

ECI & Constructing Excellence Productivity Workshop

23 October 2019

Discussion Paper: Starting the Revolution

Prepared by:



Facilitated by:





The engineering & construction industry is not sustainable

because



There is a lack of investment compared to other industries

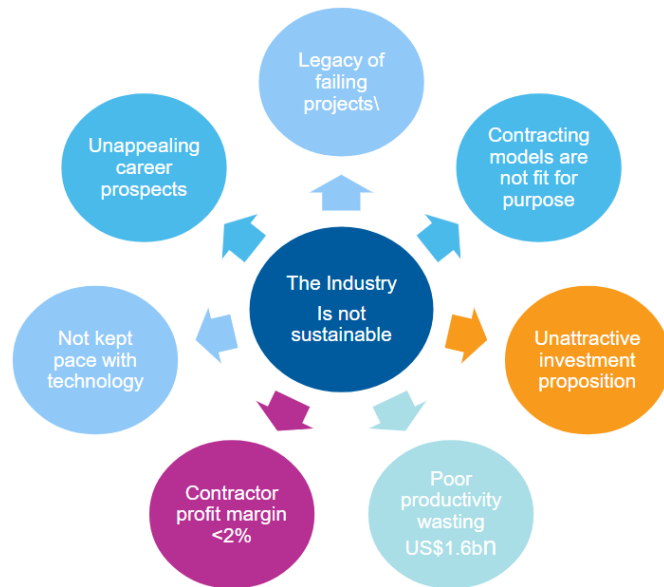
because



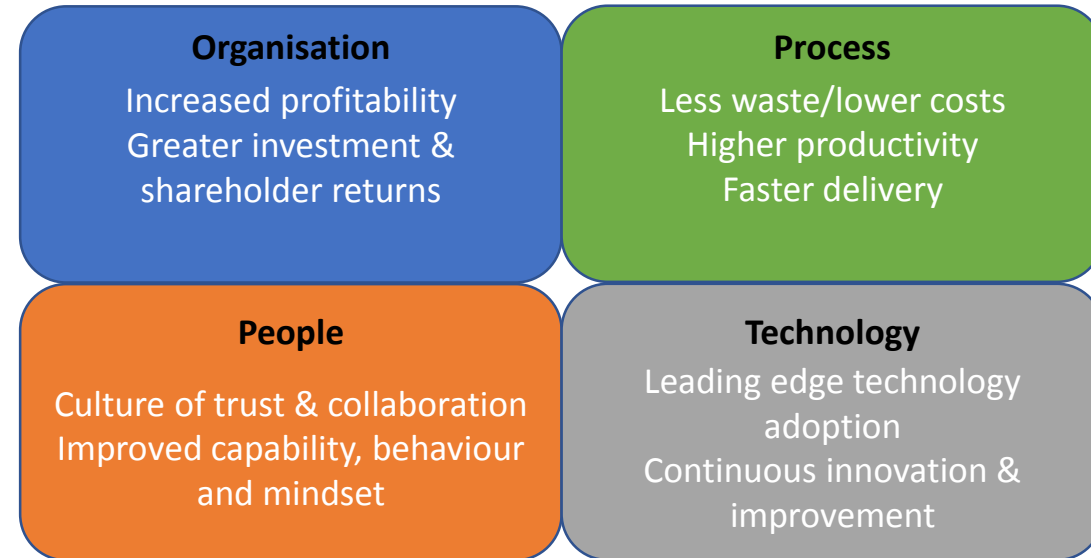
There is a legacy of failing projects

The CE/ECI conference supported the view that the Engineering & Construction Industry requires a revolution to eliminate waste, maximise productivity and drive successful project delivery

Problems



Vision – better industry outcomes across the 4 pillars...



The purpose of this paper:

- Consolidate inputs and outputs from the CE/ECI event, providing a summary of change initiatives and ideas
- Propose a way forward and next steps to help answer the key question...

How do we ensure that these [changes] are universally known, adopted and embedded in industry practice?

	Organisation	People	Process	Technology
Pre-event feedback	Contracting model Procurement Project Mgt techniques Financing/budgeting	Mindset & attitudes Trust	Advanced work packages Toyota/Kaizen/Lean Value engineering Standardisation Planning	Digital Data Implementation/training/adoption Drones Augmented reality
Workshop	Strategy Contracting Model Integration	Culture – innovation / creativity / empowerment Recruitment, Training & Development Reward & Performance management	Standardisation Procurement	Automation Digitalisation
Conference Presentations	Benchmarking Dynamic pricing Smart contracts Supplier verification Leasing models Supply chain Agility Integration & removing silos	Remove Culture of fear Create KPIs to measure / reward behaviour Mindset Training & effective communication	Advanced Work Packages Workforce Planning Operating System 2.0 Standardisation Re-shape procurement Process driven by technology Remove waste	PDRI AI for AWP SuPERTOOL Industry 4.0 Digitalization PORS Smart Torque System Doxel Reduce need for site workforce Improve data confidence

There is a mix of ‘off the shelf’ **solutions** (e.g. Doxel, AWP), **work in progress** (e.g. OS 2.0, Project Team, contracting models) and **new ideas** that need developing into more meaningful initiatives (e.g. culture, procurement, standardisation). All **3 types** need a tailored approach...

