



# **Making Good Projects Great**

**“More Business Value for Our Money”**

**Jim Porter  
DuPont VP Engineering and Operations (Retired)  
Workface Planning Conference  
Calgary, Alberta  
December 1, 2010**

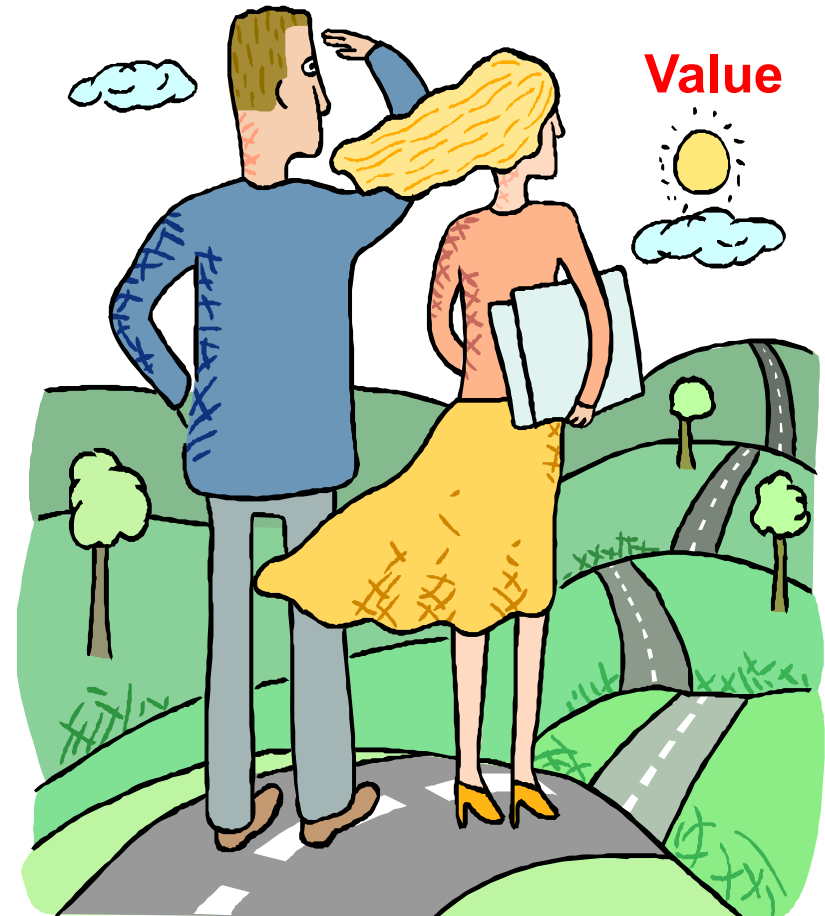
# Safety Contact – Cell Phones & Driving





# My Beliefs...

1. Construction Industry is critical to future **business success**.
2. Construction Industry must help owners understand how to capture **business value**.
3. Owners must operate in ways that ensure Construction Industry **effectiveness and sustainability**.



# Business Value

$$\text{ROIC} = \frac{\text{Net Income} - \text{Dividends}}{\text{Total Capital}}$$

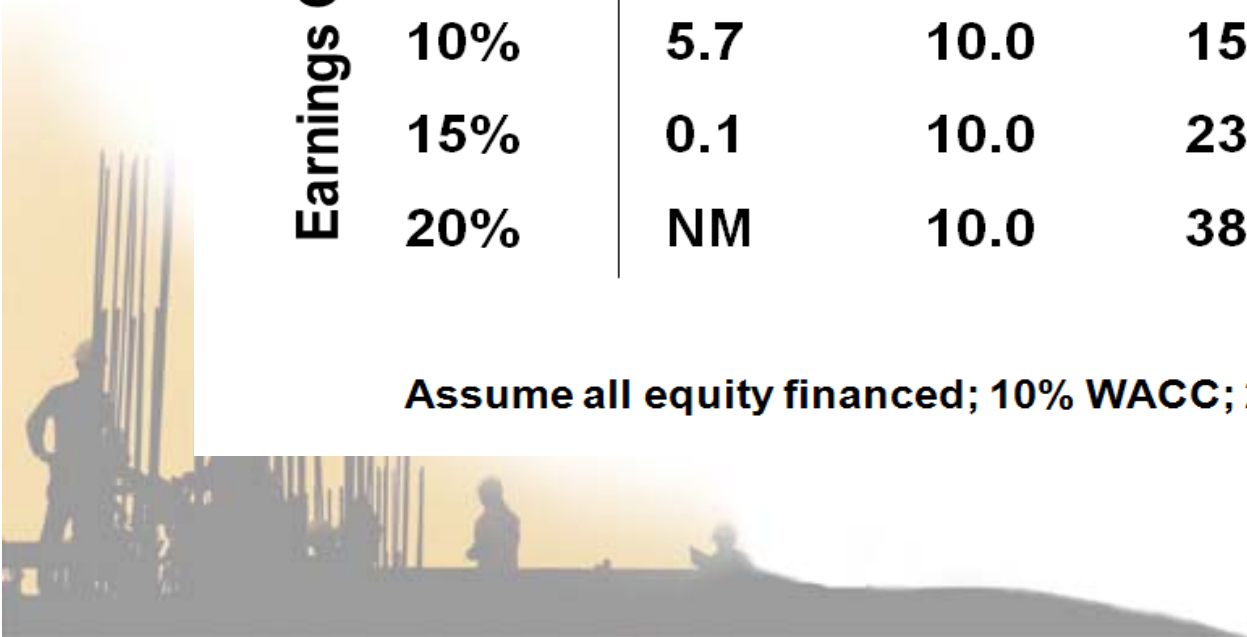


## ROIC and P/E Multiples

### Return on Invested Capital

		8%	10%	15%	20%
		<hr/>			
Earnings Growth	5%	8.5x	10.0x	12.0x	12.9x
	10%	5.7	10.0	15.8	18.6
	15%	0.1	10.0	23.4	29.9
	20%	NM	10.0	38.2	52.2

