Construction Strategy Code of Practice” dealing with project management and tendering issues
- The use of “Co-ordinated Project Information” being a contractual requirement
- Discouraging “endlessly refining existing conditions of contract [that] will not solve adversarial problems”, in favour of a “set of basic principles upon which modern contracts can be based”

However, it is in the foreword to “Constructing the Team”, that Sir Michael Latham issues his biggest challenge to the industry. He acknowledges that his recommendations are radical but then suggests that “participants in the construction process can react in three ways to them:

- They can refuse to have anything to do with the Report. That would be a pity. The problems would remain, but the goodwill to tackle them, which has been growing dramatically over the last twelve months would be lost.
- They can pick out the sections that suit them and reject the rest. If everyone does that, nothing will happen.
- Or, hopefully, they can try to make the package work, through the implementation of structures which the report recommends. They can set about Constructing the Team”

Drivers for Change in the Industry
An On-Going Theme

So why is it then that, despite seminal reports, central government initiatives and overwhelming feedback suggesting that effective cooperation is more conducive towards successful project outcomes, the industry appears reluctant to embrace, more comprehensively, the principles and practice of collaboration that we outline in this Report?

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18 Constructing the Team (1994)
19 Rethinking Construction (1998)
Central government has continued to encourage the Industry to improve its performance and public perception with a number of further initiatives, typified by the publication of ‘Construction 2025’.

On a similar theme, Sir John Egan in "Rethinking Construction", identified five key ‘drivers of change’ that are as valid today as they were nearly twenty years ago:

- Committed leadership (driving an agenda for positive change and improvement)
- A focus on the customer (placing the client and end-customer at the centre of all project activities; eliminating activities that add no value)
- Integration of teams and processes around a specific product or service (addressing the fragmentation that is inherent in the Industry and reducing waste and duplication)
- A quality-driven agenda (significantly reducing defects and adopting a ‘right first time’ approach)
- Commitment to people (improved learning and training as well as career progression opportunities; improving retention rates)

Drivers for Change

In 2009, Constructing Excellence published a review of progress since Rethinking Construction entitled “Never Waste a Good Crisis”\(^\text{20}\). This review identified a series of “blockers” that were considered to be frustrating change in the Industry; these blockers were summarised into the following four interrelated Industry themes:

- Business and Economic Models (“Business and Economic models in the sector determine the pace of change”)
- Capability (“we need to attract, retain and develop more of the right people to improve Industry capability”)
- Delivery Model (“A lack of integration in the delivery process impedes continuous improvement”)
- Industry Structure (“the diverse and fragmented structure of the Industry creates competing agendas”)

Central government has continued to encourage the Industry to improve its performance and public perception with a number of further initiatives, typified by the publication of ‘Construction 2025’\(^\text{21}\), a report which recognises that in order to deliver the Government’s strategic priorities for the Industry, fundamental changes will be required throughout the delivery and supply chain. The report identifies key drivers of change:

1. **Improved image of the industry:**
   - A coordinated approach to engaging young people
   - Increasing focus on occupational health and safety and improving standards on smaller projects
   - Relaunch of ‘TrustMark’ scheme

2. **Increased capability in the workforce:**
   - Development of action plans to address capacity issues
   - Investigation of mechanism for ‘pooling’ apprenticeships
   - Common entry and career pathways
   - Review of approach to the identification of development needs
   - Review of ‘card schemes’

3. **A clear view of future work opportunities:**
   - Encourage more non-Government owned pipelines to better document future demand
   - Identify specific areas where regulatory risk is creating concern

4. **Identify local champions to develop regionally focussed pipelines**
   - The creation of a demand map for construction, infrastructure and repairs and maintenance

\(^{20}\) Constructing Excellence (2009)

\(^{21}\) Construction 2025 (2013)
The construction team’s efforts can be focused on delivering a project that best reflects the client’s objectives and is commercially viable for the contractor and its supply chain members.

5. Improvement in client capability and procurement:
- Conduct further analysis to identify the cost of accessing framework arrangements
- Improving access for SME organisations to public-sector opportunities
- Develop a Local Government procurement strategy, together with a Local Government Association procurement group
- Reducing bureaucracy by implementing standard pre-qualification questionnaires throughout the supply chain

6. A strong and resilient supply chain:
- Develop a construction supply chain charter
- Better promote the range of access to finance-based products available to SMEs

7. Effective research and innovation:
- Improve the awareness of the R&D agenda in the wider Industry, together with funding and collaboration opportunities
- Trail the use of “innovation exchange discussions” between clients and together with their supply chains
- Explore options for improving post-project evaluation standards

A number of the above drivers are reflected in the Crown Commercial Service’s negotiated reforms including:

- The Competitive procedure with negotiation is now described more clearly with particular emphasis on:
  - The client must indicate (and cannot change) minimum requirements and award criteria
  - The client must negotiate with those suppliers submitting initial offers (unless it reserves the right to accept tenders without further negotiation)
  - The client must seek a final tender from suppliers following completion of the negotiations

- Competitive dialogue (this now explicitly allows negotiation with the preferred bidder, provided that changes are not material)

As a result of their experiences of successive periods of economic recession, some clients have retreated to a notably risk averse default position and a rejection of collaborative working methodologies. This has also been prompted, for example, by the insolvencies of leading contractors and supply chain specialists.

This is particularly evident for example as regards repairs and maintenance contracts in the Affordable Housing sector where there is a notable trend towards the use of more schedule of rates and/or lump sum contracts with little or no requirement or incentive for the parties to collaborate. These contracts are seen as heavily biased towards the client and therefore ‘safer’ and more robust in their ability to penalise contractors for poor performance.

Others have gone a stage further and have taken these repair and maintenance functions in-house, setting-up internal contracting organisations in the belief that such arrangements protect those clients from the cost and disruption associated with insolvencies and also as a further ‘hedge’ against inefficiency and poor performance.

Nevertheless, a significant minority continue to take an opposing view, preferring to maintain or enhance their commitment to collaboration, encouraged by their experience and tangible feedback indicating that such relationships ultimately provide the means by which waste and inefficiency can be significantly reduced and the construction team’s efforts can be focussed on delivering a project that best reflects the client’s objectives and is commercially viable for the contractor and its supply chain members.
This is most evident in relation to large and/or complex infrastructure projects where many clients actively engage with their contractors and specialists very early and throughout the project initiation and delivery process in order to best harness their knowledge and experience.

In contrast, there is notable pressure from a contractor and supply chain perspective towards more pro-active engagement with clients and design teams. This is undoubtedly due, in part, to the desire to mitigate the adverse impact of competitive pressures and the all too evident legacy of unrealistically low bidding that continues to pervade the sector (encouraged in no small part by a significant body of clients and their advisers).

That said, some contractors are genuine in their belief that effective collaboration delivers more successful projects and that the earlier they can be involved in the design and specification, the more effective their contribution can be.

In his seminal book, “Early Contractor Involvement in Building Procurement”23, David Mosey discusses this very issue and convincingly argues that “the most effective way to add value and to challenge the risks of excluding contractor contributions is for clients, consultants and contractors to form a full team at an early stage of the project, establishing the roles of all parties under integrated conditional preconstruction phase agreements”.

Mosey goes on to illustrate his proposition via three principal and interrelated themes:

- All too many projects are plagued by inefficiencies, claims and disputes that can be directly traced to the late appointment of the lead contractor and their key specialists and subcontractors, which in turn hampers their ability to contribute towards design, specification and ‘buildability’ considerations;
- The absence of early contractor involvement also frustrates the effective development of works and supply packages, the analysis and management of project costs and risks as well as the development and agreement of construction phase programmes, and
- The use of conditional preconstruction phase agreements codify such benefits and can “operate as a valuable tool for project managers, particularly if they are subject to agreed preconstruction phase programmes and to the systems of open communication and collaboration known as ‘partnering’ [or similar arrangements]”

Supporting these principles, central government has latterly openly advocated the use of more collaborative working methodologies. This is seen, for example, through its endorsement of the NEC suite of contracts and also the JCT’s Constructing Excellence Contract and the PPC2000 suite of contracts.

23 David Mosey (2009)
The impact of BIM

"Building Information Modelling" (BIM) gets people and information working together effectively and efficiently through defined processes and technology”. So says the Royal Institution of Chartered Surveyors in its publication “What is BIM?”

