



Best Value Contracting

A new Paradigm for State
Construction



John W. Morrison AIA
Department of Central Services
Construction and Properties Division

NPSC

- New
- Paradigm
- for State
- Construction

A large, bold, red number '2' is centered on the right side of the slide.

Happy Birthday!

Two years ago...

...two epiphanies came together at the same time and place...

1

State Construction Administrator realizes his position is really “Chief Procurement Official” and not “State Architect” as previously thought. Technical knowledge of construction not required.



2

State Construction Administrator sees a vision, emerging from the fog, of a cure for the antiquated “low bid” public contracting model.



Two years ago this month...

That's Me



April 3-4, 2008
OKAPP Conference
Cox Convention Center
Oklahoma City, OK



Best Value Procurement
Dr. Dean Kashiwagi
PBSRG
Arizona State University
• Breakout Sessions
• Keynote Presentation



Two years ago...a series of events is set in motion...



Dr. Dean sees from beginning to end



DCS attends PIPS training in Tempe, AZ

- DCS becomes research partner with PBSRG
- Education/Training for architects, construction managers, contractors and vendors
- Central Purchasing and Construction and Properties embark on strategic plans

Agenda

- **Why a Paradigm Change?**
 - A Brief History Lesson on Construction
- **PIPS Basics**
- **Progress to Date**
- **Changing the Paradigm:**

A Vision for Building Greatly

Presentation may be downloaded from Construction & Properties Home Page at www.ok.gov/dcs.



Why a Paradigm Change?

A history lesson...

Department of Central Services
Construction and Properties Division

Rewind to 2005...Five years ago

The state of the State Construction Program

- Lawsuits
- Limited staff dealing with conflict on all fronts
- Projects rarely on time, rarely in the budget
- Many contractors declined to bid on State projects
- Low customer satisfaction

Why? Realities were obvious.

- Low bid procurement model is broken
- Construction industry has evolved, but procurement has not
- Purchasing agents driven to the low price
- Accept low bid and devote resources for management, direction and control after award

2005...

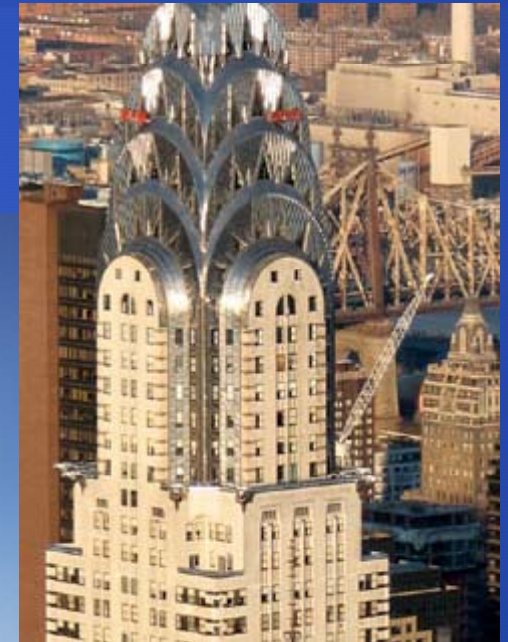
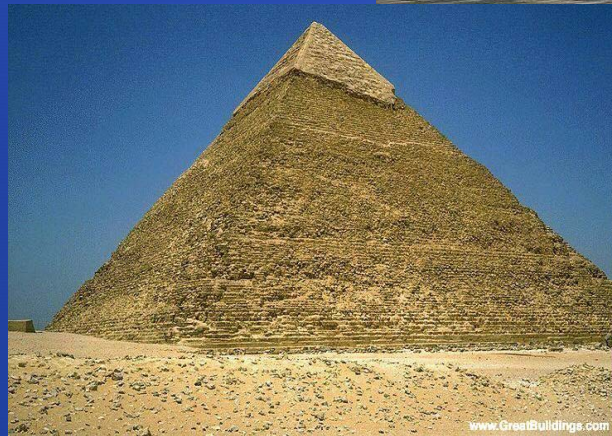
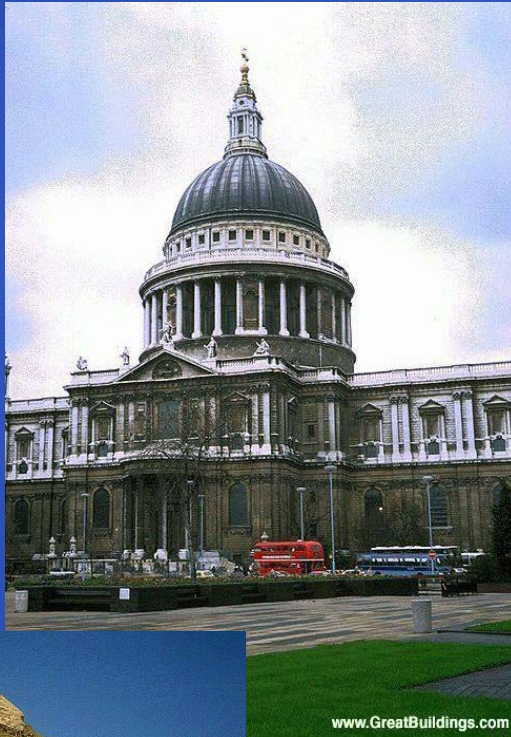
The State, like most public procurement operations, had resorted to managing contractor performance by making the contract more stringent.

How did we get here?

Rewind 100 years...

- Oklahoma State Capitol Building
 - 1917: Nine (9) sheets of drawings to describe construction of the dome
 - 2001: One Hundred Fifty Two (152) drawings were necessary for modern contractors to complete the work.
- Historically, the Architect established “Design Intent”
- The Contractor was responsible for constructability, means, methods and site engineering

How were these buildings built?



A 'Modern' Construction System Evolved

Design-Bid-Build Construction

- Architects still retained their responsibilities and accountabilities - for a while
- Contractors remained Master Builders as well
- But slowly both became confused in their roles to various degrees
- How many sheets of drawings does it take to build a building?
- Architects moved away from 'Intent' while Contractors moved to 'don't do anything without clear instructions from the Architect.'

The 'Modern' Construction System

Design-Bid-Build Construction

- Avoids accountability
- Confuses liability
- Adds complexity
- Requires more resources
- Requires more intervention by the Owner
- Promotes litigation
- Has low Customer Satisfaction!

Descendants of the Master Builder

- Architects and Contractors evolved into separate roles
- Architects convinced Owners that 'Construction' was a commodity...
- The Contractor fought back by building everything to the minimum standards set by the Architect...
- Architects, due to legal concerns, have expanded their drawing production exponentially, exceeding technical limits and making quality control and drawing coordination problematic at best

Albert Einstein

The definition of insanity is making the same mistake over and over and expecting different results...

- **The system is so well entrenched, few even realize how crazy this is!**

Having lost sight of our objectives, we redoubled our efforts.

- Pogo

Back to 2005: What can we do?

- Slicker Contracts? More Lawyers?
- Change the delivery model?
 - Construction Management: choose your contractor
 - Design-Build: single-source responsibility
 - Competitive Proposals: various models of “Best Value”

Why are these problems not so obvious in the Private Sector?

What's different about Government?

Government

- We're the experts
- Can control performance with burdensome contract clauses
- Price driven: award, then manage, direct & control the contractor

Private Owner

- Hires experts
- Understands: will be successful if the hired expert is successful
- Own best interest to set the contractor up to succeed

2005: “We Must Change”

- First, admit that we don’t know what to do (no one seems to know)
- Second, establish a framework for change
 - Rally the stakeholders for a common objective
 - Work towards inclusiveness – end “Us vs. Them”
 - Change the Culture: from Regulators to Service Providers
 - Be Collegial - Stop the locker room talk
 - Make a vow: Fix the procurement model, if it takes the rest of our combined careers

Fast forward to 2008...

- OKAPP Conference

The debate is over.

We have a Poster Child for the
benefits of joining OKAPP.

Change is a Scary Thing!