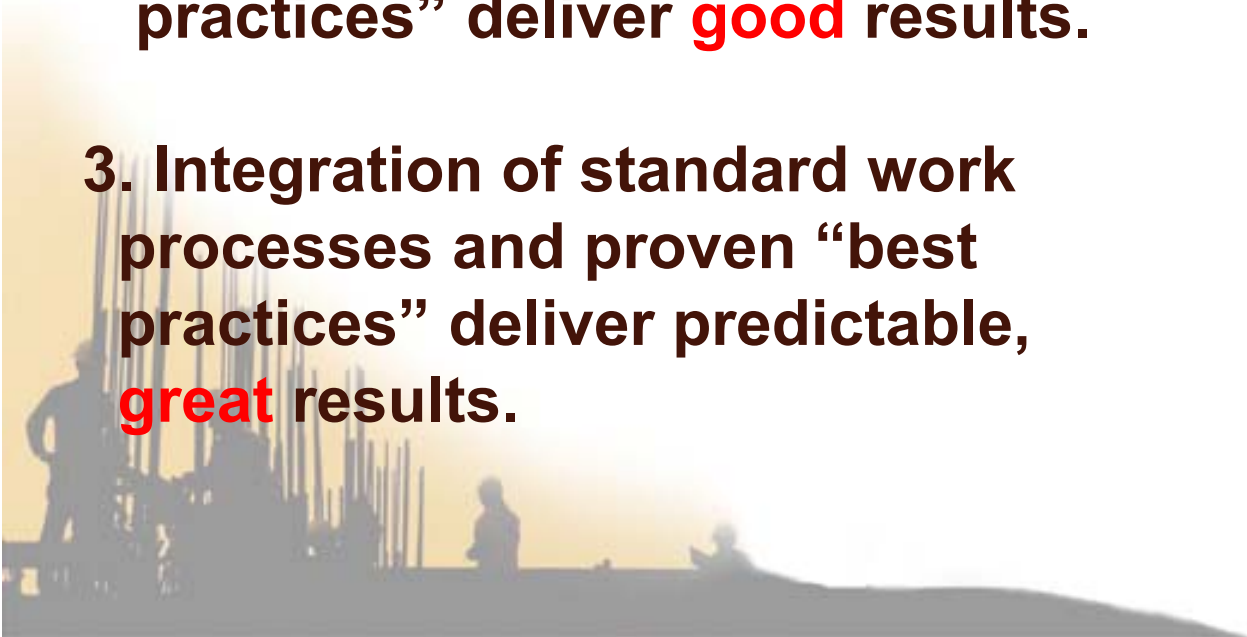
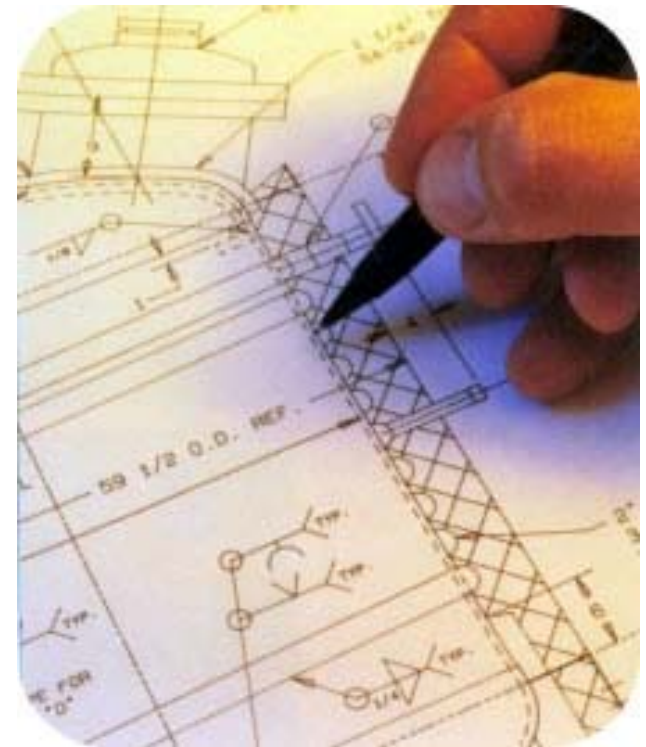
Assume all equity financed; 10% WACC; 20-year forecast period.





# My Experiences...

1. Standard work processes executed in a disciplined manner deliver **predictable** results.
2. Consistent use of proven “best practices” deliver **good** results.
3. Integration of standard work processes and proven “best practices” deliver predictable, **great** results.



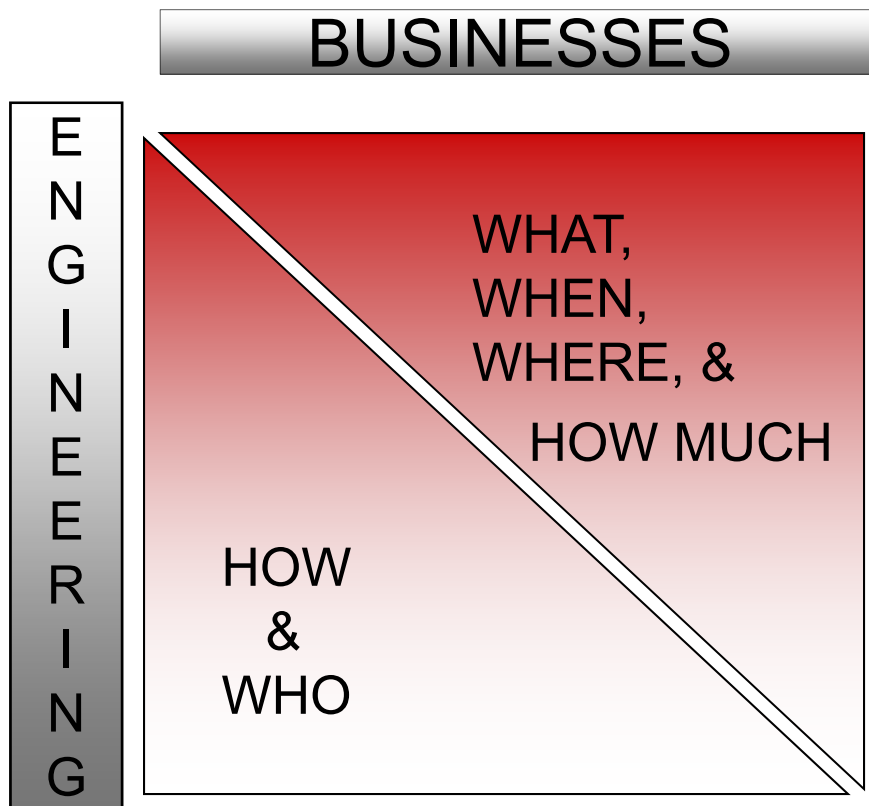


# **WorkFace Planning**

**An integrated work process  
and  
a best practice.**



# “One Enterprise” Project Work Processes

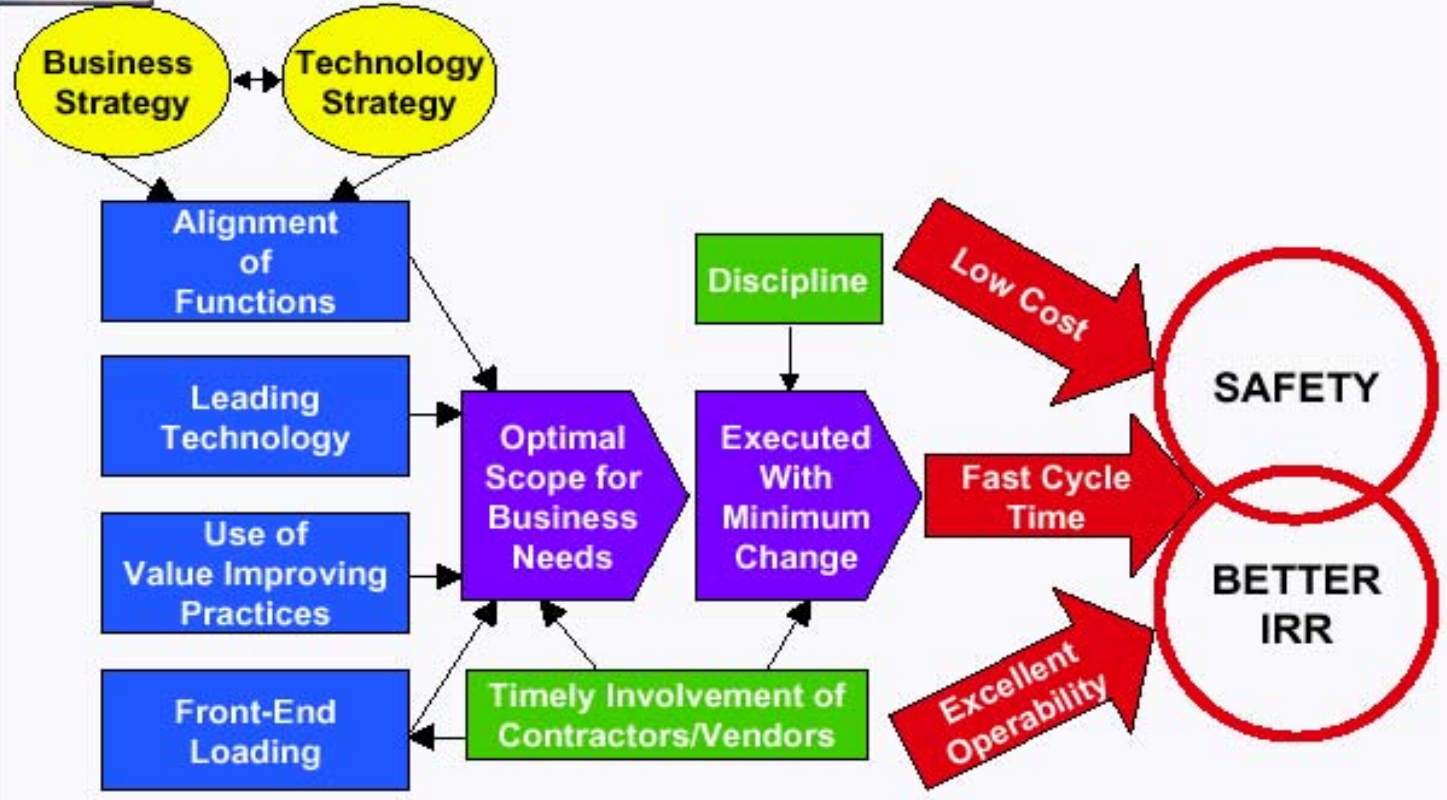


- Businesses Lead Cross Functional Project Teams to Do FEL and Determine “What, When, Where and How Much.”
- Engineering Develops the Most Competitive “How and Who” and Leads FEL and Project Execution.
- Requires Mutual Accommodation and Collaboration to a Higher Degree than Ever Before.