BIM was given particular prominence in the UK Government’s Construction Strategy published in 2011, against the background of a fragmented Industry renowned for delivering projects late and over budget.

There are different levels of BIM maturity, with Level 2 (where information is exchanged between the project team which may be integrated to some extent but without necessarily requiring team members to collaborate in a comprehensive way) mandated to be adopted by 4th April 2016. Level 2 BIM actively promotes the sharing, analysis and reuse of key project data.

BIM is seen as a key driver for change with its emphasis on “people, information, processes and technology” whilst not being confined solely to ‘buildings’, it is equally applicable to roads, bridges railways and other civil engineering and infrastructure projects for example.

The Government’s commitment to BIM has been further emphasised in the March 2016 Budget. In a related policy document, it has committed £15m to the development of Level 3 BIM, which requires comprehensive collaboration between all disciplines via a single, shared project model held in a centralised repository. The document goes on to state that "The government will develop the next digital standard for the construction sector – building information modelling 3 – to save owners of built assets billions of pounds a year in unnecessary costs, and maintain the UK’s global leadership in digital construction”.

However, from a collaboration perspective, it is imperative that the Industry views BIM as a means to an end, rather than an end in itself.

The Impetus for Change

In view of the positive drivers for change discussed above, are there any signs that the impetus can be maintained? Or, put another way, what’s going to be different this time around?

We would argue that there are a number of reasons why this might be so:

• Arguably, economic and market conditions are now more stable, given that key lessons have been learnt from the 2008 recession and the resulting banking crises. Interest rate control and other monetary policy controls have largely been successful in bringing some stability to the economy
• The more conversant project teams become with BIM, prompted by the 2016 mandate for implementation described above, the more they will come to appreciate the need for effective collaboration. Indeed, BIM will not work without it. In addition, the more widespread adoption of BIM will necessitate wider collaboration as regards the on-going management and maintenance of facilities
• An increasing move towards the acceptance of collective responsibilities rather than individual liabilities.

24 Davidson, S (November 2014), What is BIM? , RICS
25 Davidson, S (November 2014), What is BIM? , RICS
26 www.building.co.uk 21st March 2016
So Where Is The Industry Now?

Overview

In late 2015, NBS published its third National Construction Contracts and Law Survey (the NBS Survey) focusing on issues such as procurement methodologies, contract usage and collaborative working and Building Information Modelling (BIM). Those consulted included clients, contractors and consultants.

The survey reinforces anecdotal evidence that ‘traditional’ procurement methodologies with fixed price or lump sum tenders, are most often used by a significant proportion (47%) of those used by respondents, with design and build next with 39%. Other methodologies, including partnering and alliancing, are only used by a maximum of 3%. Interestingly though, a significant majority of respondents are using two-stage tendering and an increasing number are utilising various forms of negotiation as part of their tendering activities.

The 2015 survey showed that the NEC suite of contracts (with their mutual trust and co-operation provisions) was becoming increasingly popular, rising from 16% to 30% as the contract most often used from the 2011 survey to the 2015 survey. The usage of JCT had declined from 60% to 38% as the most used contract during the same period. In the £5-£25m band, the survey indicated that NEC was most used.

During 2016, the Government is expecting the Industry to fully embrace BIM, with all project and asset information being documented in an electronic format (see below). As the NBS states, “BIM now provides us with the information, tools, standards and structures for greater collaboration. Indeed collaboration is a precondition for achieving the higher levels of BIM”.

However, the NBS survey found that only 18% of respondents utilise any form of collaborative tools or techniques on all of their projects. In contrast, some 62% claim to collaborate on some or all of their projects, although 38% stated that they did not employ collaborative working on any of the projects that they worked on in the last year. Not surprisingly, where collaboration was used, it tended to be most prevalent on high value projects. Of those utilising collaboration, the various methodologies were summarised as follows:

- ‘An ethos of mutual trust and cooperation’ (67%)
- ‘Formal partnering agreement’ (33%)
- ‘Non-binding partnering charter’ (20%)
- ‘Alliancing agreement’ (13%)
The NBS was keen to explore the reasons why respondents adopted collaborative working or not. The proponents of collaboration cited these principal factors for their usage:

- ‘Enables information sharing’ (81%)
- ‘Reduces the number of disputes’ (65%)
- ‘Improves the delivery of the client’s objectives’ (64%)

Those indicating some concern regarding the use of collaboration mentioned these factors:

- ‘Makes responsibility less clear’ (32%)
- ‘Exposes me to greater risk’ (19%)
- ‘Makes me feel uneasy’ (15%)

These responses prompt one to ask the obvious question, namely whilst collaboration is recognised as having many positive attributes, why is it that the majority of respondents seem reluctant to work together in a collaborative manner? The NBS survey has some revealing answers:

- ‘The client did not want to use collaboration in projects’ (42%)
- ‘The parties involved have different aims and objectives’ (33%)
- ‘The projects we work on are too small’ (27%)
- ‘Concerns about liability’ (24%)
- ‘Concerns about risk’ (24%)
- ‘Established divisions between the different professionals’ (22%)
- ‘Resistance or concerns in my organisation’ (11%)
- ‘Previous negative experience of collaborative projects’ (6%)

It is encouraging that relatively few respondents mention differences between professionals or an inherent resistance in their respective organisations as reasons for not collaborating. However, it is disappointing to note that significant numbers cite their client as a negative influence on the adoption of collaboration, together with an apparent inability to reconcile the fact that the parties have differing aims and objectives.

Further encouragement for the use of collaboration appears to come in the form of BIM, with the NBS survey indicating that 47% of its respondents mentioned BIM as an enabler of collaboration. Only 9% stated that it was not. That though, leaves a significant minority apparently either not knowing of or apathetic towards, BIM’s ability to promote collaboration.

The Economist’s Intelligence Unit study entitled “Rethinking productivity across the construction Industry” also provides some valuable insights into current thinking on collaboration, not just from a UK perspective but also globally.

Published in 2015, the study examines “causes of the current productivity gap and on the tools and strategies that leading companies are adopting to address and overcome these issues around the world”. Whilst the study is primarily focussed on the examination of factors affecting productivity, it has a core proposition that is especially relevant to collaboration, namely that inefficiency and ineffectiveness have their roots “across the stakeholder community”.

When asked “which of the following project partner-related obstacles present the biggest single hurdle to improving your organisation’s productivity?”, 32% of respondents cited poor communication and collaboration (exceeded only by a lack of investment capital at 36%).

Looking at potential sources of improvement, the Intelligence Unit posed the question, “which of the following actions by clients and investors would contribute most to improving productivity in the construction sector over the next three years?”; 40% of respondents stated a “willingness to engage in long-term collaborative relationships with contractors.”
So, whilst there has been progress towards the more widespread adoption of collaboration in some sectors of the industry (most notably transport and infrastructure), many project teams remain unaware of how to collaborate effectively and/or unconvinced of its benefits. However, we believe that the increasing use of a two-stage approach to procurement, described elsewhere in this Report, coupled with more effective client leadership, is one means by which project teams will become convinced of the need to work together better and more effectively.

The Contractual Perspective
In parallel with the ‘softer’ behavioural aspects of collaboration, the construction industry has made efforts, significant in some instances, to address collaboration from a contractual or organisational perspective.

Early initiatives to address collaboration in standard forms of contact have included the following:

New Engineering Contract
The ‘NEC3 Engineering and Construction Contract’ for example contains provisions such as:
- A requirement for the Employer, the Contractor, the Project Manager and the Supervisor to act in a spirit of mutual trust and co-operation
- Early warnings and risk reduction meetings
- A Compensation Event regime so that additional entitlements to payment and time are agreed within defined timescales as the project proceeds
- No final account mechanism
- In Options C and D, the facility for target price contracts (with a pain/gain share regime)
- An Option X12 – Partnering, which can be used by more than two partners

Standard From of Contract for Project Partnering (PPC 2000)
First published in 2000 by the Association of Consultant Architects (ACA) (and subsequently updated on a regular basis), ‘PPC 2000’ is a multi-party contract focused specifically on the use of partnering. Its principal features include:
- A multi-party contract primarily between the ‘client’, ‘constructor’ and the ‘client representative’; other parties such as specialist contractors and consultants can also join the contract and become part of the partnering team
- A partnering ethos runs throughout its terms, e.g. provisions dealing with incentivisation, continuous improvements, performance indicators, co-operative and transparent exchange of information and a painshare/gainshare mechanism
- Varying levels of design responsibility, including fitness for purpose

The contract has achieved widespread use by central and local government, for example on prisons, schools, healthcare and social housing projects in the UK and abroad.

