

IPLOCA - INTERNATIONAL PIPE LINE & OFFSHORE CONTRACTORS ASSOCIATION



Operator and Contractor Alliance Use in Pipeline Construction

IPLOCA – 50th Annual Convention
Paris, France
Mark Bridgers - Continuum Capital
September 15, 2016

Objective & Agenda

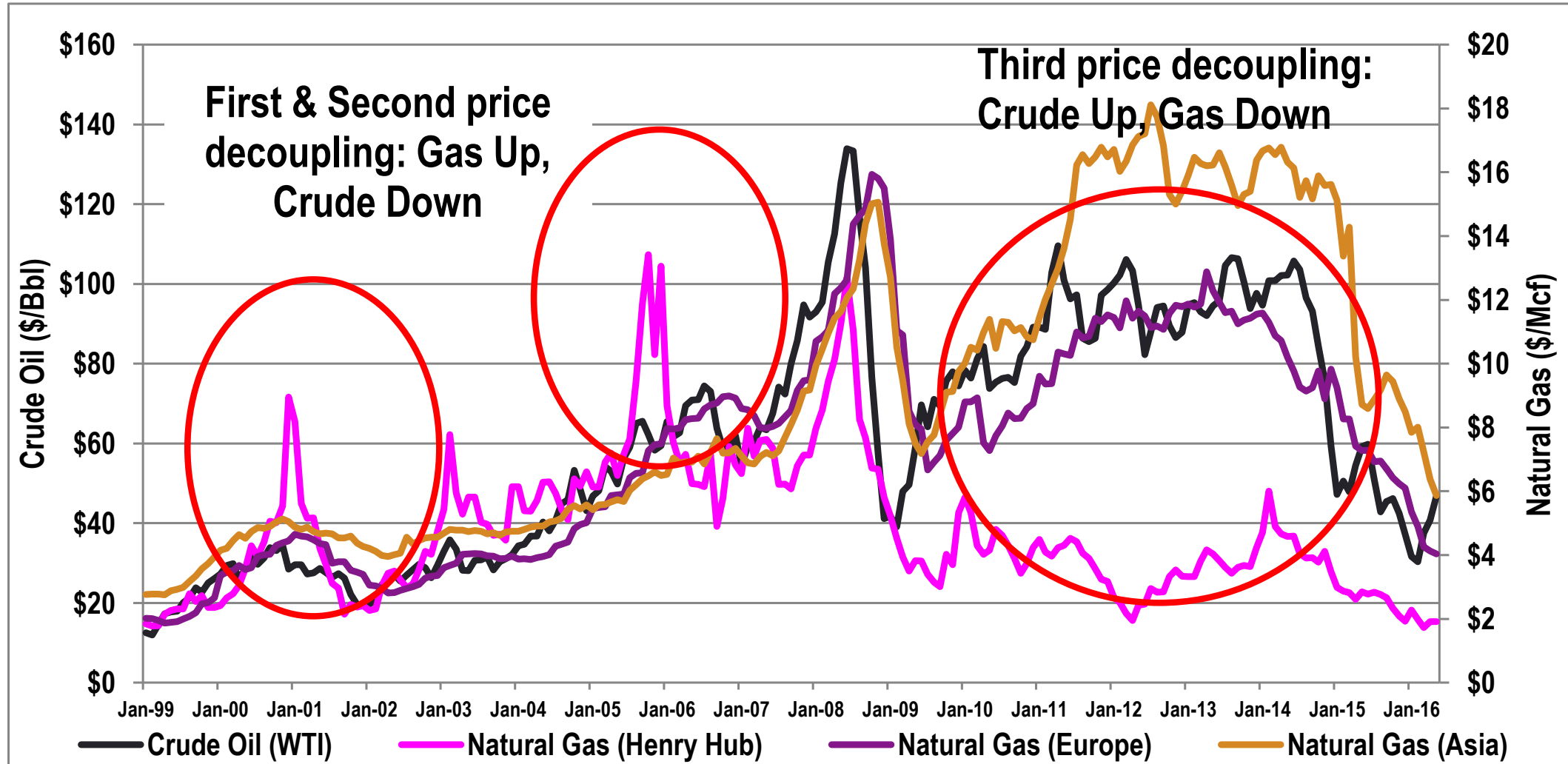
► Objectives

- Review the application and use of strategic alliance type sourcing and service provider management techniques and determine if they are effective

► Agenda

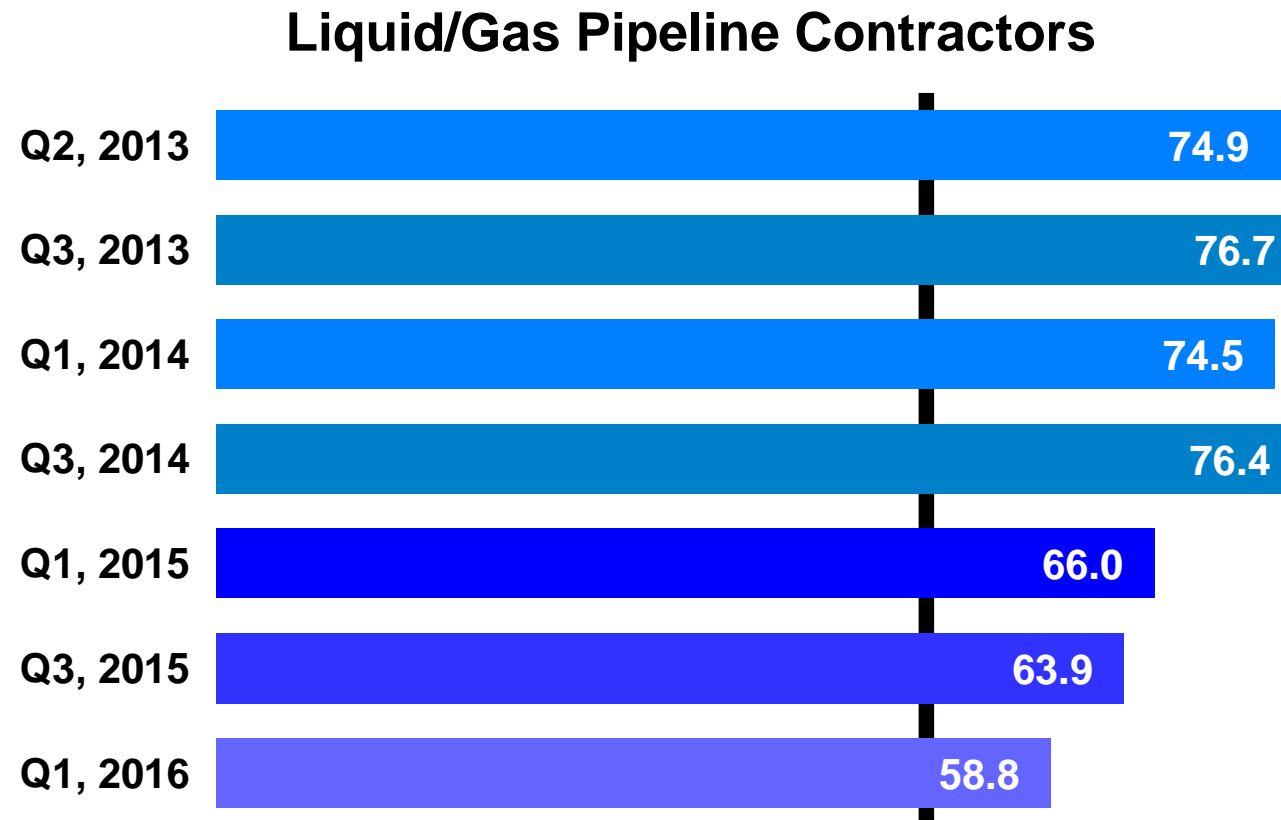
- Some history to set the stage
- Rational for the selection of an alliance business strategy
- Effective building of an alliance
- Effective leadership, management, measurement, and control techniques
- Effective safety, quality, productivity, etc., performance improvement within an alliance
- Case study results achieved

Some History to Set the Stage



Pipeline Contractor Industry Perceptions

- ▶ Liquid/Gas pipeline perspectives construction market activity becoming less positive since peak oil price in 2014



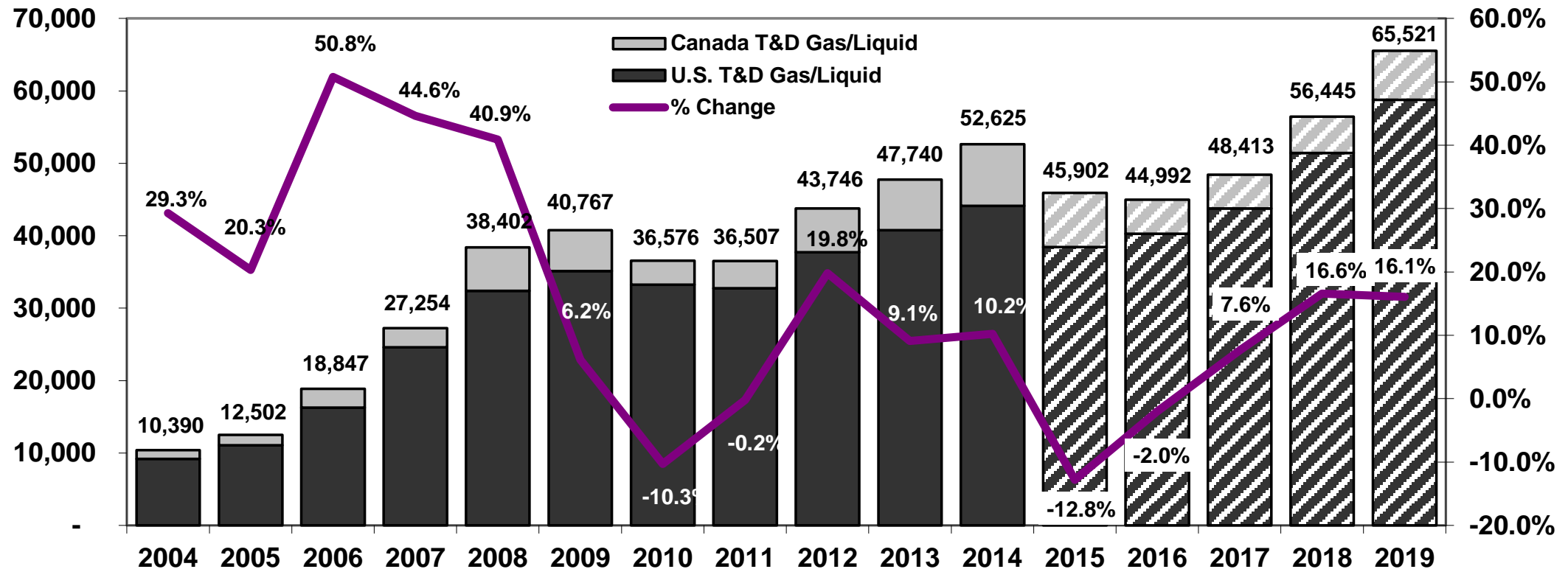
Pipeline Construction Index
 > 50 Indicates Growth (Better)
 < 50 Indicates Slowing (Worse)

A reduction from 76.4 to 66.0 down to 58.8 indicates that while perceptions of the market are still positive, they are much less positive than they were prior to 2015.