Solutions



Ensure case studies and suppliers available. Demonstrate the benefits and explain what needed to implement

Work in progress



Mix of case studies and gap analysis to identify what else required to increase adoption and sell benefits

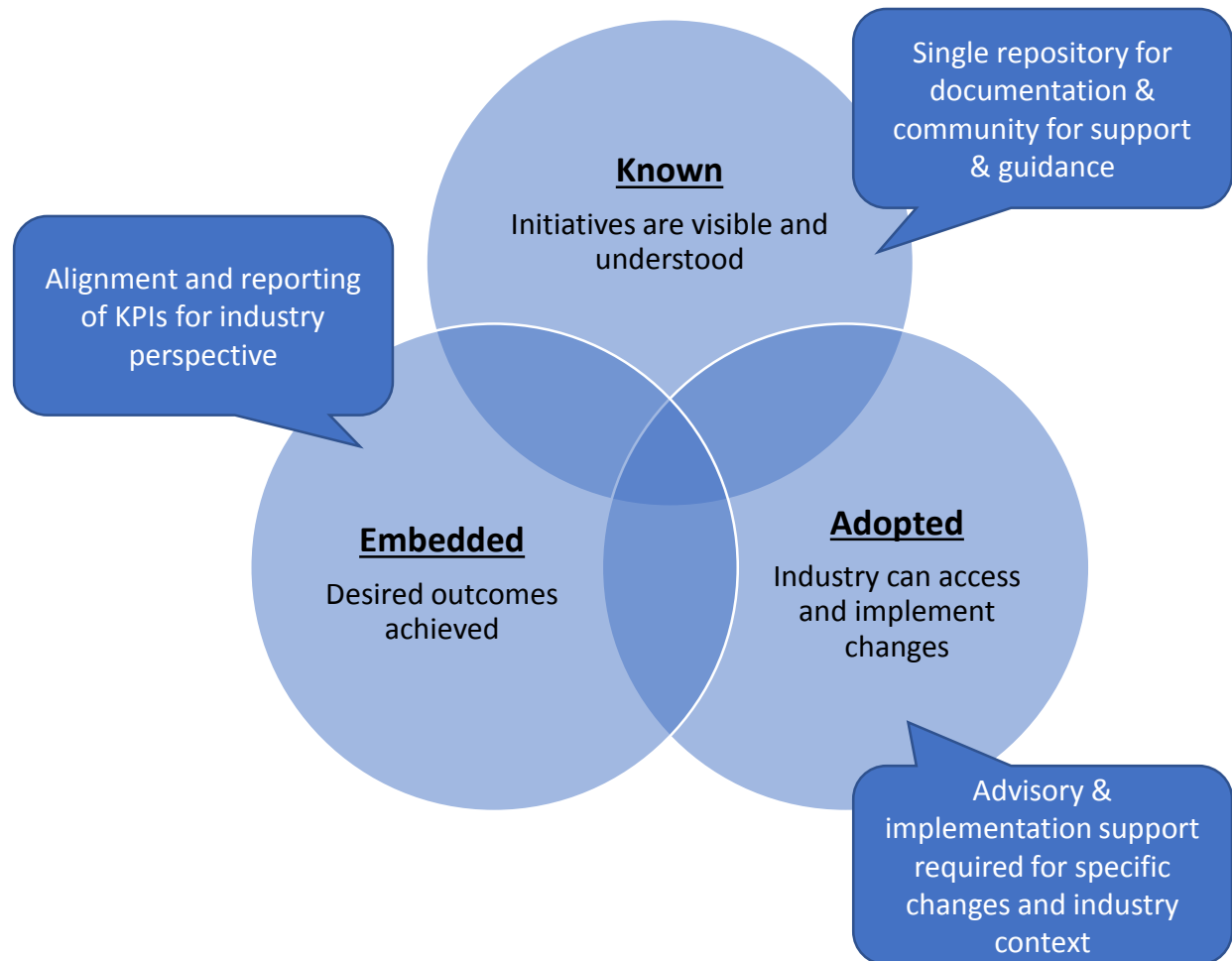
New ideas



Working groups to develop thinking and translate into change initiatives to be tested then shared as best practice / case studies to be adopted

How do we ensure that these are universally known, adopted and embedded in industry practice?

What does 'known', 'adopted' and 'embedded' mean?
And what are the enablers we need in place?



Critical Success Factors – apply some basic principles...