A derivative entitled ‘TPC 2005’, reflects many characteristics of PPC 2000 but is primarily focused on term partnering and is used extensively in repairs and maintenance contracts, most notably in the affordable housing sector.
The ACA is in the process of publishing a suite of contracts and associated documentation aimed at providing a common ‘template’ for alliancing contracts, based upon its successful suite of PPC 2000 and TPC 2005 contracts. This documentation includes:

- Framework Alliance Contract
- Project Alliance Contract
- Term Alliance Contract

JCT and Constructing Excellence

The JCT and Constructing Excellence (the cross-sector, cross-supply chain, member-led organisation working to produce a better built environment) jointly published the ‘JCT Constructing Excellence Contract’.

The contract can be used to procure a range of construction services and is specifically tailored for use in partnering and where participants wish to engender collaborative and integrated working practices. Its terminology is such that it is designed for use throughout the supply chain for the appointment of main contractors, sub-contractors, and consultants and can be used as part of a framework agreement. This creates an integrated suite of obligations which can be passed through the various tiers of the supply chain. It can also be used whether or not the supplier is to carry out design, and the supplier’s design input (as either contractor or consultant) can vary.

The contract expressly underpins collaborative working and the formation of integrated teams when used with the Project Team Agreement, providing for the use of a risk register, risk allocation schedules, and performance indicators. However, there is little evidence of its widespread use thus far.

To accompany the ‘JCT Constructing Excellence Contract’, a ‘Project Team Agreement 2011’ has been published which can be utilised to formalise the integration of the project team and includes options that provide for risk and reward sharing arrangements between team members.

It is interesting to note that the JCT has recently provided some insights into its proposed updates for the 2016 editions of its suite of contracts, which include further provisions relating to BIM and amendments to reflect the Public Contracts Regulations 2015. In addition, it appears that the procedures relating to the ascertainment of loss and expense claims will be revised to encourage prompt assessment and settlement.

As previously discussed, most alliancing arrangements are based upon bespoke contract management and administration documentation. The drafting of such documentation to reflect the discrete requirements of individual projects or programmes has many obvious advantages.

An explanation of the degree to which the most common forms of contract reflect and/or support the key principles of collaborative working is included at Appendix A.
Forms of Collaboration

Collaborative working in the construction sector takes many forms, ranging from informal relationships and protocols to highly structured arrangements such as those typified by alliancing agreements.

Whilst these collaborative working arrangements share many common themes, each has a number of distinctive characteristics which are explored in greater detail below.

Informal Relationships

Informal or more unstructured relationships have their place in the panoply of collaborative working relationships. Even in the context of the use of more traditional standard forms of contract, with their inherent adversariality, a strong emphasis on appropriate values and behaviours between the client and project team can overcome such barriers to collaboration.

In such arrangements, it is often the client that ‘sets the tone’ for collaboration, sometimes extending its commitment by appointing an independent adviser to promote effective team-working and cooperation, together with the use of binding or non-binding team ‘charters’.

However, as discussed elsewhere in this Report, the Industry frequently underestimates the continuous effort required to maintain such relationships, eschewing guidance and examples of best practice from other sectors in favour of historically entrenched positions, thereby perpetuating a highly divisive blame culture.

Few, if any, project teams set out with the intent of initiating adversarial relationships but some find it difficult to overcome the constraints of inflexible forms of contract that place the parties in opposition and discourage any meaningful contribution from the contractor and supply chain until works commence on site.

Joint Ventures

On larger projects, a number of parties may join together in a joint venture. This can be to benefit from a wider skill set at tier 1 level or because the project would be too large for a single organisation bearing in mind its capitalisation and turnover.

Joint ventures can be integrated where the participants form a company. Its constitution will then be structured to reflect the shareholders’ stakes and how the joint venture will organise itself in terms of board membership, voting rights. Often the joint ventures are unincorporated.

There will be a joint venture agreement setting out the provision of capital, constitution of the board, voting rights, dispute resolution, and the contribution of key staff, profit share and dissolution upon the completion of the project.

The decision as to whether to incorporate or remain unincorporated will often be driven by tax considerations.
Partnerships
A partnership is "the relationship which subsists between persons carrying on business in common with the view of profit" 29. The partners are jointly and severally liable to organisations with which they contract and in the absence of a cap on liability within a contract, their liability is unlimited. It is for this reason that limited liability partnerships were created 30.

Whilst joint ventures and partnerships are a collaboration between contracting organisations or individuals, a contract between a client and a joint venture or partnership does not imply collaboration. The collaboration is solely on the supply side and has no bearing on the form of procurement used.

Frameworks
The EU Procurement Rules define a framework as "an agreement or other arrangement between one or more contracting authorities and one or more economic operators which establishes the terms (in particular the terms as to price and, where appropriate, quantity) under which the economic operator will enter into one or more contracts with a contracting authority in the period during which the framework agreement applies" 31.

It is important that the framework contractors are incentivised to deliver improvements not only through being rewarded by an increased share of the framework business but in receiving a share of the savings.

Many clients are drawn to framework agreements as they offer a significant degree of flexibility as regards when and to which organisations, call-off contracts may be awarded. Properly structured, a client can gain substantial benefits. Key features of a well organised framework will be obligations upon the parties to the framework to share information so that efficiencies can be derived during the life time of the framework. Innovative ideas from one framework contractor can be shared for the benefit of the wider project. Obligations around continuous improvement will encourage the contractors to seek to work in a manner which benefits the client throughout the framework. Allied to this regime, it is important that the framework contractors are incentivised to deliver improvements not only through being rewarded by an increased share of the framework business but in receiving a share of the savings.

Other benefits might include:
- Reduced procurement and mobilisation costs
- The opportunity to build longer-term relationships with tier 1 contractors and their supply chain members
- Improved value-for-money
- Enhanced opportunities for stakeholder and community-based engagements

Importantly, a framework agreement is not of itself a contract to undertake works but is a general term for agreements that set out the contractual terms and conditions upon which future works, often termed a 'call-off contract' for example, will be undertaken. In the public sector, frameworks are permitted to be established for a maximum of four years, with an option to let call-off contracts for a limited period thereafter.

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29 Section 1 Partnership Act 1890
30 Limited Liability Partnership Act 2000
31 OGC (September 2008)
Alliances
With their holistic approach to procurement and delivery, alliances are increasingly considered to be the ultimate form of collaborative project and programme delivery. This is not just in the UK but across the world and most particularly in the infrastructure sector.

HM Treasury in its publication entitled “Alliancing Best Practice in Infrastructure Delivery” is confident enough to say that in even the most complex and challenging project delivery environments, alliances “have delivered more value than traditional procurement arrangements with collaboration underpinned by common goals and integration”.

Anecdotal evidence suggests that in the most successful alliances, integration applies across the whole of the extended supply chain, not just to tier 1 contractors. Considerable efforts are made to ensure that each member’s goals and outcomes are correctly aligned.

Alliances can take many forms typified by that shown in Figure 2 above.

At this point, it would be reasonable to pose the question, ‘so what’s that different about alliances and what distinguishes them from other similarly advanced forms of procurement and project or programme delivery?’

Many alliances are characterised by a conscious dilution of client control. For example, many aspects of management and key decision-making are devolved to a ‘project board’ or similar alliance leadership team. Decision making of the leadership team is generally on a unanimous “best for project” basis. Clients therefore have more limited rights to ‘influence’ than they might otherwise have in more traditional arrangements.

Typically, in relation to the day to day management of issues, the client’s rights and obligations are limited to reserved powers. These can be those matters which a client considers are fundamental to the functioning of its assets or operations. If there were circumstances which meant that there would be an impact on the ability of the alliance to deliver to the client’s brief and requirements, the client would have

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32 HM Treasury (2014), Improving Infrastructure Delivery
the ability to issue directions to the alliance. The client’s rights will be in relation to issues which are potentially wider than the successful delivery of the design and construction of the project. By way of example, on Network Rail’s alliancing projects, Network Rail reserves to itself decisions on issues which will potentially cause a “Network Operation Issue”. Clearly the overriding reason for a project is to enhance the client’s ability to deliver its business and only the client can see the full wider implications of an event (whether on the project or externally) and its impact on both its business and the project.