## Elements of Capital Effectiveness



*Key Leading Indicators*

*Key Performance Indicators*



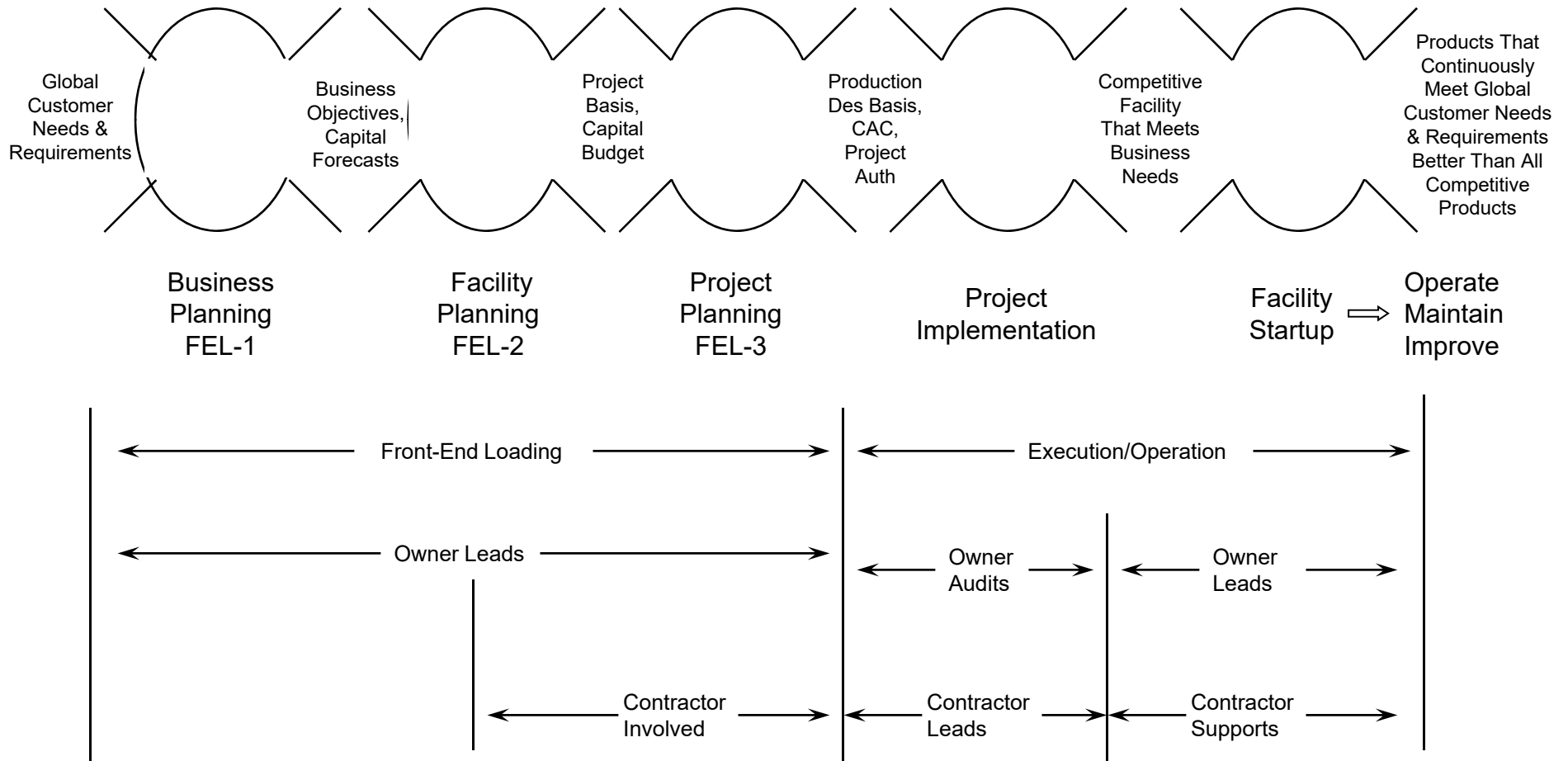
# WorkFace Planning

**Goal of WorkFace Planning is to improve performance by getting the right things to the right place at the right time:**

- The Project must be planned forward from Engineering to Start-up since process systems drive commissioning and start-up, commissioning and start-up drive construction and construction drives engineering and procurement.
- The planning process must work backward from Startup to Engineering to schedule the release of engineering to the field since the Path of Construction will drive the prioritized release of Construction Work Packages (CWP).
- The prioritized release of CWP will determine the order in which the Field Installation Work Packages (FIWP) must be prepared and released to drive the sequence in which engineering and procurement is delivered to the field.



# Facilities Engineering Process



# FACILITIES ENGINEERING PROCESS



- Process/Product Development
- Market Forecasts
- Sales/Capacity Reconciliation
- **Competitive Studies**
- Legal/Environment/S&OH
- Process/Technology Evaluation and Selection
- **Procurement Screening**
- **Strategic Review**
- **Informal VGAs**
- Preliminary Process Hazard Assessments

- **Form Project Team**
- Prepare Project Objectives
- **Identify Site Options**
- Hold Business Review
- Technology Screening & Conceptual Engineering
- **Evaluate Business Feasibility**
- SHE Strategy & Screening Reviews
  - Consequence Analysis
- Run Pilot Plant
- Prepare Basic Data
- Prepare Screening VGA