1. Get senior stakeholder buy-in across industry
2. Initiate and manage as a Transformation Programme
3. Establish a governance framework to provide structure and oversight
4. Agree clear roles and responsibilities
5. Put in place communication and reporting mechanisms
6. Facilitate remote / F2F collaboration and learning opportunities
7. Define how success will be measured

Revolution requires getting organized and aligned so we can accelerate change and pull in the same direction

Finding the 'answers' is eminently feasible

- Many great ideas and initiatives already exist
- Creativity and innovation opportunities are plentiful

And there are many industry bodies applying transformation agendas e.g.

- BRE – Construction Innovation Hub
- CII – Operating System 2.0, Project Team
- Plus many others...

However, there is opportunity to co-ordinate & collaborate for maximum effectiveness

- Organise based on transformation best practice and apply a simplified approach
- Agree the facilitation roles and teams (across CE/ECI etc. plus others as required)
- Determine investment method and secure funding for resources needed (people, tools etc.)

This will build momentum quicker and increase confidence across multiple stakeholder groups

- Oversight for a coherent joined up story
- One stop shop for information and collaboration

Proposed first steps on journey towards next event in Amsterdam Q1 2020...

- In addition to CII & Project Team, join-up with other industry bodies (CE, ECI, IPA, ICE etc.) for true industry wide perspective and collaboration
- Identify and engage guiding coalition (e.g. Steering Committee)
- Define and agree the governance framework, transformation approach, workstreams, owners and resources required
- Produce contextual diagram to illustrate where the change initiatives are in the value chain and key stakeholder groups – the blueprint for future industry model (see appendices)
- Hold workshops with key resources to agree approach/tools, develop content (e.g. change backlog, roadmaps) and determine priorities
- Develop portal and key tools required for effective communication, collaboration and learning
- Define how success will be measured e.g. behavioural KPIs, productivity, profit etc.

Consensus for revolution

Organised for transformation

Momentum established

23rd Oct

Jan 2020

Mar 2020

The next 3 slides provide some simple examples of tools that could be used and developed over time to establish a better understanding of the changes and options for moving the transformation forward.

The purpose is to encourage thinking, offering some suggestions to get the ball rolling...

1. Stakeholder benefit matrix

How do the change initiatives impact different stakeholders and what benefits will they bring?

2. Blueprint

What are the interdependencies across the value chain? Where in the lifecycle do they occur?

3. Transformation approach

How can we organise to get the revolution started?

1. Stakeholder benefit matrix

Stakeholder Group	Organisation	People	Process	Technology
Owner				
Main Contractor				
Sub Contractor				
Investor				
Consultant				
Other				

The purpose of this is to identify what the changes mean to different stakeholder groups. Why does it matter to them? What are they trying to achieve? Are there areas of conflict or synergy opportunities? Could use the OGSM (Objectives, Goals, Strategies, Measures) model for each to support alignment and collaboration. This would feed into the Blueprint

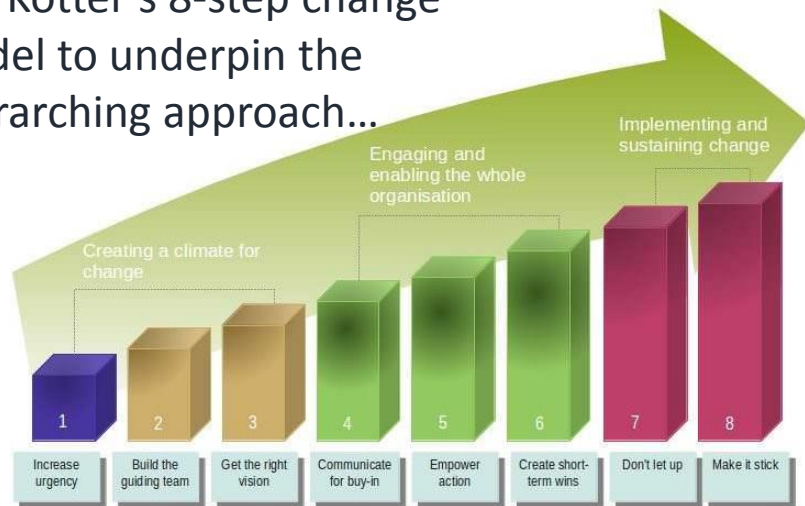
2. Blueprint - Where are the change initiatives in the value chain and how impact key stakeholder groups?

Stakeholder Group	Financing	Contracting	Design	Build	Handover	Operate
Owner						
Main Contractor						
Sub Contractor						
Investor						
Consultant						
Other						

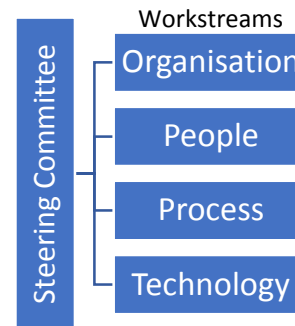
The purpose of this is to identify upstream and downstream interdependencies showing the stakeholder benefits to illustrate the future industry operating model. It could be used in conjunction with opportunity analysis (e.g. how/where reduce transactional cost) and aligned to strategic change planning (e.g. prioritisation and sequencing)