Source: Proprietary Continuum analysis of pipeline contractor perceptions over 2012-2016.

North American Pipeline Spending Overview

▶ US Gas & Liquid, Transmission & Distribution



Source: Building permits, construction put in place, and trade sources. Continuum prepared forecasts for 2015-2019.

Agenda

- ▶ Some history to set the stage
- ▶ Rational for the selection of an alliance business strategy
- ▶ Preparation for the building of an alliance
- ▶ Timeline for implementation
- ▶ Measurement, management, and control techniques
- ▶ Case study results achieved

Why an Alliance?

- ▶ Pipeline Owner or Operator must drive sourcing strategy
- ▶ Movement from existing sourcing strategy must be driven by two items:
 - Dissatisfaction with status quo
 - Strategic direction of overall organization to leverage opportunities or attack threats
 - Government Bureaucracy: Greater consistency and predictability in the construction environment and improved legal security and reliability for investors
 - Manpower Shortage: Particularly in skilled manpower and field supervision
 - Project Execution Urgency: Variance with the target schedule and budget expectations
 - Safety: Continued improvement in safety performance necessary
 - Regulation shift: Intensifying regulatory scrutiny
 - Shift in core competency: Choice not to renew internal workforce and allowing it to attrit over time
 - Centralized vs. decentralized: Capital design/construction insourced or outsourced
 - Acquisitions: Continued activity driving change or update of sourcing and construction service provider management strategies
 - Etc.

Agenda

- ▶ Some history to set the stage
- ▶ Rational for the selection of an alliance business strategy
- ▶ Preparation for the building of an alliance
- ▶ Timeline for implementation
- ▶ Measurement, management, and control techniques
- ▶ Results achieved
- ▶ Termination, evaporation, acceleration examples of the alliance relationship

Owner Decision Structure

▶ Sourcing Strategy

- Definition of whether arms length or collaborative/integrated approaches for the capital construction program will be used

▶ Construction Delivery Tactics

- Definition of how individual projects or bundles of work will be undertaken (Three tactical decisions falling under a sourcing strategy)
 - What contract vehicle or method will you use to select a price?
 - How will you manage the design/construction process?
 - How will you build the job?
- Combined, all three of these decision equal a construction delivery system

▶ Insourcing vs. Outsourcing

- Definition of whether activities will be performed with internal or external resources

Sourcing Strategy *(1 of 3)*



Sourcing Strategy (2 of 3)

Strategic Sourcing Matrix - Services

Company: _____ Date: _____ Prepared by: _____

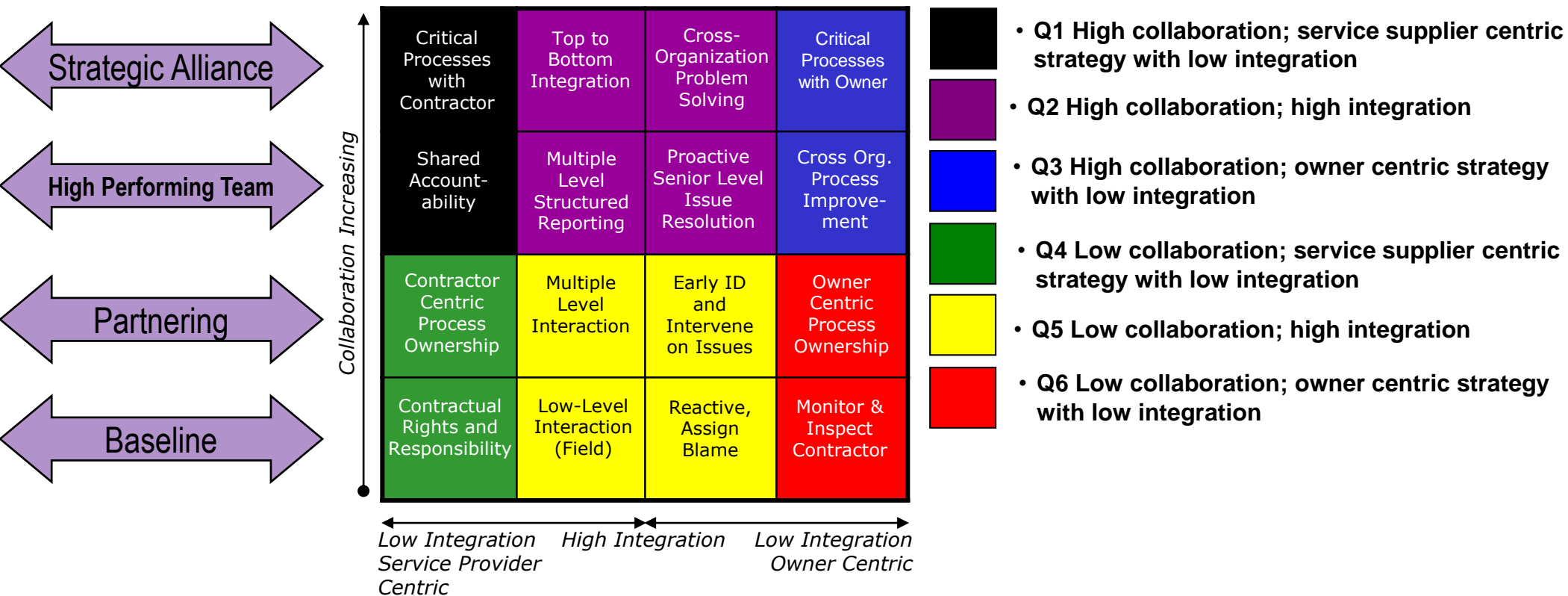
	Project/Owner Base Characteristics					Relationship			Problem Solving				Team Focus/Result			
	Construction Repetitiveness	Operator Experience with Construction	Operator Management staff	Relative Project Workload	Operator Geographic Familiarity	Operator Risk Tolerance	Relationship Levels	Relationship Approach	Site / Condition	Technical Construction Complexity	Construction Coordination Complexity	Schedule Speed	Issue Resolution Approach	Operator Culture	Process Ownership	Process Improvement
Level 3 Strategic Alliance	Low Repetition	Low	Limited	High	Low	Low	Total Organizational Commitment	Top to bottom seamless and integrated	is-is difficult	High	High	Fast Track	Cross-organizational problem-solving	Relationship, Team oriented	Major innovation breakthroughs	Critical process ownership across organizations
Level 2 High Perf. Team	<p>A very high percentage of pipeline construction projects are purchased and managed using baseline processes. Typical conditions include:</p> <ol style="list-style-type: none"> Lack of transparency of cost and schedule performance. Lack of collaborative problem-solving culture. Project management discipline lacks the data needed to proactively manage projects. 					<p>Many of the base characteristics for pipeline projects tend to indicate a need for more collaboration and better information flow. The lack of these contributes significantly to negative cost, schedule and quality outcomes.</p>			<p>Due to regulation, environmental pressures, long distance of typical projects and in markets where highly unionized labor is utilized, coordination complexity is very high. This is not a good fit with baseline sourcing strategy.</p>				Proactive with senior level sponsors		Improve control performance	Cross organizational process assessment
Level 1 Partner						Mutual Goals	Multiple level interaction	Early identification and intervention					Achievement of project goals	Utility centric & service provider centric process ownership		
Baseline Vendor	High Repetition	High	Adequate	Low	High	High	Monitor & Inspect Service Provider	Low level interaction close to field	Clean/prepared	Low	Low	Reasonable	Reactive, assign blame	Hard nosed; adversarial	Contractual rights and responsibilities	Lack of process ownership

