

# Welcome

## Collaborative Contracting Models

What are they, do they work and  
what more can be done?

A background image of a construction site at dusk or dawn. Silhouettes of construction workers are visible against a warm, yellowish sky. A large crane is prominent in the center, and various structural elements of a building under construction are visible in the foreground and midground.



“In the United States since 1945, productivity in manufacturing, retail, and agriculture has grown by as much as 1,500 percent; productivity in construction has barely increased at all.”



# Introductions

Frank De Luca, P.Eng – COAA Contracting Committee Co-Chair

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# Agenda

- Introduction and objectives
- What is Collaborative Contracting
- Why Change
- Why Collaborative Contracting
- What Models Already Exist
- What is COAA's role?
- Questions





# Workshop Objectives

- Awareness of the impact of collaborative contracting – size of the prize
- Understand the need for change
- What can you take back to your organization to affect change
- What do you need from the COAA
- Roadmap to success

**Success/value of this workshop depends on your participation!!**





# What is Collaborative Contracting

- Is it a form of contract?
- Is it a mindset – set of behaviors?
- Is it both?





# Why Collaborative Contracting?

“Productivity in Alberta generally is poorer than the US Gulf Coast”

“Productivity in Northern Alberta (above 55° N) is especially poor”  
Evident

The Problem: Practices used, especially on the front-end, are poor

This manifests into a failure to align design and construction



# Ten Root Causes for Low Construction Productivity



**Root causes**

- Increasing project and site complexities
- Extensive regulation, land fragmentation, and the cyclical nature of public investment
- Informality and potential for corruption distort the market

- Construction is opaque and highly fragmented
- Contractual structures and incentives are misaligned
- Bespoke or suboptimal owner requirements

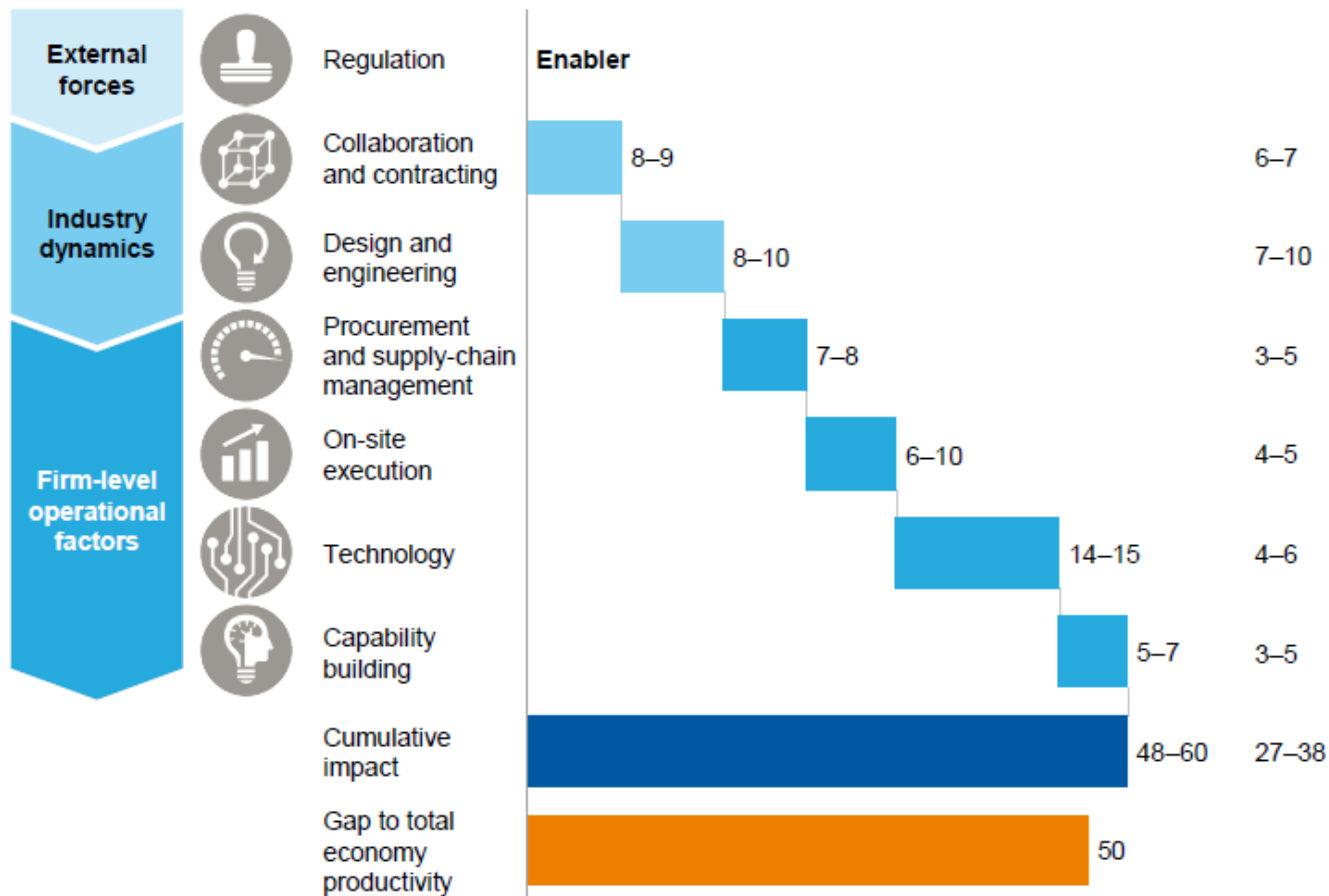
- Design processes and investment are inadequate
- Poor project management and execution basics
- Insufficiently skilled labor at frontline and supervisory levels
- Industry underinvests in digitization, innovation, and capital



# 7 Ways to Tackle Root Causes

Potential global productivity improvement from implementation of best practices<sup>1</sup>  
Impact on productivity (%)<sup>2</sup>

Cost savings %



# What Models Exist?

- Alliancing
- Integrated Project Delivery
- Best Value Methodology
- PAAD Collaborative Risk Model



# Alliance Contract Model



“...Alliancing reflects a shift from more traditional procurement methods which focus on strict risk allocations, to a collaborative approach....”