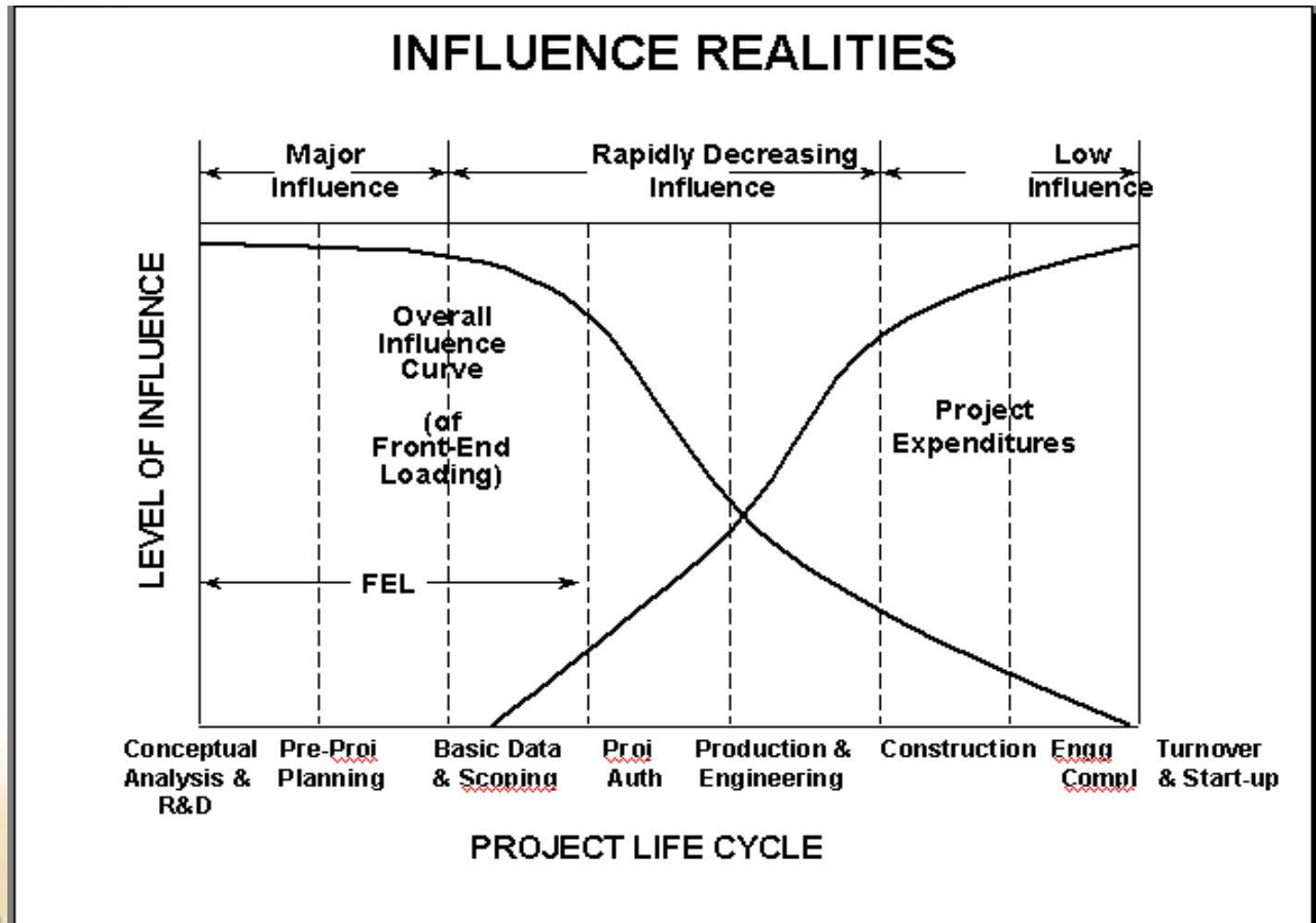
- Project Survey(s)
- Design P&I Diagrams & Major Equipment
- **Procurement Plan**
- **Execution Plan**
- **Preliminary Equipment Arrangements**
- Scope of Work
- **Schedule Analysis**
- SHE Pre-Auth Reviews
  - PHR, Ergonomics & Fire Protection
- **Estimate Preparation**
- Appropriation Request



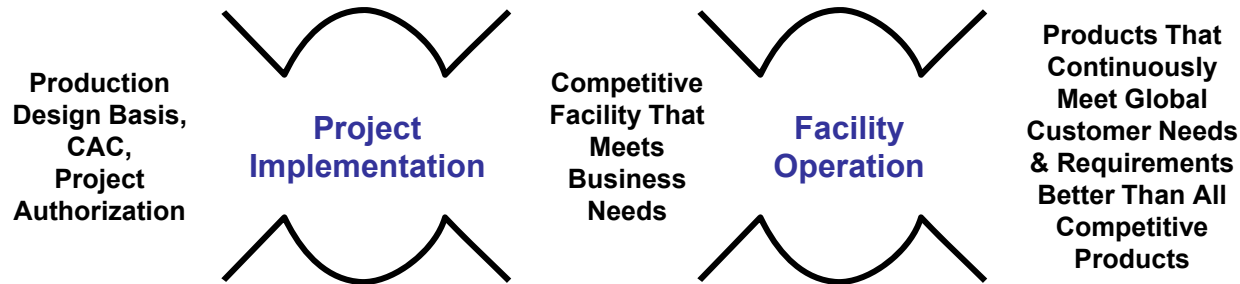
***Plans are of little importance,  
but planning is essential.  
-- Winston Churchill --***



# FEL: Window of Opportunity



# FACILITIES ENGINEERING PROCESS



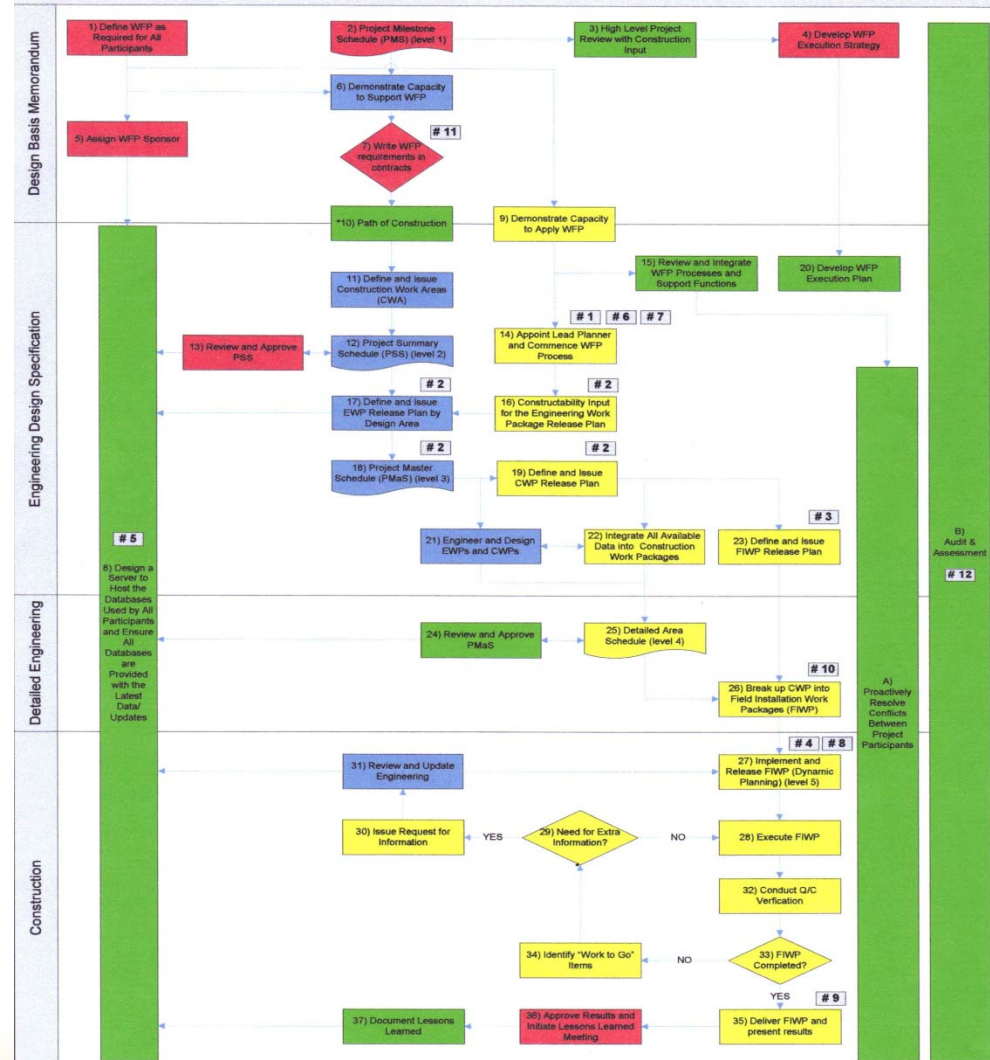
- Quality Review
- Process Development Letter
- **Production Design**
- **Equipment Procurement**
- **Bid Package Specifications**
- **Contract Quotations**
- **Award Contracts**
- **Build Facility**
- Checkout/Turnover
- Detailed PHA/QA
- Operating Procedures & Safe Work Practices
- **Contractor Safety & Performance**