The loss of control does not mean the alliance and its board has a completely free hand as to how it performs. The client will retain the right to terminate for significantly poor performance and suspend the works.

Is this loss of control something which clients should resist? The NBS33 survey would tend to suggest that it isn’t. The most often cited matter impeding project progress was employer variations (66%) and third most prevalent factor was provision of employer information (40%). Both of which are likely to lead to the fourth and fifth most frequent impediments, namely assessment of delay and extension of time and scheduling and construction programmes.

It seems that potentially by moving project, strategic and day to day decision making away from the client and its advisers to a collaborative structure, in which the client has a seat on the delivery board, there is the potential to eliminate the major causes of delay on construction projects.

In addition, a central theme of alliances is the collective development and application of highly structured and robust incentive or pain/gain share mechanisms, mirrored by shared risks. There is a true alignment of interests between the parties. In the parlance of alliancing contracts, “everybody wins or everybody loses”. ‘No-dispute’ provisions are common, with the parties only able to sue each other in very limited circumstances. Many alliances contain provisions whereby all costs are fully reimbursable, supported by open-book documentation and reporting.

In addition to the “no dispute” provisions, the reduced ability to claim extensions of time and variations and emphasis on collaborative working, eliminate the major areas of dispute which, from the NBS34 survey, were found to be extensions of time, valuation of the final account and valuation of variations.

This reduction in the ability to claim for extensions of time and variations ought to drive a number of considerations in structuring the procurement of an alliance. The first is that the target price should be set at a realistic level so that beating the target is not an easy option but not too low such that it is likely from the outset that the project will end in painshare. The tender and pre-construction periods need to be sufficiently long so that a robust target price can be set, the design developed sufficiently and enough surveys undertaken that all parties have confidence in the target.

Because of the limited scope for obtaining extensions of time and variations, a sufficient element of the target price needs to relate to design development. This enables the alliance to absorb additional costs and design development changes which fall short of scope variations and which would have an impact on the target price.

However, as can be seen from the description of the setting of the target price, alliances are not a soft option. In addition, alliances require fundamental cultural and behavioural change that can only be achieved through a truly collaborative effort from all parties and supply chain members, often backed by ‘best for project’ unanimous decision-making protocols. In the event of disagreement, one option is for the parties to provide for any deadlock to be resolved by the use of independent expert determination. Whilst this has some attraction, in reality, alliances often shy away from adopting this route as it means devolving ultimate decision making responsibility to a third party. This can engender inappropriate behaviours and detracts from the emphasis on the parties agreeing everything themselves. Some alliances have been known to go further by utilising psychometric testing to ensure the ‘best-fit’ of key personnel with their counterparts and the ultimate project or programme deliverables.

33 NBS (2015)
34 NBS (2015)
At present, the use of alliancing is mainly confined to the procurement of large infrastructure projects, for example those commissioned by Network Rail and Thames Water, with values exceeding £100m. However, many of the principles and features of these contacts can readily be exported to less complex construction projects.

New Models of Procurement
In parallel with the evolution of collaborative working methodologies and associated contractual arrangements, the Industry has made notable progress with a number of associated initiatives aimed at encouraging effective collaboration.

In July 2014, the Cabinet Office published guidance35 focused on three new procurement models aimed at making material improvements to the performance of the construction Industry. In his foreword, the then Government Chief Construction Adviser, Peter Hansford, stated that "These models encompass principles of early supplier engagement, transparency of cost, integrated team working and collaborative working. They are fully consistent with the objectives of the Government Construction Strategy (May 2011) and the ambitions of the Industrial Strategy for Construction, Construction 2025 (July 2013). Their adoption will contribute considerably to the reductions in the cost of construction that both Government and Industry are seeking.”

The three models comprise:
- Cost Led Procurement
- Integrated Project Insurance
- Two Stage Open Book

These models all exhibit a common core of characteristics that complement collaborative working and include:
- A requirement to clearly define the functional outcome(s)
- Delivering such outcomes using common data, benchmarking and proactive cost planning techniques
- Early principal contractor and supply chain engagement
- Robust review and performance management processes, including risk management
- Identification and application of mutually beneficial behaviours and skill-sets

Each of the procurement models envisages that projects will be delivered by integrated project teams working collaboratively. Along with reducing costs, the models are expected to:
- "contribute to improved programme certainty, reduce risk, encourage greater innovation, and [improve] relationships across clients and the supply chain”

Importantly, the models are not aimed at producing the cheapest construction project but rather delivering the most cost effective and value for money outcomes through effective collaboration.
Cost Led Procurement

In Cost Led Procurement, clients are required to select a number of supply chain teams from a framework agreement. This is based upon consideration of their ability and willingness to work in a collaborative manner to deliver an initial project below its “cost ceiling” and then to achieve further cost reductions on subsequent projects, whilst maintaining the required quality and performance requirements. Whilst in competition, integrated supply teams are then able to utilise their experience, innovation and creative thinking to develop their bids, together with the client team.

On the basis that at least one team can meet or better the cost ceiling, that team will be scored and selected on a relative basis, with reference to the basis of its commercial and delivery method statements as well as the calibre of its proposed team. In the unlikely event that none of the teams are able to deliver their propositions within the available budget, given that clients and teams that regularly work together should be conversant with client requirements, cost plans etc., then suppliers from outside of the framework are offered the opportunity to make their proposals.

If it proves impossible to match the client’s available budget, then it has the option to reconsider its budget, design requirements and the like.

Cost Led Procurement is best suited to programmes of work with a high degree of repetition or highly functional outputs, such as schools, prisons, roads and defence accommodation for example.

In order therefore to be truly effective, Cost Led Procurement requires a number of prerequisites including the:

- Client to be able to clearly articulate its needs to supply chain members
- Commitment of all parties to collaborative working
- Early involvement of those supply chain members and their selection on a competitive basis
- Transparency of costs by all parties
- Structured use of value and risk management
- Use of BIM

Integrated Project Insurance

The key feature that distinguishes an approach using Integrated Project Insurance (IPI) from more conventional procurement models is the use of a holistic insurance policy to cover the risks associated with the delivery of a project or programme.
Collaborative Construction: More myth than reality?

The contractual structure will follow the alliance model described above with a project board. The IPI model requires a target cost contract. The insurers appoint technical and financial advisers at the outset who will assess the bids before confirming that the project can proceed at various gateways by ensuring the bid demonstrates best value for money. These advisers are retained throughout to provide input on the progress of the project.

Here, all the construction-related risks conventionally held separately by the client, its principal contractor(s) and supply chain members are packaged into a single, third party assured, policy. In addition however, the insurer also takes that proportion of any cost over-runs that exceed a pre-agreed ‘pain-share’ threshold. Effectively, the excess on the insurance policy is a fixed sum commensurate with the alliance’s painshare cap. To prevent parties bringing claims (except in limited circumstances), the insurance contains a latent defects component.

From a collaboration perspective, the proponents of IPI highlight that it much reduces the potential for a ‘blame culture’ based on a perceived need to offset liability, to detract from a project or programme team’s performance.

Against this background, the benefits of IPI are frequently summarised as follows:
- The project team are discouraged from adopting a defensive approach; there is a known maximum liability and the availability of suitable insurance coverage is known
- It avoids the inequities that can flow from joint and several liabilities and also the need for collateral warranties
- The presence of the latent defect element of the insurance may enable professionals to be able to join alliances at tier 1 more easily
- Given that the assessors remain involved with the project, there is a degree of on-going technical audit
- For the time being, the cost of IPI has been fixed at 2.5% of the project cost

That said, many experienced project board members will not welcome perceived interference by outside assessors. Many boards wish to be autonomous and to control the strategic direction of the project. Since the excess on the insurance will be equivalent to the maximum amount of painshare payable by the alliance, it is questionable how useful the cost overrun component will be bearing in mind the philosophy of alliancing is to drive unnecessary cost out of the project. Perhaps the key issue is the benchmarking of projects such that the target cost should be 20% less than the cost of similar projects.

The IPI approach is currently being trialled on a project commissioned by Dudley College at its Centre for Advanced Building Technologies.