# What is an Alliance Model?

A Project Alliance is a commercial/legal framework between a 'owner'-participant and one or more private sector parties as 'service provider' or 'nonowner participants' (NOPs) for delivering one or more capital works projects.



# Why an Alliance Approach?

When used appropriately, Project Alliances have the potential to produce many positive outcomes including:

- Greater certainty over project costs,
- Opportunities for innovation
- Improved performance in delivery of infrastructure projects.

“the Australian model has resulted in zero litigation, 100% on time and on-budget and high customer satisfaction in over 400 projects”





# Alliance Model Features

- TOC developed jointly as an open book estimate
- Focus on Direct Project Costs and Project Specific Overheads
- Agreement on Non-Owner participants Corp OH & Profit is a separate exercise based on an audit of performance on similar projects
- Rates developed from first principles or competitive quotes
- No hidden profits (eg: salary costs / plant dept rates etc)
- Contingency and Risk factors must be appropriate
- Parallel Independent Estimate undertaken

# Types of Alliance Agreements

- Long Term Integrated Service Contracts
- Alliance Overlay Agreement
  - Alliance Board
  - Works Contracts
- Fully Integrated Alliances
  - Shared Risk of Achieving
- CAPEX, OPEX and Revenue





# Alliance History in Alberta

Limited Alberta and Canadian Experience

Examples:

- Aurora North Mine – 20 years ago
- Terra Nova

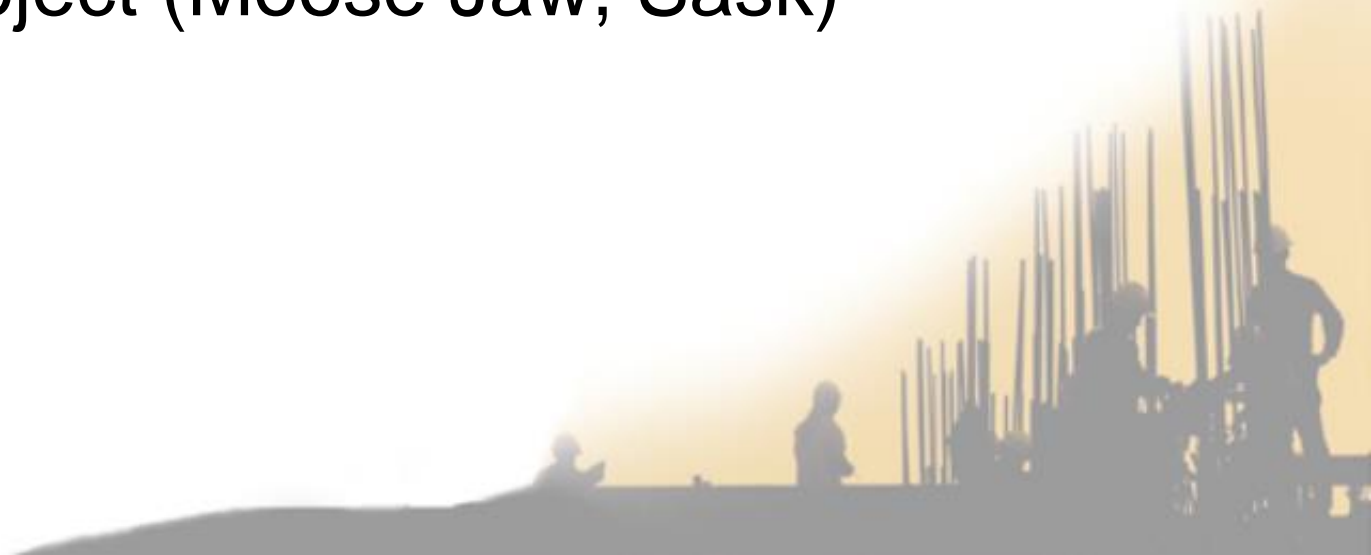






# Integrated Project Delivery

- Owner, Architect and CM/GC
- Target Value Design
- Core Group (Owner, Architect and CM(GC))
- Estimated Maximum Price Developed
- Five Hills Health Region – New Regional Hospital Project (Moose Jaw, Sask)



# Common Characteristics

- Risk/Reward
- Alignment of Interests
- Removal of Conflict



# Challenges

- Selection of Core Group
- Design Participation
- Disclosure of Pricing and Proprietary Processes
- Alignment of Interests
- Discipline of Failing Party
- Developing Consensus
- Success Depends on Someone Out of a Party's Control



How does contracting need to evolve?

An owner's Perspective





# Context

- Construction productivity significantly lags other sectors.
- MGI estimates the value of productivity to be \$1.6 trillion a year (or equivalent to the GDP of Canada)
- Canada's construction productivity is stagnant over the past 20 years but has declined by 2.1% in the past 10 years.
- Heavy industrial construction has performed the best of the construction sub-sectors, followed by civil and large-scale building construction.
- Contract model or capabilities gap?



