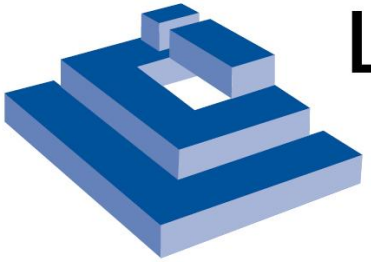

Lean Construction Institute

Building Knowledge in Design and Construction

Provider Name: Lean Construction Institute
Provider Number – H561

Course Name: Using Contract Incentives to Improve Project Optimization and Aligning Design-Build with Lean Project Delivery

Course Number – 20121012AM2

Course Speakers: Will Lichtig, Joel Darrington, Robynne Parkinson

Course Date: October 12, 2012

Credit(s) earned on completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

Copyright Materials

Course Description

Three key takeaways:

· Intrinsic motivation is critical to a high performing project team

· Traditional construction compensation approaches get in the way of intrinsic motivation

· Contract incentives can and should be structured to be compatible with intrinsic motivation and improve project optimization

1. The attendees will learn how the design-build delivery method fosters and encourages lean construction practices.
2. The session will examine the DBIA contract documents, specifically the Owner/Design-Builder and the Teaming Agreement, and the efforts taken to make them consistent with lean construction practices.
3. The speaker will discuss how to increase communication between the design-build team and the owner.

The design management process set forth in the prime contract allows the parties to collaborate and communicate.

· The business terms in the prime contract are flexible and allow for shared risk/reward and other incentive based contracting tools.

· The teaming agreement promotes communication and exchange of information.

· The agreements are flexible and allow the parties to develop specific protocols and legal requirements for communication and collaboration, such as co-location, a management committee, and information exchange.

Learning Objectives

At the end of the this course, participants will be able to:

1) Understand how Lean Project Delivery and commercial terms support and align

2) Understand the science of human motivation and how it relates to LPD performance and incentive programs

3) Understand how to identify key performance metrics for incentive plans that will promote rater than defeat motivation

4) Understand how to integrate LPD methods and practices within the DBIA document family.

Commercial Terms to Support Lean Project Delivery

Will Lichtig
Lean in the Public Sector
Fairfax, Va.
December 8-10, 2011

BOLDT

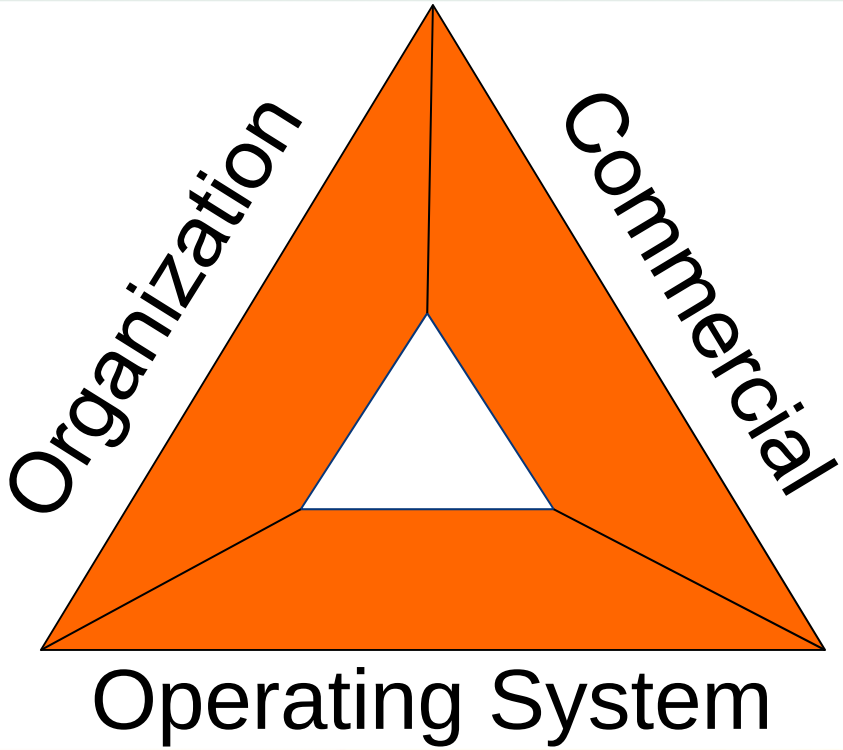
Key Points

- Design a commercial system that responds to purpose
- Science challenges our “common sense” about motivation
- Lean calls for management by process, not by results
- Qualitative systems that require self-evaluation optimize learning
- Lose the phrase “incentives”; adopt “award fee” or “performance based compensation”