Sourcing Strategy *(3 of 3)*

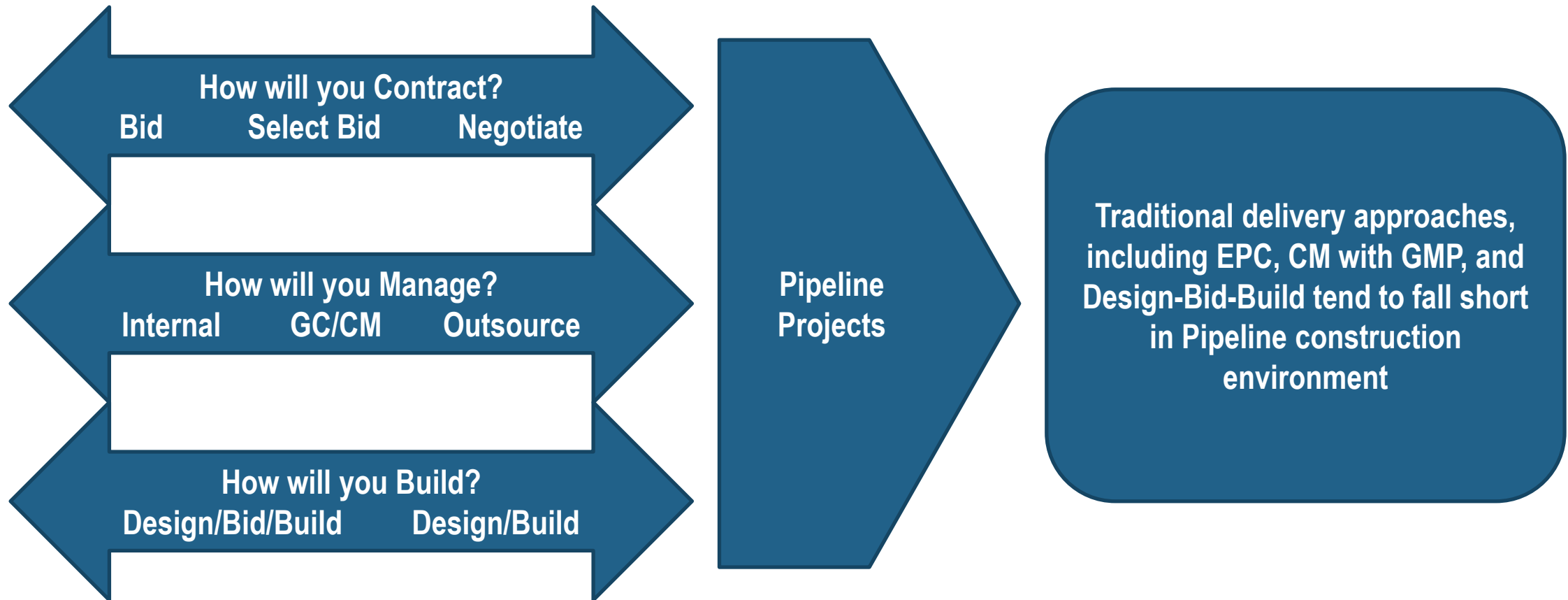
Six basic strategies demonstrating varying degrees and types of integration and collaboration

Two types of low integration – outsourced vs. vertically integrated

Four tiers of collaboration – 1) Baseline, 2) Partnering, 3) High Performing Team, 4) Strategic Alliance



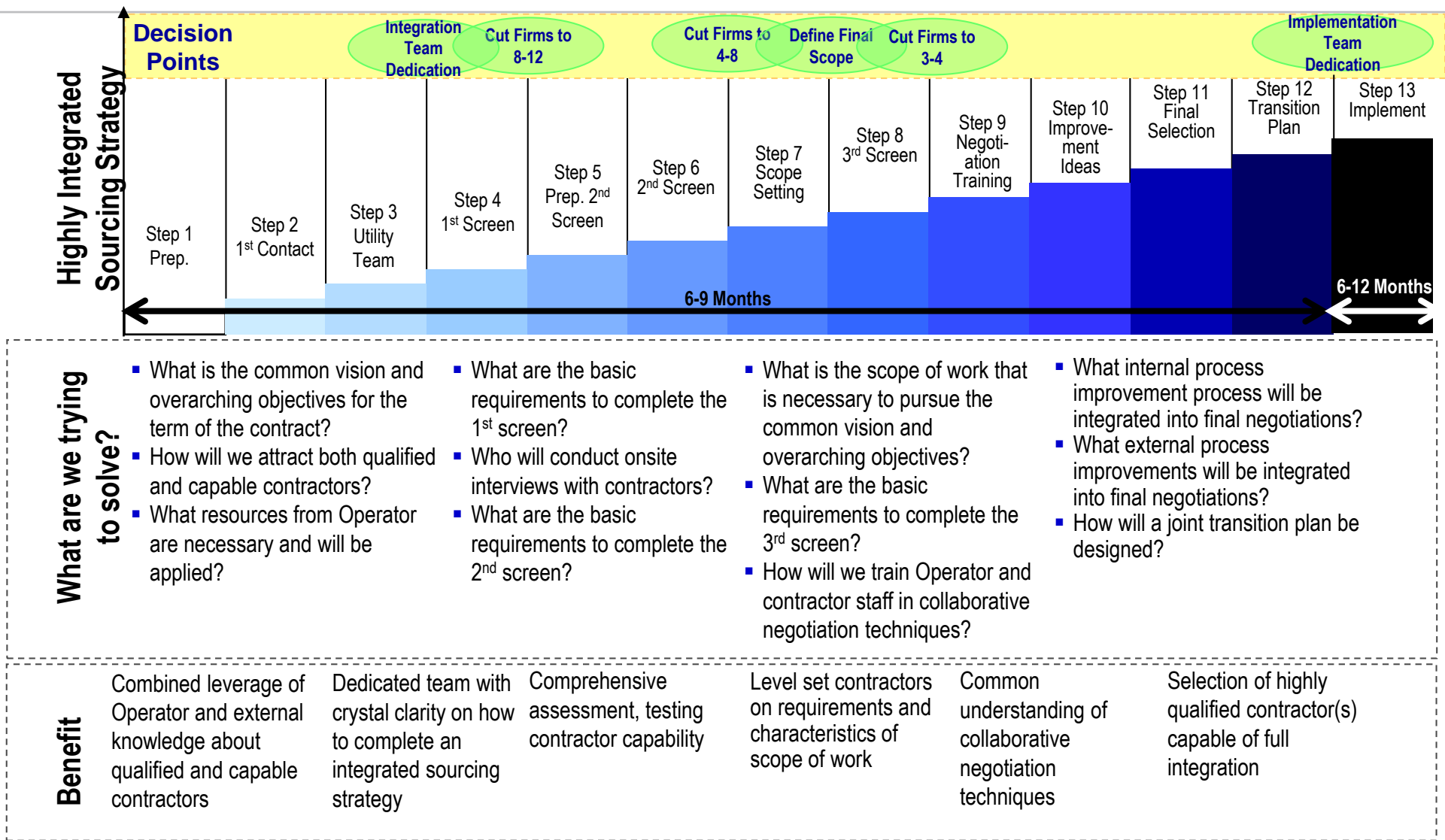
Construction Delivery Tactics



Agenda

- ▶ Some history to set the stage
- ▶ Rational for the selection of an alliance business strategy
- ▶ Preparation for the building of an alliance
- ▶ Timeline for implementation
- ▶ Measurement, management, and control techniques
- ▶ Case study results achieved

Highly Integrated - Service Provider Selection Process



Agenda

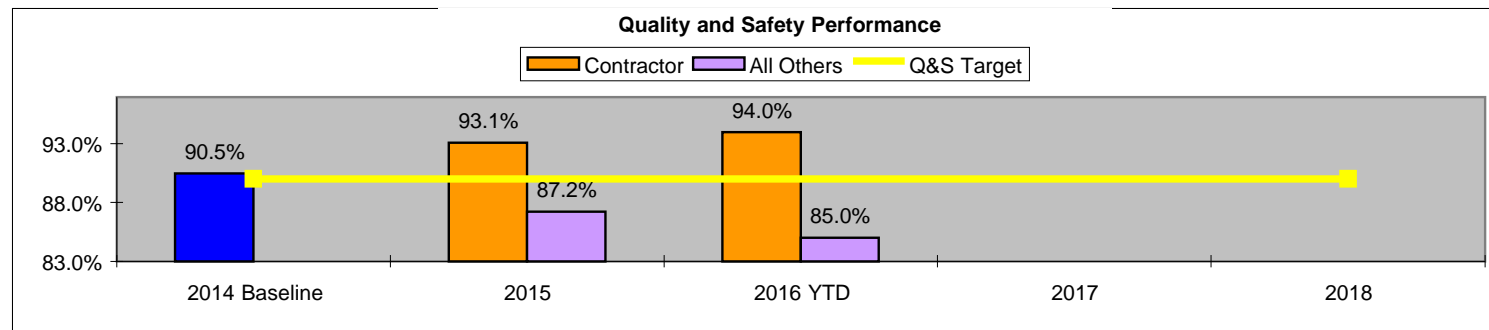
- ▶ Some history to set the stage
- ▶ Rational for the selection of an alliance business strategy
- ▶ Preparation for the building of an alliance
- ▶ Timeline for implementation
- ▶ Measurement, management, and control techniques
- ▶ Case study results achieved

Measurement & Control

Owner-Contractor
ALLIANCE PLAN
2016

Stand & Deliver Session 1

Goal:	Maintain the appropriate level of quality and safety.	
Metric:	Achieve 90% "clean" rate of quality and safety audits. ("clean"= no significant issues)	
Process Improvement		
Issue 5:	Safety Huddle Use	Rank 1
Issue Owner:	Stan Jones (Plus team Mitch Fuller-Super, John Smith-Super, Mike Rand-Foreman (Masonry), Charles Mendelyev-Super) - 6 months to complete implementation.	
Weaknesses:	1) No consistency; 2) No interaction or questions; 3) No material pertaining to tasks at hand	
Solutions:	Project manager spot checks	
Measures:	1) Reduce the number of incidents and lost time accidents by ?%. 2) Superintendent performance of tool box talks in critical areas as monitored by project managers.	
Forms:	Project manager checklist (See sample form)	



Actions Last 30 Days:	Established personal metrics for each foreman and superintendent and challenge project manager to address and raise performance.
Actions Next 30 Days:	Meet with project manager to review monthly performance and continue to make refinements in driving out safety/quality violations.