We are confronted with insurmountable opportunities.

- Pogo

We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard...

- JFK



PIPS

Performance Information
Procurement System

Department of Central Services
Construction and Properties Division

PIPS!

- Performance Information Procurement System

Using Performance Information to
to determine the Best Value

PIPS Overview

- Credits
- Information Measurement Theory
- Industry Structure
- PIPS Selection Process

PBSRG

(Performance Based Studies Research Group)

- Conducting research since 1994
- 175 Publications
- 483 Presentations, 8,600 Attendees
- 683 Procurements
- \$808 Million Construction services
- \$1.7 Billion Non-construction services
- \$1.3B Euro (\$2B) construction test ongoing in the Netherlands
- Africa/Southeast Asia/Australia (7 universities)
- ASU procurement - \$100M over ten years
- GSA implementation in 2009
- 50 Different clients (public & private)
- 98% Customer satisfaction, 90% of PM/RM transactions minimized

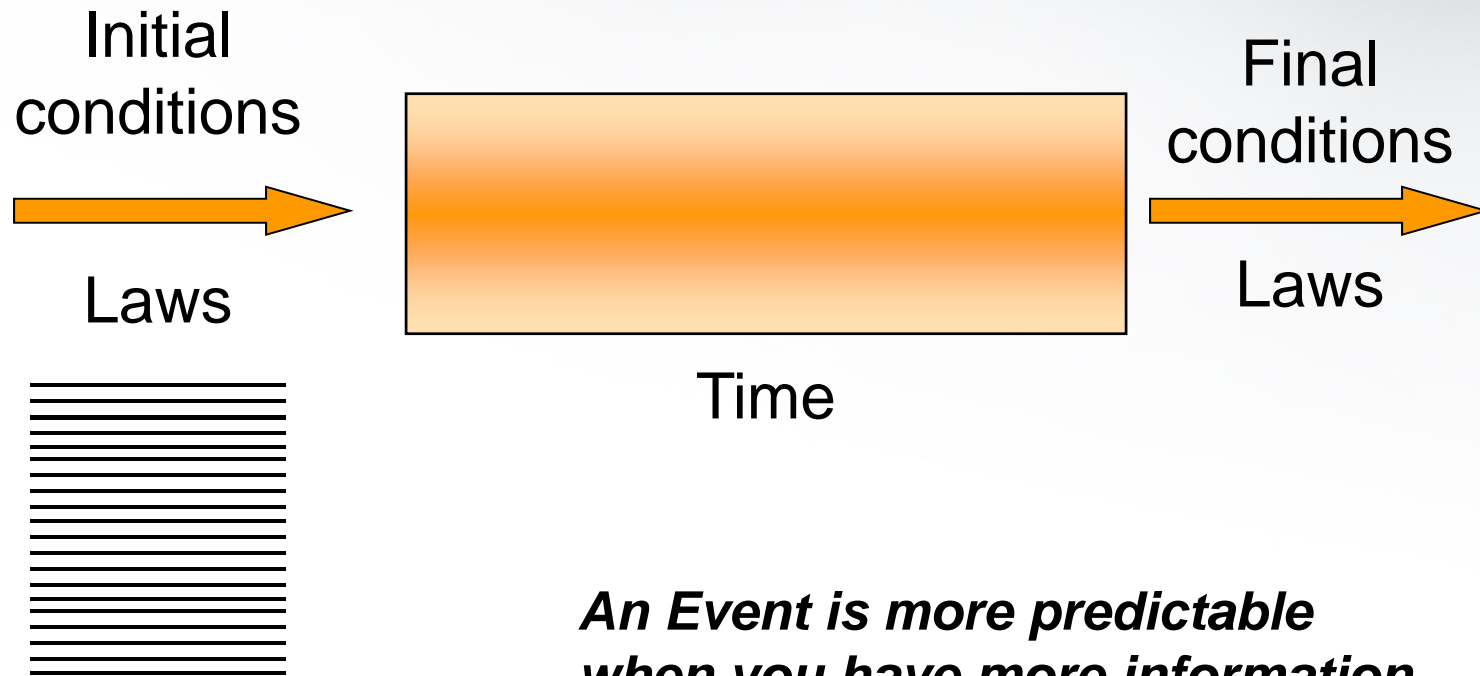


www.pbsrg.com



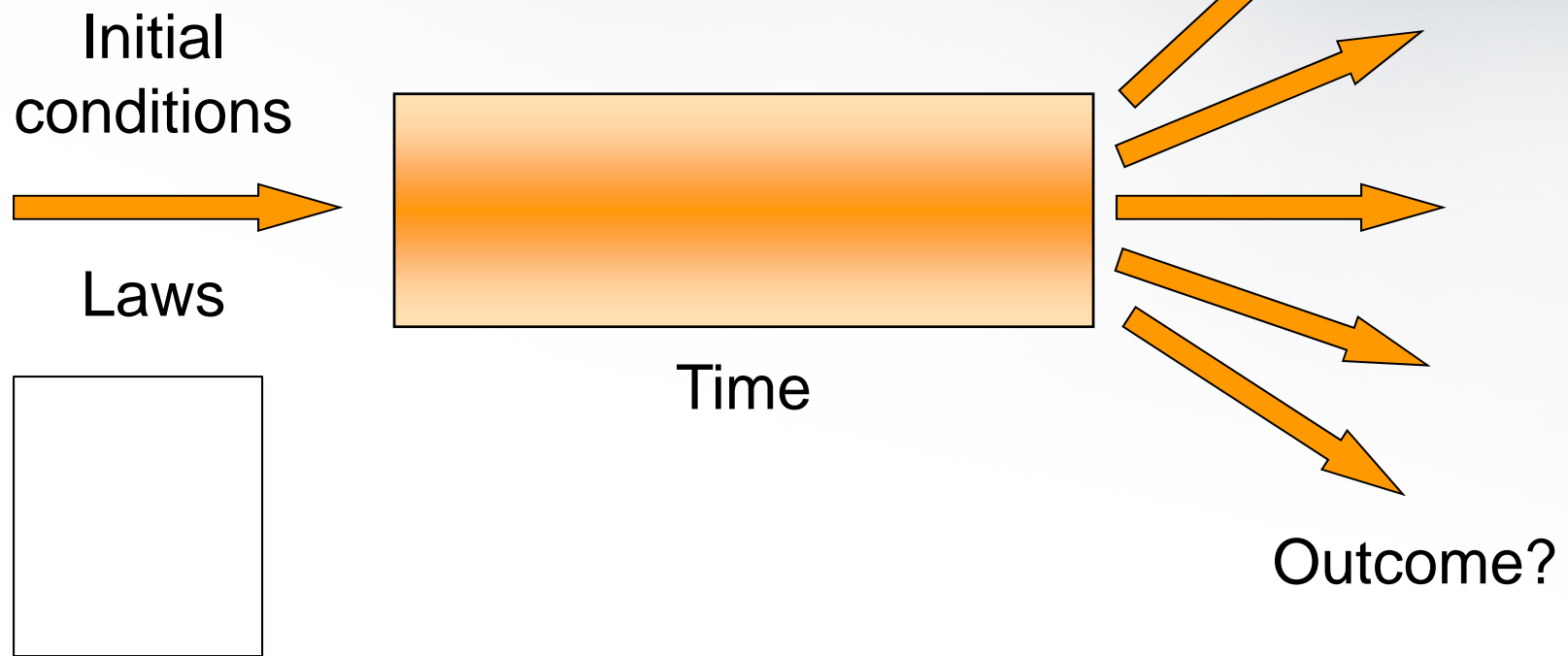
Information Measurement Theory

An Event...