- **Pre Start Up Safety Review**
- **Energize**
- **Start Up**
- **Audit**
- **Operate**
- Training & Performance
- **Maintain**
- **Mechanical Integrity**
- Improve
- Regenerate
- Incident Investigation
- **Management of Change**
- Emergency Planning & Response

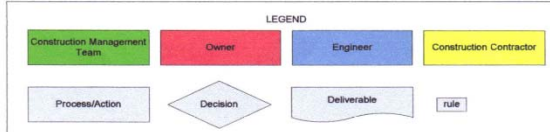


**Workforce Planning Flowchart:**  
An Example of the Processes that are Involved in Workforce Planning

Contract is Cost Reimbursable

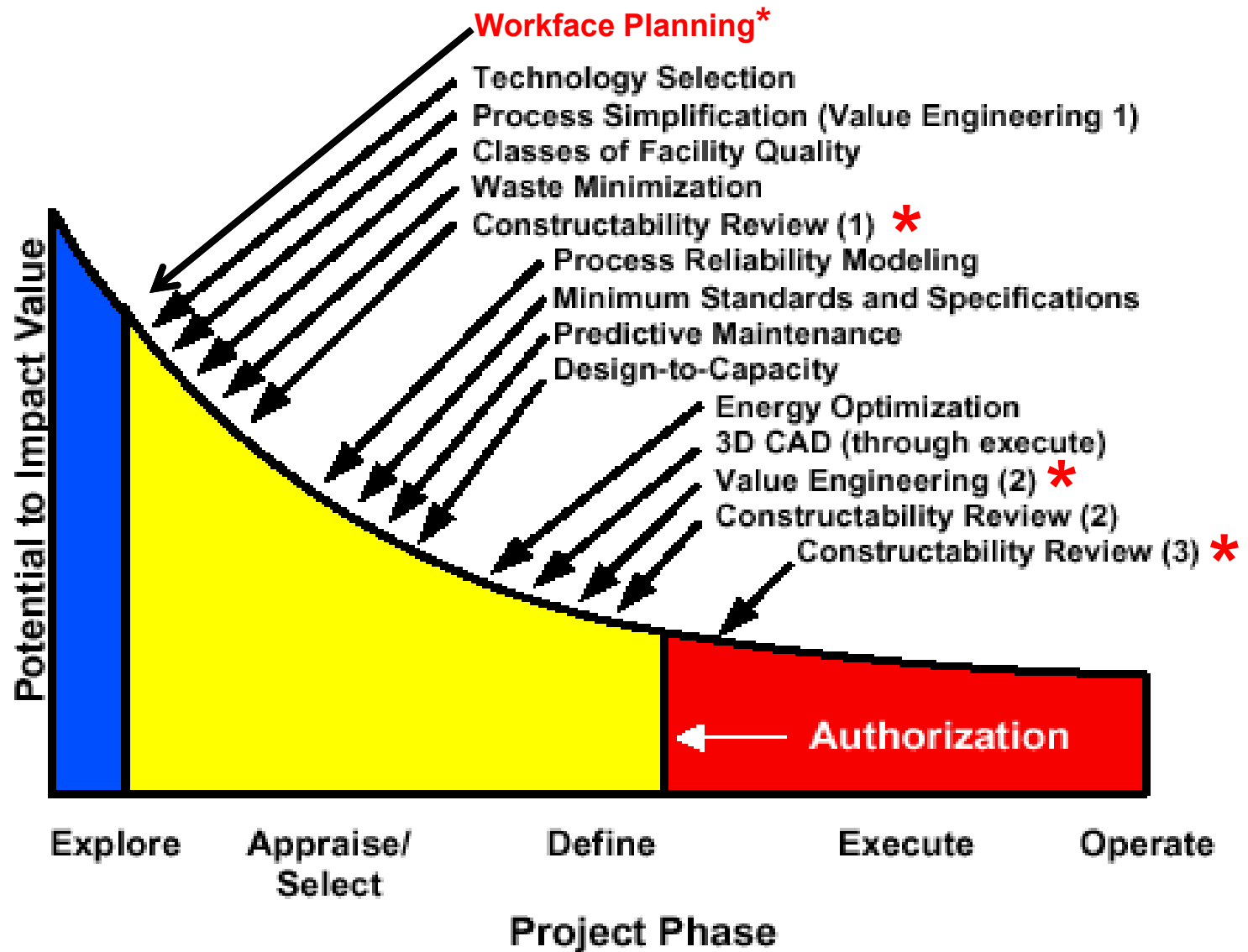


\*\*10) Path of Construction Ideally this involves the Construction Contractor, Construction Management Team, Engineering and the Owner. This means the Construction Contractor is engaged in late DBM/Early EDS. In the absence of the Construction Contractor the Construction Management Team will fulfill this role.