OUTLINE

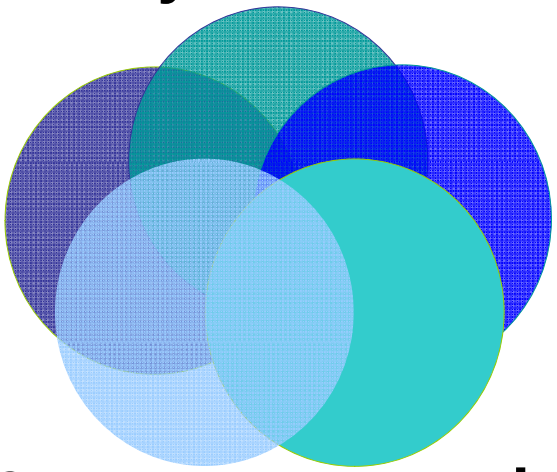
- Lean Project Delivery Context
- The Role of Science
- Considerations in Developing Commercial Terms
- Examples
- Learnings

Three Domains



Collaborate;
Really Collaborate

Increase
Relatedness



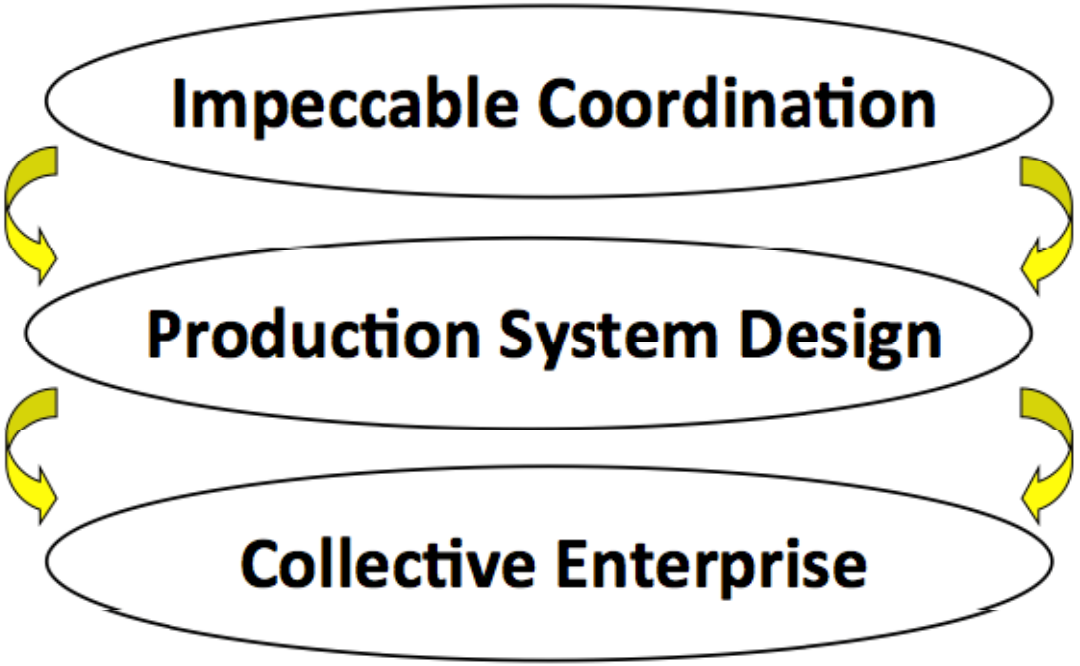
Networks of
Commitment

Optimize
The Whole

Tightly Couple
Learning w/ Action

Courtesy

Three Connected Opportunities



	Organization	Operating System	Commercial
Old	Hierarchical Siloed Command & Control	CPM Specialists Parts	Lump Sum Low Price
New	Collaborative Flat Consensus	Lean Sustainable BIM	Entrepreneurial Collective Best Value

A Contracting Continuum

OLD **NEW**

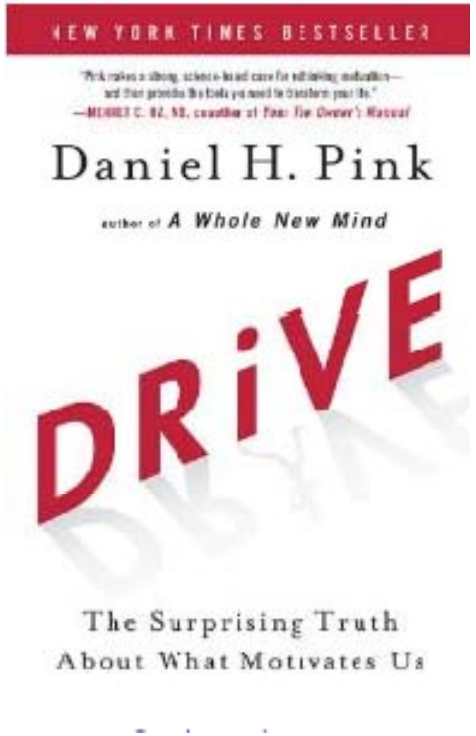
Basic Brain Rules

- Dopamine & Prediction Error
- Loss Aversion
- Trap of Certainty
- Strategic Allocation of Attention
- Fairness & Reciprocity
- Social Approval/Belonging