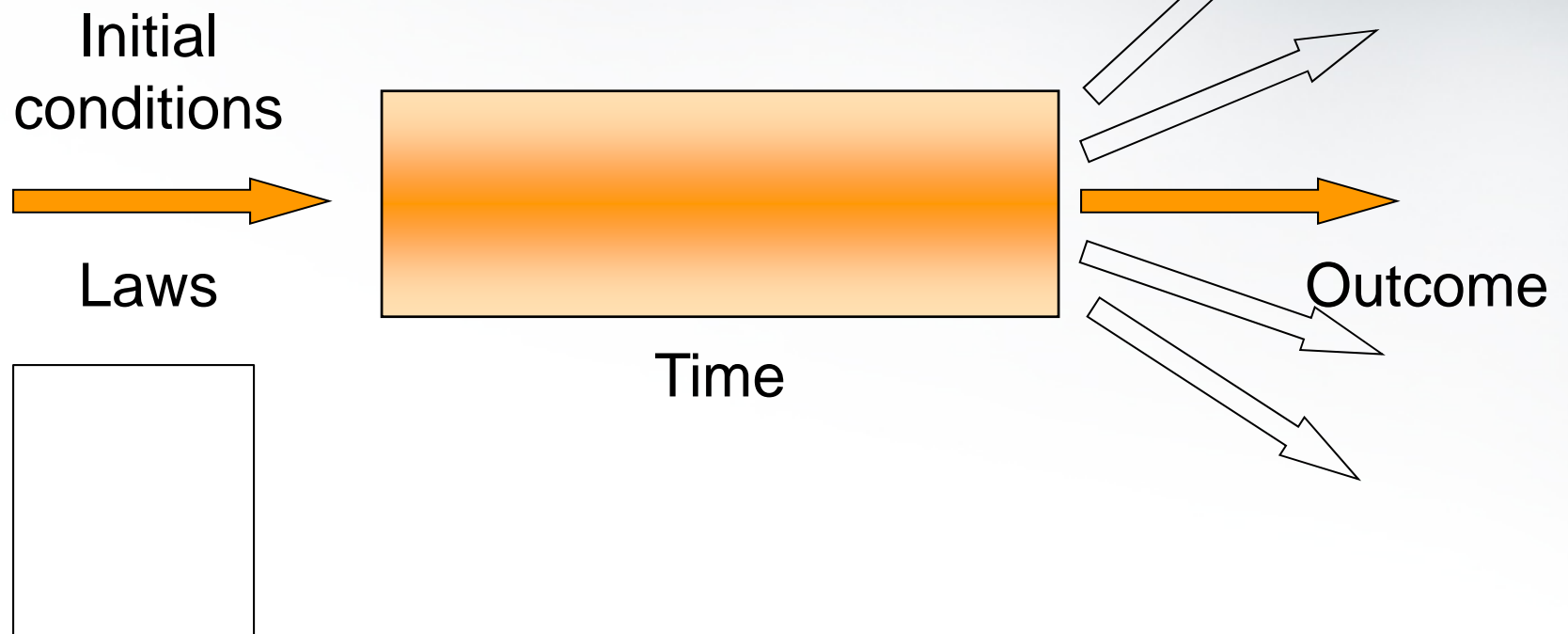


***An Event is more predictable
when you have more information
up front***

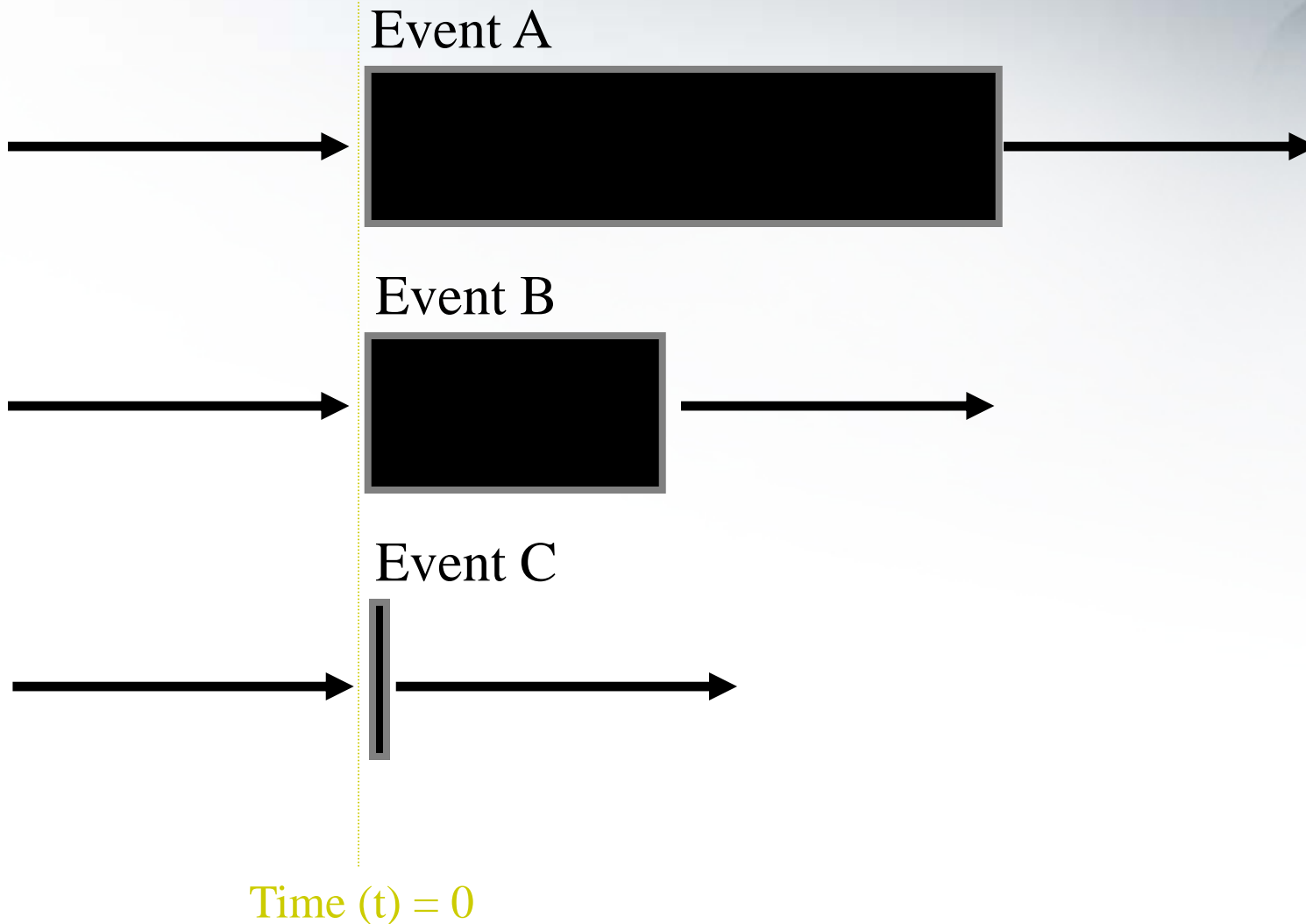
What happens without information?



