

Impact case study (REF3)

Institution: University of Bolton		
Unit of Assessment: Business and Management Studies C17		
Title of case study: Procuring Work Through Partnering, Collaboration and Trust to Better Leverage Successful Outcomes on Large Construction Projects; a 14-Point Tool Kit for Supply Chains		
Period when the underpinning research was undertaken: 2014-2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): Dr Carl Bridge Dr Peter Farrell	Role(s) (e.g. job title): Head of Management Accounting Reader in Construction Management	Period(s) employed by submitting HEI: January 1989 to-date November 1989 to-date
Period when the claimed impact occurred: 2015-2020		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact (indicative maximum 100 words) Research, undertaken at the UoB Institute of Management (IoM), has been implemented in the procurement of a construction project for the benefit of supply chains; from a client to multiple designers, contractors and suppliers. Through partnering, a contract was agreed with minimal delay to the project. Literature published over many years, with new figures in 2019, show that over 30% of construction projects are completed over budget and delivered late. Construction contributes 7% to UK GDP and globally, it is often in double digit figures. The research is multi-disciplinary, a collaboration between IoM and Engineering researchers.		
2. Underpinning research (indicative maximum 500 words) This research was led in the IoM by Farrell, and supported by Bridge, Sherratt and Higham. It originated in PhD research with industry practitioners such as Challender, Whitaker, Khalifa and Emam, where in particular the former helped in providing live projects as a vehicle to implement research outcomes in practice, and thus give the research its impact. Competitive procurement systems pervade many industries and service professions, where perhaps six suppliers bid for work on the basis that lowest price wins. Executive decision makers find comfort in competition, since if objectives are not met, they can defend themselves to stakeholders by arguing that projects were market tested. In construction, this often leads to a failure to meet client objectives such as cost, time, quality, health and safety, and sustainability; also, there are too many disputes between contracting parties that require resolution through formal and expensive legal channels. This case study demonstrates how IoM research has been implemented, with immediate benefits at the early stages of one example large building, and with continuing work on other projects. At the inception stage of projects, clients may 'partner' and 'collaborate' with perhaps two or three members of a supply chain, and during negotiations underpinned by 'trust' select one party with whom to agree client objectives. Supply chains are motivated to perform well, since success often brings repeat work.		

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Trust and Collaboration

Findings provided insight into the creation, mobilization and development of trust. An inventory framework was theorised and developed by which levels of trust or 'trust status' can be measured on partnering projects. Using the said inventory framework, the case study found that trust levels on partnering projects, on a 0-100 percentage scale, scored a relatively low 50.83%. Subsequently, a new method of measuring the commitment of partners to trust building strategies was devised. A novel evaluation tool was devised to measure success, and linked it to organisational commitment and trust building strategies. This provided conclusive empirical evidence to support best practice for building trust in partnering arrangements. Barriers to trust were analysed, alongside trust building mechanisms and their practical applications within the industry. Also an examination was undertaken of how supply chains can have confidence to change and implement new practice. The dilemma was addressed by focusing on constructs which could influence trust and offer a greater understanding of trust building mechanisms.

Addressing the Issues

Due to the research a "toolkit" was devised consisting of 14 trust building mechanisms thus: (i) regular workshops, (ii) networking events, (iii) incentivisation schemes, (iv) open communication, (v) style of leadership, (vi) partnering charters, (vii) fair contact terms, (viii) CPD, (ix) professional body membership, (x) transparent accountancy systems, (xi) joint recruitment, (xii) commitment, (xiii) complementary management systems, and (xiv) relationship management. To deploy the toolkit efficiently and effectively, it is suggested that organisations implement a "collaborative facilitator" role to oversee processes and encourage further trust.