Intrinsic Motivation

- Purpose
- Mastery
- Autonomy

- $ paid to incent creative work deteriorates performance

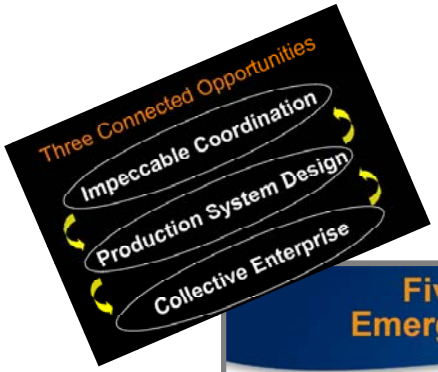


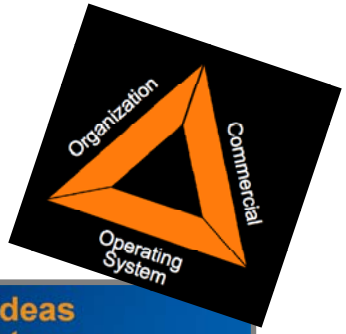
Organizational Motivation

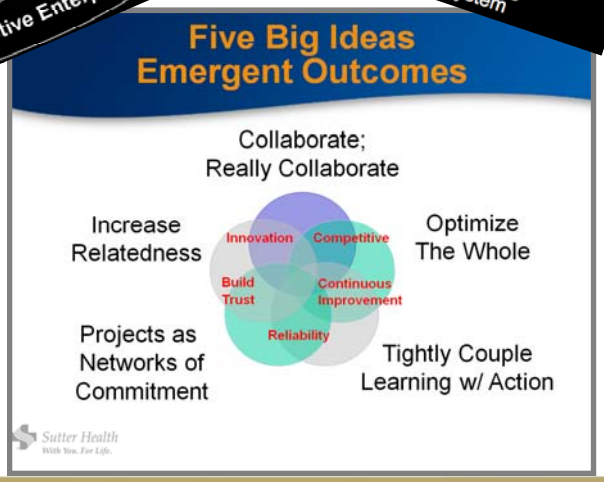
- Profit (how we keep score)
- Create Capability to make future profit
  - Customer Satisfaction
  - Reputation
  - Develop People

Purpose

- Promote 5 Big Ideas
- Encourage Lean Process
- Promote Lean Behaviors
- Encourage Prudent Risk
- Eliminate Hidden Contingency (Howell's new waste)
- Promote Learning
- Reward Superior Outcomes







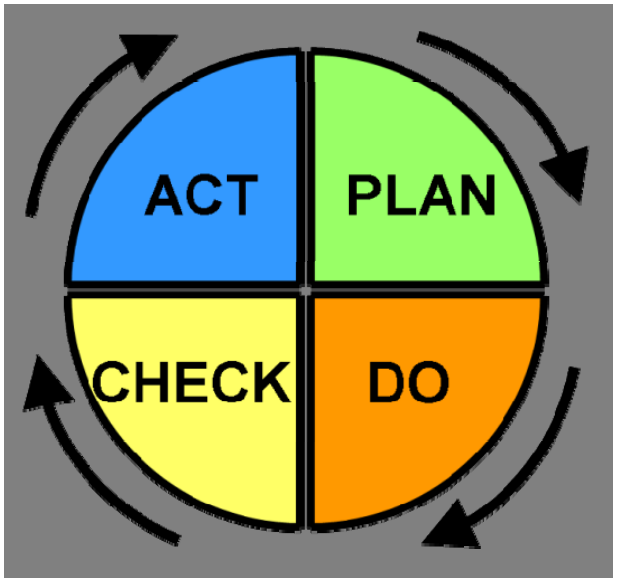
Promote Learning?

- Link with Self Assessment
- Promote “reflection”
- Public/Community of Practice
- Develop action plan (PDCA)
- Allow “recovery”