# Traditional Contracting Structures and Potential Misalignment

Players	Motivation	Clashing behaviors
<b>Owner</b>	Reliably deliver project in timely fashion	<ul style="list-style-type: none"> <li>Constantly push contractors and suppliers to expedite production and delivery; engage expeditors for critical path items</li> </ul>
	Receive value for money	<ul style="list-style-type: none"> <li>Seek cost savings throughout (e.g., contractors, suppliers, labor, utilities, etc.)</li> </ul>
	Avoid high-profile setbacks or failures	<ul style="list-style-type: none"> <li>Engage best contractors and offload complete risk onto them</li> </ul>
<b>Main contractor</b>	Maximize profit margin	<ul style="list-style-type: none"> <li>Charge for any scope changes and submit claims, variations, and project extensions</li> </ul>
	Ensure financial stability	<ul style="list-style-type: none"> <li>Get milestone-based payments; stall work until installment is paid</li> </ul>
<b>Designer/ architect</b>	Illustrate creative edge and reputation	<ul style="list-style-type: none"> <li>Submit drawings and designs in random order and not the way required by construction contractors</li> </ul>
	Minimize effort and resources	<ul style="list-style-type: none"> <li>Work according to their own resource availability and timeline, rather than under project timelines</li> </ul>
<b>Subcontractor</b>	Optimize resources	<ul style="list-style-type: none"> <li>Deploy cheapest available labor and machinery; in case of any issues, submit claims</li> </ul>
<b>Materials supplier</b>	Financial stability	<ul style="list-style-type: none"> <li>Make high margin on raw materials, logistics, etc.</li> </ul>
<b>OEMs<sup>2</sup> for long lead items</b>	Financial stability	<ul style="list-style-type: none"> <li>Try to sell technology or product that is most profitable instead of the most appropriate solution for owner</li> </ul>
<b>Other equipment supplier</b>	Maximize profit margin	<ul style="list-style-type: none"> <li>Squeeze subcontractor cost by negotiations, claims, variations, and project extensions</li> <li>Low motivation to adhere to quality, health, safety, and environment standards unless tight third-party inspection done by main contractor or owner</li> </ul>



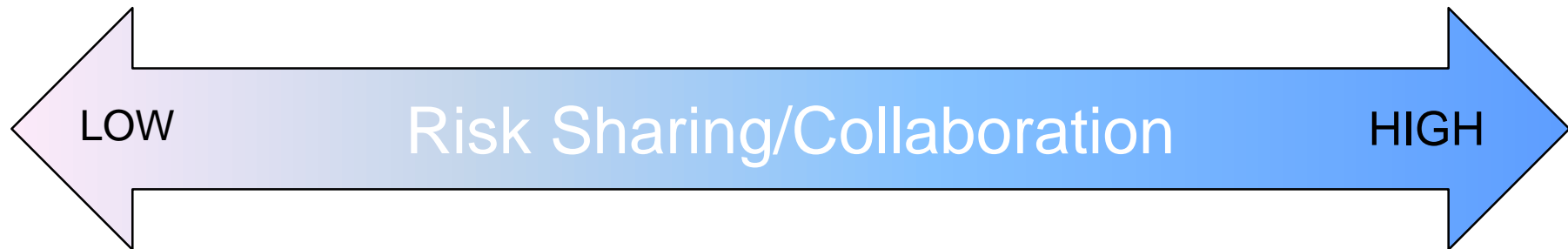
# Collaboration and Risk in Contracting Models

Lump-sum turnkey engineering, procurement, and construction/Design-build

Owner integrated/ design-bid-build

FEED open book + PC (convertible E+PC)

Alliance/IPD/Partnership



Pre-conditions?