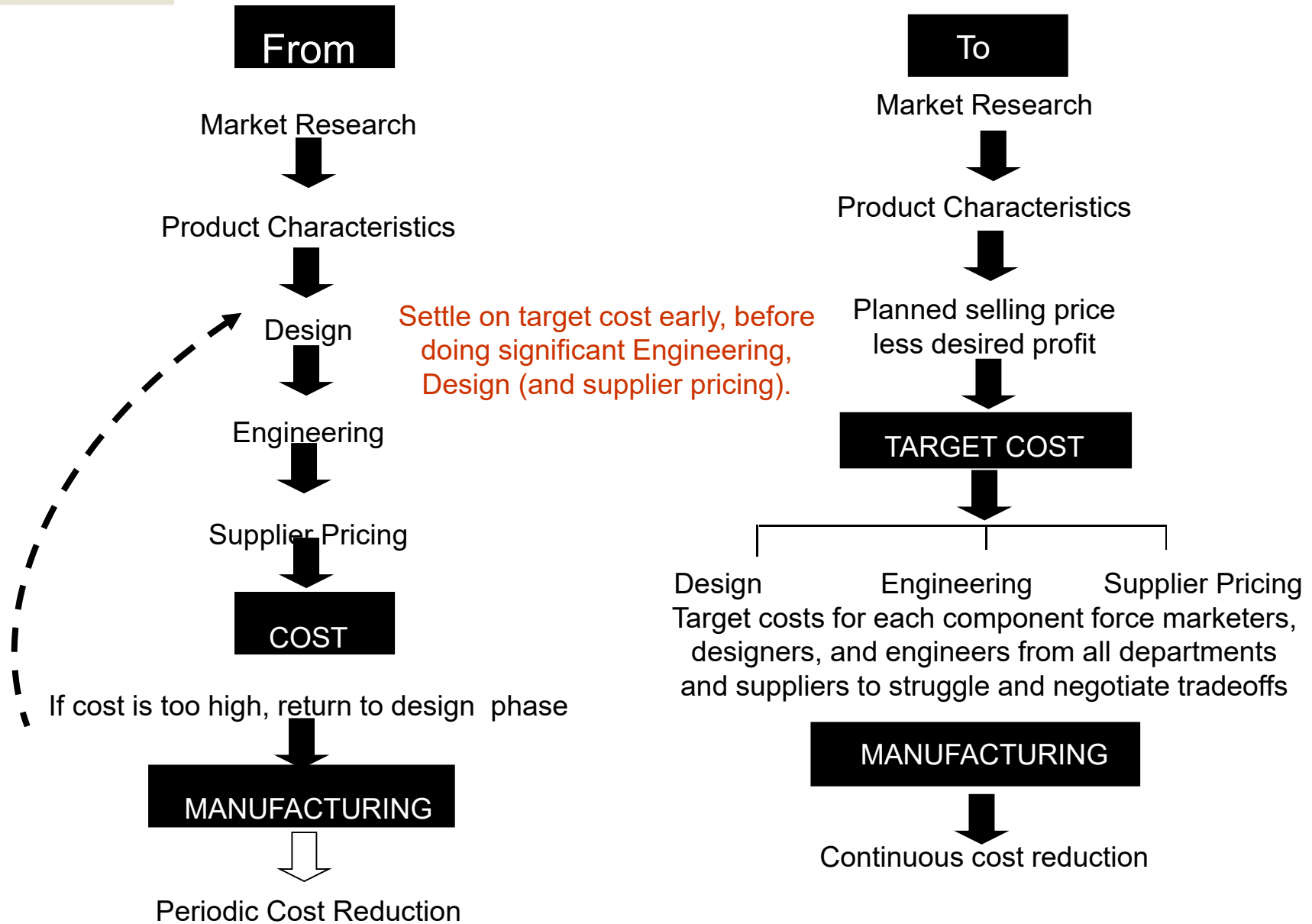


# The “Right” Plant Practices

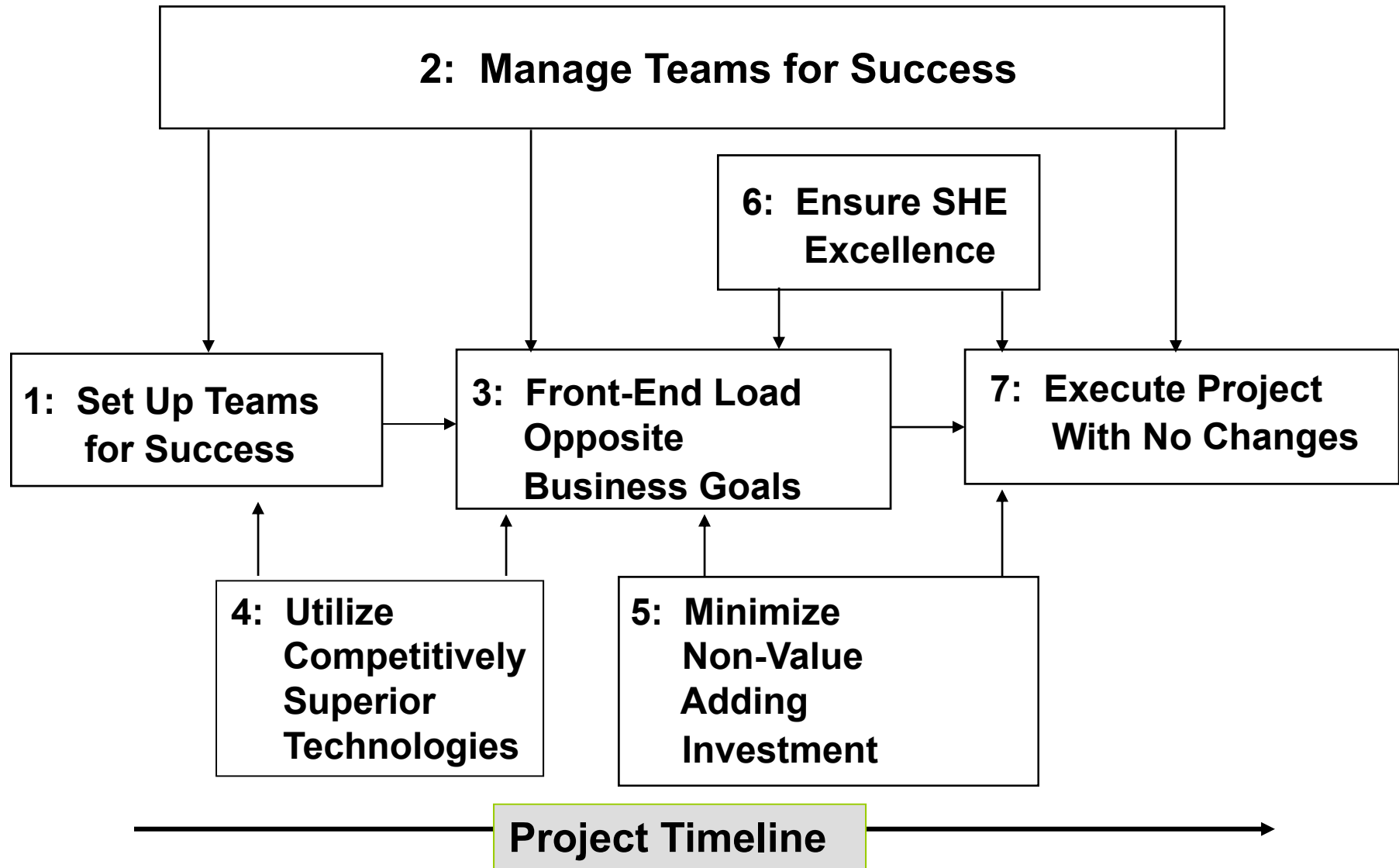




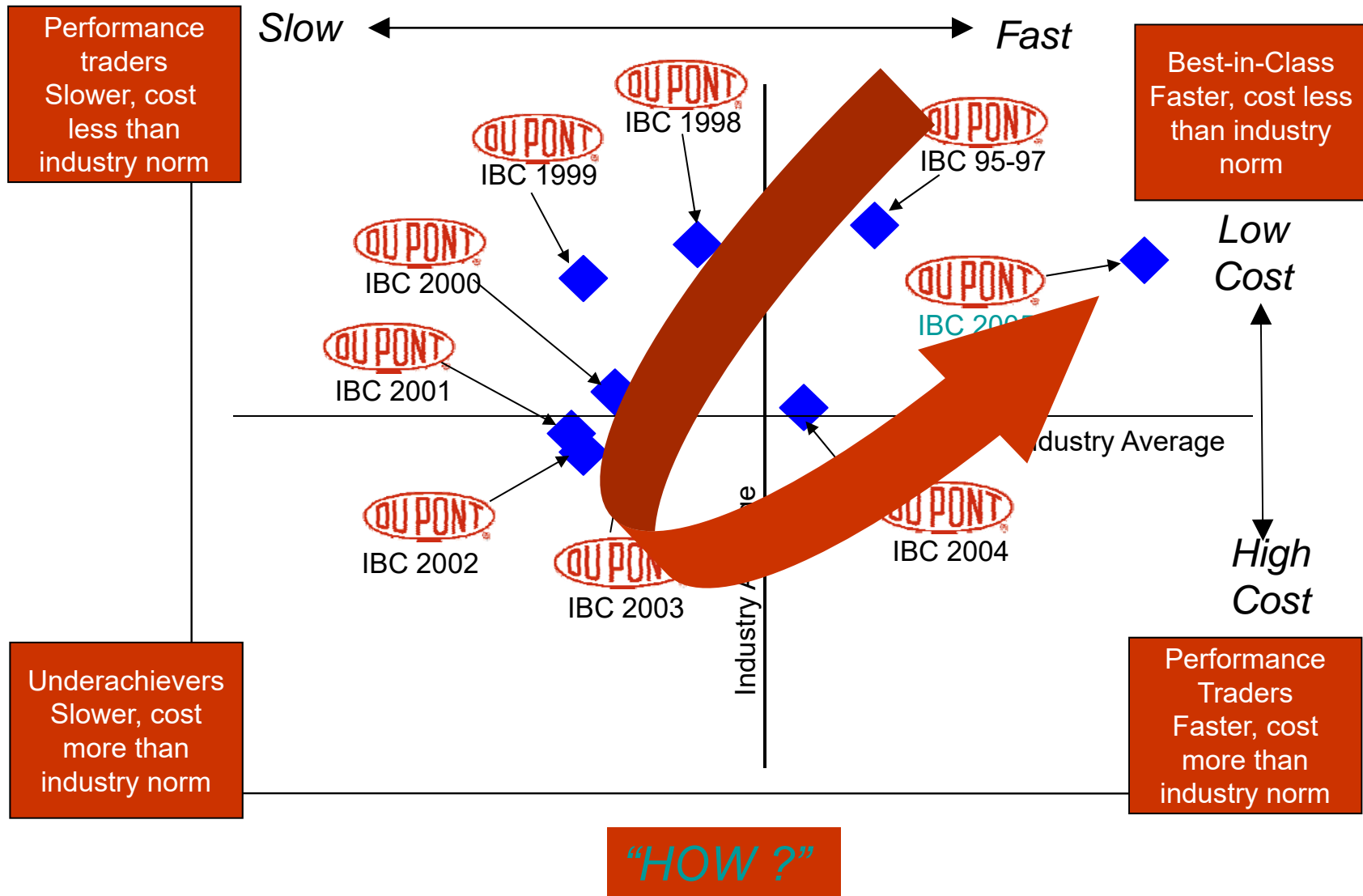
# USING CAPITAL MORE BUSINESS EFFECTIVELY



# Capital Productivity Best Practices



# DuPont Benchmarking Results





**Labor Supply/Demand Forecasting Model**

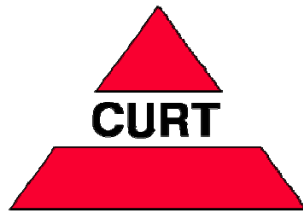


# Supply/Demand Forecasting Model

Web-Based Labor Market Information Management

**Construction Workforce Development Center**

In association with:



**[www.cwdcforecasting.com](http://www.cwdcforecasting.com)**



## Labor Supply/Demand Forecasting Model



### Benefit to Owners

- Reliable tracking system to assist with project planning
- Regional supply/demand summary info
- Easy access to input data on regular basis
- Secure interface & data confidentiality
- Common methodology

### Benefit to Contractors

- Timely data for recruiting & training strategies
- Reliable tracking system to understand supply/demand

**[www.cwdcforecasting.com](http://www.cwdcforecasting.com)**

**Strong Operating  
Discipline Required  
to Deliver a  
Great Project...**



**Strong Operating Discipline**



**Safety**

**Cost**

**Quality**

**Schedule**



# Operational Discipline



*“Goal of WorkFace Planning is to improve performance by getting the right things to the right place at the right time”*





# “More Business Value for Our Money”

## Different Levels of Value From WFP

- Owners
- Contractors
- Industry

### Owners - Improved safety performance

- Improved planning
  - \*Execution strategy
  - \*Contracting Strategy
  - \*Optimize cost & schedule
- More accurate estimates(cost/schedule)
- Improved control
- Increased productivity

# “More Business Value for Our Money”

**Contractors** - Improved safety performance

- Improved planning
- Improved productivity
- Increased profitability

**Industry** - Improved safety performance

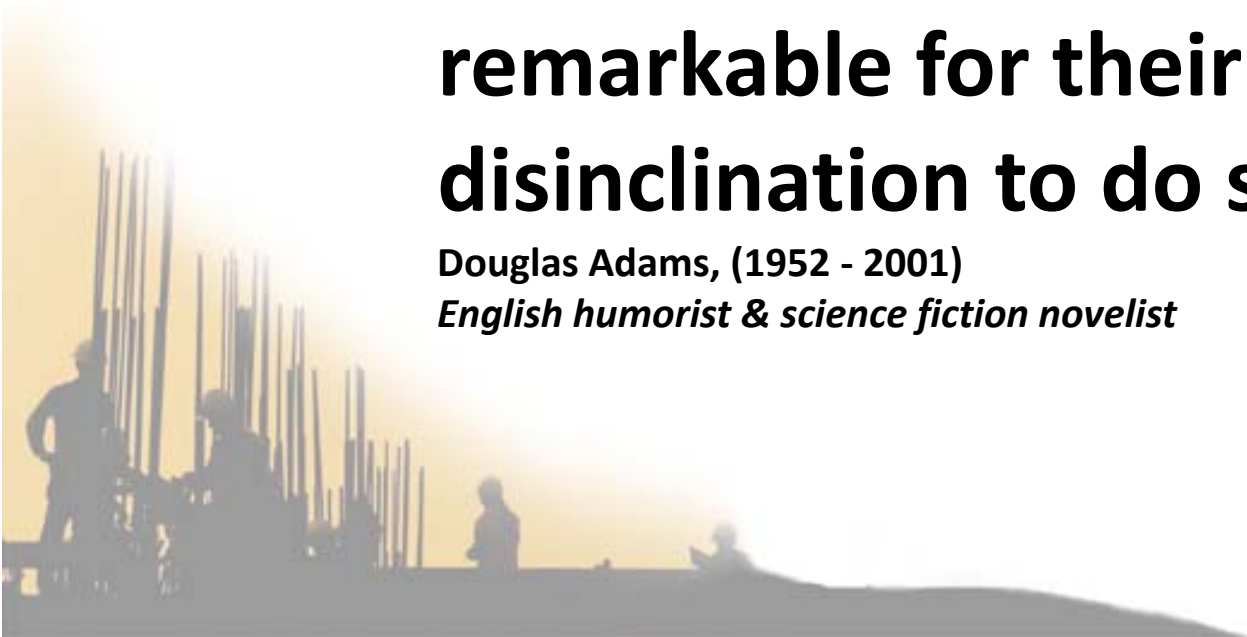
- Improved work force development
- Increased work force availability
- Increased overall productivity
- Increased attractiveness of construction jobs



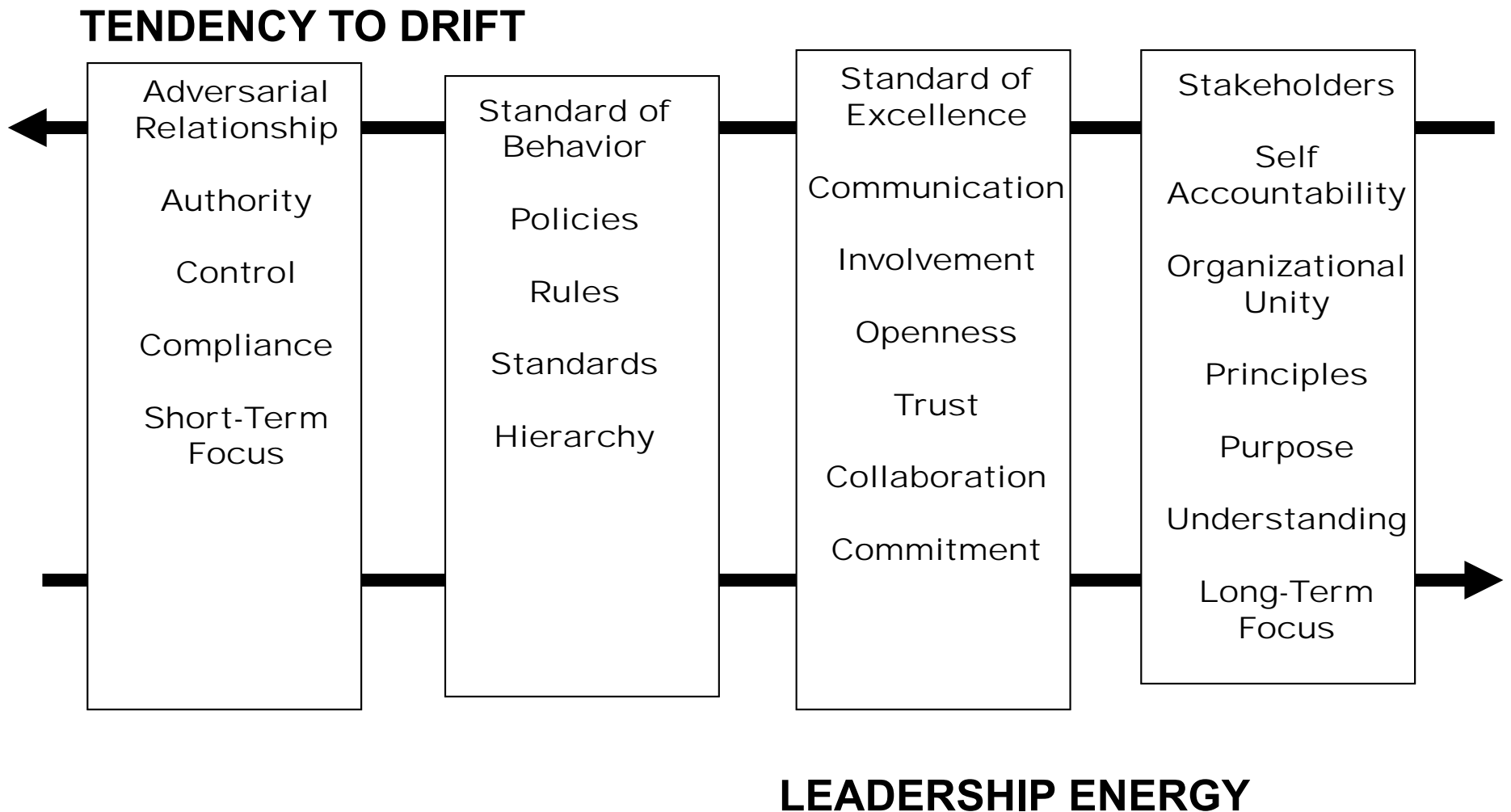
**“Human beings, who are almost unique in having the ability to learn from the experience of others, are also remarkable for their apparent disinclination to do so.”**