Arguably, the success of IPI will, in part, be dependent upon the Industry’s willingness to adopt a new procurement model, requiring fundamental changes in established values and behaviours as well its ability to be scaled-up to higher value projects. At present, IPI is primarily structured for projects of a value between £10million and £25 million but it will be interesting to monitor how the insurance industry tailors products to a ‘no claims’ environment.
Two Stage Open Book

Central to this model and its most compelling feature, is a structured and systematic approach to the early engagement with all key contractor and supply chain members.

There are many variations on the theme of a two stage approach to the initiation and delivery of a project or programme. A generic approach, however, envisages a first stage, whereby a number of teams are invited to submit an initial proposal based upon an outline brief, specification and cost model, the preferred team then being selected on the basis of pre-agreed criteria such as its demonstrable capability, capacity to undertake the work, relevant experience, key personnel and fee.

During the second stage, the selected team is then appointed to develop a detailed proposal on an open-book basis to provide greater assurance that the project will deliver the client’s specific requirements within acceptable outturn cost parameters.

Through collaborative pre-construction phase processes, using contracts such as PPC 2000, an adapted NEC ECI clause or JCT PCSA, the two stage open book approach can mitigate bidding costs and enables clients and project teams to work far closer together in order to ensure that the stipulated project deliverables can be met within realistic and equitable targets.

Following the publication of its Construction Strategy (May 2011), the Government has tested its recommendations through a series of BIM-enabled Trial Project Case Studies, independently audited by Constructing Excellence, project mentors and academic partners, which demonstrate encouraging results. In addition, David Mosey highlights that the Royal Institute of British Architects (RIBA) has restructured its 2013 Plan of Work to recognise work stages led by early appointed contractors and specialist supply chain partners. As David Mosey states “the combination of BIM, The RIBA 2013 Plan of Work and Two Stage Open Book can offer a procurement and delivery model that is collaborative, transparent and commercially robust”.

BIM

The NBS Construction Contracts Law Survey 2015 discusses the imminent requirement for all central government-funded projects to adopt BIM by March 2016 but also highlights an obvious lack of preparedness by many in the Industry.

Nearly half (47%) of respondents to the survey considered that they were more likely to view BIM and an enabler of collaboration than not. Whilst only 9% did not, that still leaves some 44% uncertain as to their views on BIM. On the face of the survey, it is evident that many in the Industry are either unaware of the requirements of BIM and/or are yet to be persuaded of its benefits.

However, there is some encouragement in the fact that 40% of respondents stated that when they use BIM, they will do so in the context of a collaborative mind-set.

The survey also contains some informative feedback around the usage of BIM in the twelve months preceding the Survey. One third of respondents reference BIM in their contracts, with 23% referencing the outputs of BIM. However, only 14% consider that BIM is fully integrated in their contracts, whilst 12% actually provide or receive a ‘compliant’ model.

“The combination of BIM, The RIBA 2013 Plan of Work and Two Stage Open Book can offer a procurement and delivery model that is collaborative, transparent and commercially robust”. David Mosey

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36 D Mosey (May 2014)
37 NBS (2015)
**Government Construction Strategy 2016**

Published by the Infrastructure and Projects Authority, the Government Construction Strategy 2016 sets out “the Government’s plan to develop its capability as a construction client and act as an exemplary client across the industry”.

Many of the principal objectives within the Strategy complement the key drivers and ambitions included within this Report and include:

- The deployment of collaborative procurement techniques that:
  - Enable early contractor and supply chain involvement
  - Develop skills capacity and capability
  - Promote fair payment

- The development of a collaborative culture with the supply chain in order to drive innovation and reduce waste

- An emphasis by the Trial Projects Working Group on enhancing the potential and benefits of the ‘new models of construction procurement’

- Consolidating and embedding BIM Level 2 throughout departmental processes

- A coordinated approach towards framework development, operation and best practice

**Raising the Standard for Collaboration (BS 11000)**

Few in the Industry would argue against the principle of maintaining effective relationships as a key element in the successful initiation and delivery of projects. How many are prepared to commit to a structured approach to collaboration is, of course, another matter.

BS 11000 -1: 2010 (Collaborative Business Relationships) offers such a framework and structured approach. As David Hawkins argues in his guide to the Standard, “the time is now right to more effectively harness the benefits [of collaboration] and move these concepts from ad hoc approaches to mainstream business operations”. Hawkins goes on to state that BS 11000 “provides a platform to build capability in a changing world. In this dynamic environment, agility, flexibility and collaboration are key ingredients to maintain competitive advantage. Adopting a structured approach will accelerate engagement and effectiveness”.

The authors of the Standard sought first to establish the fundamentals of a platform for collaboration and then to provide a framework within which the principles of collaboration could be embedded in organisations and teams via the use of the following ‘eight-step’ model:

**Awareness**

Increasing the awareness amongst all key participants of the barriers to effective collaboration and overcoming some of the inherent prejudices discussed elsewhere in this Report.

**Knowledge**

Recognising that effective collaboration requires strategies that are directly related to core business objectives, whilst acknowledging the risks that can come with enhanced integration.

**Internal assessment**

Appreciating the strengths and weaknesses of participating organisations or teams and developing the means by which they can be accommodated to mutual benefit.

**Partner selection**

Profiling potential ‘partners’ and evaluating their suitability.

**Working together**

Establishing the principles of joint governance and their incorporation into appropriate contracting arrangements, together with ensuring that performance management and incentivisation processes will support collaborative behaviours.
Value creation
Ensuring currency and innovation aimed at enhancing value through mutual continuous improvement programmes.

Staying together
Committing to working together to “nurture” relationships as well as resolve problems and disputes.

Exit strategy
Maintaining a joint exit strategy, such that all parties are focused on active engagement and understand the deliverables prior to conclusion of the relationship.

The Standard also includes a useful summary, (Table 2) below, of positive and negative contributors towards collaborative relationships.

Although the construction Industry has many unique features and challenges, there is no obvious reason why BS 11000 should not complement many of the initiatives outlined in this Report and at the very least, provide a useful ‘checklist’ for effective collaboration.

<table>
<thead>
<tr>
<th>Positive contributors to collaboration</th>
<th>Negative contributors to collaboration</th>
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<tbody>
<tr>
<td>Executive sponsorship</td>
<td>Poor behaviour management</td>
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<tr>
<td>Committed leadership</td>
<td>Lack of stakeholder commitment</td>
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<tr>
<td>Early stakeholder engagement</td>
<td>Lack of partnering skills</td>
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<tr>
<td>Integrated planning</td>
<td>Lack of management support</td>
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<tr>
<td>Joint government structure</td>
<td>Lack of strategic direction</td>
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<td>Open book (if appropriate)</td>
<td>Poor upfront planning</td>
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<tr>
<td>Clarity of objectives</td>
<td>Poor partner evaluation</td>
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<tr>
<td>Relationship management plan</td>
<td>Failure to address cultural differences</td>
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<tr>
<td>Good communication at all levels</td>
<td>Lack of shared goals</td>
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<tr>
<td>Joint ownership of success</td>
<td>Poorly defined measurement</td>
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<tr>
<td>Behavioural charter</td>
<td>Lack of benefit analysis</td>
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<tr>
<td>Joint risk management</td>
<td>High focus on risk transfer</td>
</tr>
<tr>
<td>Effective information sharing</td>
<td>Hidden agendas</td>
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<tr>
<td>Early integration of processes</td>
<td>Poor communication</td>
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<tr>
<td>Joint skills development</td>
<td>Ineffective dispute resolution</td>
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<tr>
<td>Joint change management</td>
<td>Lack of exit strategy</td>
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<tr>
<td>Appropriate performance measurement</td>
<td>Negative approach to contract</td>
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<tr>
<td>Integrated continuous improvement</td>
<td>Lack of innovation</td>
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<tr>
<td>Effective dispute management</td>
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<tr>
<td>Joint exit strategy</td>
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Spotlights

The Latham⁴⁰ and Egan⁴¹ reports both acknowledged that the construction industry could and should learn from best practice adopted in other industry sectors.

Accordingly, we spoke to a number of clients operating in the leisure, infrastructure and pharmaceutical sectors to determine how their project teams collaborate effectively and demonstrate exceptional performance.