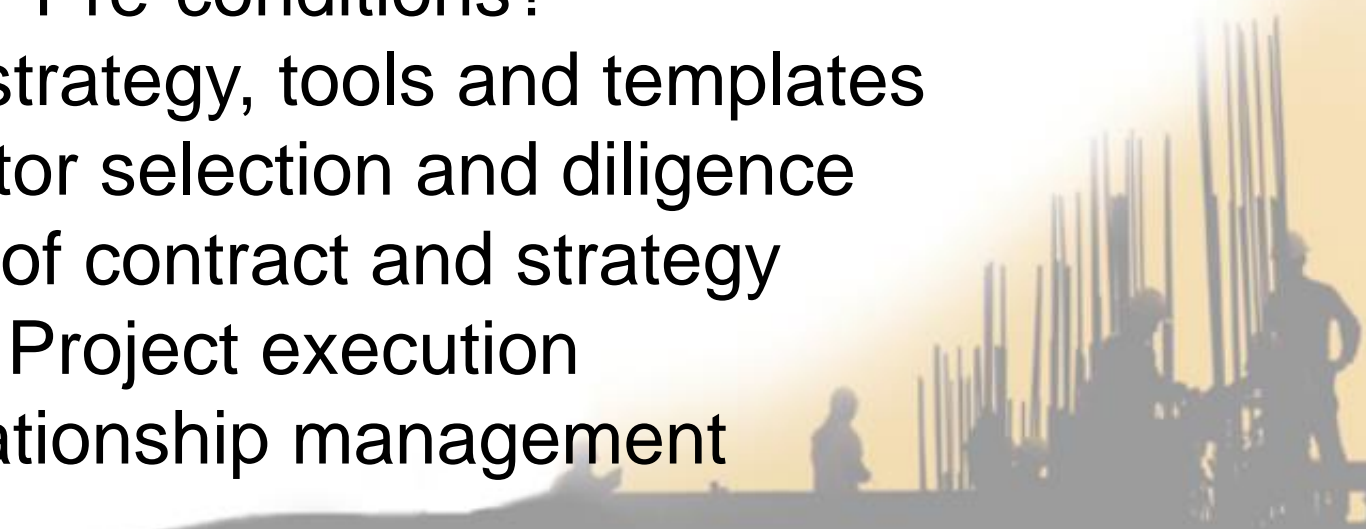
Sourcing strategy, tools and templates

Contractor selection and diligence

Form of contract and strategy

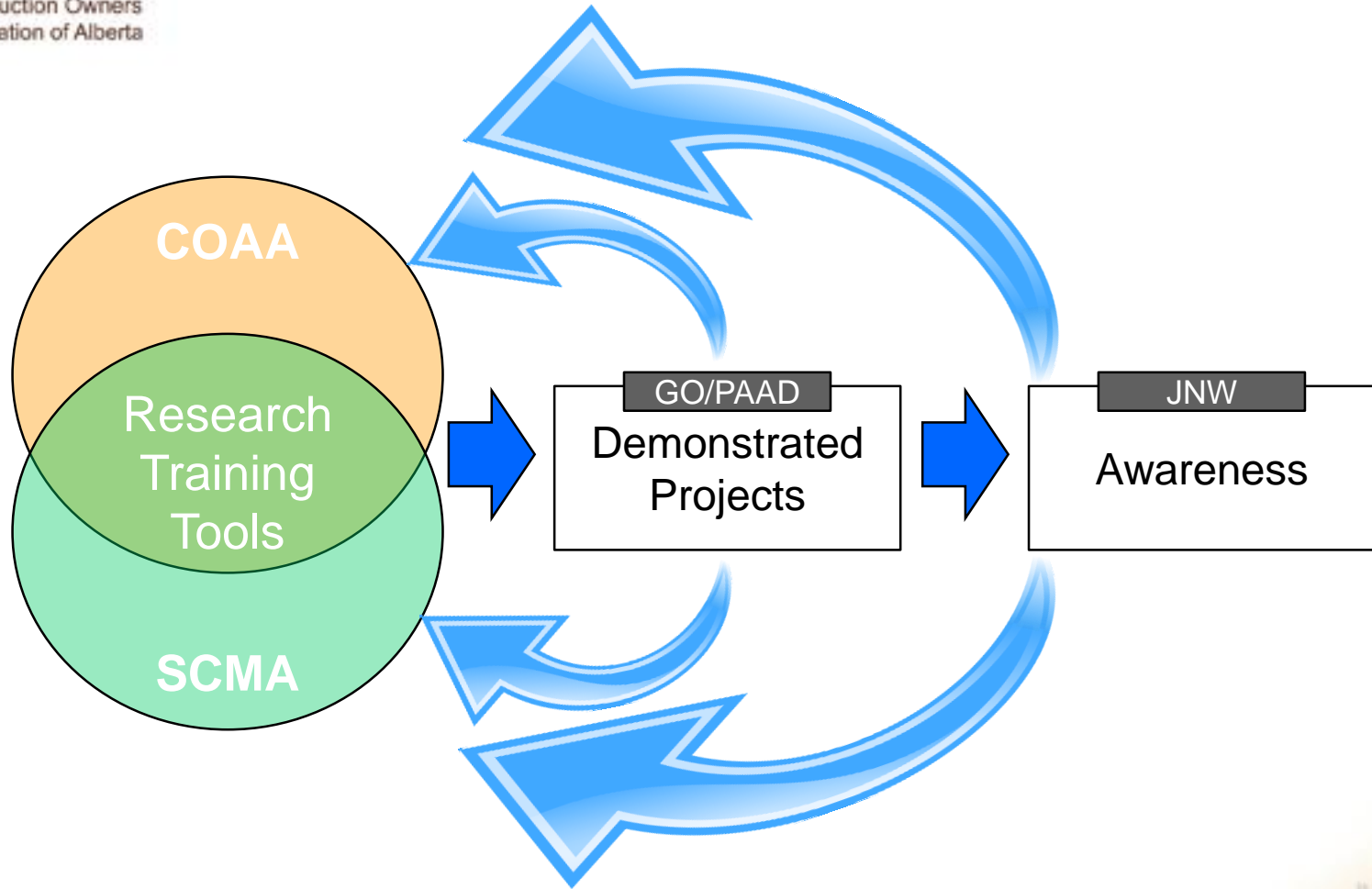
Project execution

Relationship management





# Industry Collaboration



**Achieve industrial construction excellence and international competitiveness**

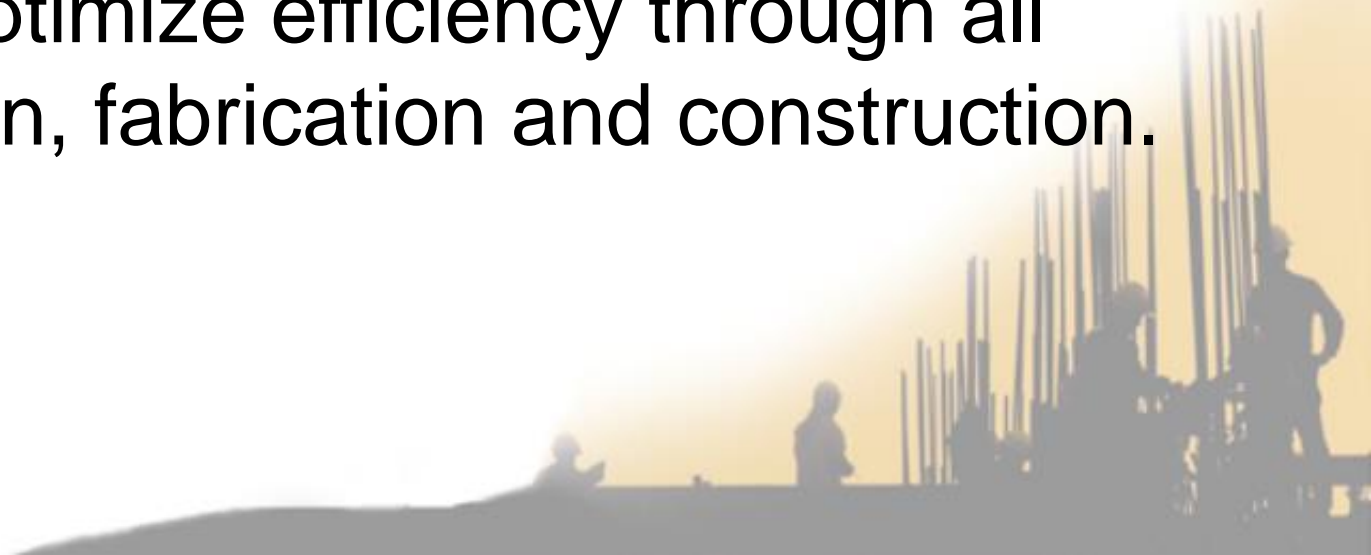




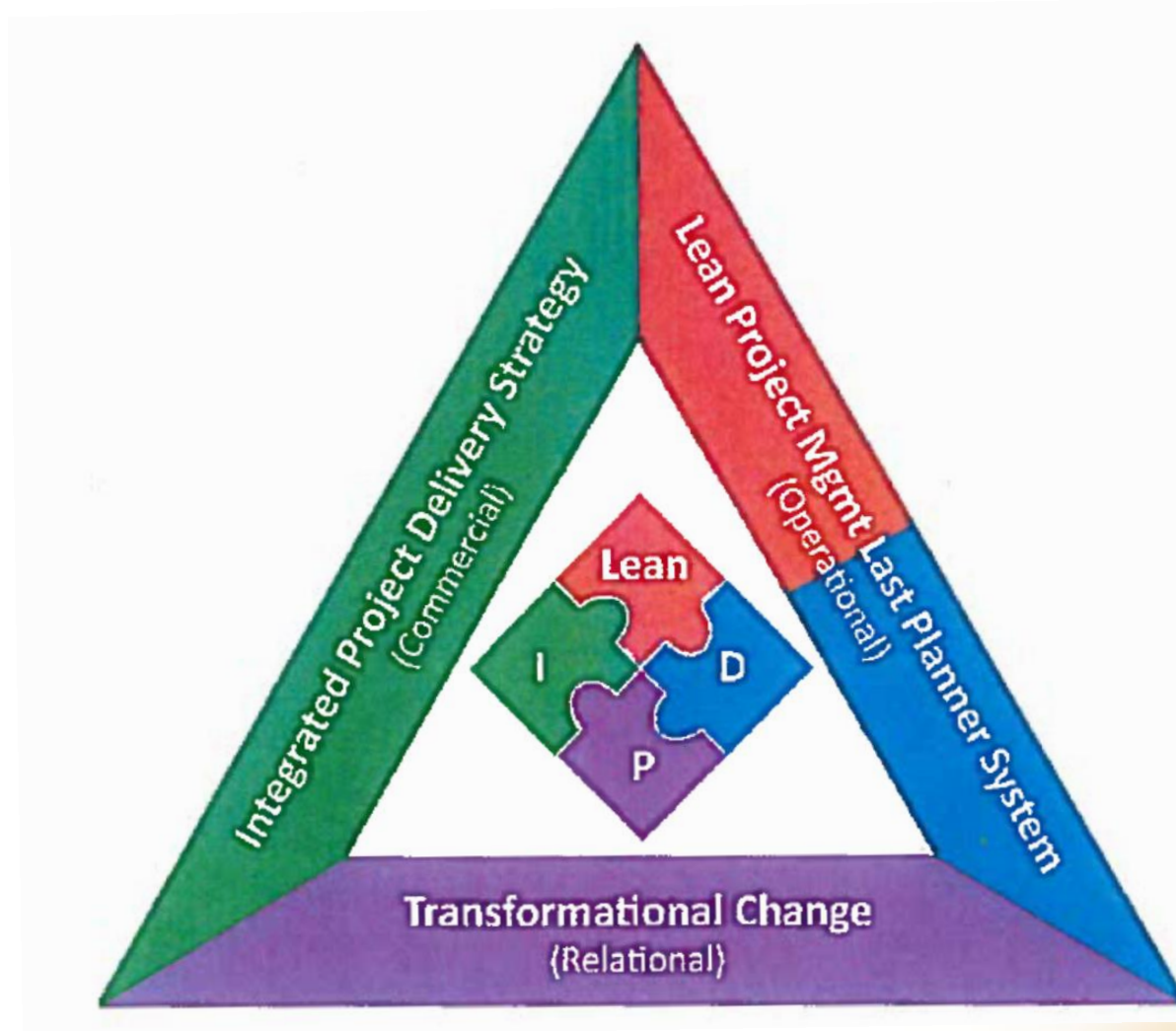


# Integrated Project Delivery (IPD)

Integrated Project Delivery (IPD) is a project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction.



# Integrated Project Delivery (IPD)





# Transformational Change - Relational

The IPD Process endeavors to eliminate the behavioral Silos caused by Traditional Contracting

All major Contractors are On Boarded as soon as possible into the Project to be proactive, collaborate and provide the IPD Team and Designers with their wealth of knowledge and experience.

