Exploring the idea of ‘costing collaboratively’ in the UK construction industry

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The UK Construction Industry Challenge

- Lack of collaboration among stakeholders
- Traditional procurement approach persist
- Commercial behaviours
- Survivalist mentality

Farmer Report, 2016
Current costing practices

- Decisions are made in silos.
- Communication and feedback is poor.
- Data mostly taken from previous projects.
- Still driven by RIBA plan of work in the UK, which support competitive tendering.
- Costing and design are fragmented - separated from production.

(Kern & Formoso, 2004; Elfving et al, 2005; Ballard, 2008; Flyvbjerg, 2008; Ashworth, 2010; Eastman, 2011; Wearne, 2014)
Sequence & disciplines involved

- Cost planning 1: architect & QSs
- Cost planning 2 with TC: architect/QSs/service engineers
- Cost planning 3: + contractor
Setting target cost

The focus is on the product design? Working toward price

Scholars are arguing that integrating experts early would shift the customary approach to support collaboration.

Why ‘Costing Collaboratively’

- Moving away from commercial ‘secrecy’
- Financial transparency
- Integrate right players to support financial commitments
- To have a clear understanding of actual cost and value – to eliminate waste
- To improve the mentality of ‘project first thinking’!
The focus is to determine what the product cost will be? working towards design.
## Approach - case study

<table>
<thead>
<tr>
<th>Project Attributes</th>
<th>Case study 1</th>
<th>Case study 2</th>
<th>Case study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of projects</td>
<td>Infrastructural</td>
<td>Infrastructural</td>
<td>Infrastructural</td>
</tr>
<tr>
<td>Location of projects</td>
<td>UK</td>
<td>UK</td>
<td>UK</td>
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<tr>
<td>Nature of works</td>
<td>Design &amp; construction of water recycling treatment plants</td>
<td>Construction of water recycling treatment plants and sewage works</td>
<td>Upgrade of highway to smart motorway btw J19 &amp; 16</td>
</tr>
<tr>
<td>Types of clients</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
</tr>
<tr>
<td>Mode of partners selection</td>
<td>Alliance, framework</td>
<td>JV, framework</td>
<td>JV, framework</td>
</tr>
<tr>
<td>Proposed duration</td>
<td>60 months</td>
<td>60 months</td>
<td>24 months</td>
</tr>
<tr>
<td>Procurement arrangement</td>
<td>Centralised procurement system</td>
<td>D &amp; B</td>
<td>D &amp; B</td>
</tr>
<tr>
<td>Contract sum</td>
<td>£1.2 billion</td>
<td>£200 million</td>
<td>£120 million</td>
</tr>
<tr>
<td>Phase examined</td>
<td>Costing</td>
<td>Costing</td>
<td>Costing</td>
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</table>
Accordingly, CC is defined as an approach that engages stakeholders (upstream and downstream) around wider scheme budgets creating a sense of ownership, driving positive behaviours to achieve desired cost outcomes. This integration encompass players i.e., designers, constructors, quantity surveyors (QSs), supply chain and the client all working together to achieve common goal with shared accountability…
## Current practice

### Case Study 1, 2 & 3: Delivery Milestones

<table>
<thead>
<tr>
<th>Feasibility Stage DM0-DM1</th>
<th>Single Solution stage DM2</th>
<th>Confirm Solution, Delivery &amp; Completion DM3-Dm4</th>
<th>Confirmation of Scheme close DM5-DM6</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC already set by client team; Schemes handed to alliance team, Processing multiple design solutions.</td>
<td>Single solution established; Key players assembled.</td>
<td>Interfacing with SC; Designs are completed, Cost data captured &amp; submitted.</td>
<td>Historical costs collated; Final cost figures determined; Costs populated into client data base; Client’s team determine the TC.</td>
</tr>
<tr>
<td>Optioneering, ROV meetings. Validation exercise.</td>
<td>Accurate cost forecast; Cost planning/ estimating; Collaborative planning meetings.</td>
<td>Project rehearsals; Update on scheme costing.</td>
<td>Preparation of new concept scheme; New business case assembled, New TC set.</td>
</tr>
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</table>

Accurate cost forecast; Cost planning/ estimating; Collaborative planning meetings.
Level of interaction

**COLLABORATION/COSTING INTERACTIONS AND STAKEHOLDERS INVOLVED**

<table>
<thead>
<tr>
<th>FEASIBILITY STAGE</th>
<th>SINGLE SOLUTION</th>
<th>ESTABLISHED SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client team</td>
<td>Client team</td>
<td>Client team</td>
</tr>
<tr>
<td>Validation Exercise</td>
<td>Optioneering exercise</td>
<td>Project team</td>
</tr>
<tr>
<td>Cost Planning &amp; Checking</td>
<td>Project team</td>
<td>Scheme Costing/Contract admin</td>
</tr>
<tr>
<td>Project team</td>
<td>Project team</td>
<td>QSs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supply Chain</td>
</tr>
</tbody>
</table>

**Client team:** consultants, feasibility engineers & QSs

**Project team:** planners, designers, contractors, estimators CM etc.

**Supply chain groups:** tier-2,3 suppliers

Activity Involvement Communication loop
Conclusion

- The depth of cross-functional integration is superficial, as commercial & SCGs are not overtly involve - limit options for innovation, continuous improvement & value enhancement.
- Collaboration is substituted with negotiation.
- BIM concept is partially applied, set-based design, CBA and relational contracting are non existence.
- ‘Institutional’ factors (i.e.; TCE, prevailing construction model & consultancy drivers) continue to derail collaboration with undue influence in commercial practices.
- The approach appears to be progressing – yet it is still driven by price, and value is not properly understood especially among commercial and SCGs.
- Indeed, CC has the potential to improve CW;
  - but need stakeholders to have sense of ownership
  - start from a position of sustainability, and
  - transparency to eliminate transactional characteristics in practice.
Thank you 😊 for listening, I’m happy to take questions