3. References to the research (indicative maximum of six references)

- Higham, A., Bridge, C. and Farrell, P. (2016) '*Project Finance for Construction*'. Oxon: Routledge. ISBN: 978-1-138-94130-4
- Challender, J., Farrell, P. and McDermott, P. (2018) *How to Improve Construction Procurement through Collaborative Trust Strategies. A New Approach and Practical Guide*. Chichester: Blackwell-Wiley.
- Challender, J., Farrell, P. and Sherratt, F. (2016) Effects of an economic downturn on construction partnering. *Proceedings of the Institution of Civil Engineers. Management Procurement and Law*. DOI: <http://dx.doi.org/10.1680/jmapl.15.00033>
- Challender, J., Farrell, P. and Sherratt, F. (2016) Collaborative trust in UK further education (FE) procurement strategies; a quantitative and qualitative analysis. In Chan, P. (Eds). Procs 32nd Annual ARCOM Conference, 5-7 September 2016, Manchester, UK, Association of Researchers in Construction Management
- Challender, J., Farrell, P. and Sherratt, F. (2015) Experiences of Collaboratively Procured Building Contracts in the UK and the Importance of Human and Organisational Factors. University of Salford International Post-graduate Research Conference. pp. 498-504. Available at: http://www.salford-ipgrc.com/downloads/IPGRC_2015_Proceedings_FINAL_ed.pdf [Accessed 31.07.15.]. Awarded best paper in conference prize
- Challender, J., Farrell, P. and Sherratt, F. (2015) Exploration of factors which affect trust within the context of construction partnering. In Raiden, A. and Ahiaga-Dagbui, D.D. (Eds) Procs 31st Annual ARCOM Conference, 7-9 September 2015, Lincoln, UK, Association of Researchers in Construction Management, pp. 299-308
- Challender, J., Farrell, P. and Sherratt, F. (2014) Partnering in practice: an analysis of collaboration and trust. *Proceedings of ICE - Management, Procurement and Law*. Vol 167. Issue 6. Pp.255-264. <http://dx.doi.org/10.1680/mpal.14.00002>
- Khalifa, M., Farrell, P. and Emam, H. (2015) The Concept of Partnering in PPP Projects in the UAE. *Proceedings of the ICE: Management, Procurement and Law*. <http://dx.doi.org/10.1680/jmapl.15.00019>.

4. Details of the impact (indicative maximum 750 words)

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The University of Salford was not involved in the research; as the client in this case study, it is one of the beneficiaries. Salford's Estates Department introduced a new procurement policy for its £400 million (M) development master plan. The first project is a £65M educational facility. Dr Peter Farrell worked with staff at Salford to provide further guidance in its implementation. The project was procured using the 14-point toolkit developed in the IoM research as the foundation due to its novelty. Tools in the kit were informed by previous literature, but their implementation in this format, is an industry first. The 'collaborative facilitator' was appointed and there is co-location of the client's design team and the principal contractor, such that complex design problems can be resolved more easily by working together.

As the UK looks to deliver many huge infrastructure projects over the next decade; alongside smaller and micro projects which are equally important in economies. Contractors often report a key reason for losses is adversarial competitive procurement systems where clients inappropriately 'dump' risks on supply chains. The liquidation in 2018 of the contractor Carillion, with a turnover in excess of £5 billion (BN), is just one example of failed procurement systems that allocate too many risks to contractors.

The University of Salford has its own project management team, supported by three design consultants that are ranked in the UK top ten by turnover. The principal contractor is Morgan Sindall is the fourth largest contractor in the UK with a turnover in 2019 of £3.07BN and profit of £88M.

The contractor has been working with the University of Salford developing concepts for the design since March 2017. Through open book accounting, a price of £47M was agreed. Abruptly, a change in the strategic context of the project by the client led to a request for a large increase in floor space. Subsequently the estimate became £73M. By working together in a collaborative manner and using the innovative 14 point tool kit in a value engineering exercise, a fixed price of £65M was negotiated. It is undoubted, that without collaborative working, importantly underpinned by 'trust', a change in scope of this size could not have been accommodated without otherwise huge delays for the client in a new protracted competitive bidding process potentially involving six contractors; and abortive costs to the five bidders who would be unsuccessful. The project started on site with first 'shovel in the ground' in July 2020, and will be completed in 29 months. Impact is evidenced on this one project through a £13M cost saving to the client, plus minimisation of time delays and further supplementary costs. It is estimated that 100+ subcontractors will be employed on this project, and 1000+ suppliers. The ethos of partnering, collaboration, trust and the tool kit infiltrate down to them all. All parties involved negotiate with partners higher up the supply chain that are placing orders, and benefit from completing their work profitably, on time, and without getting involved in adversarial dispute resolution systems. The reach and spread of influence over construction supply chains is therefore consequently significant. Whilst it is difficult to measure quantitatively at this stage of the research, it is expected that the supply chains will conscientiously apply their experiential learning arising from this research on other projects. The research cites the learning model of Kolb (1984), who writes "*Learning is the process whereby knowledge is created through the transformation of experience*".

Material from this research was the impetus to write the books 'Project Finance for Construction' by Bridge, Farrell and Higham, 'How to Improve Construction Procurement through Collaborative Trust Strategies' by Challender, Farrell and McDermott, and 'The Client Role in Successful Construction Projects' by Challender and Whitaker. These textbooks and eight other publications in this case, are read by students and practitioners for application in industry. There is potential impact both in the UK and globally since publications are available in the international domain. Research continues to measure this impact and to apply findings to other areas of national economies, including the manufacturing and service sectors.

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One of our sources of corroboration writes of the project “... *I passionately believe that this is the finest example of Collaborative Working within the Construction Industry that my team and I have been involved with ...*”.

5. Sources to corroborate the impact (indicative maximum of ten references)

Letters from:

Pre-Construction Director, Morgan Sindall

Regional Director, Faithful and Gould: Project Manager and Quantity Surveying Consultants

Associate Director of Development, Estates and Facilities, University of Salford in its role as a construction client.