Without information, still only happens one way

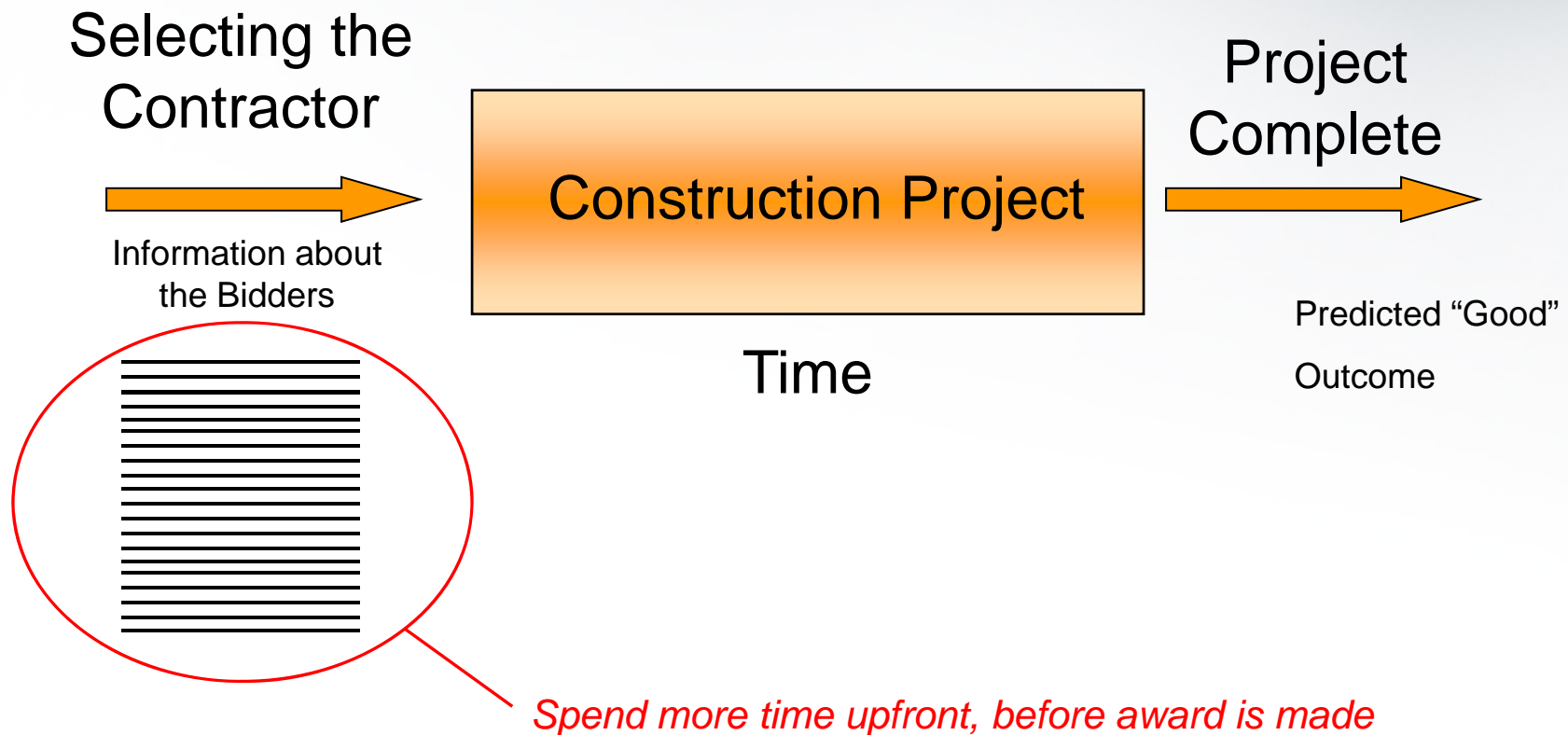


Which event outcome is the easiest to predict?





How does this relate to procurement?



PIPS will assist us in gathering the information

Industry Structure

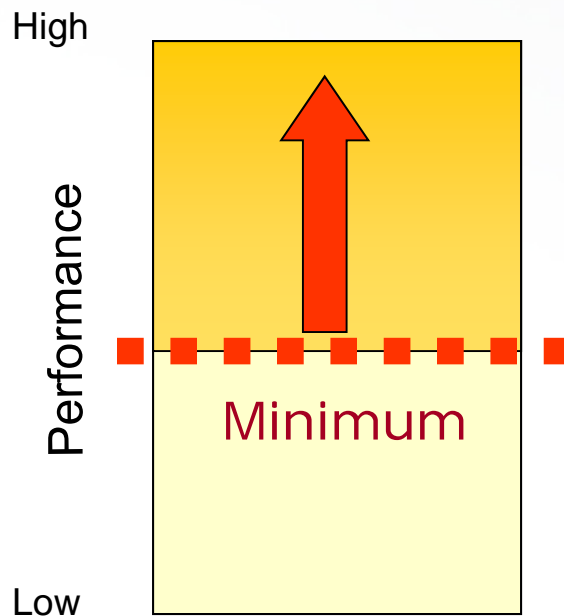


Problem with Priced Based Systems



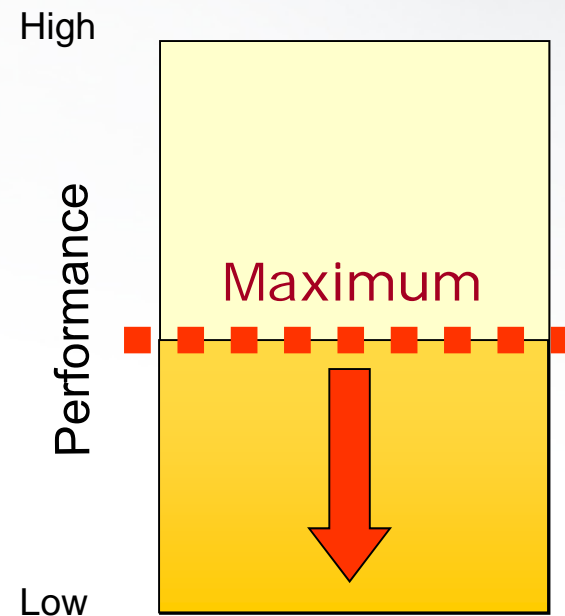
Owners

"The lowest possible quality that I want"

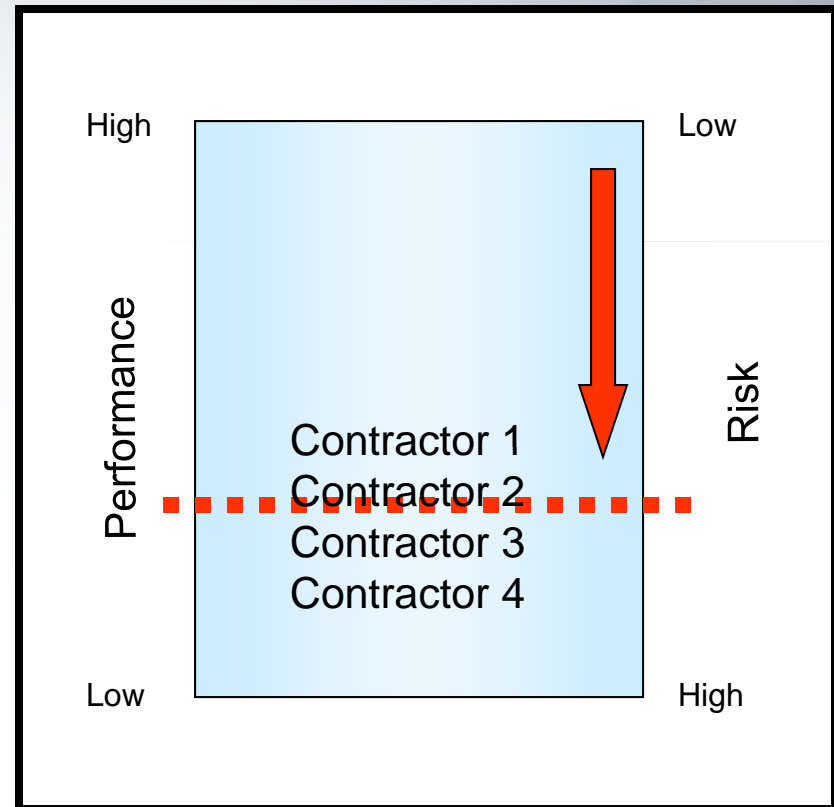
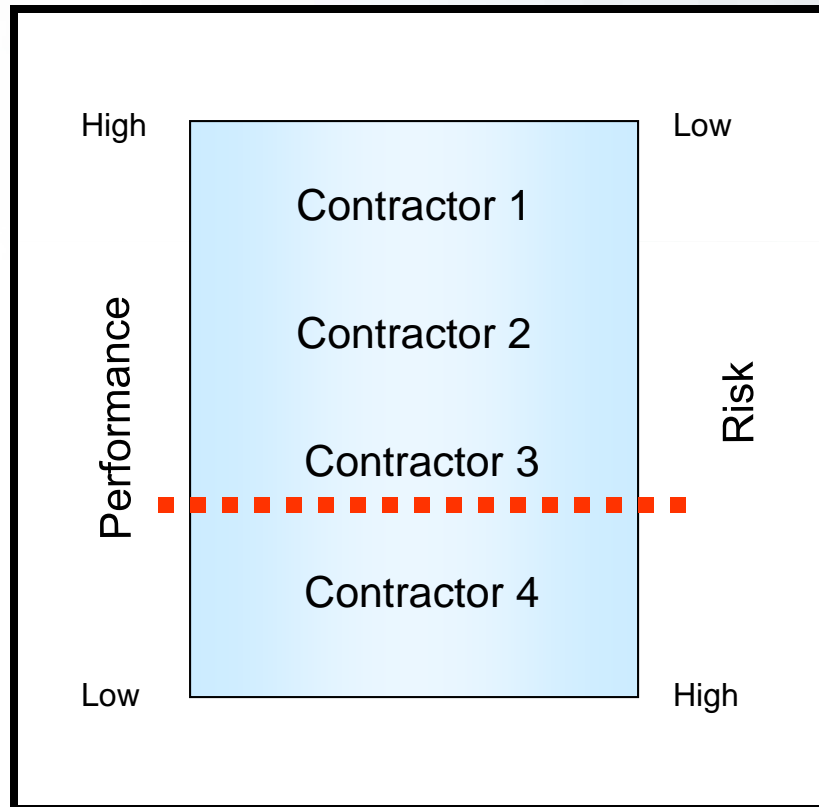