Douglas Adams, (1952 - 2001)

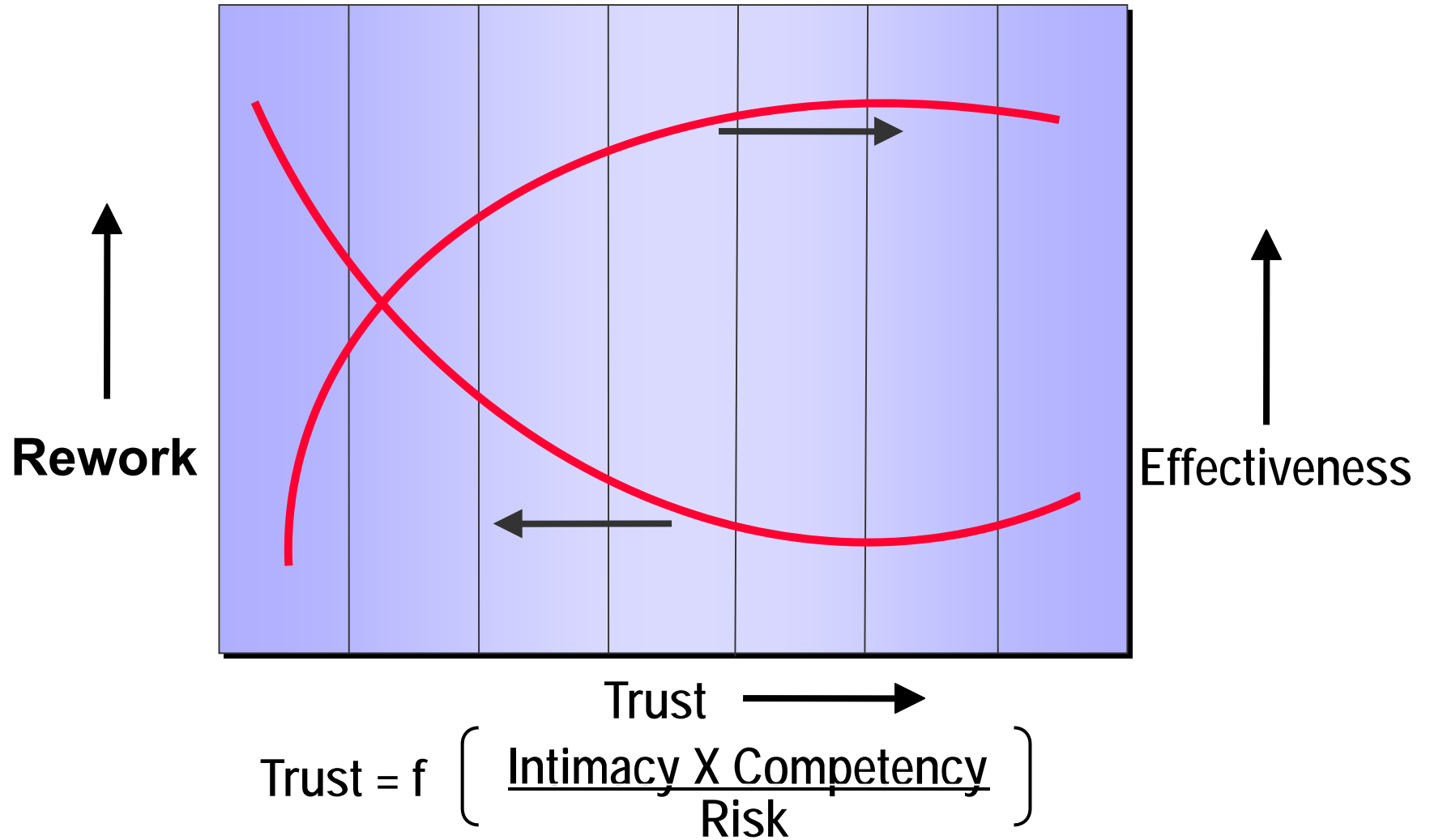
*English humorist & science fiction novelist*



# Cultural Evolution



# Effectiveness / Trust Relationships

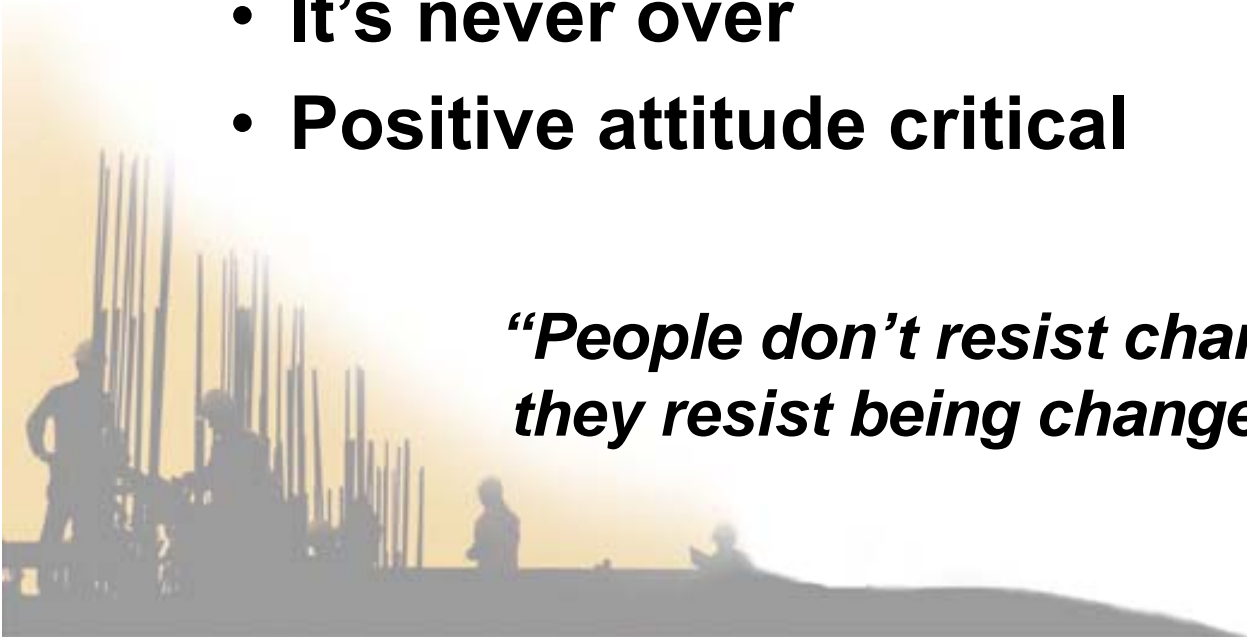




# My Reflections

- **Must see project management holistically**
- **Best practices define the pathways**
- **Leadership is learn/teach/learn**
- **It's never over**
- **Positive attitude critical**

***“People don’t resist change,  
they resist being changed!”***





# AUDIENCE FEEDBACK

**NOTE:** The information collected is anonymous and may be used for research purposes. By participating, you are giving your consent for the use of this data.





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