3. Transformation approach

1 Use Kotter's 8-step change model to underpin the overarching approach...

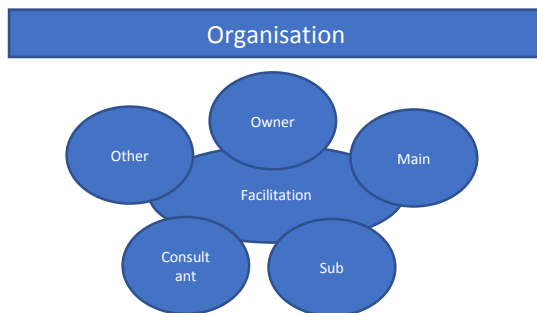


2 Put in place mechanisms for effective decision making and ways of working...



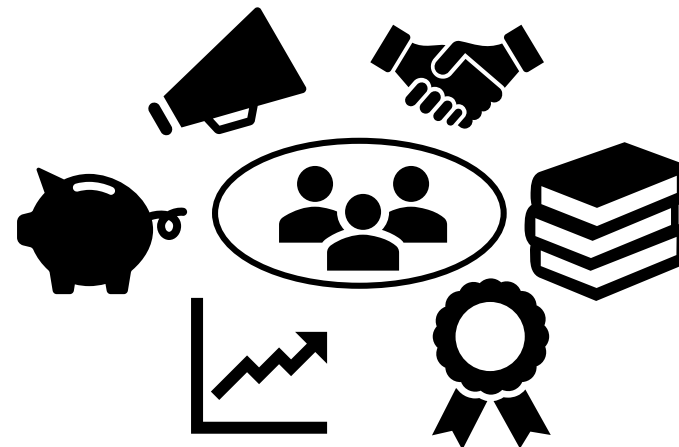
There's an opportunity to adopt Agile ways of working to build momentum quickly. Ownership of workstreams is key e.g. Product Owner who would be driving the improvement opportunities in their workstream engaging resources as required for specific initiatives.

3 Engage a range of stakeholders to form temporary teams to identify, plan and deliver workstreams...



This fits with Agile, creating a collaborative approach and optimising efficiency e.g. planned bursts of effort to achieve specific outcomes. Each workstream will manage their own backlog and feed into the Steering Committee who provides oversight for the overall Change Roadmap

4 Create a Community for Change with representatives across all stakeholder groups to provide visibility and become a catalyst for transformation...



The 'C4C' is a communication vehicle sharing plans, celebrating success & providing learning opportunities. It will align with the Portal acting as an information hub along with bringing stakeholders together virtually and face to face as required.

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Workshop Output - the 4 Pillars to Improve Productivity

1) Importance of the 4 pillars

Individually each delegate was asked to rank the relative importance of each of the 4 pillars to improve productivity on a scale of 1-10 (unimportant to critical)

2) Group Sessions

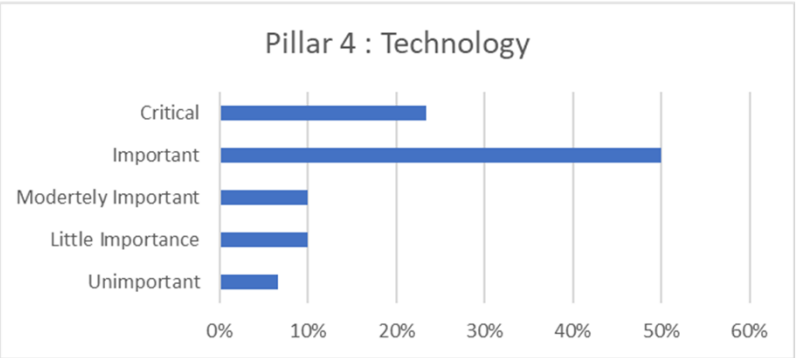
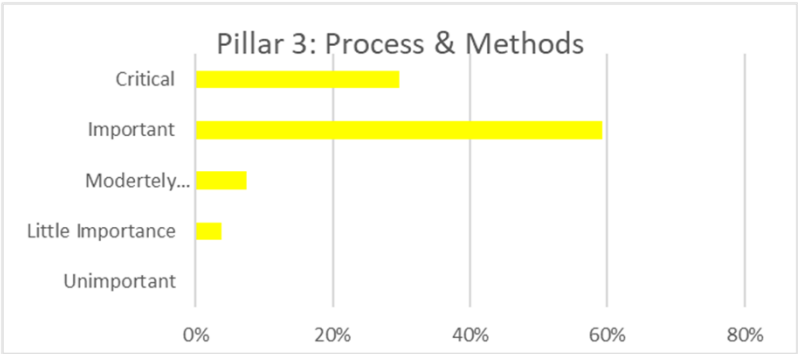
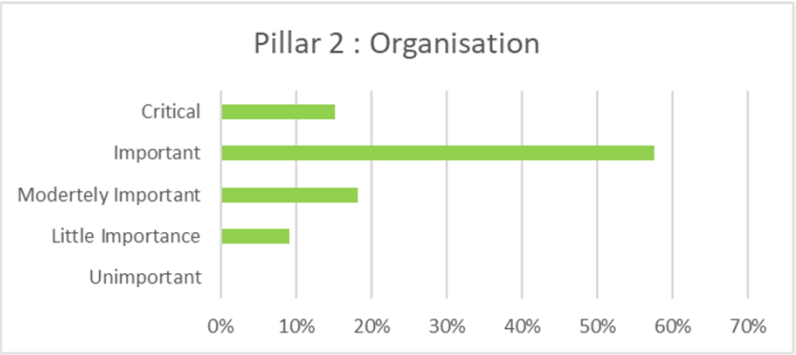
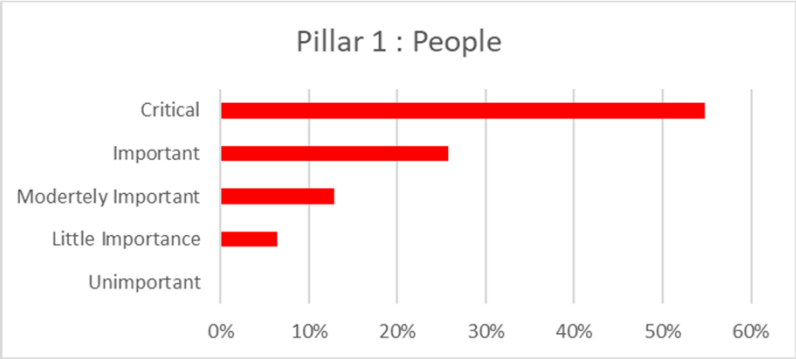
In 4 separate sessions the delegates in their 'as-seated' groups were asked to discuss and record (post-it) ideas/measures to improve each the 4 pillars and place those measures on a graph dependant on their complexity (low to high) and potential impact (low to high)