Contractors

"The highest possible value that you will get"



Impact of Minimum Standards

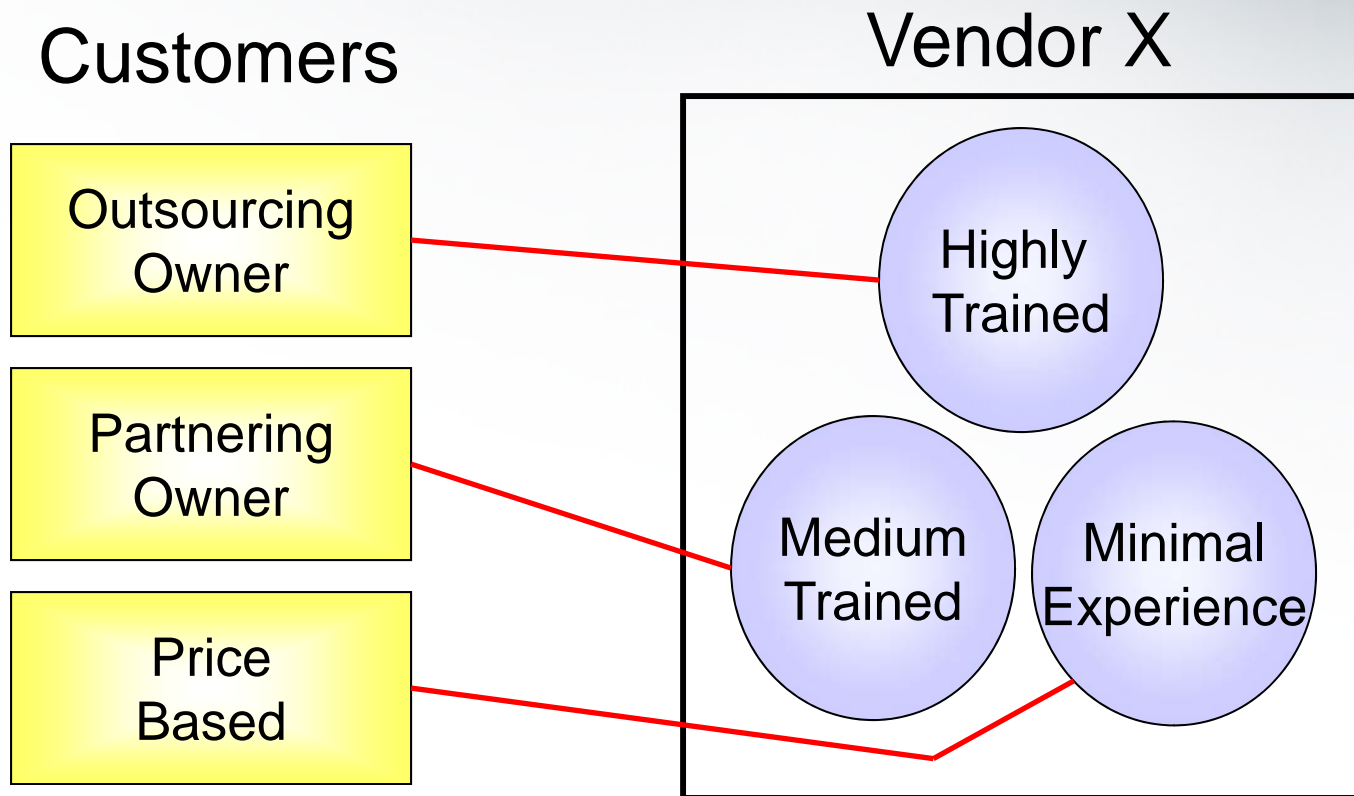


Industry Structure



Performance	High	<u>III. Negotiated-Bid</u> Owner selects vendor Negotiates with vendor Vendor performs	<u>II. Value Based</u> Best Value (Performance and price measurements) Quality control Contractor minimizes risk
		<u>IV. Unstable Market</u>	<u>I. Price Based</u> Commodity Purchase Specifications and Standards Management & Inspection Client minimizes risk
	Low	Low	High
		Competition	

Industry performance and capability



PIPS Selection Process

Best Value System
Performance Information Procurement System (PIPS)
Project Management Model, Risk Management Model