Irrespective of their particular sector, there was a high degree of consistency as regards those factors contributing to highly effective collaborative performance. These can be summarised as follows:

• Alignment of mutual goals and objectives
• Continuous reinforcement of collaborative behaviours
• Effective leadership (by client and core groups/project boards)
• Early and on-going supply chain engagement
• ‘Ring-fencing’ of pre-agreed profit and overheads
• Proactive performance management linked to simple incentivisation mechanisms
• Joint problem resolution
• Frank and open conversations

⁴⁰ Constructing the Team (1994)
⁴¹ Rethinking Construction (1998)
Barriers to Change

The Legacy of the Latham and Egan Reports

In his report ‘Constructing the Team’\(^{42}\), Sir Michael Latham urged the sector to take the initiative for improvement. In particular he said “If this opportunity is not taken, it may not re-occur for many years and a new report may be commissioned in the year 2024 to go over the same ground again!” Prophetic words, given the relatively marginal progress made towards effective partnering and other the forms of collaborative working that Latham advocated.

Sir John Egan in his ‘Rethinking Construction’\(^{43}\) report similarly challenged the Industry to “commit itself to change, so that, working together, we can create a modern Industry, ready to face the new millennium”. Amongst many other recommendations, Egan saw “integrated processes and teams” as a key driver of change and cited partnering together with Car Manufacturing, Steel-making, Grocery Retailing and Offshore Engineering” as sources of inspiration and best practice for the necessary improvements.

So why has relatively little happened in the intervening years?

The reasons are numerous and undoubtedly complex but all too often Latham and Egan’s views are seen as being too abstract or of marginal relevance to those at the furthest reaches of the supply chain. In an Industry that is renowned for being largely cynical about looking beyond its immediate ‘comfort-zone’ it should perhaps come as little surprise that exemplars from other sectors are treated with some suspicion or as simply not relevant.

Fragmentation

There can be little doubt that the UK construction suffers from an inherited ‘fragmentation’, with a plethora of organisations, in turn employing very small numbers of people. Whilst this might be seen as an advantage as regards agility and a flexibility to respond quickly to market conditions and requirements, such fragmentation detracts from the ability to promote continuity of teams and the associated benefits that stem from established working relationships.

The diverse nature of the Industry also frustrates the communication of policy and the dissemination of feedback from initiatives and success stories relating to performance improvement in general and collaborative working in particular.

Inertia

The Industry has traditionally been resistant to embrace change. Whilst this is, in part, a reflection of society as a whole, it might be also be due to the legacy of standard forms of contract which were overtly ‘client-biased’ and inadvertently

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42 Constructing the Team (1994)
43 Rethinking Construction (1998)
fuelled the mistrust that pervaded as a result. There seems to be a sense amongst many in the Industry that collaboration ‘costs more’ or that clients are somehow ‘giving something away’ by paying contractors and/or consultants marginally more for a more integrated approach. Whilst this might be true, in some instances, particularly as regards those costs up to and including project completion, arguably, there are substantial savings to be exploited from collaborative effort as regards operating and maintenance costs in the longer-term.

The Perception of Collaboration

Collaboration is often considered to be unduly resource-hungry and an expensive way of ‘getting things done’. In part, this is because of the emphasis on behavioural assessment during the tender process.

We are reminded of a saying in high-volume manufacturing circles that is used to illustrate potential sources of waste and inefficiency: “There’s never enough time to do it right, but there’s always enough time to do it over.”

In other words, in an Industry that is focused on delivering often bespoke projects, with relatively little continuity and standardisation of components in very short timescales, many take the view that collaboration ‘just gets in the way’.

In addition, many project teams underestimate the importance of creating a culture of collaboration; they often assume that the required culture and behaviours flow naturally from being placed in a situation where effective cooperation and teamwork is required. The reality is quite different; many of the highest performing project teams, including those working as part of an alliance, make a conscious effort to create and maintain a culture that supports both their needs and the project or programme deliverables.

Client Drivers

Albeit with some very notable exceptions, many clients are driven by relatively short-term goals and thinking. Developers and investors largely take the view that they will fund and develop on the basis that they gain a return in the short-term with an option to sell-on the development or income stream.

Relatively few clients might be said to be ‘in it for the long haul’. Those that are, such as the major retailers with the advantage of ‘serial programmes’ with similar design and specification requirements for example or infrastructure clients that often rely upon central government funding, seem to be more adept at embracing collaborative working methodologies and behaviours. A consequence of such a short-term focus, is that the end-users can be excluded from any meaningful involvement in the design and specification of projects as well as in the critical procurement and construction phases.

A further client barrier to change relates to a widespread reluctance to cede a significant degree of control to a core group, project board or similar body. Many forms of partnering contract and certainly those based upon the use of advanced alliancing principles, require a fundamental shift in emphasis towards collective decision making and accountability. Many clients are reluctant to give up what they perceive as their ability to influence and control project outcomes. What they arguably underestimate, are the tangible benefits of collective effort and rewards. As James Surowiecki states in his landmark book “The Wisdom of Crowds”

44 Surowiecki, J (2004)

Many project teams underestimate the importance of creating a culture of collaboration; they often assume that the required culture and behaviours flow naturally from being placed in a situation where effective cooperation and teamwork is required.
Academia and the Professions

A number of academic institutions are noted for their research into and promotion of collaborative working. However many graduates seem unaware of what it really takes to collaborate effectively from the commercial, legal and relationships and behaviours perspectives.

Whist many of the associated professions such as the Royal Institution of Chartered Surveyors (RICS), the Royal Institute of British Architects and the Institution of Civil Engineers etc. have each commissioned research and guidance on collaborative working, the majority of their respective members seem reluctant to advocate such methods, sometimes in the face of client opposition.

In one respect this is perhaps not surprising, given their ‘fragmented’ nature (a very similar situation to the contractors and supply chain members). However, despite a core of very notable exceptions, the reluctance of many professional firms’ to constructively challenge their clients, as well as offer timely and proactive advice, undoubtedly inhibits collaborative working.

The RICS ‘Futures’ report45 does though contain some valuable prompts for Chartered Surveyors in the context of collaboration and in particular, around cross-cultural working and the avoidance of silo working. One notable statement stands out: “People who can collaborate with others from outside of their specialism will become increasingly important, as will those able to understand value creation for clients’ businesses”.

Leadership and Followership

It would be hard to deny that the calibre of leadership within the Industry must improve in order that the benefits of collaborative working can be fully exploited. There are simply too few high-calibre leaders that can create and maintain the environment within which teams and key individuals can work effectively towards a common purpose, free from judgement and the commercial distractions that pervade so many project teams. As former US Navy Seals Jocko Willink and Leif Babin emphasise in their book ‘Extreme Ownership’, “there are no bad teams, only bad leaders”46.

However, the success of collaboration is not wholly dependent upon leaders of course; those that are led, especially key team members, have a similarly important role to play. The principle of followership is the reciprocal of leadership and summarises the required behaviours and competencies of key subordinates. In his Harvard Business Review article “In Praise of Followers”47, the noted scholar, Robert Kelley suggested four main qualities of effective followers:

- **Self-Management:** The ability to apply critical thinking and work on one’s own initiative
- **Commitment:** An unambiguous commitment to the collective goals of a group or organisation
- **Competence and Focus:** Possessing skills and competencies that complement the achievement of project goals and objectives as well as the willingness to maintain and improve such competencies over time
- **Courage:** Maintaining the required ethical standards and behaviours and also being prepared to constructively challenge where necessary.

45 Our changing world; let’s be ready, RICS, April 2015
46 Willink, J and Babin, L (2015)
Increasing Bid Costs
There is a view that increasing bid costs, particularly in the public sector and driven, in part by a move towards the various forms of permitted pre-contract negotiation activities, are a barrier to many but the most well financed contractors and supply chain members.

Whilst such forms of procurement undoubtedly assist collaborative working prior to mobilisation, many projects do not benefit in the same way, either because clients are reluctant to pay what they perceive as a premium for such procurement routes and/or contractors and key suppliers that would otherwise participate, are precluded from doing so because they do not wish to take the risk of what might turn out to be abortive tendering costs.

Standard Forms of Contract
Despite notable exceptions such as the PPC/TPC and NEC suite of contracts, most standard forms of contract do not contain specific provisions relating to collaborative working, or if they do, those provisions tend to be generic in nature and do not a prescribe a structured approach to effective team-working and communications. In the JCT 2011 edition, there is a three line paragraph on collaboration tucked away in the supplemental provisions and only applies if the contract particulars are filled in to state that it does.