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Importance of 4 Pillars to Improving Productivity



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High Impact Low Complexity Ideas/Solutions/Changes to Behaviours

Pillar 1: People

Remove culture of Fear of being/doing things differently	Train people in effective communication
Investment in building a people network	Constructively Challenge (360 Feedback)
Remove focus on billable hours	Challenge the measure of competency – right people in the right job
Creating a shared vision	Reward training and development
Empowerment	Identify and encourage the right attitudes
encourage creativity	Train people to Consider/Understand people –Trust/Respect
Create KPI to measure/reward behaviour	

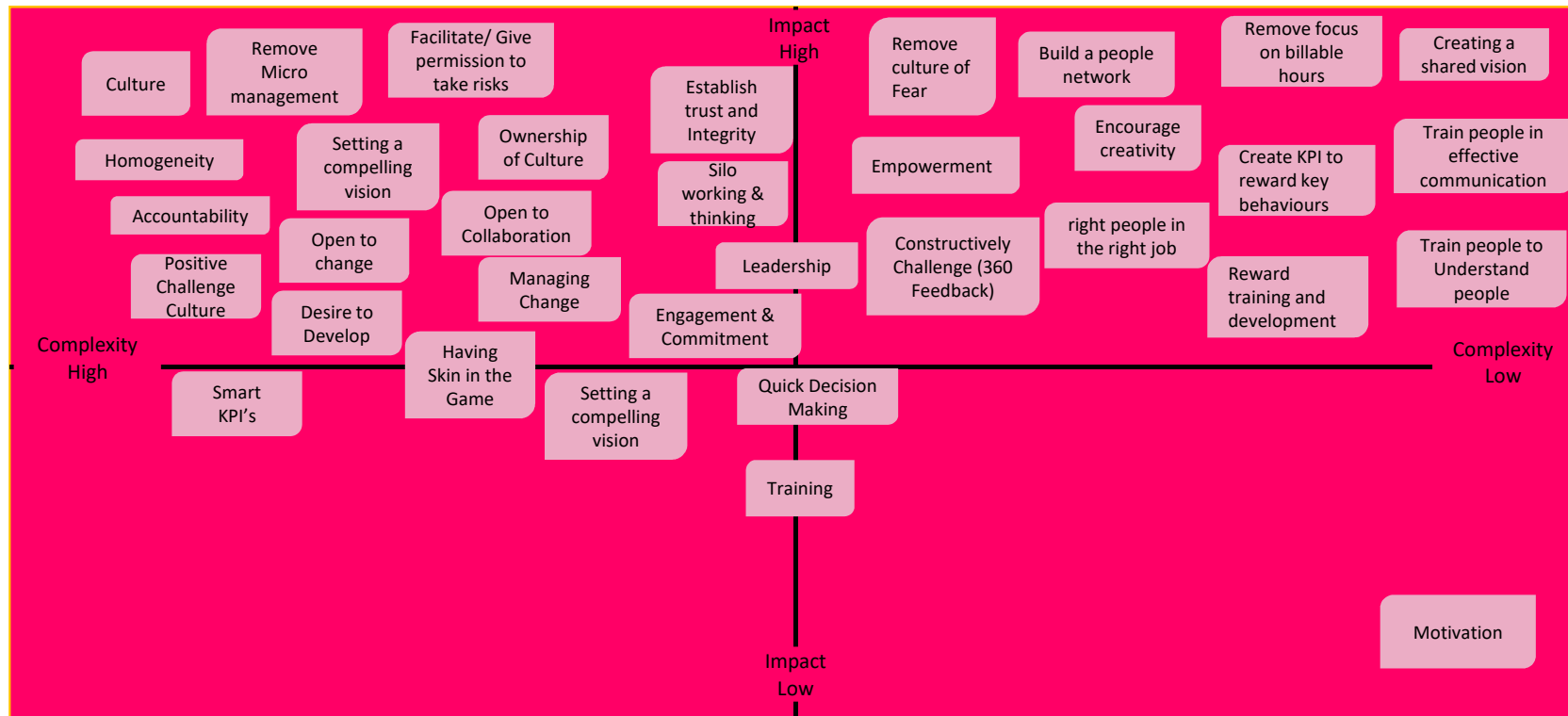
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Group Session – the collective results