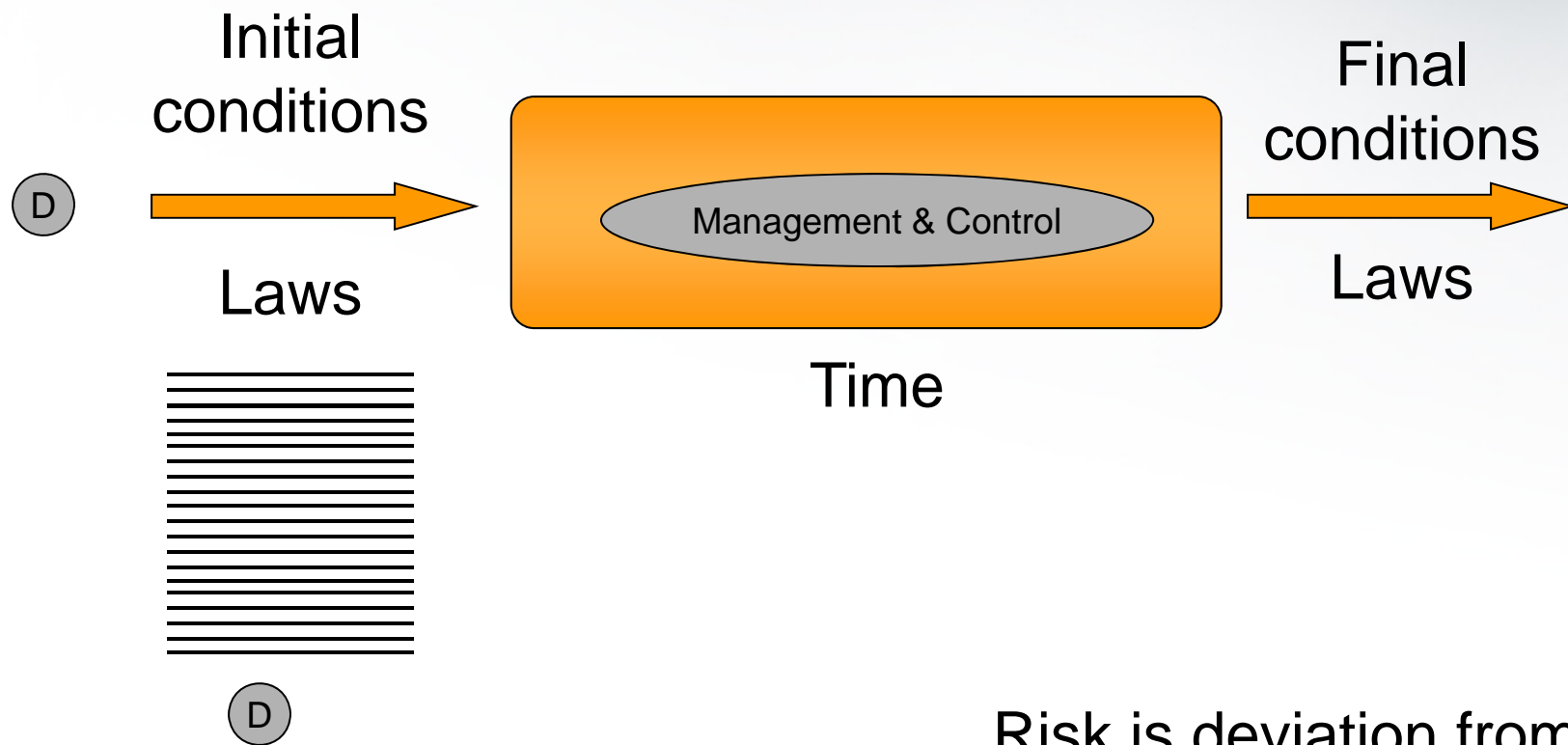
PHASE 1:
SELECTION

PHASE 2:
PRE-PLANNING
QUALITY
CONTROL

PHASE 3:
MANAGEMENT
BY RISK
MINIMIZATION

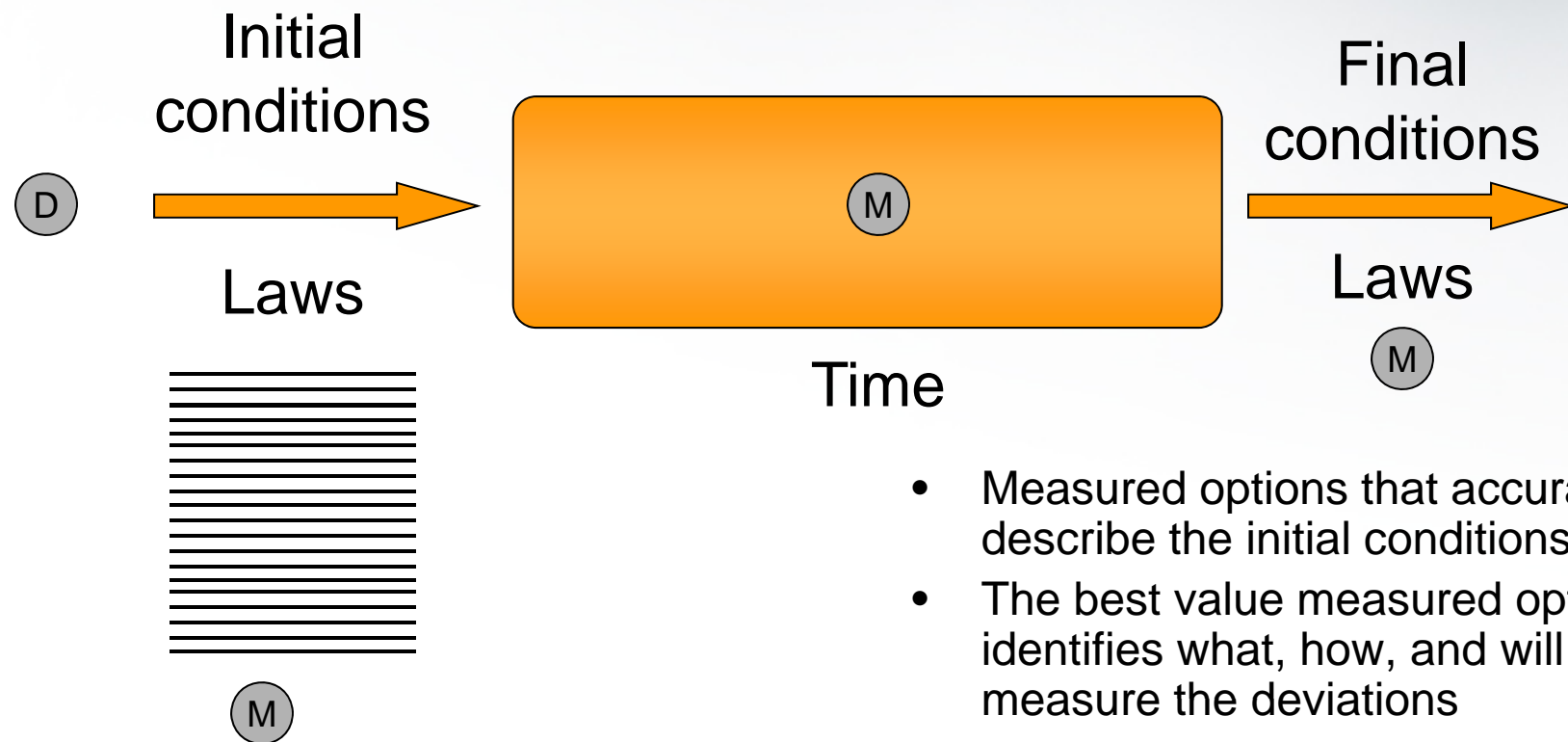


Traditional Management



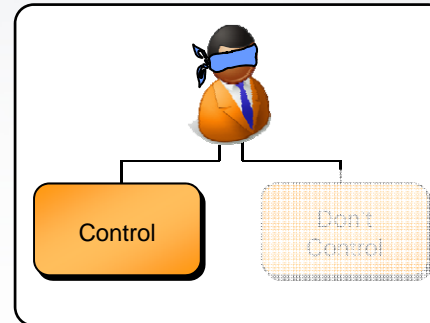
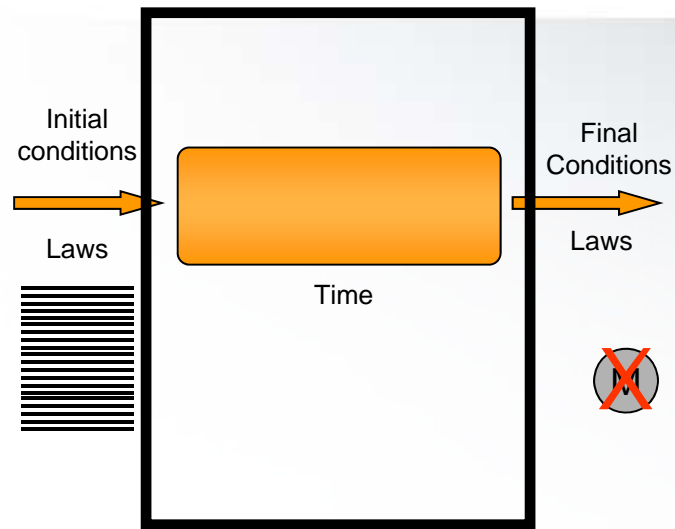
Risk is deviation from expected measurements