Management & Governance

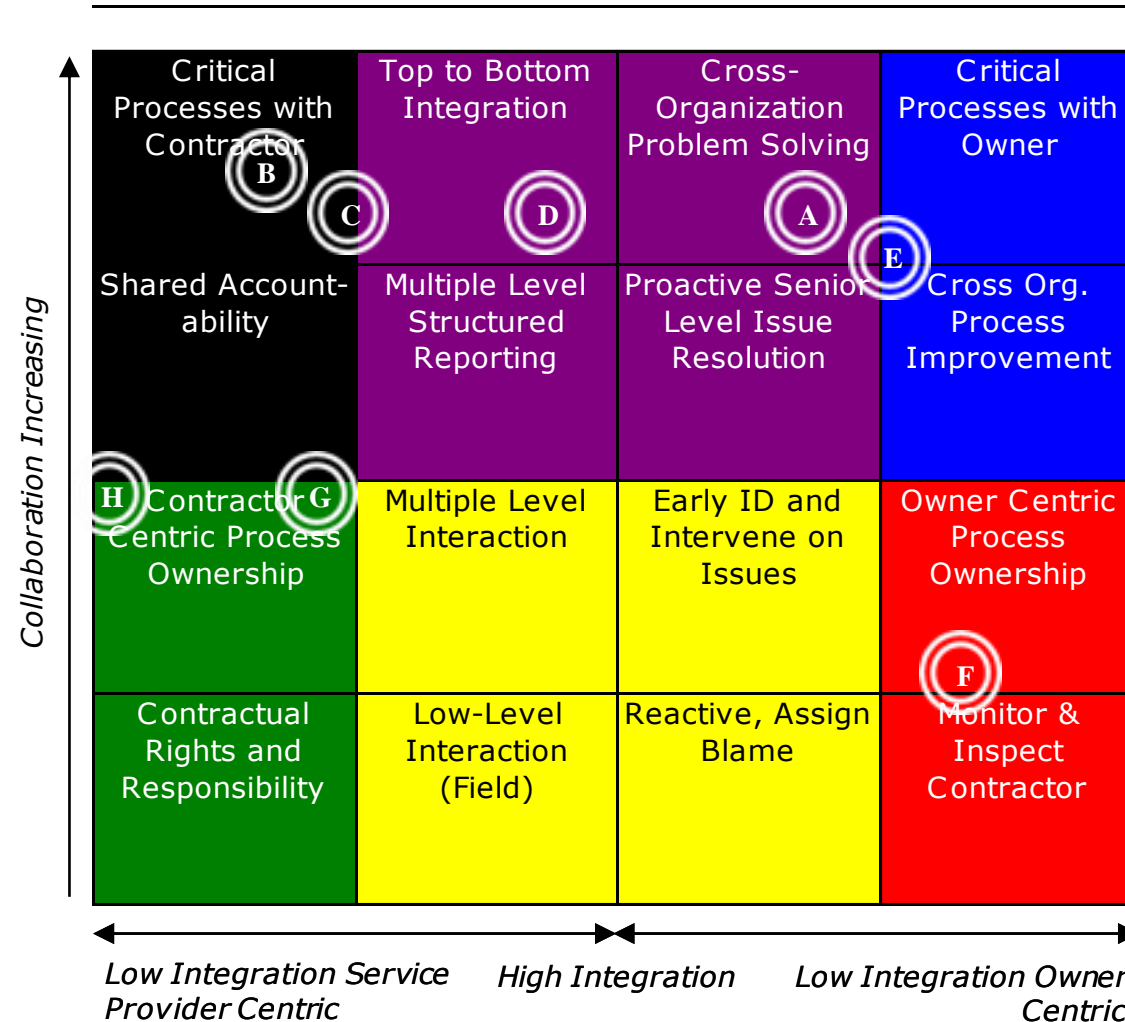


Agenda

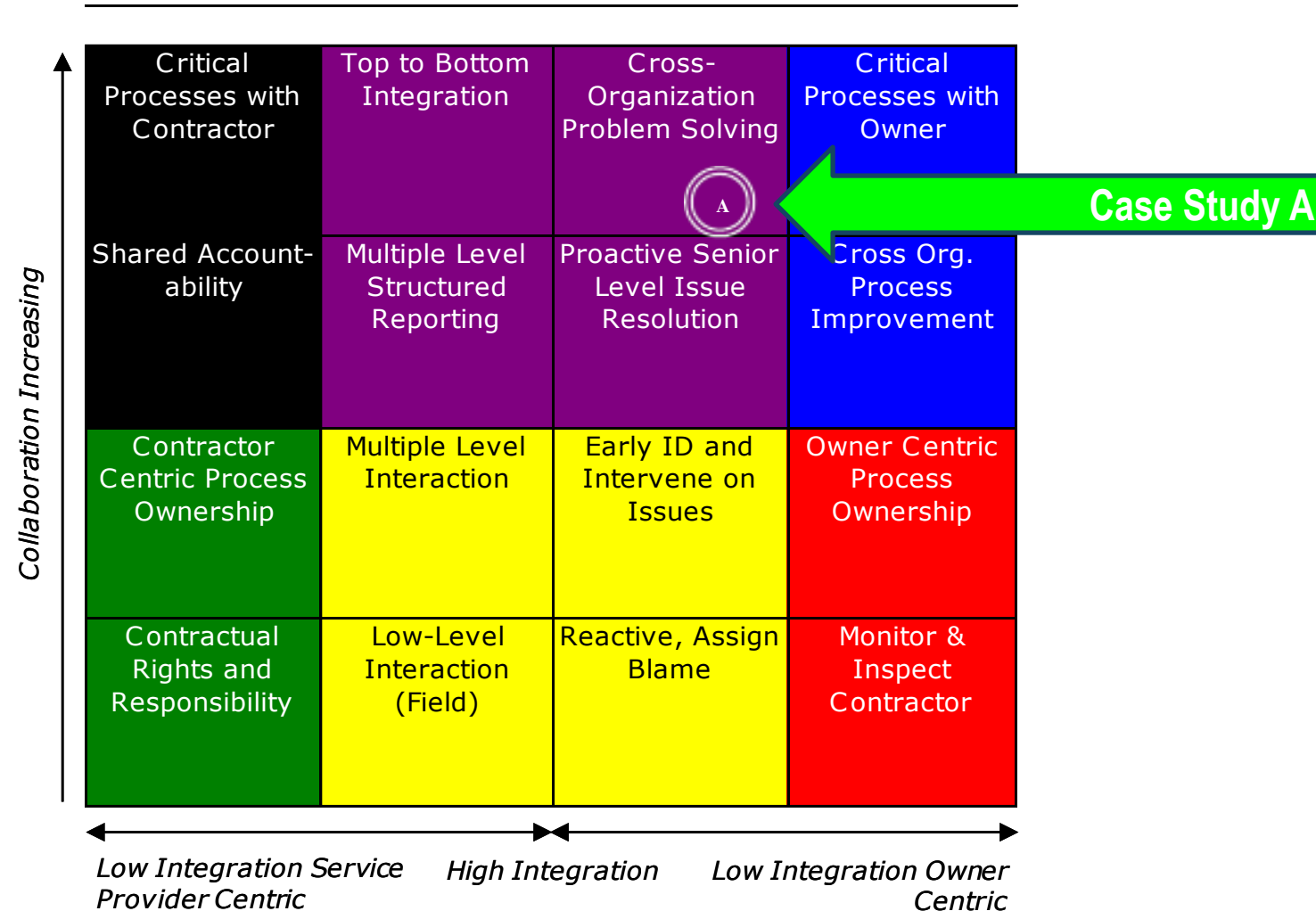
- ▶ Some history to set the stage
- ▶ Rational for the selection of an alliance business strategy
- ▶ Preparation for the building of an alliance
- ▶ Timeline for implementation
- ▶ Measurement, management, and control techniques
- ▶ Case study results achieved

Case Study Results

- ▶ There are a limited number of examples of various types of collaborative, integrated, alliance, and extended enterprise relationships in pipeline construction.
- ▶ We have selected several blind examples as case studies



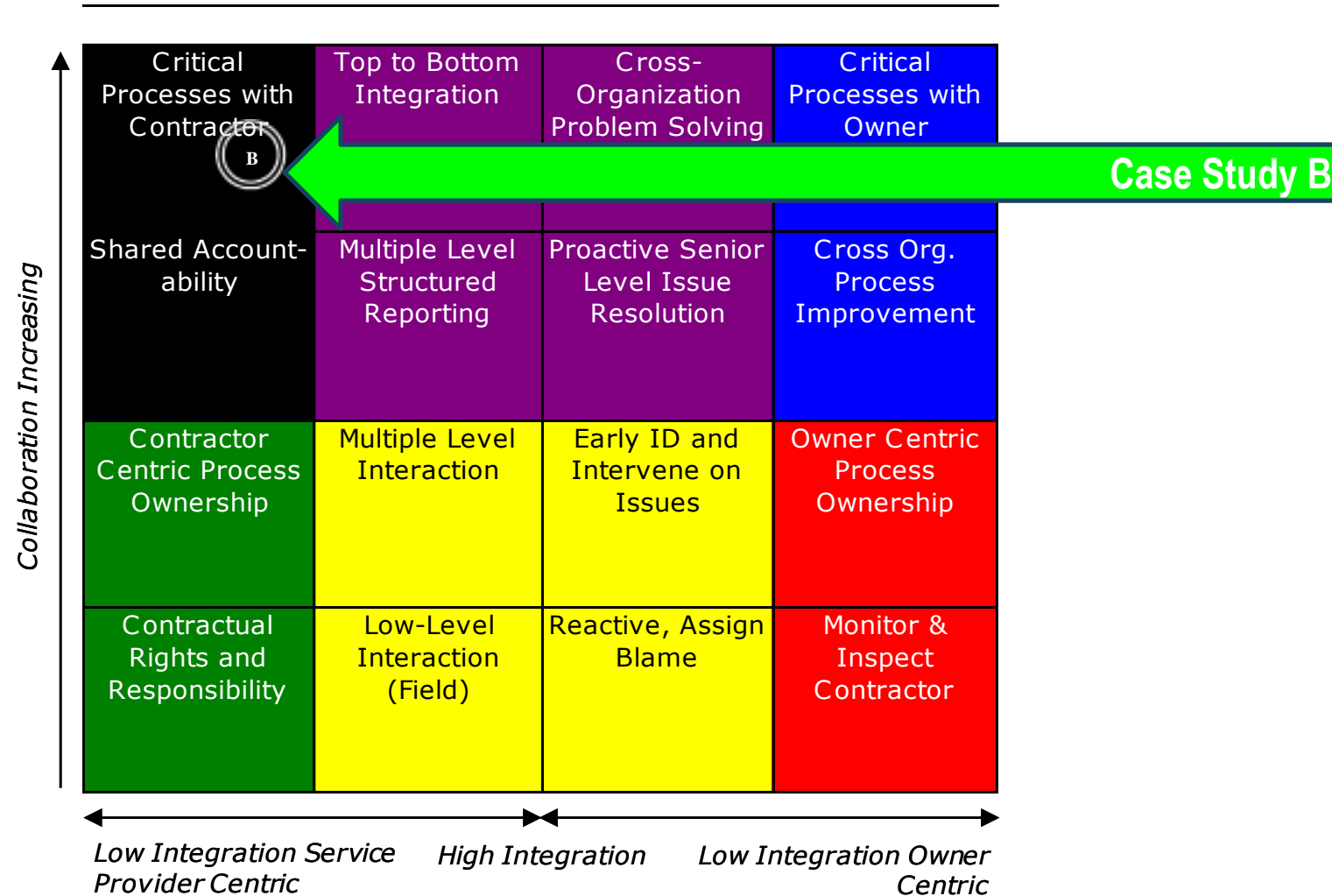
Case Study A (1 of 2)