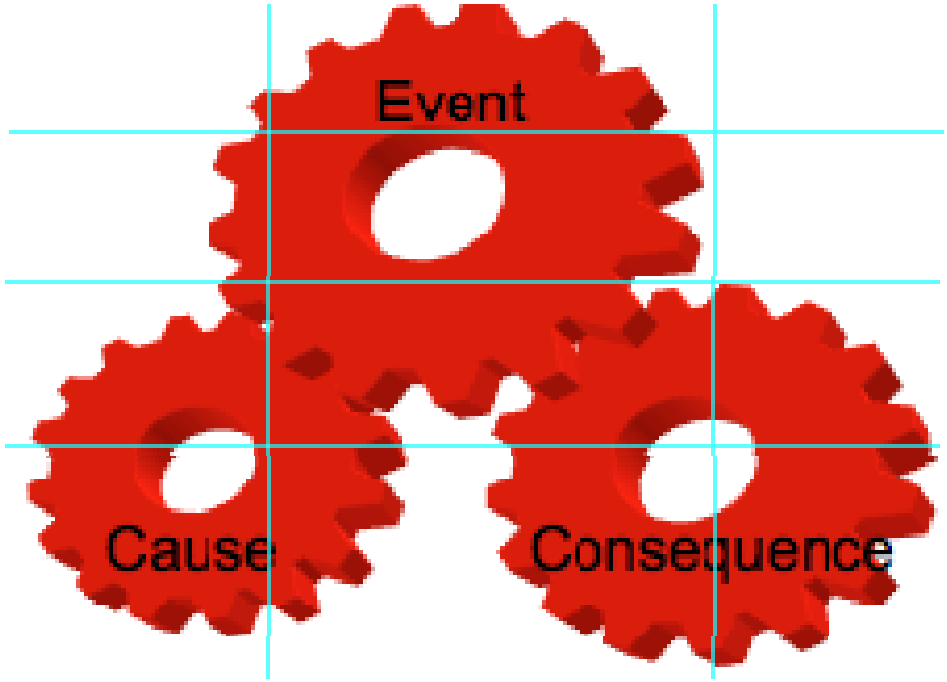
Driven by Lean Principles

Complex systems must be managed to see problems, solve problems, and share what is learned, all while insisting that leaders cultivate these capabilities throughout the organization.