New PM and RM model that depends on efficiency



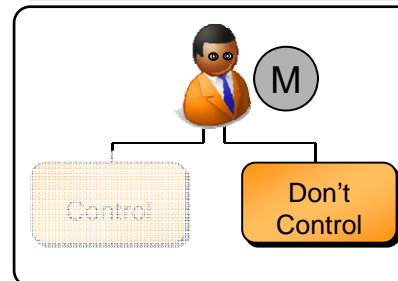
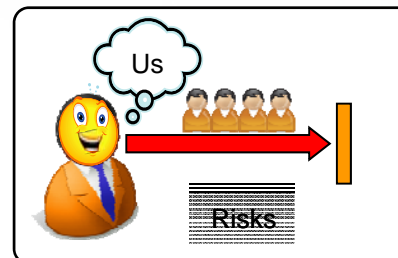
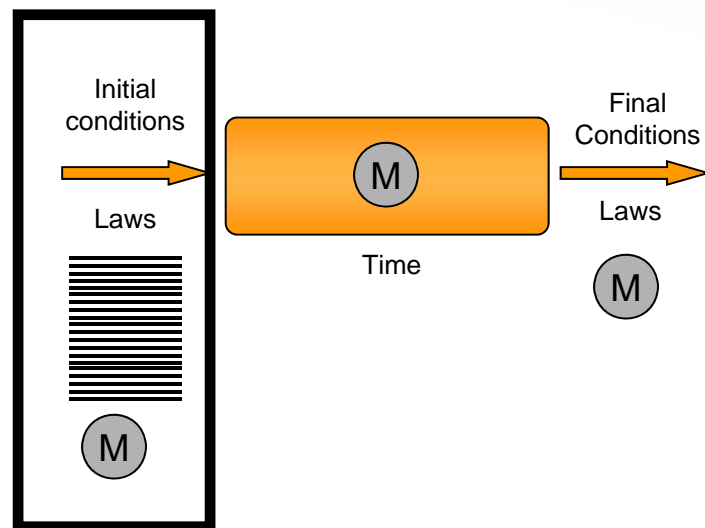
- Measured options that accurately describe the initial conditions
- The best value measured option identifies what, how, and will measure the deviations
- The measured solution replaces the buyer's guess

Delivery of Services



Status Quo: High Risk

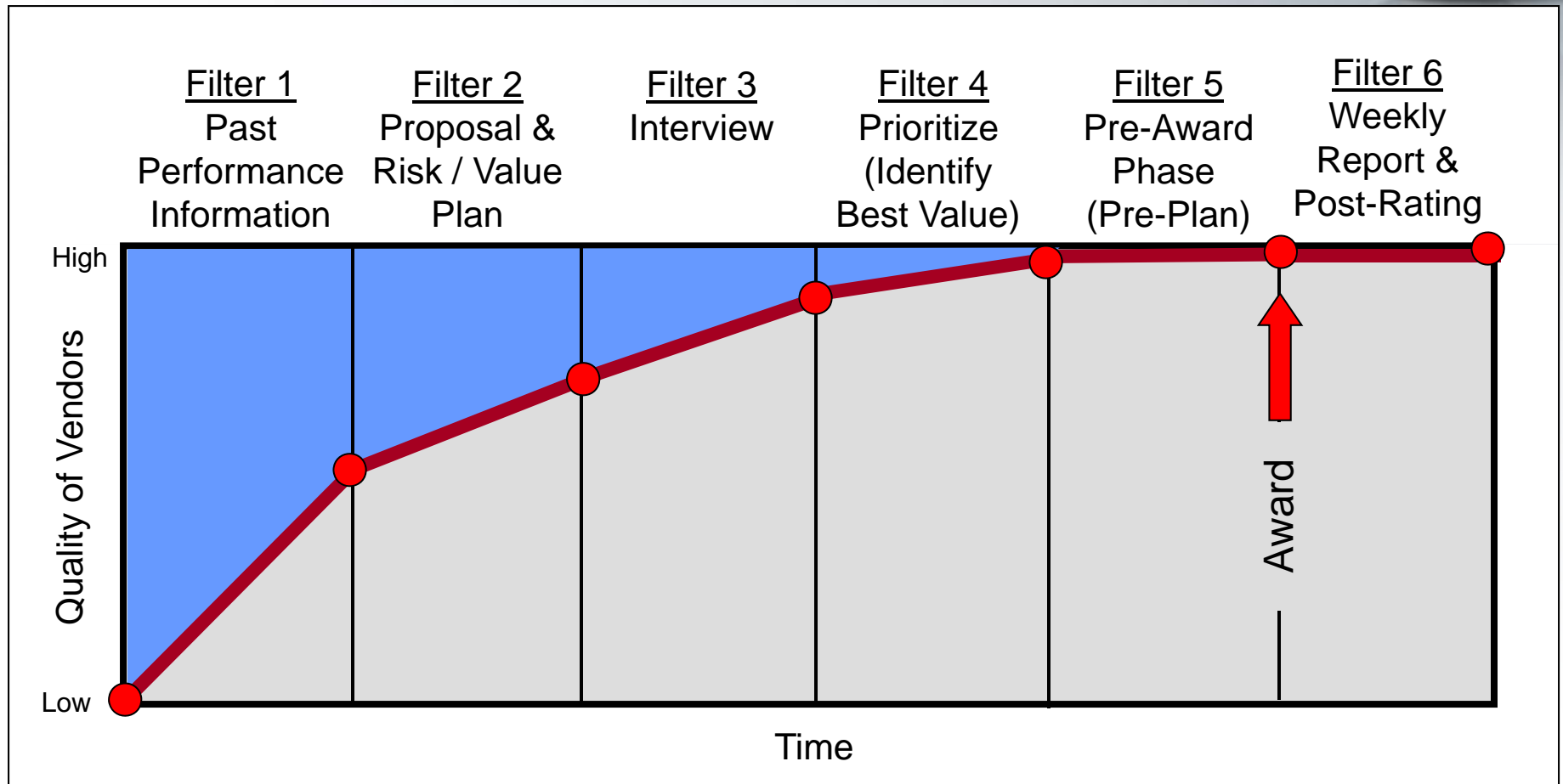
- **Control, manage, direct, and inspect**
- **Increase the flow of information**
- **Inefficient, ineffective**
- **Maximizes technical issues**