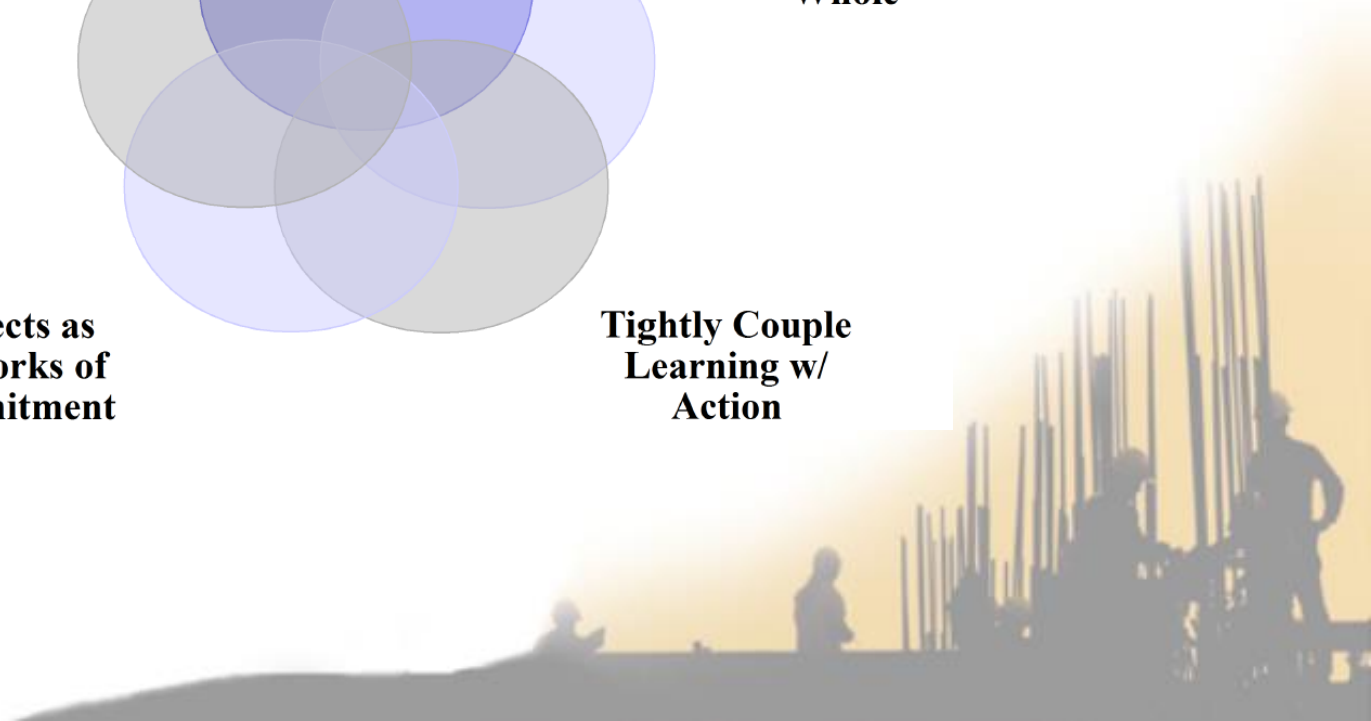
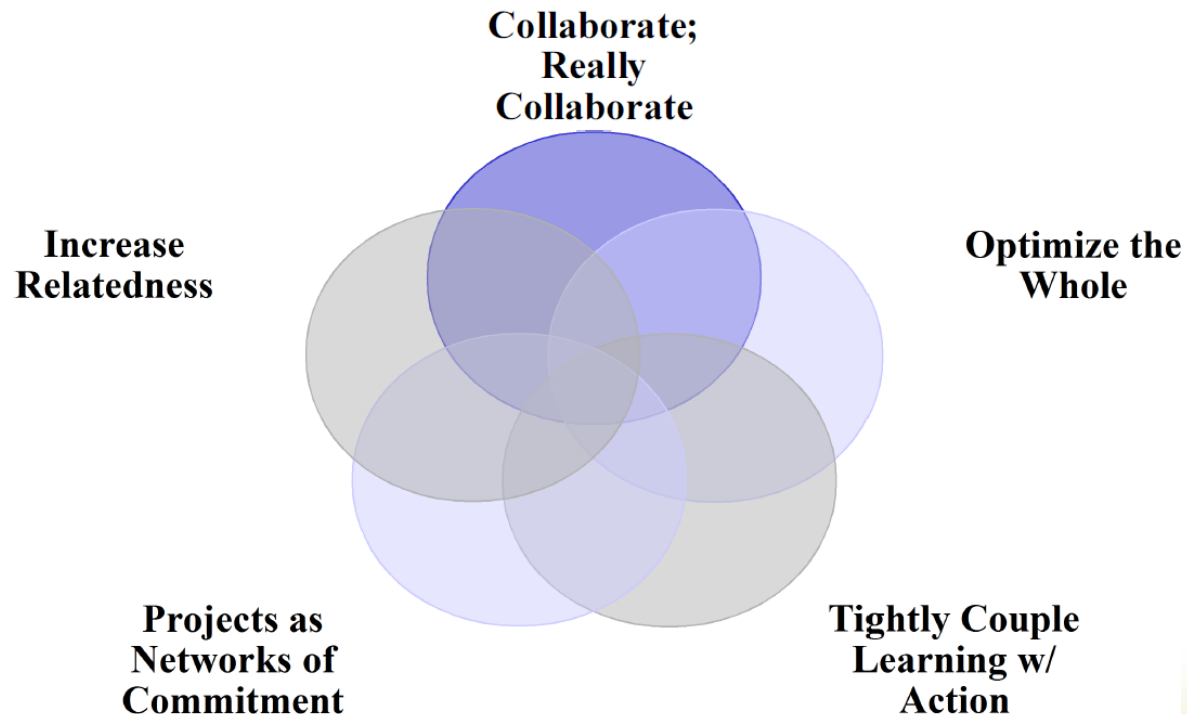
The traditional design and then bid delivery process of WHAT? HOW? and by WHOM? Becomes condensed to an immediate enterprise.

The complete IPD Team working as a cohesive unit have the resources to address constructability, schedule and cost etc.

Owners are part of this Team. They are the ones that have to identify and provide direction as to what value they want from the project. What is the business model or enterprise? Is it as simple as bottom line cost, or schedule critical, or perhaps life cycle, etc. These are the Conditions of Satisfaction that have to be established for the Target Value Design. This facilitates the team to design and construct in an efficient value producing manner.