– Steven Spear



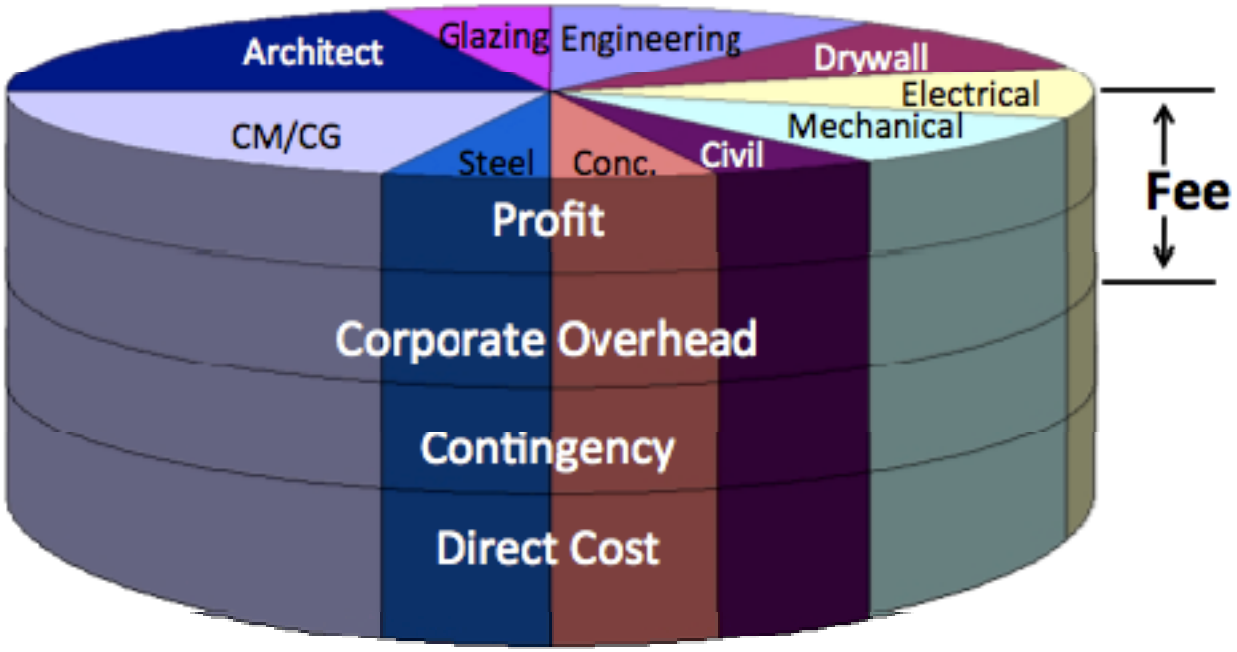
Deal Structure - Risk



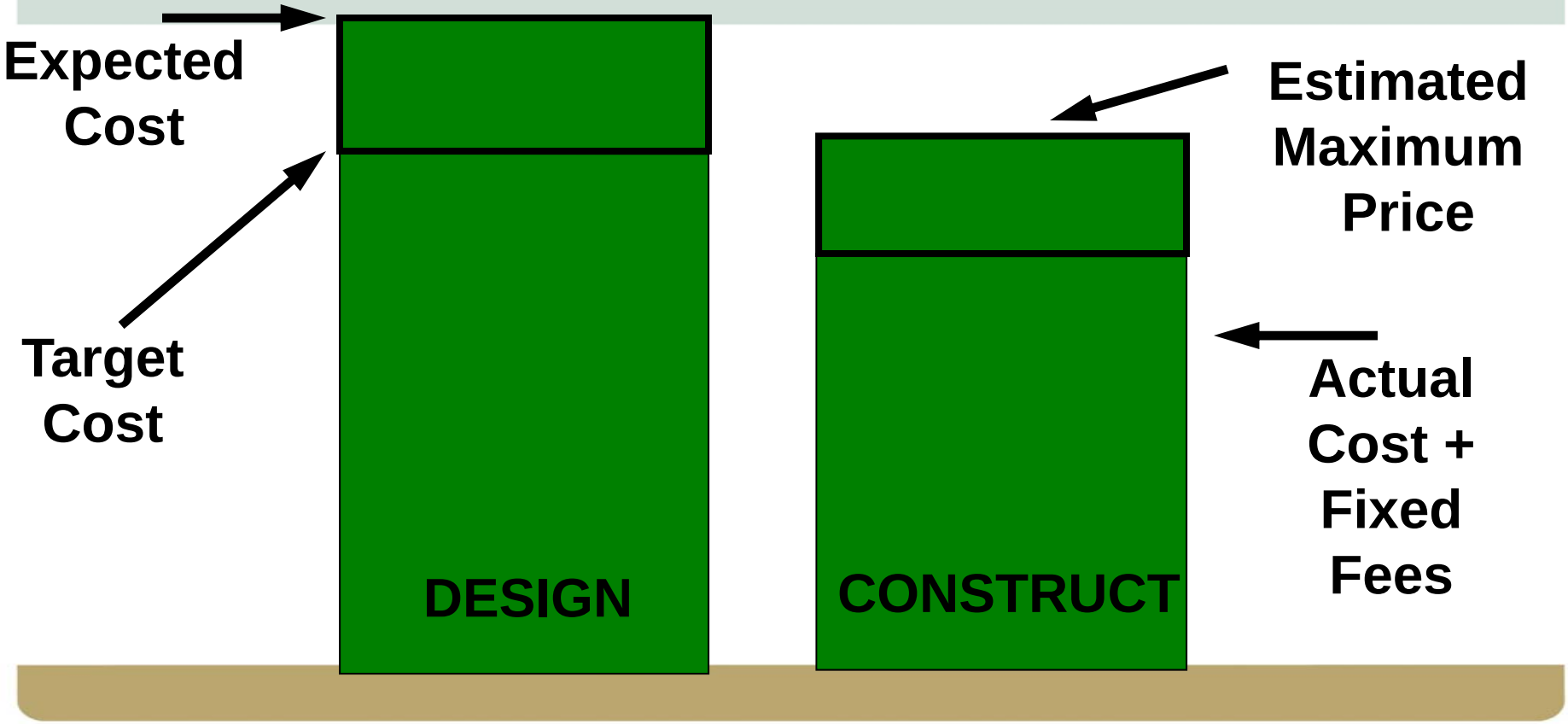
- Elements of Risk
- Approach to Risk
- Questions to Answer
  - What (Limits?)
  - When (Triggers?)
  - Who (Indv/Collective?)

Deal Structure - Rewards

- What
  - Efforts (Process)
  - Outcomes (Results)
- Who
  - Companies (Breadth)
  - Individuals (Depth)
- How
  - Money
  - Non-monetary
- When
  - Periodic
  - Completion
- Funding
  - Dedicated
  - Savings

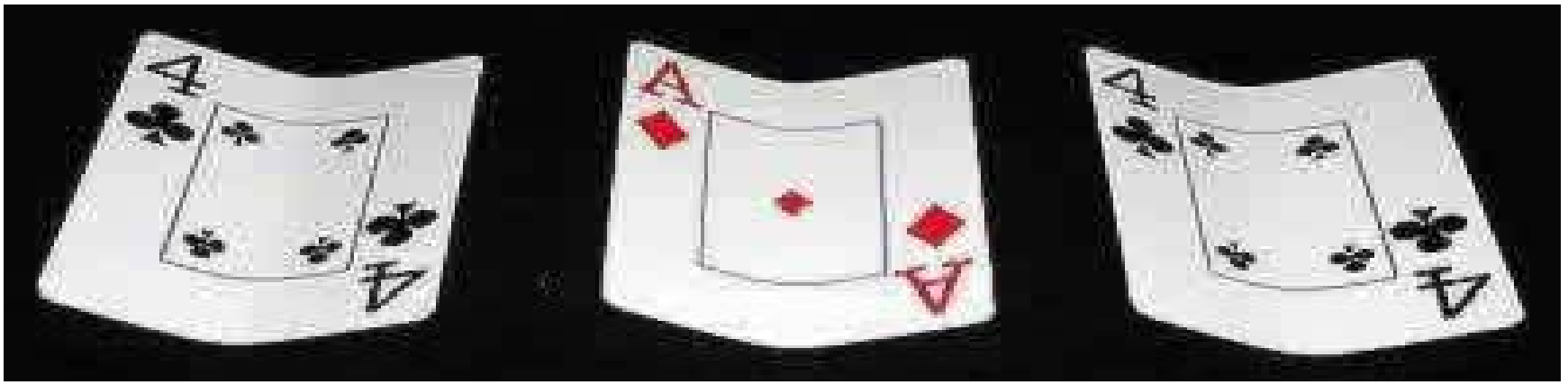

Architect
Glazing
Engineering
Drywall
Electrical
Mechanical
Civil
CM/CG
Steel
Conc.
Fee
Profit
Corporate Overhead
Contingency
Direct Cost