Case Study A (2 of 2)

Company Description	European gas pipeline operator with existing assets concentrated in a small, compact, and highly urban geography.		
Sourcing Strategy	Alliance: Q2 High collaboration; high integration	Lifecycle Stage	Growth to Early Maturity
Year Formed	2008	Year(s) Renewed	2012/2013
Service Provider(s) Description	Two primary service providers, one serving as project management/design/engineering resources, one serving as pipeline contractor resource specifically for maintenance, repair, and replacement of assets.		
Initial Rational	Contract with resources and talent to ensure access to highest skilled resources for high visibility projects and integrity program.		
Transition Points	2012/2013 end of initial integrity program and transition to 2 nd phase of integrity program.		
Current Rational	Continuation of flexible and high performance relationship..		
Results Achieved	<ul style="list-style-type: none"> • Significant cost driven out through continuous improvement yielding year over year cost savings. • Raising performance and productivity of internal workforce through competition, comparison, and in some instances collaboration. • Accumulation of cost savings for reinvestment in growing asset base. • Long-term access to skilled and experienced resources to execute integrity program. 		

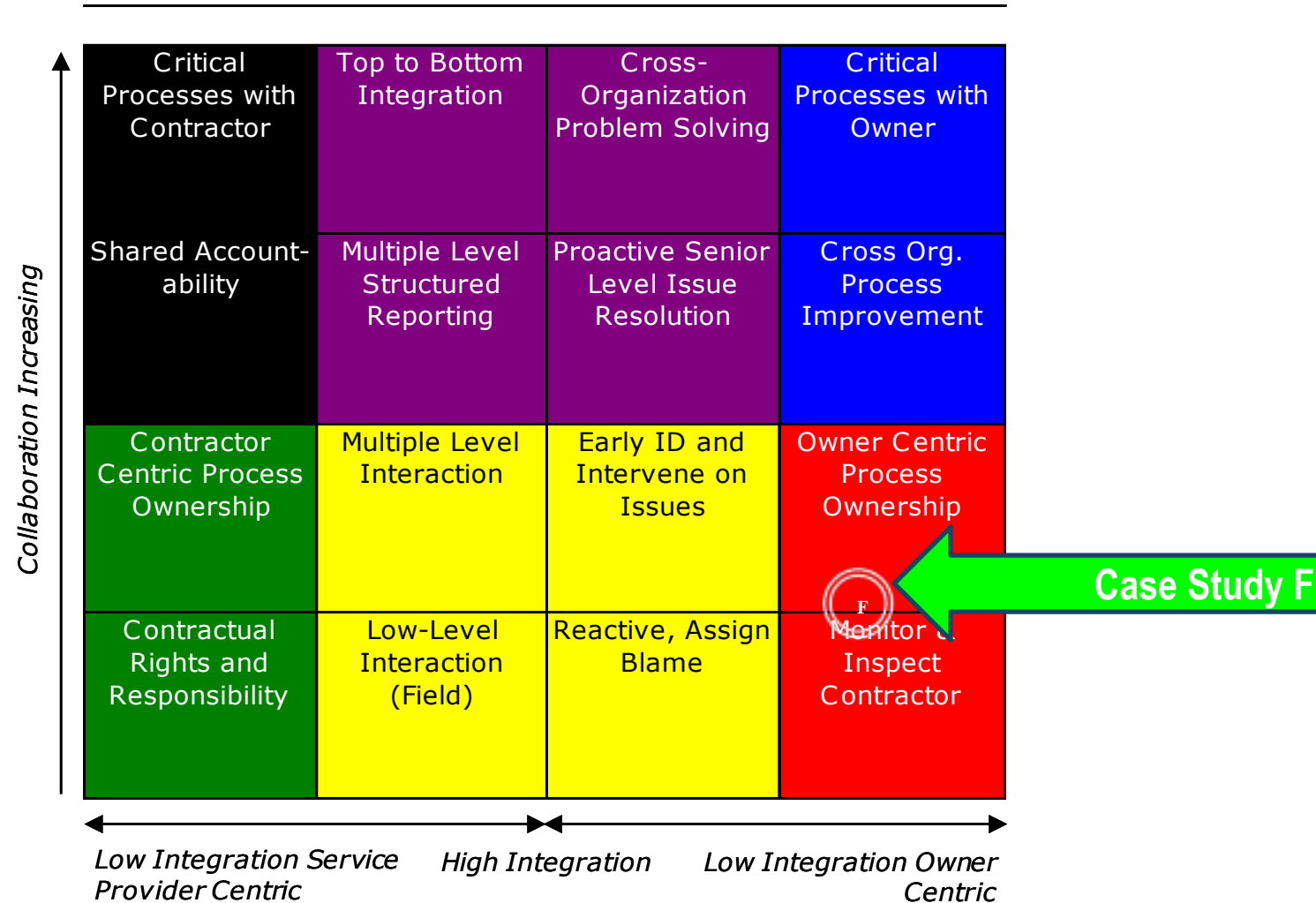
Case Study B (1 of 2)




Case Study B (2 of 2)

Company Description	North American liquid and gas pipeline operator with substantial existing assets and significant system expansion over the past decade.		
Sourcing Strategy	Alliance: Q1 High collaboration; service supplier centric strategy with low integration	Lifecycle Stage 	Maturity
Year Formed	2004	Year(s) Renewed	2008; 2013
Service Provider(s) Description	Four primary service providers, two primarily providing integrity/maintenance and related other services, two serving as pipeline contractor resource for all types of new pipeline and/or station construction or installation.		
Initial Rational	Executive decision to move toward a perceived higher value model and movement from an environment that historically was defined by: 1) 30-plus contractors bidding on various projects; 2) Contractual/Legalistic approach; 3) Multiple contact points; 4) Mutual exploitation; 5) Task oriented; 6) Performance Not Tied to Payment.		
Transition Points	2008 regulation intensity shift resulted in reevaluation of approach to continue pursuit of superior quality, compliance, and safe operation, installation, and construction.		
Current Rational	Work with firms that provide highly valued services that withstand regulatory scrutiny and meet expectation within regulatory scheme.		
Results Achieved	<ul style="list-style-type: none"> Achievement of initial strategic desires and meeting of requirements within regulatory environment \$20+ million in first 4 years, subsequent performance of similar magnitude 		

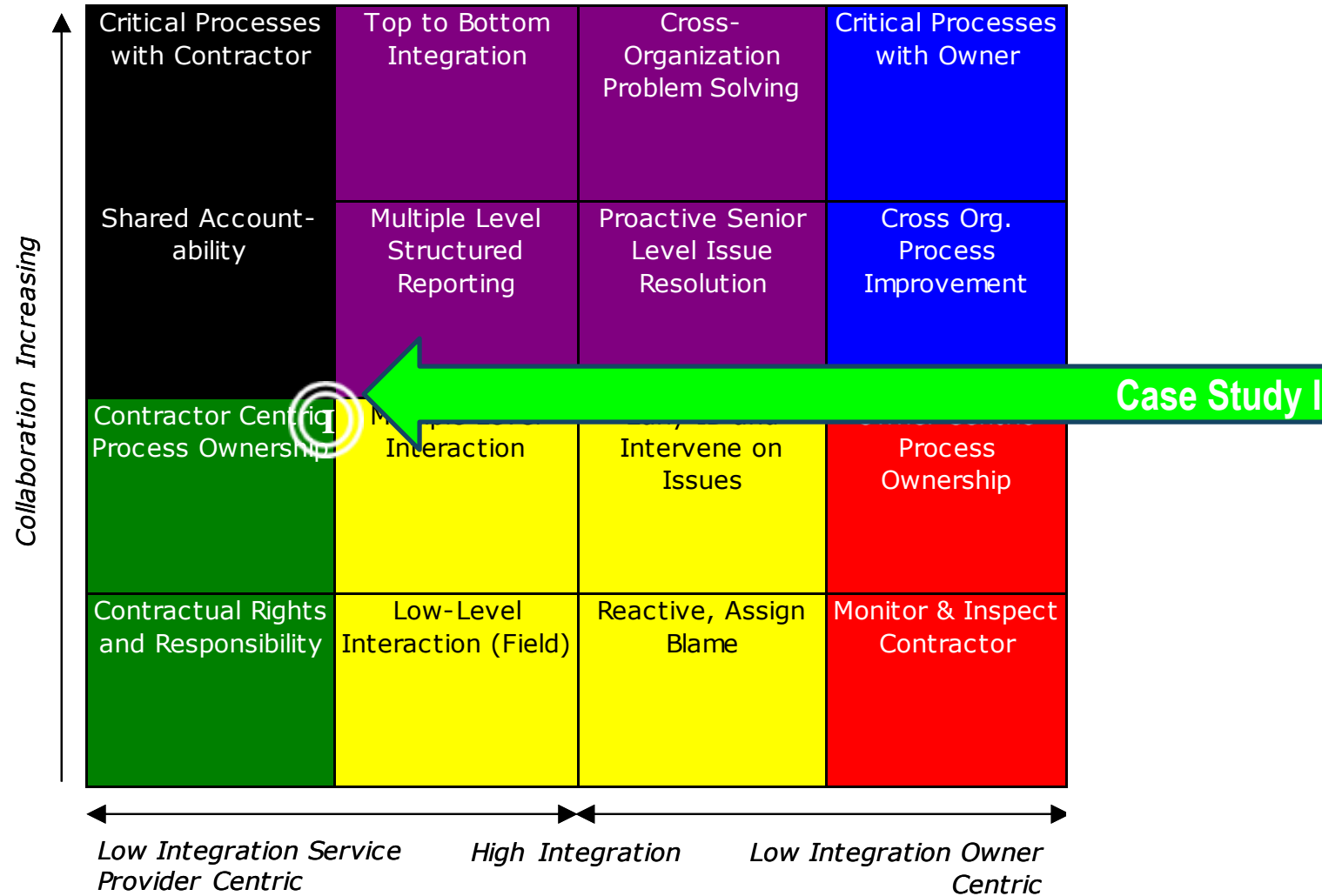
Case Study F (1 of 2)