# Transformational Change

“Transforming the experience at project work from frustration and conflict to trust and mutual respect”





# Lean Project Management

The IPD Team Common Goal is established by the Project Conditions of Satisfaction and the design proceeds to a Target Value ie estimate

Team Cluster Groups are set up dedicated to the final design and construction of specific portions of the project

"Big Rooms" are set up to ensure relatedness, collaboration and production

Hand off work Planning, create flow, eliminate variation > Last Planner System of Production Control

At all times recognizing Waste "DOWNTIME"

- Defects, Overproduction, Waiting, Non Utilization of Talent, Transportation, Inventory, Motion, Extra Processing

Continuous Improvement, Lessons Learned, there is no best just better

BIM, 5D

BIQ Process

Root Cause Analysis, 5 Whys

5 S, Sort, Straighten, Standardize, Shine, Sustain

Small Win Celebrations





# Shared Risk/ Reward Business Deal

The 3 way contract is to align all project participants to a shared project goal, ie owner Conditions of Satisfaction

The logic of a shared risk/reward deal reinforces the culture of a single team with a common goal, among the Designers and Contractors

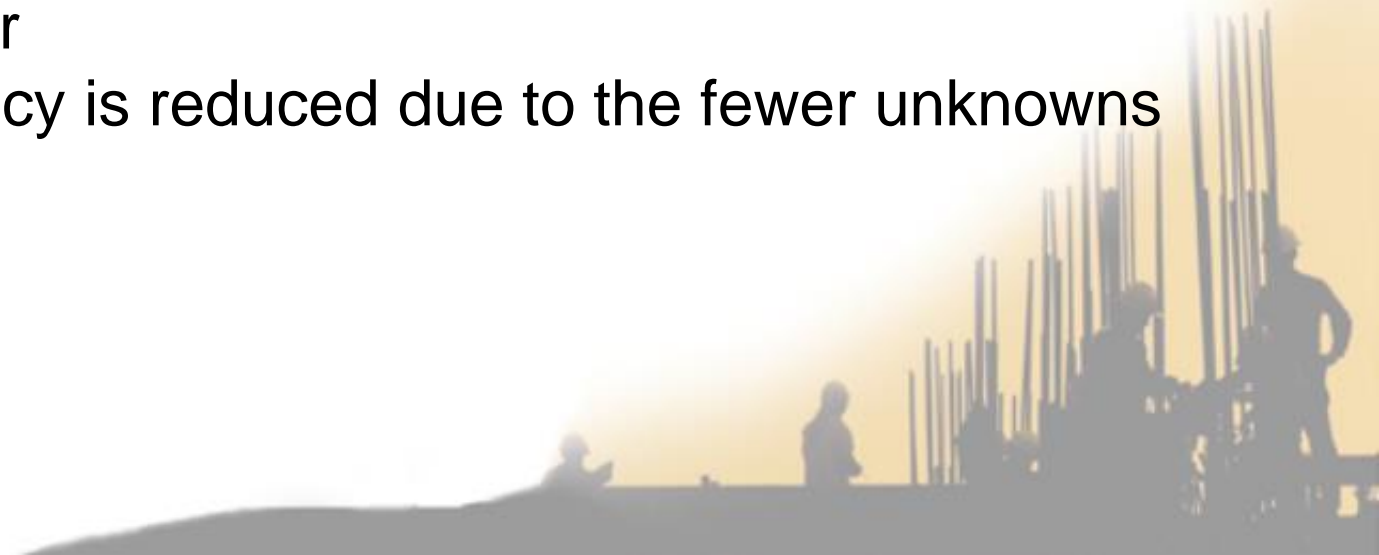
An ICL, Incentive Compensation layer or Profit Pool is established during the on boarding

Project Team Contingency is established during the development of the Validation Report Out

Although Direct costs are paid, only the overall project success will ensure each individual company success to sharing the contingency and to its ICL

# IPD / Lean Features

- No-blame environment eliminates litigation
- Better evaluation of Innovative Design, Construction Techniques and or solutions at the beginning of the Design Phase
- Improved Drawing completeness, accuracy and constructability
- Early procurement of critical components
- Selection of a Team best suited to deliver Value to the Project and Owner
- Overall Contingency is reduced due to the fewer unknowns



# IPD / Lean Benefits

- Potential Design and Proceed flexibility to react to market conditions
- Improved safety
- Improved quality of construction
- For Owners there are simply reduced costs and increased profitability







# Elements Common to all models

- ✓ Decisions made based on “Best for the Project” approach
- ✓ No blame culture
- ✓ Contractor (and maybe subcontractors) in at bare cost
- ✓ Fee at risk
- ✓ Collective risk identification/management
- ✓ Contractor selection based on who is best suited to manage the risk.
- ✓ Much earlier contractor engagement
- ✓ Compensation model that incents collaborative behaviors



# What has the COAA done?

The Contract Strategy Best Practice provides the tools to help select which contracting model is best suited for the situation





# COAA Contract Strategy BP

**Example 6. – EPC Alliance or Contractor Consortium** – Contractor(s) carries out the detailed engineering, procurement and construction either on its own or with Sub-contractors / JV partners / Consortium partners / Alliance Partners. The Alliance or Consortium is formed between key project participants who are responsible for all aspects of the delivery of the Project. Consortium or Contractor only Alliances can effectively address the risks of interface issues between the E&P Contractor and the Construction Contractor, but needs a high level of trust between the two or more contractors and a “hands off” Owner to truly achieve success. An alternative is that the Alliance includes the Owner and that full transparency between the Parties and a “best for project” approach prevails.