Pillar 1 People



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High Impact Low Complexity Ideas/Solutions/Changes to Behaviours

Pillar 2: Organisation

Ensure there is a clear Strategy	Develop alternative Contracting models
Ensure Diversity	Speed up decision making
Integration – Remove silos	Define the organisational structure
Define the organisation	Being prepared to declare your shortcomings
Align strategy and goals	Break down complexity
Improve communication	R&D
Don't place people on who's available	Remove Inertia

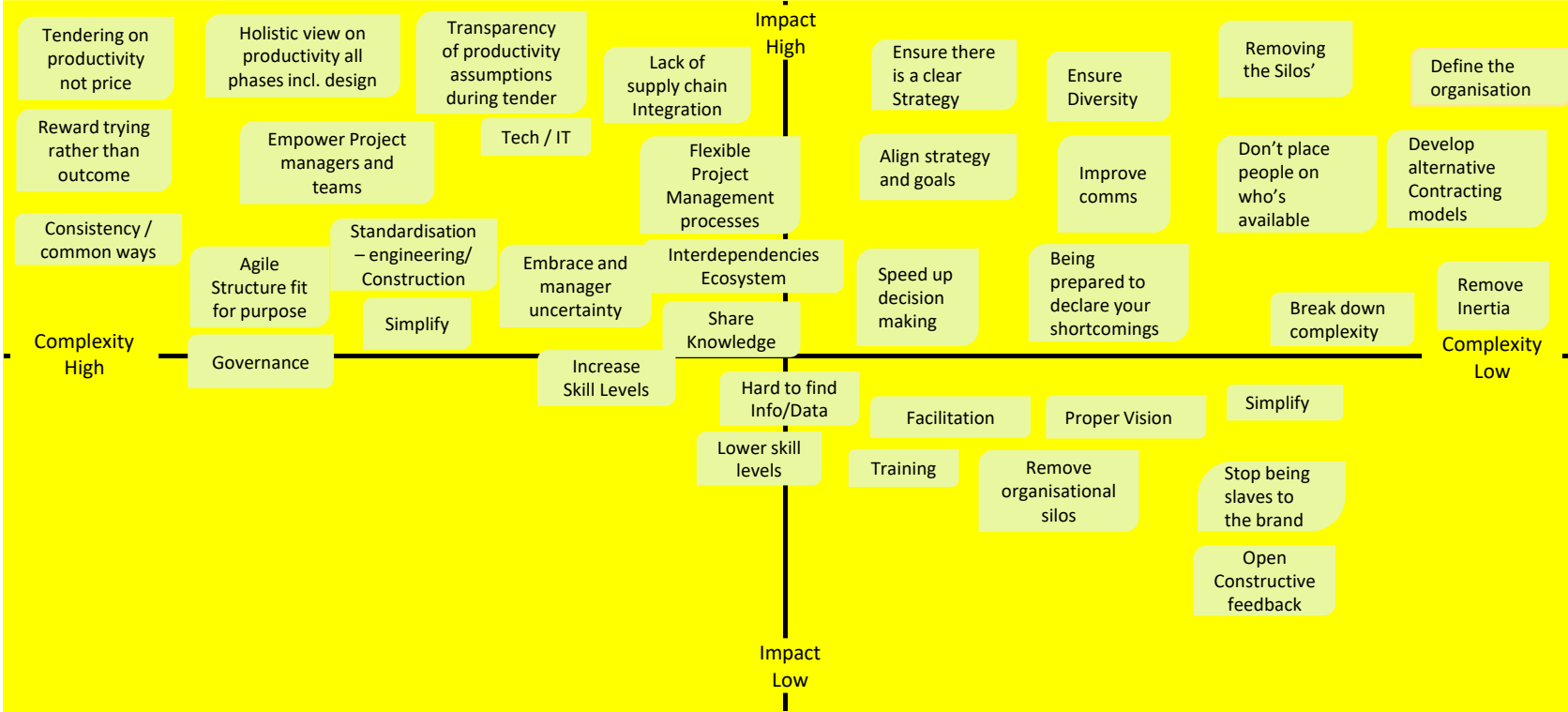
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Pillar 2 Organisation