Case Study F (2 of 2)

Company Description	Large, North American, predominately gas pipeline operator with significant assets within “High Consequence Areas” as defined by regulatory authorities.		
Sourcing Strategy	Approved/ Certified: Q6 Low collaboration; owner centric strategy with low integration	Lifecycle Stage 	Start-Up
Year Formed	2013	Year(s) Renewed	N/A
Service Provider(s) Description	Four pipeline contractor resources specifically for combined integrity, system strengthening, and new asset construction program.		
Initial Rational	Regulatory scrutiny and dramatic increase in capital spending were initial short-term drivers. Continuity of access to field labor to ensure top quality contractor field leadership, and quality craft labor resource access throughout replacement program timeline were long-term drivers.		
Transition Points	N/A		
Current Rational	N/A		
Results Achieved	<ul style="list-style-type: none"> Pipeline operator historic cultural issues represent very significant obstacle to ultimate formation and success of alliance strategy. 		

Case Study I (1 of 2)



Case Study I (2 of 2)

Company Description	Large, Asian, predominately gas pipeline and terminal operator with significant assets in a single country and terminal/pipeline development internationally		
Sourcing Strategy	Teaming: Q4 Low collaboration; service supplier centric strategy with low integration	Lifecycle Stage 	Start-Up
Year Formed	2005	Year(s) Renewed	2008; 2011; 2015
Service Provider(s) Description	Group of EPC contractor resources serving multiple geographies primarily for terminal development and major pipeline construction		
Initial Rational	Bring consistent processes and players to higher risk international terminal development		
Transition Points	<ul style="list-style-type: none"> 2008 & 2013 peak gas prices demanded change in corporate strategy with more international development and consolidation of capital spending with smaller set of construction service providers and introduction of more collaboration between owner and contractors. 		
Current Rational			
Results Achieved	<ul style="list-style-type: none"> High degree of unit pricing structure, business process, and technology consistency achieved Long-term access to skilled and experienced engineering, construction management resources to execute projects 		

Is an alliance type sourcing and service provider management techniques effective?

YES

Especially in the high volume, high demand pipeline construction markets that have recently and will again exist where workforce supply (contractors, highly effective crew and project leadership, and skilled trade) constraints!

Thank You

MARK BRIDGERS

shipping:

405 Forsyth Street
Raleigh, NC 27609

mailing:

PO Box 31026
Raleigh, NC 27622

www.ContinuumCapital.net

919.345.0403

MBridgers@ContinuumCapital.net

Twitter: [@MarkBridgers](https://twitter.com/MarkBridgers)

Skype: [mark.bridgers.continuum](https://www.skype.com/people/mark.bridgers.continuum)

LinkedIn: www.linkedin.com/pub/mark-bridgers/12/9b4/81

Mark Bridgers

Mark founded and leads a Utility Vertical Market team team at Continuum Capital. He works with gas/electric utilities, power generators, pipeline companies, and energy companies. As a recognized expert in capital construction and operational challenges, Mark was recently honored with membership in the Society of Gas Operators (SOGO).

Mark helps firms prepare for and successfully navigate “strategic transitions.” His passion is helping organizations achieve breakthrough innovations through collaborative or integrated relationships. He is the architect of an approach for integrated service provider management referred to as the “Extended Enterprise” among construction industry participants.

Mark is an avid educator, trainer, and writer with more than 20 years of industry expertise including financial performance analysis; development and implementation of tools to reduce construction cost, life-cycle cost, and operational friction; restructuring of processes and procedures - often times using LEAN Construction techniques; and leader development.. He is a recognized expert in capital construction and operational challenges . Mark is also author of over 150 articles and research papers published internationally in industry journals, including ENR, PE – The Magazine for Professional Engineers, Pipeline & Gas Journal, Utility Contractor (NUCA), Underground Contractor, Electric Energy (RMEL) and Electric Perspectives (EEI).

Mark holds a master’s degree in business administration from the University of Virginia’s Darden school of Business and a bachelor’s degree in financial management from Clemson University. In addition, he earned the designation of Chartered Property and Casualty Underwriter (CPCU) and Associate in Reinsurance (ARe).





Appendix I

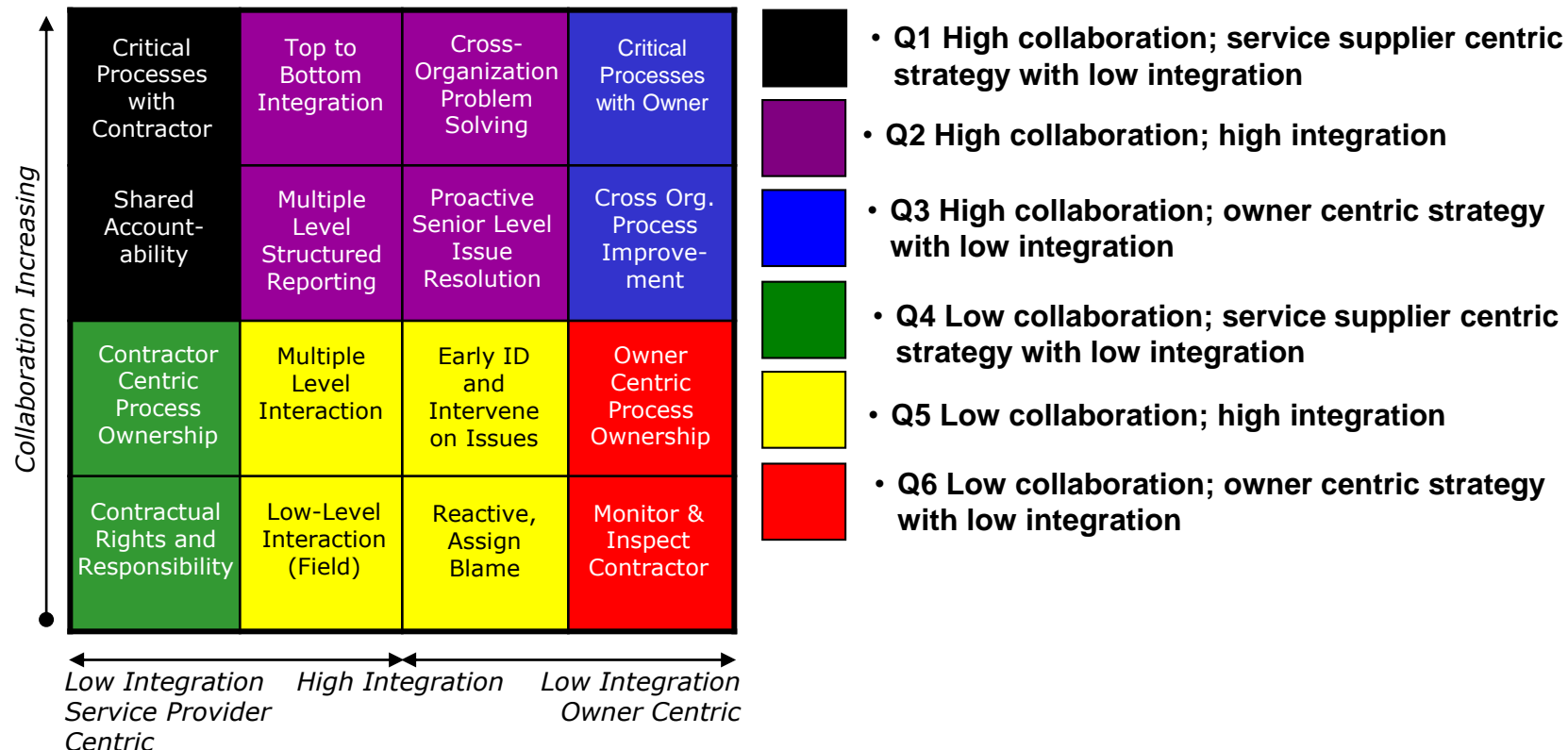
Sourcing Strategy Examples

Sourcing Strategy Details (1 of 7)

Six basic strategies demonstrating varying degrees and types of integration and collaboration.