As described earlier, the ACA is shortly to publish a suite of alliancing contracts comprising:
- Framework Alliance Contract
- Project Alliance Contract
- Term Alliance Contract

Whilst this suite will certainly assist, many clients and project teams will continue to struggle to comprehend the intricacies and benefits of collaborative working without a greater degree of standardisation or at least wider availability of informed guidance and exemplar case studies.
As far back as 1998, the report’s task force believed that “the way forward to achieving the ambition of a modern construction industry lies in commitment”. That plea was focused on:

- Major clients: To lead the drive for improved efficiency and quality
- The industry: To collaborate with major clients to deliver significant performance improvements and to “offer these to the occasional and inexperienced clients”
- The Government: To create the environment that will enable the required step-change in performance and also to encourage the public sector to become best practice clients

The need for such commitment is as strong today as it was nearly twenty years ago and perhaps even more so, given the increased complexity associated with major projects, increased levels of scrutiny and regulatory interventions and challenging economic and environmental constraints.

We argue that such commitment will be ineffective unless it is matched by a structured and proactive approach to collaboration.

BIM

Building Information Models (BIM) will assume even more significance in future construction and infrastructure projects, especially on those funded by the UK Government. The NBS Construction Contracts and Law Survey 2015 postulates that models “will increasingly have a legal standing as the information about a building [or structure] is moved from disparate data stores into a central, collaborative model”.

Some 58% of respondents to the survey recognise BIM as contractually binding in just the same way as conventional drawings and specifications are currently. However, project teams will need to acknowledge that BIMs contain a far greater diversity of information ranging from data relating to the properties and performance of structures to their on-going operation, maintenance and refurbishment for example.

As highlighted by Beale and Company, the CIC BIM Protocol places contractual obligations upon the Employer [client] to incorporate the Protocol into contracts where BIM will be used. Accordingly, it will be imperative that the basis upon which collaboration is to take place on a project, together with the format of and extent to which BIM models are to be used, is made expressly clear at the outset of a project.

What Needs to Happen?

Commitment

The concluding chapter in the ‘Rethinking Construction’ report is entitled “The Way Forward”.

48 Rethinking Construction (1998)
49 NBS 2015
50 Beale & Company (June 2015)
However, as Shona Frame warns51, “it would be dangerous though to consider that BIM is a panacea and references in some of the literature to it leading to ‘zero defects construction’ tend to be met with incredulity from those in the Industry”.

Frame highlights that “the BIM model is only as good as the people using it, the information put into it and the communication of other relevant information….”. Here then is the nub of the issue; BIM can be a major contributor towards the successful design, procurement, delivery and operation of built assets but in order for it to be fully effective, the project team must work together in a highly disciplined, structured and collaborative way.

**Leadership**

Whilst the Government can play its part in the public sector, we argue that for collaboration to truly succeed, it is the major clients that are best positioned to lead the necessary agenda for change outlined in this Report.

In addition, those leading project or programme teams must be acutely aware of the importance of understanding how highly effective teams really work and be prepared to become just as confident and capable in managing the dynamics of multi-disciplinary teams as they are in managing the commercial, legal and operational aspects.

**Effective Team Working**

As discussed at length elsewhere in this report, effective team working is paramount to the success of any attempt at collaborative working.

Few would disagree with that proposition. However, the challenge comes when clients and project teams face exacting deadlines or significant problems that must be overcome; it is all too easy to sacrifice the team ethos in the search for solutions or indeed ‘someone to blame’.

For just these reasons, we argue that clients and their project and programme teams would benefit from on-going coaching interventions to help them on a journey from occasional dysfunctionality, through working as a group to operating as a highly effective team.

In his book “Performance Coaching for Complex Projects”52, Tony Llewellyn makes a compelling case for the following team coaching model:

- **Assess the project environment**
- **Set-up** (a critical phase where the team coaching interventions are defined and planned for greatest impact)
- **Enable execution**: Facilitating correct behaviours and interpersonal communications
- **Build resilience**: Working with teams to “withstand disruption and unexpected change” by enabling them to embrace risk, uncertainty and ambiguity
- **Learning**: Harnessing lessons learnt and embedding them throughout the client and project team's organisations to improve future performance

Returning to Patrick Lencioni's seminal work, "The Five Dysfunctions of a Team: A Leadership Fable"53, there is an important link between operating effectively as a team and the commercial and legal terms around which projects are structured.

Lencioni describes the critical importance of building “vulnerability-based trust and overcoming the fear of conflict”. One of the key dysfunctions of a team is an absence of trust predicated on people's need to feel invulnerable; in other words, they feel compelled to defend a position or line of argument, for fear of losing face or a negotiating position, or simply being judged by their peer group.

In the course of our discussions when researching this Report, a major client in the pharmaceutical sector described how one of its project teams had transformed from being largely dysfunctional to highly effective through fundamentally reviewing its structure and behaviours, removing the need to feel invulnerable and using an independent chair/coach to lead its regular project and progress meetings.

Removing the need for such a defensive stance, by crafting complementary commercial and legal provisions such as those found in the more advanced forms of alliancing described earlier, teams’ attention can move to a focus on delivering ‘best for project’ outcomes.

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51 Shona Frame (April 2012)
52 Llewellyn, T (2015)
Academia and the Professions

Academia and the professions clearly have a critical role to play in equipping those wishing to pursue a career in construction with a well-rounded view of what it really takes to enable projects to succeed.

Robust technical knowledge is an imperative but, we would argue, so is engendering a willingness and confidence for professionals to constructively challenge clients more so than they do now and in particular to focus more on satisfying true needs rather than just wants. Clients ‘don’t always know best’ and in turn, the very best amongst them, actively encourage their advisers to prompt the ‘difficult discussions’ that can result in improved outcomes and enhanced value-for-money returns.

This prompts us to suggest that there is now an opportunity for academia and the professions to consider the tangible benefits of common first degrees or modules in property and construction-related subjects, before students then specialise in their chosen fields.

Contractors and Supply Chains

Tier 1 contractors and their respective supply chains have a critical role to play in improving collaboration within the Industry.

Having said that clients ‘don’t always know best’, nor do funders or professional advisers of course. Effective collaboration simply will not succeed without the proactive participation of the supply-side of the Industry. At this point, we suggest that the Industry has much to learn from how other sectors such as high-volume manufacturing and aerospace, actively engage with contractors and specialists at the earliest possible opportunity.

Demonstration Projects and Knowledge Centres

How then should the Industry best convey the message regarding improving collaboration?

Change management practitioners advocate the use of a central body to guide transformational change, rather like the “guiding coalition” advocated by Kotter International54. We suggest that an organisation such as Constructing Excellence would be well-placed to continue its work in this field and become a recognised ‘knowledge centre’ for best practice in both the art and science of effective collaboration.

Effective collaboration simply will not succeed without the proactive participation of the supply-side of the Industry.

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54 8 Steps to Accelerate Change in 2015, Kotter International 2015
Conclusions and Recommendations

Changing Attitudes

For collaborative construction to become more prevalent, the Industry needs to change its attitude to what constitutes success and value from a project.

Too often, completing a project within budget is the key driver and prior to commencement of a project, compromises are made between the original brief and concept for the asset with the budget. This leads to compromises in terms of specification and quality to meet the budget. This is a short term saving when considered against the life time of a building which, not untypically, will be expected to last for a minimum of 20 years.

Better measures of success will be whole life cycle costs, sustainability and energy savings which pay for themselves over the lifetime of the building.

The impact of BIM

BIM requires the design team to collaborate and contribute in a collaborative way. With the design becoming more integrated, there are significant implications for the traditional approach to establishing liability. There will be a blurring of the roles of designers so that being a team member is more important than the badge of each individual profession. In the event of a design issue, it will be more difficult to identify if one consultant was solely responsible for the error. Responsibility under BIM will, by definition, become shared and how designers’ insurers will react to the new culture and approach to negligence claims will be interesting to follow.

It seems that where there is the potential for joint liability, all consultants will be brought into proceedings by clients. This could lead to claims for contribution between defendants but with the lines of who is actually responsible for what breach and damage being very difficult to establish. If that is the case, there will be a down side to the biggest enabler of collaborative working.