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High Impact Low Complexity Ideas/Solutions/Changes to Behaviours

Pillar 3: Process & Methods

Standardised Processes	Processes to drive collaborative behaviour
Process driven by Technology	Co-ordination between teams
Removing the Silos'	Micro-management
Overly Procedural	Gate Process/Reviews
Re-shape procurement	Team Building
Knowledge Transfer	Remove Waster – over production/processing
C.P.M	

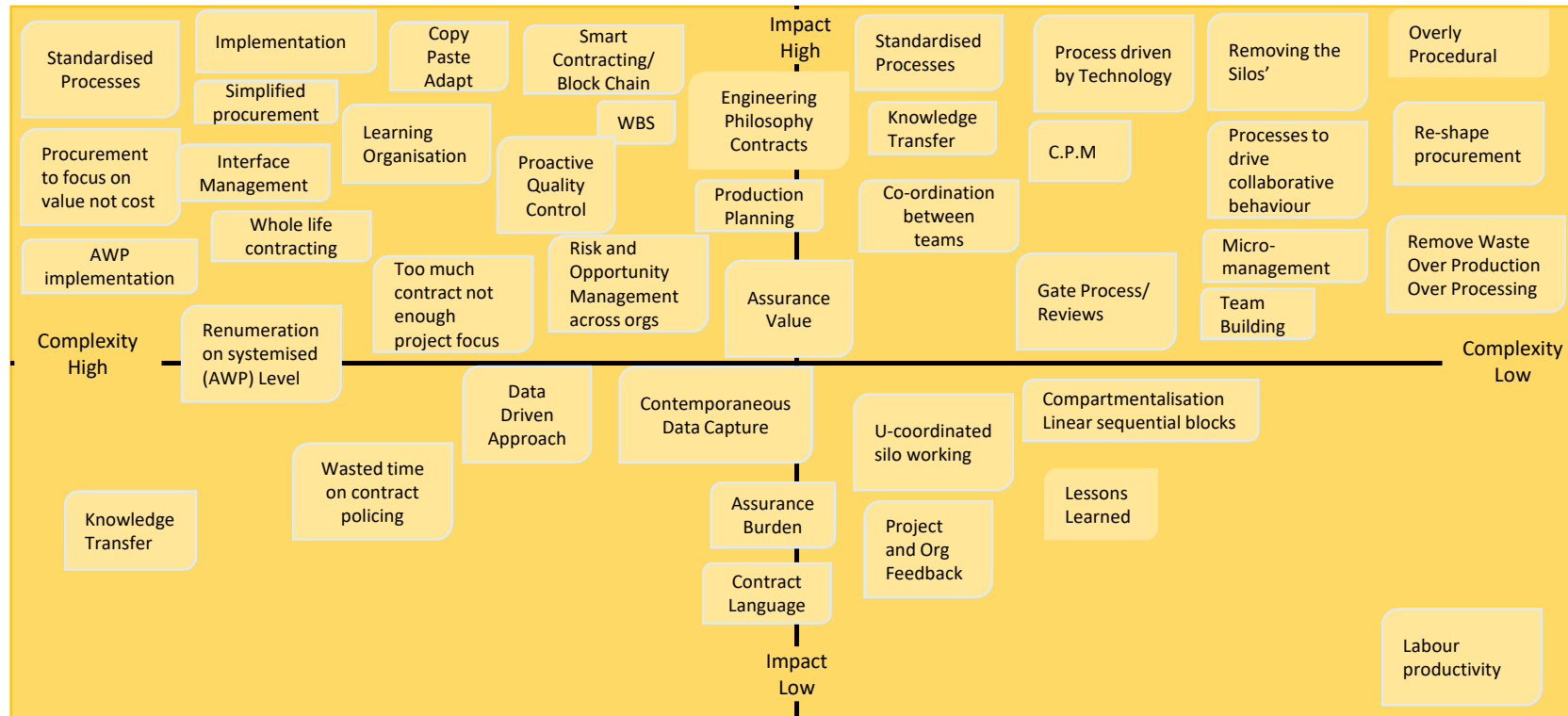
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Pillar 3: Process & Methods



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High Impact Low Complexity Ideas/Solutions/Changes to Behaviours

Pillar 4: Technology

Improve rate of uptake and connectivity	Change traditional client thinking
Reduce Cost	Integrated models
Resource monitoring and allocation	Benchmarking
Improve data confidence to build trust	Simplify information to support decision making
Contract Management	Reduce need for site workforce
Remove dinosaurs	Big data analysis to improve predictability
	Improve Training and roll-out