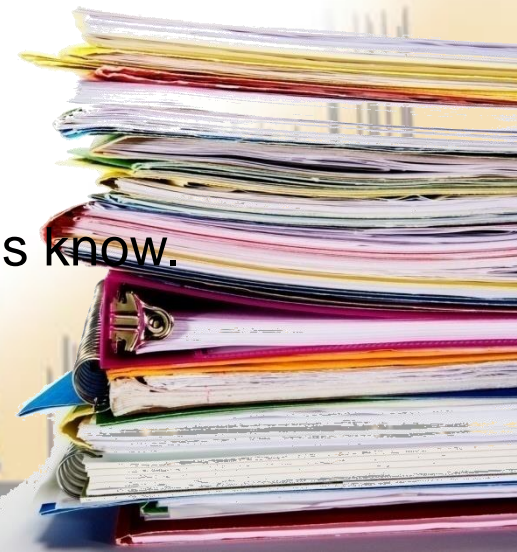
Roles	Risks allocated to the Owner	Risks allocated to the Contractor	Variants	Performance summary
<p>Owner initially engages engineer and prepares the Project brief, schematic design, developed design and contract documentation.</p> <p>Contractors specializing in various fields may “form” a consortium or JV as part of the Contractor party to the Alliance.</p> <p>Relationship must be collaborative for the Alliance to be effective. There is a policy of ‘no blame, no disputes’ between the Alliance partners. However the relationship between Parties can remain potentially adversarial but can be mitigated by the openness of an Alliance and/or a ‘Risk Pot’ that is used to compensate for growth / unforeseen risk. The typical mentality is still to protect ones’ own interests.</p>	<p>Cost overruns are borne by the Owner after the Alliance cap has been breached.</p> <p>That the design meets the Project brief and that the contract documentation reflects the design.</p> <p>That the contract documentation is complete, unambiguous, accurate and suitable for the purpose of the execution of the Project through E, P and C.</p> <p>The Owner’s costs cannot be capped even if Project costs exceed expectations but the overruns can be either borne by the Contractor or shared with the Contractor up to the Contractors agreed maximum cap.</p>	<p>That the materials and workmanship are in accordance with the contract documentation.</p> <p>That completion of the execution of the E, P and C phases will be within the allocated time and within the target price.</p> <p>That the cost of execution will be within the Target Price and structured so that commercial risk and reward is shared such that it is in the Alliance partners interests to work co-operatively.</p>	<p>Additional monetary incentives may be applied for performance relative to KPIs (Key Performance Indicators), determined by the alliance at the outset which can add/deduct from overall profitability.</p> <p>Target price mechanisms vary considerably dependant on the Parties risk tolerance.</p>	<p>Predominantly used for mega projects where no one Contractor has the skill or resources to execute the whole project and where the Owner desires a seamless execution in terms of responsibility and team and where it is difficult to transfer risk appropriately between the Parties.</p> <p>Success is highly dependent upon the attitudes and abilities of the Alliance partners to manage the Project as a team and the clarity of the scope split and battery limits between Contractors. An alignment of common goals on a ‘best for project’ basis is usually best served by an achievable incentive.</p> <p>Requires large team to manage the Alliance and interfaces, not well suited where there is a lack of resource availability or experience in managing Alliance contracts – from both an Owner &amp; Contractor standpoint.</p>
Tender process, cost and payments	Scope	Design/quality	Time	Generic contracts Administration
<p>Tenders called from single Alliance consortia or via a competitive bid. Often short-listed contractor alliances develop concept designs and target costs for the Project before a final selection is made. Often evaluated on non-price criteria through workshops and interviews. The process of establishing the Alliance can be costly in terms of time, effort and cost.</p> <p>Costs are often 100% reimbursable with Owner paying all direct costs of the project or agreed unit rates (including Alliance partners’ actual costs, profit and overheads), up to agreed target costs, after which the profit and overheads of all Alliance partners are also often used to cover costs on a pre-agreed basis. The Target Costs typically include substantial contingency or “Risk Pot”.</p>	<p>Scope is precisely specified in the contract documents.</p> <p>Scope can be varied, but usually is on the basis of a whole Project or a significantly sized silo to make the effort of entering such an agreement worthwhile.</p>	<p>Design/quality is defined in the Project brief, however, input is possible from the Owner, Contractor and a range of other experts, to give design and ‘buildability’ advice and balance quality against cost and time.</p> <p>KPIs (Key Performance Indicators) may be used to encourage excellent quality.</p> <p>Warranty period applies to trade contracts, for durations as deemed appropriate.</p>	<p>The process of establishing the alliance can be lengthy.</p> <p>Well suited to fast tracking the Project if an integrated schedule or where the Project is not fully defined or variations are needed if the “best for project” mentality is adhered to.</p> <p>Owner delays will still give rise to extensions of time for the completion of construction but knock on effects Contractors in a Consortium should be absorbed between them. For true alliances there is usually a nonblame, or recourse for delays.</p>	<p>Contract needs to be written specifically for the type of alliance chosen.</p> <p>Parties should appoint a steering committee to act honestly and fairly in administering the contract. Facilitator needed for workshops and cost consultants/ auditors needed to validate target costs.</p> <p>Contract administration is potentially very complex, specifically when overruns to the Target Price occur.</p>



# What more can the COAA do?

- The Leader's Round Table has identified that Collaborative Contracting is the top rated initiative to improve productivity on projects
- The Contracting Committee has been tasked with investigating and reporting recommendations for further development of a Best Practice
- What can be done to incorporate collaborative behaviors into all forms of contracts?

If you are interested in participating in this initiative please let us know.





Q&A?



Discussion!



Comments?

The current Best Practices and contact info are available at:

[www.coaa.ab.ca](http://www.coaa.ab.ca)