As BIM becomes more prevalent and if it is to succeed, we foresee that contractual structures will need to change so that parties can contribute fully to their role so that the benefits of collaborating and sharing in the success of a project are enhanced and the litigation risk of poor performance is reduced. Those structures need to enhance team working and sharing of information.

This tends to suggest some element of risk reward needs to be included in all substantial BIM projects and to alleviate concerns for clients about how they can recover the cost of defects where individual responsibility for that defect is not easy to establish, latent defect insurance may become more widely used.

New Structures

The traditional structure of a client and its project manager controlling the project needs to be reviewed. Client control and directing the contractor and professionals by instructions is not the most efficient means of procuring a building. The design and construction processes are complex. An integrated approach to designing the building, involving both professionals and contractors from an early stage is to be encouraged as it leads to a more efficient and seamless design and construction process.

With that in mind, the use of single stage tendering for a fixed price design and build contract does not drive value. The contractor is appointed late in the process, cannot have a full understanding of the design and is generally expected to take all of the risk of design errors and will have limited ability to obtain additional payments. This is a recipe for the supply chain compromising on quality by attempting to find savings in an attempt to balance the books.
Changing the Risk Profile
If the intention is to place all design and construction risk upon a contractor, it should be done in circumstances where it can fully understand those risks, can influence the choices prior to entering contract and is incentivised to achieve savings without compromising on quality. Even within a fixed price contract, some incentive mechanisms should be included to encourage the contractor to find innovative solutions which create either capital savings or long term efficiencies.

With that in mind, fresh thinking needs to be applied around the following areas and roles:-
• Contract forms with core groups
• Quantity surveyors and cost managers
• Structures and issues to enable consultants and specialist sub-contractors to participate and share in collaborative structures
• Key Performance Indicators
• Insurance

Contract forms and core groups
Creating a core group to steer a project is a key to project success. The essential features of the core group are that it should include one member from the client and each key participant from the supply chain. Decisions should be made unanimously and should be accepted by the client.

In many contracts, we feel the core group is not fully empowered and that its recommendations can be reviewed by the client and its advisers and not implemented. Full control of the project is not devolved to the core group. Unless core group recommendations are accepted, save in limited circumstances, the core group is not fully empowered and whilst it will be useful, providing technical and strategic insight, the contract which reserves all instructions to the employer and its supervising officer will still be largely traditional in nature.

For collaboration to succeed, clients need to devolve the management of projects to a core team. This may mean that there is a reduction in control as the client will only reserve key issues such as payment, suspension and termination to itself. It will also require though, a significantly improved understanding of team dynamics and the principles of team-working. This, in turn, will also necessitate an improvement in the calibre of leadership in core teams as well as client organisations.

The client’s checks and balances in this structure are that it has a representative on the core group and decisions need to be made unanimously. If the client’s representative feels that a decision is not going to be made in the best interests of the project, it can withhold its consent and alternative solutions which are acceptable to all parties will need to be found.

It should be noted that the previously quoted NBS survey found that client changes and instructions were amongst the major delaying factors on projects. It may be counter intuitive but devolving power to a core group may reduce delay and create efficiencies.

Quantity Surveyors and Cost Managers
If there is to be a change in the emphasis of what constitutes success and value, the role of the quantity surveyor and their mindset will need to alter. If projects are looking at longer term value and are based on a target cost arrangement, the role of a cost consultant needs to be reviewed.

Apart from the initial setting of budgets and assisting in assessing the financial aspects of tenders, the traditional role of the quantity surveyor needs to change and may be usefully reduced. Aggressive cost control and disallowing of costs will not be conducive to creating the collaborative culture. In collaborative contracting, the quantity surveyor’s role should become more creative by looking at issues around long term value of the asset and life cycle costing.

Structures and issues to enable the supply chain to participate and share in collaborative structures.
The traditional shape of a construction supply chain is similar to a pyramid. If there is to be collaboration there needs to be some means of integrating collaboration and creating a flatter structure so that all key players can contribute and share in a project’s success.

At present, on significant projects, key sub-contractors may be incentivised by using a target form of sub-contract but it is unlikely that for their own suppliers, similar arrangements are in place. The further down the chain, the more likely traditional contracts will be placed.

Consideration needs to be given to overall project risk share pots so that all key contractors and consultants have a stake in the project’s success.
For consultants, there are other issues. On true collaborative projects, there will often be a need to rectify defects throughout the project and to produce a turnkey solution which the project delivery team warrants will meet the brief. In spite of “skill and care” wording in relation to design, there are potential tensions between this approach and professional indemnity insurers not insuring fitness for purpose obligations. At tier 1 level, consultants have been reluctant to accept the design and construction obligations because of the risk of invalidating their PI insurance. This is notwithstanding the no claims” clauses and the continuing obligation to rectify and be paid reimbursable cost for doing so.

To address this commercial concern, if consultants are unwilling to accept these limited risks, then their role in collaborative projects will be at second tier where their influence will not be as great as if they were part of the first tier team. Bearing in mind that the consultants will produce the design, they are in the best place to assume the risk and if they cannot contribute and be rewarded fully, it dilutes collaboration.

To that end, the Integrated Project Insurance model is to be welcomed as a starting point in providing insurance cover in collaborative projects, covering latent defects and significant cost overruns. It is perhaps a product which will need refining.

**Insurance Models**

We are aware that PI insurers are looking at how traditional PI liabilities can be covered in the no claims context. There is a recognition by insurers that contracts with no claims clauses are not compatible with traditional professional indemnity policies. In particular if there is a design fault, the consultant responsible cannot admit its mistake (its liability). Traditionally, insurers would take on the defence of an allegation of negligence with any work to rectify the issue waiting until fault is determined. This approach would make projects grind to a halt.

Solutions being considered involve an endorsement/ extension on the policy so that in the alliance context, the insured’s reasonable and direct costs of taking action to mitigate negligence are covered.

In collaborative contracting, the quantity surveyor’s role should become more creative by looking at issues around long term value of the asset and life cycle costing.

The effect of this will be that whilst rectification costs will still be reimbursable costs paid by the employer, any sums recovered under the policy will be accounted for by the consultant to the employer and the target will be unaffected. This is potentially an attractive proposition.

**Incentives and KPIs**

All too often, KPIs are used as a stick with which to beat the contractor. KPIs should be set so that not only should poor performance attract a sanction but above benchmark performance should be rewarded. The more means of incentivising the team to share in a project’s success, the more committed the performance and the greater the chance of a successful outcome.

**Next Steps**

In the light of our conclusions, the challenge for the industry is how to structure projects so that these features are successfully incorporated into contractual structures. The majority of these features can be found in alliancing structures and contracts and the core group/ project board structure, no claims culture, collaboration and risk sharing seem ideal for projects utilising BIM. The issue for the Industry is how to incorporate these features into standard sized projects because of the additional time and cost of establishing the team and the price.

At the beginning of this Report, we outlined our ambition that it should reignite the debate around the need for and nature of, collaboration in the construction industry. We do not claim to have dealt with all of the key drivers and barriers but do hope that the Report provides a robust basis for further informed discussion and a constructive challenge to the Industry to perform even better in the future.

Accordingly, this Report represents the first of a number of stages in this journey. Our next task is to work with clients and the Industry to develop and explore in more depth, the principal themes and recommendations, culminating in a second report in 2017.
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Appendix A: Procurement Routes and Collaborative Features

- Alliancing with Integrated Body
- Partnering
- Term/Framework Agreements
- Target Cost
- Management Contracting
- Traditional (lump sum)
- Design & Build
- Cost Led Procurement
- Construction Management
- Traditional (Remeasurement)
- EPC Contracting
- Public-Private Partnerships
- Two Stage Open Book
- Integrated Project Insurance
Collaborative Construction: More myth than reality?

Standard Form Construction Contracts and Collaborative Features

MORE

- New PPC Alliancing Framework Contract
- JCT Constructing Excellence
- NEC3 ECC with partnering option X12
- ICC Target Cost
- PPC 2000 Standard Form of Contract for Project Partnering (Amend 2013)
- Term Partnering Contract TPC2005 (Amended 2008)
- CIOB Contract for use with Complex Projects
- JCT Management Contracting
- JCT Construction Management
- JCT Standard Building Contract with Supplemental Provision 1
- JCT Design and Build Contract with Supplemental Provision 7
- GC Works
- ICC Design Construction Version
- Fidic Red/Yellow/Silver
- IChemE Contracts
- MF/1

LESS