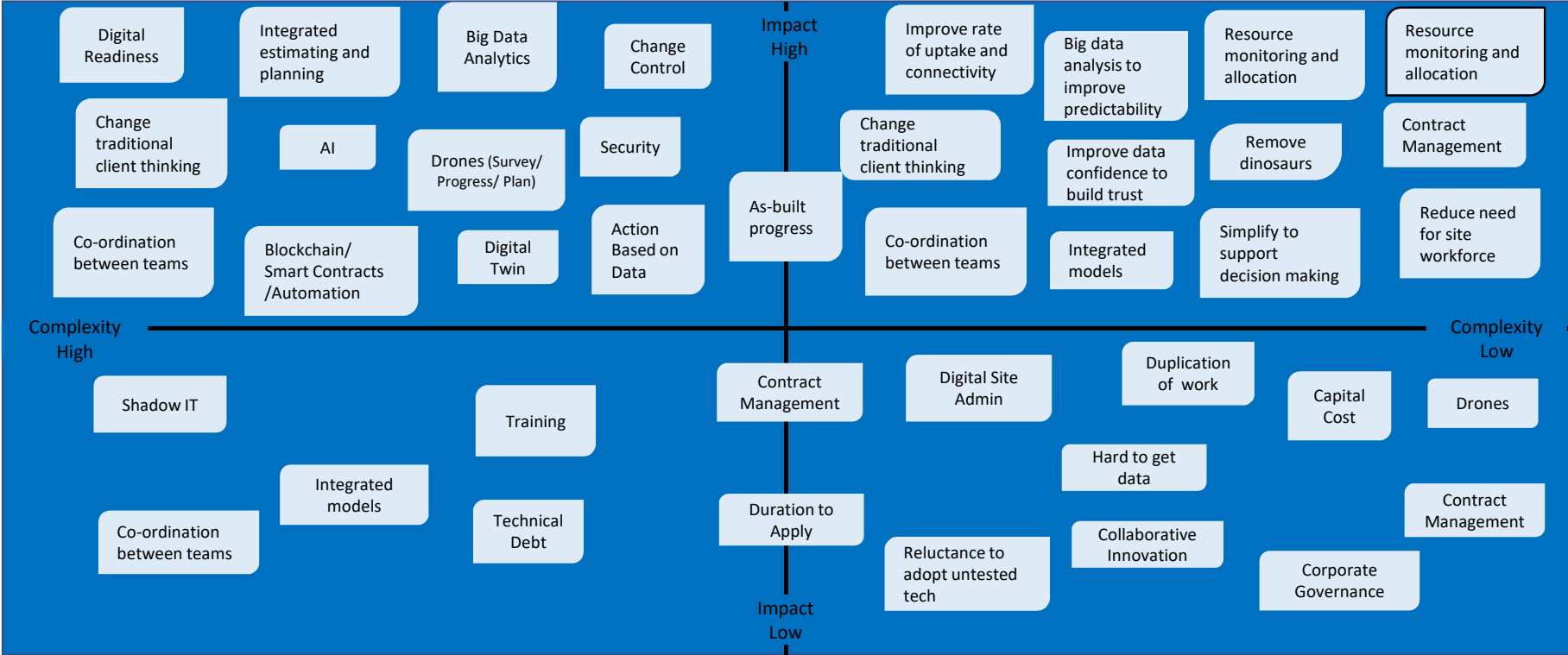
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Group Session – the collective results

Pillar 3: Process & Methods



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Observations – a high Level view (Jonathan Ralph-Aspen Global):

- Clear consensus on People as the Key Pillar
- Concern that the Technology pillar is the only pillar with a “not Important” response (7%)
- Commonality between the group on the actions

However:

- Where are the Main Contractors? (excl. Multi-disciplinary client/designer/constructor orgs)
Main Contractor representation at the workshop day **Planned <10% Actual 0%**
Counter Intuitive that they aren't driven by margin/profit improvement
What are they waiting for?
Is the fear of failure in a low margin environment creating a self fulfilling prophecy?
Are they too busy:
 - Firefighting the effects of 'doing what they've always done' to focus on the future.
 - Selling the dream that they can't deliver
- How can we influence the supply chain?

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The Productivity Workshop was facilitated by Aspen Global.

Aspen Global

Formed from three highly regarded consultancies which together represent over 60 years experience in helping clients improve operational excellence from lean and continuous improvement.

An integrated community of Master Practitioners and coaches:

- Offering a global presence for delivery
- A common approach based on the Aspen way and Aspen philosophy
- Certified through the Aspen way
- Passionate, engaging and empathetic to local needs
- Considers environmental issues whilst delivering sustainable excellence

The core team of Gerald Robinson and Steve Priest have a wide complementary portfolio of experiences and skills from holding senior positions in corporate business, leading national initiatives to buying and selling companies. Their shared passion is working with organisations to Deliver Excellence, whilst developing teams and individuals to realise their potential

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