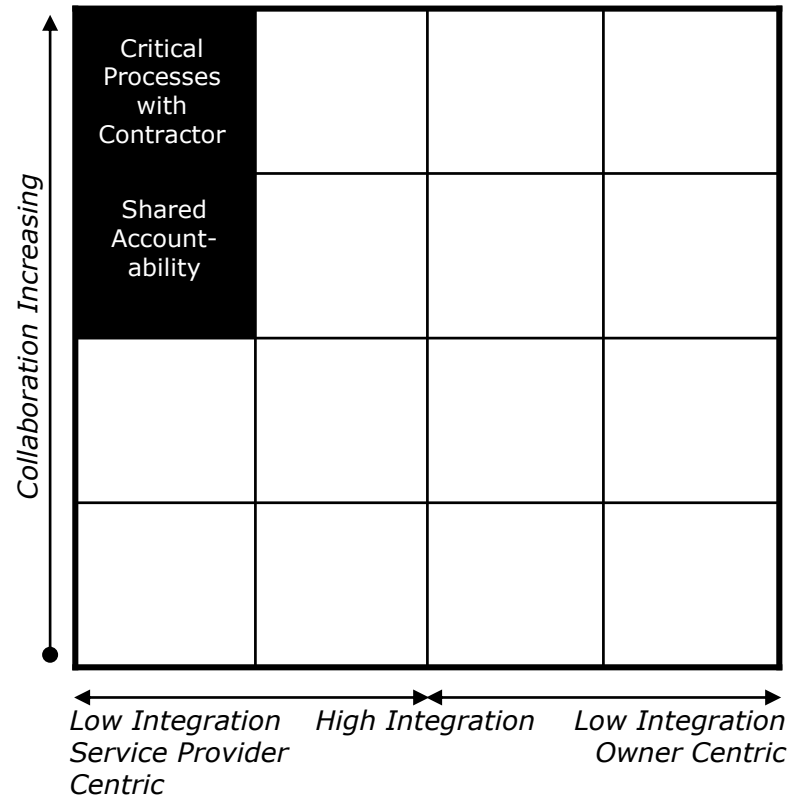
Two types of low integration – outsourced vs. vertically integrated

Four tiers of collaboration – 1) Baseline, 2) Partnering, 3) High Performing Team, 4) Strategic Alliance



Sourcing Strategy Details (2 of 7)

► Strategic Alliance

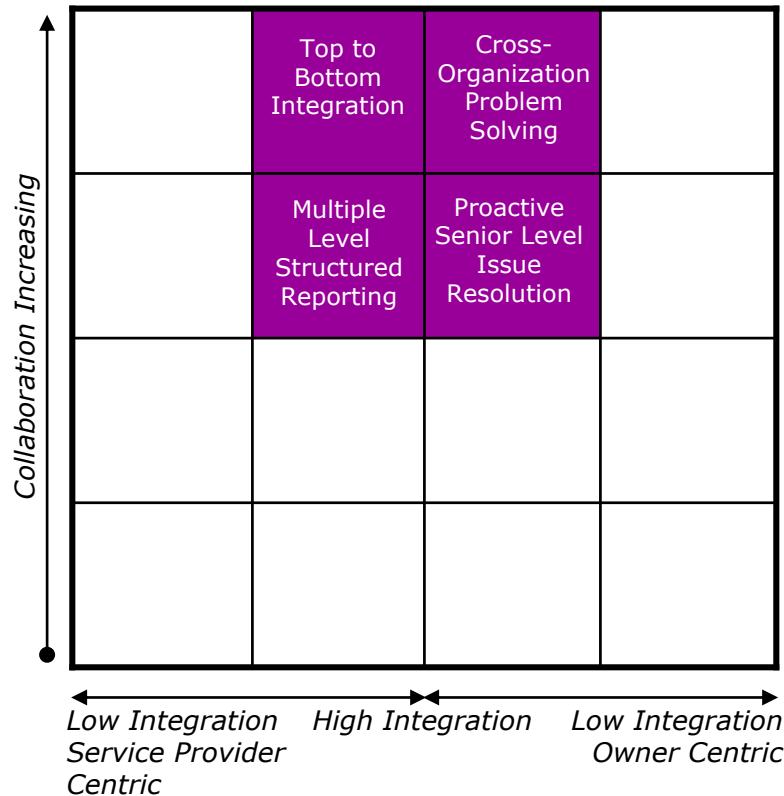


- Q1 High collaboration; service supplier centric strategy with low integration

Q1 High collaboration; service supplier centric strategy with low integration	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Good direction and input from the owner creates a better final product for the end user. • Leverages the owner's limited resources to focus on only the most critical and key areas of decision making and not the management of details. 	<ul style="list-style-type: none"> • A low integration approach will keep timely key information from the contractor. In a changing business environment this could cause problems in meeting the needs of schedule (either faster or slower) and usability of the final installation. • Low integration will not fully leverage team collaboration opportunities.

Sourcing Strategy Details (3 of 7)

► Strategic Alliance or Extended Enterprise

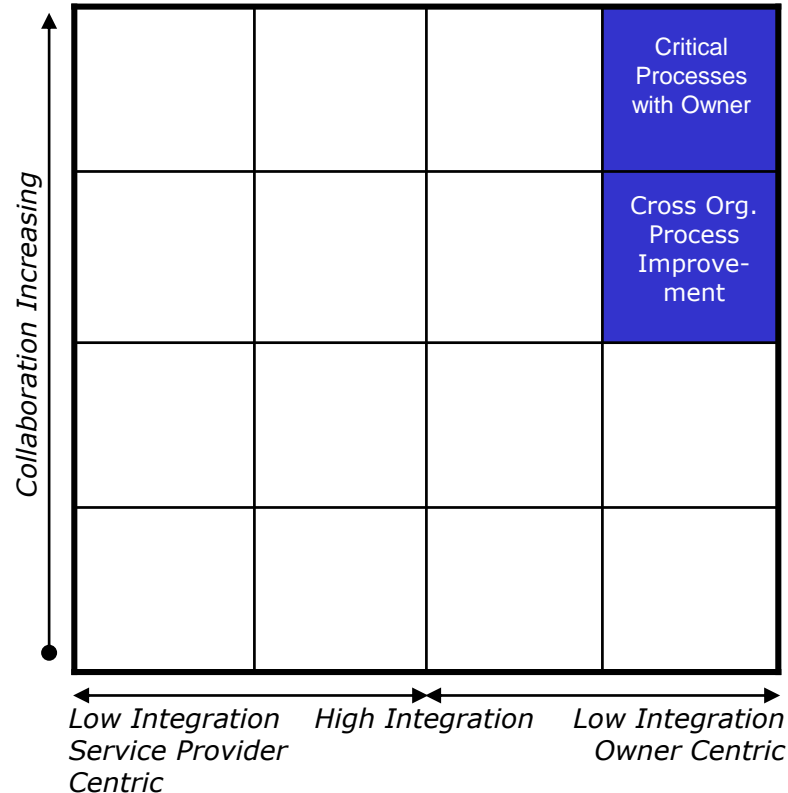


• Q2 High collaboration; high integration

Q2 High collaboration; high integration	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Promotes great team work to take advantage of strengths of all the resources. • Everyone will understand the business needs and be fully aligned to project goals. • The team will be well positioned to effectively address any changes in the business needs. 	<ul style="list-style-type: none"> • Owner project confidentially could be compromised as contractors will know more about the owner business. • It takes a lot of work to build & maintain the trust level required to work effectively in this approach. • Complacency may occur over the long term, if effective measures are not in place.

Sourcing Strategy Details (4 of 7)

► Strategic Alliance

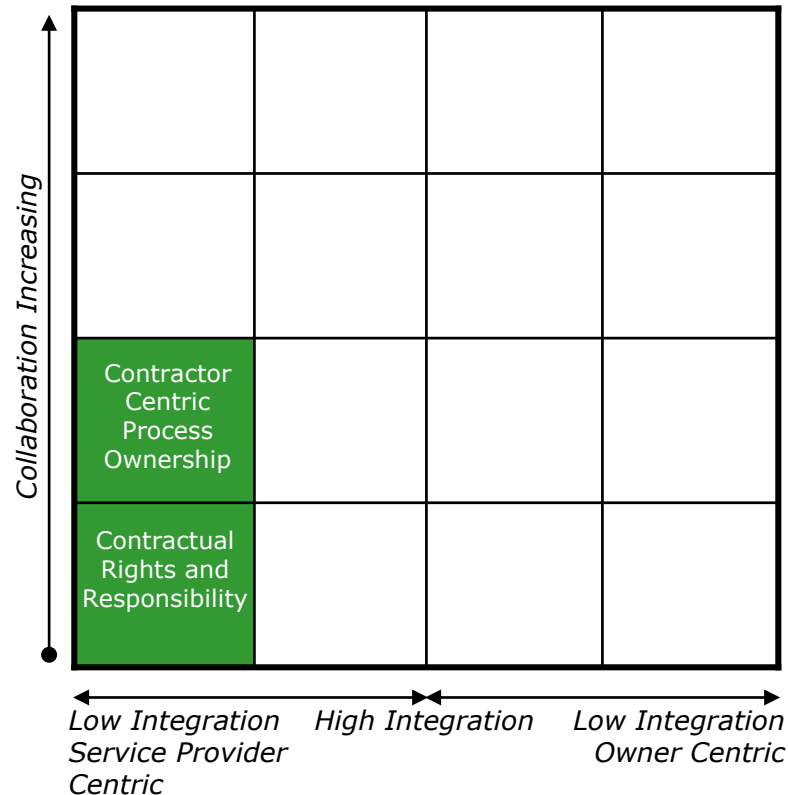


 • Q3 High collaboration; owner centric strategy with low integration

Q3 High collaboration; owner centric strategy with low integration	
Strengths	Weaknesses
<ul style="list-style-type: none"> The owner will have great control of project execution. High collaboration can build good team work. 	<ul style="list-style-type: none"> Will require more owner resources and deeper involvement. Will require owner resources with a sufficient project management experience and expertise.