Basic Commercial Model

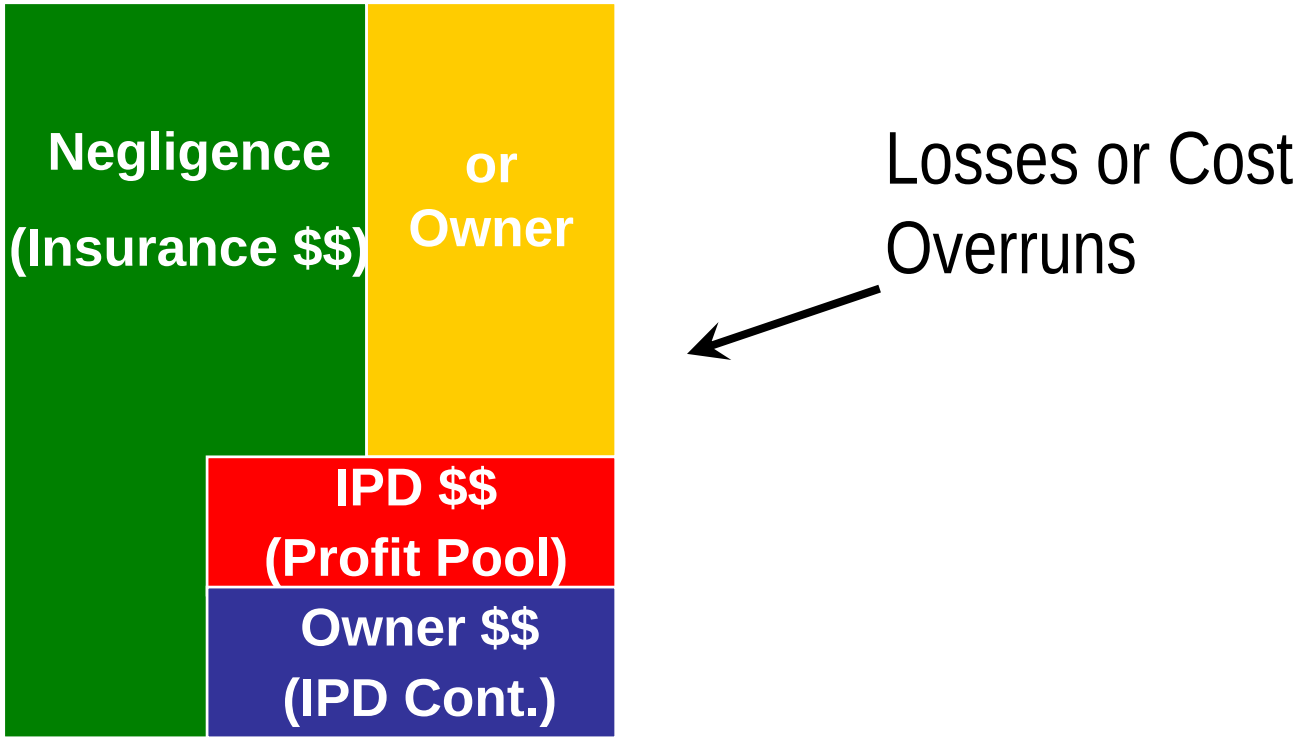


Traditional Risk Management

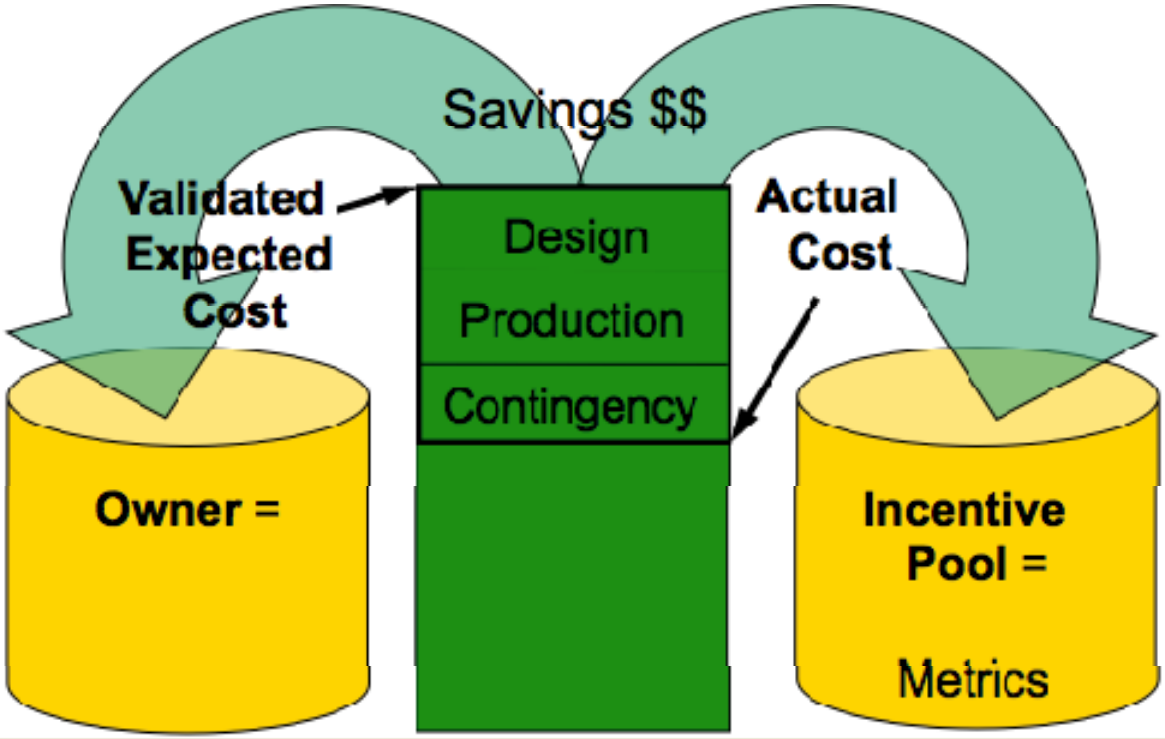
Open-Face Risk Management



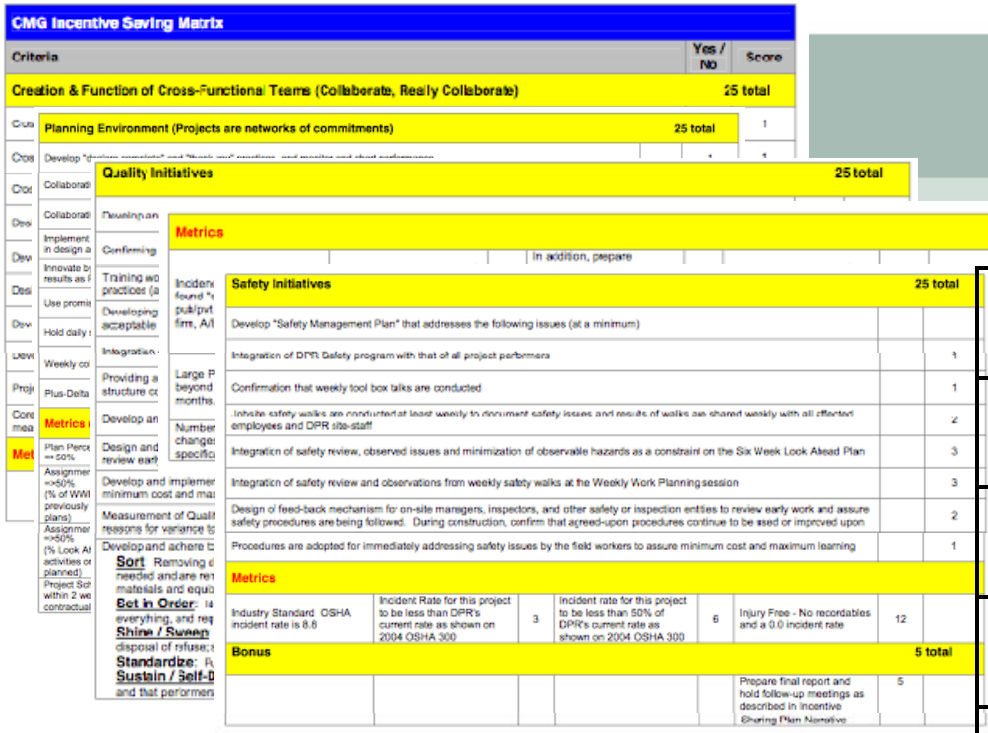
Sharing of Risk



Sharing of Savings



Camino Medical



	Risk	Reward
Who	GMPs/LS	6
What	Unlimited	E/R
How		$
When	Each GMP	Comp.
Funding		Savings

Fairfield MOB

	Risk	Reward
Who	A/E	None
What	All	None
How		N/A
When	GMPs	N/A
Funding		N/A

Castro Valley

EXHIBIT 10

PRINCIPLES FOR GAINSHARE/PAINSHARE STRUCTURE AND PROCEDURES

Contents

- Summary
- Details
- Dividing of the IFOA Profit
- Calculating the IFOA Profit
- Methodology for Early Release of Profits

Summary:

In essence the painshare / gainshare plan for this project is very simple. You subtract the cost of the project from the amount of funding available for the project and there is the profit. To the extent that is more money than the participants normally expect that is the gainshare or incentive. To the extent that it is less than they would expect that is the painshare or risk.

The maximum extent of the painshare is that the profit be zero. I.e. if the cost of the project is greater than the available funding, that difference will be paid by the Owner. Or put another way the risk of the non-Owner participants is capped at the full value of their expected profits.

There are some subtleties within these simple principles and those are covered below.