Sourcing Strategy Details (5 of 7)

► Teaming

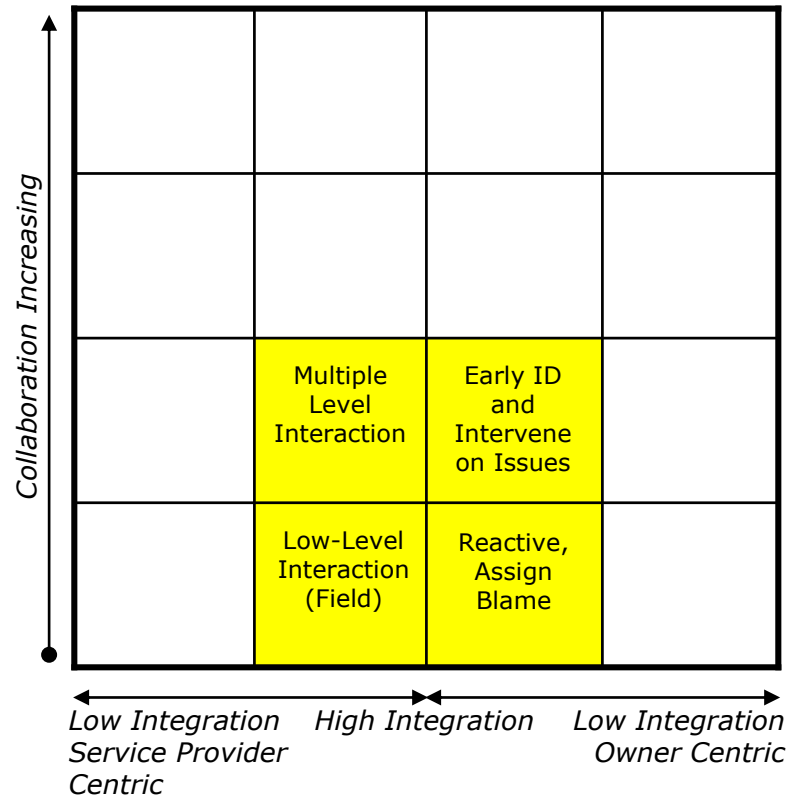


- Q4 Low collaboration; service supplier centric strategy with low integration

Q4 Low collaboration; service supplier centric strategy with low integration	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Will minimize owner resources required for projects. • Can take advantage of market economic conditions of the contractors. • The contractors can execute projects in the most efficient way from a pure construction perspective without owner interruptions. 	<ul style="list-style-type: none"> • The owner will have a difficult time changing directions or scope of the project even if business needs dictate a change is required. • The owner will lose control of the project delivery process. • The contractors will not have the most up to date information in a timely manner. • The owner/contractor resources will not function as a fully integrated team. • Contractors may find it difficult to get timely owner decisions.

Sourcing Strategy Details (6 of 7)

▶ Listed Vender

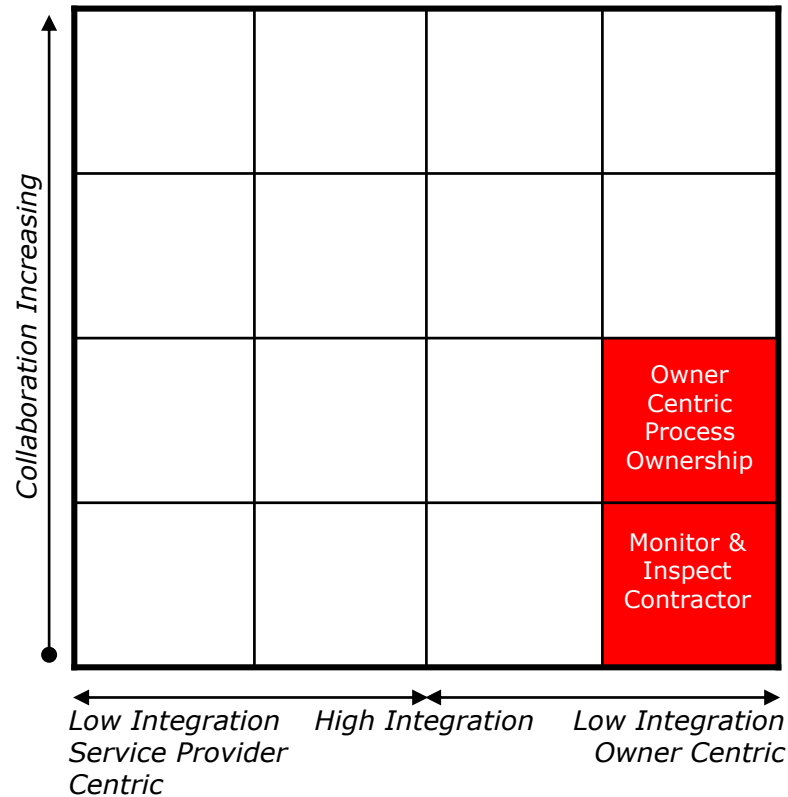


• Q5 Low collaboration; high integration

Q5 Low collaboration; high integration	
Strengths	Weaknesses
<ul style="list-style-type: none"> The sharing of work processes could result in using the best practices available. 	<ul style="list-style-type: none"> The resources of both the contractor and owner may not be able operate effectively as a team with missing information. Decision making could be too limited in perspective and only represent a one sided view point.

Sourcing Strategy Details (7 of 7)

► Approved & Certified



• Q6 Low collaboration; owner centric strategy with low integration

Q5 Low collaboration; high integration	
Strengths	Weaknesses
<ul style="list-style-type: none"> The owner has complete control of the project delivery process. The owner may be able to take advantage of good economic market conditions and get low priced bids. 	<ul style="list-style-type: none"> Will require a high level of owner resource involvement. Owner resources must have a high level of project expertise and ability. Will not be positioned to take advantage of contractor constructability opportunities early in the project when big payouts available.



Appendix II

Additional Case Studies

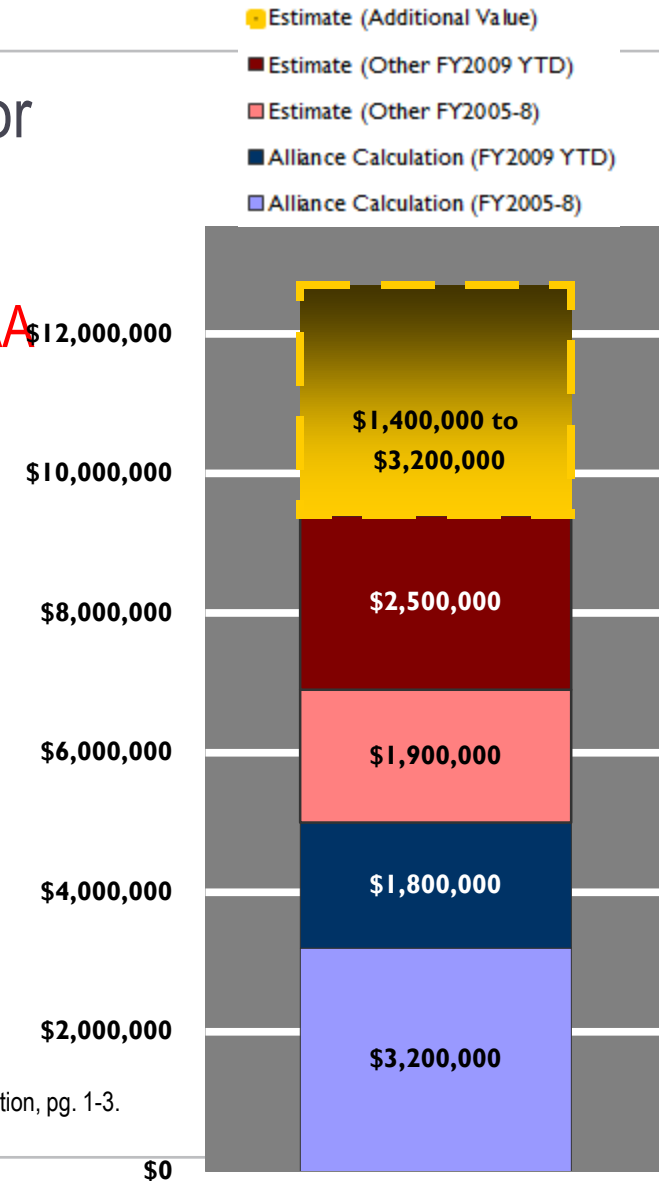
Industry Research Documented Results

Table 2 - Construction Industry Institute (CII) – Model For Partnering Excellence

Category	Result Area	Results
Cost	<ul style="list-style-type: none"> • Total project cost (TPC) • Construction administration • Marketing • Engineering • Value engineering • Claims (% of TPC) • Profitability 	<ul style="list-style-type: none"> • 10% reduction • 24% reduction • 50% reduction • \$10 per hour reduction • 337% increase • 87% reduction • 25% increase
Schedule	<ul style="list-style-type: none"> • Overall project • Schedule changes • Schedule compliance 	<ul style="list-style-type: none"> • 20% reduction • 40% reduction • Increased from 85% to 100%
Safety	<ul style="list-style-type: none"> • Hours without lost time accidents • Lost work days • Number of Dr. cases • Safety rating 	<ul style="list-style-type: none"> • 3 million versus 48,000 industry standard • 4 versus 6.8 industry standard • 74% reduction • 5% of national average
Quality	<ul style="list-style-type: none"> • Rework • Change orders • Direct work rate 	<ul style="list-style-type: none"> • 50% reduction • 80% reduction • 42% increase
Claims	<ul style="list-style-type: none"> • Number of claims • Projects with claims 	<ul style="list-style-type: none"> • 83% reduction • 68% reduction
Other	<ul style="list-style-type: none"> • Job satisfaction 	<ul style="list-style-type: none"> • 30% improvement

Solution Example – Internal/External Crew Collaboration

- ▶ Estimates of additional value to operator for the period FY2005 to FY2009
 - Range of \$1,400,000 to \$3,200,000
 - 15-35% adder to total value based upon CMAA research and estimates*. Calculated by multiplying additional savings by 15-35%
- ▶ Most substantial impacts
 - Contractor safety performance
 - Procurement and sourcing efficiency
 - CAPEX depreciation savings
 - Lower turnover
 - Improved customer service level
 - High-quality/candid communications
 - Reduced internal friction



*Source: CMAA Seventh Annual Survey of Owners; C2 + 2C = LC, The solution to low cost capital programs, Fall 2006 publication, pg. 1-3.