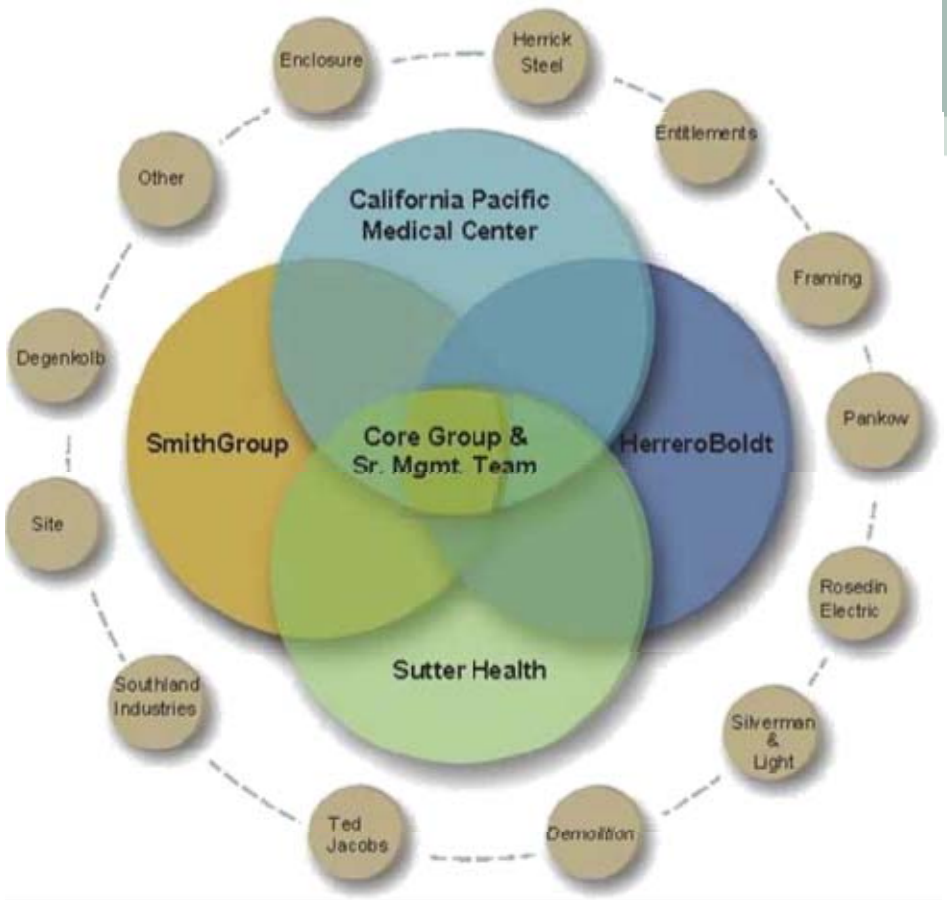
Details:

Some Definitions:

- Funding Provided by Sutter: TOTAL_FUND
- Budget for work not covered by the Estimated Maximum Price (EMP) as fixed when the original EMP is signed: FIXED_OWNER_BUDGET
- Owner's Contingency for Project as fixed at the time the original EMP is signed: FIXED_OWNER_CTGY
- Final Cost of Work for the work that forms the basis of the EMP: FINAL_IFOA_COST
- Final Balance of the IPDT Contingency: FINAL_IPDT_CTGY

	Risk	Reward
Who	11/Coll	11/Coll
What	Profit	R
How		$
When	EMP	50/50
Funding		Savings

CPMC-CHH



	Risk	Reward
Who	All/Coll.	All/Coll.
What	P/partial	E/R
How		$
When	EMP	Comp.
Funding		Sav./Fund

Challenges

- Lack of Uniform Personality
- Uneven effort among team
- Inconsistent Application
- Selfish Outliers
- Free Riders
- Balancing Qualitative & Quantitative
- “Grade Inflation”

Law of Unintended Consequence

- Incoherence with Purpose
- Override Intrinsic Motivation
- Lack of Fairness
- Altruism $\longrightarrow$ Pecuniary
- Artificial “governor” on effort & results

Resources

- Daniel Pink, Drive & http://www.ted.com/talks/dan_pink_on_motivation.html
- Jonah Lehrer, How We Decide
- John Medina, Brain Rules
- Frans Johansson, The Medici Effect
- Jerry Wind, The Power of Impossible Thinking
- Darrington & Lichtig, “Rethinking the G in GMP”, http://www.box.net/shared/2eog3bybu8
- Darrington & Howell, An Optimized Project Requires Optimized Incentives (IGLC 18)
- Darrington, Addressing Human Motivation in Construction Contracts http://www.agc-ca.org/uploadedFiles/Publications-Products/Constructor-Mag-PDFs/February2010.pdf

Resources

- Diana Hoag, Contract Incentives and the Pentagon Renovation Program http://www.docstoc.com/docs/63217297/Construction-Contract-Incentives
- Diana Hoag, Contract Incentives and Design-Build Rethinking Acquisition (BIA Dateline Feb. 2005)

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This concludes The American Institute of Architects
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