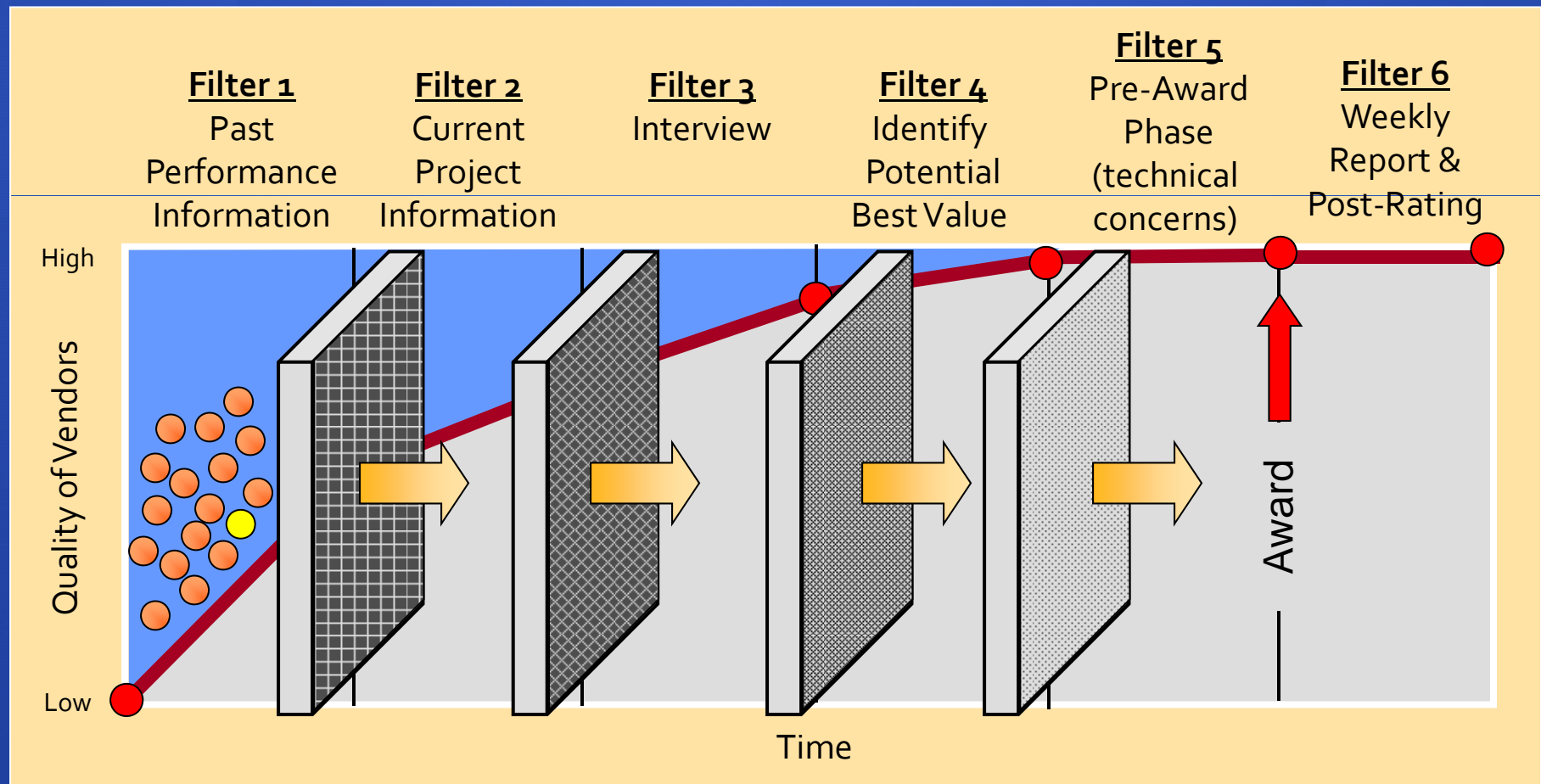
New PM Model: Low Risk

- **Transfer control to the contractor**
- **Preplanning**
- **Quality Control**
- **Measure**
- **Minimize flow of information**
- **Minimizes technical issues**

Performance Information Procurement System (PIPS)



General Contractor Selection



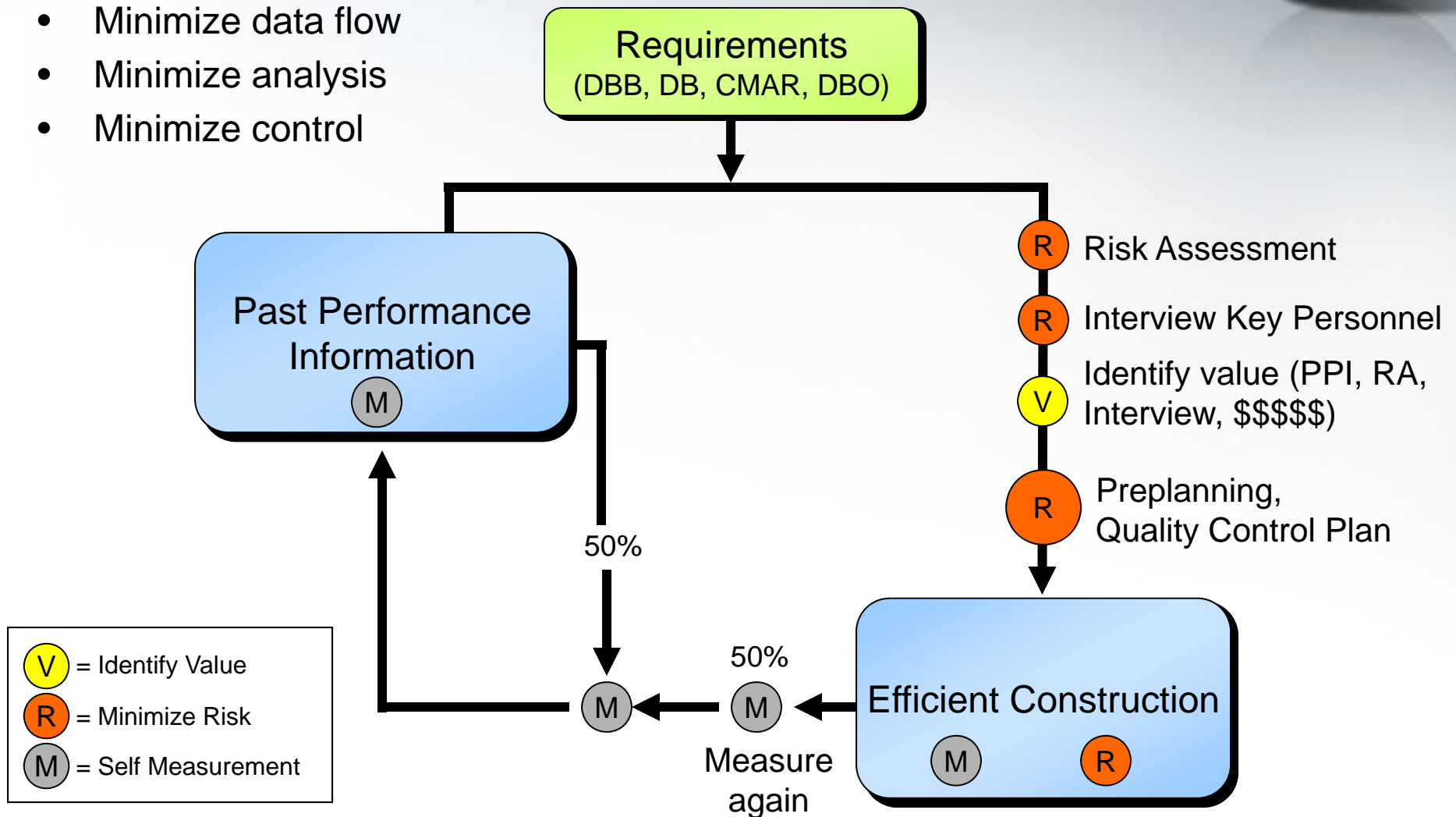
Self Regulating Loop

(Six Sigma DMAIC Generated)



Actions

- Minimize data flow
- Minimize analysis
- Minimize control





Building
Greatly

Progress

Year **2** of 5

Department of Central Services
Construction and Properties Division

Education

- **Internal – DCS Procurement Personnel**
 - Annual BV Conference
 - In-house training
- **External – Agencies and Vendors**
- **External - Outreach**
 - Vendor Groups
 - Legislature

Pilot Projects

Central Purchasing

Construction and Properties

- Design Consultant Selections
- Existing IDIQ Contracts
 - Weekly Reporting
 - Performance Measures

Performance Based Studies Research Group

State of Oklahoma Best Value Case Studies



www.pbsrg.com



PERFORMANCE BASED STUDIES RESEARCH GROUP

Computer-to-Plate System



Computer to Plate System



- Computer to Plate (CTP) system includes: Routing Information Protocol (RIP), Workflow software and proofing system.
- Agency Budget: 120,000

CTP Project Conditions



- Using Agency unhappy with having to run project as Best Value.
 - Expected it to take more time
 - Did not think it would add any value
 - Wanted to perform actions outside of legal bounds
 - Thought system was a commodity
 - Thought they knew exactly what they wanted
- First time procurement agent ran a Best Value project
- Fast track project

Procurement Time



Best Value	Traditional	Action
16-Oct	16-Oct	RFP Issue Date
20-Oct		Pre-Bid Teleconference
22-Oct	23-Oct	Questions from suppliers due
24-Oct	28-Oct	Answers to questions posted
30-Oct	4-Nov	Proposal due date
31-Oct	12-Nov	Interviews
5-Nov		Identify Best Value
6-Nov		Pre-Planning
20-Nov	19-Nov	Negotiations
21-Nov	21-Nov	Award
36	36	Number of Days

- Best Value Time Difference:
 - Allows vendor more time to minimize risks and client concerns.
 - Minimizes selection evaluation and negotiation time.
- Potential Time Savings:
 - Client invested a large amount of time during the previous year to gain a greater understanding of CTP systems and to develop the RFP.
 - The BV system eliminates the need for technical knowledge in order to select a vendor

Bid Selection



No	Summary Criteria	1	2	3
1	Total Cost of CTP Service	\$111,769	\$184,162	\$158,950
2	RAVA Plan	48	46	39
3	Past Performance Information - Survey	9.74	10.00	9.68
4	Past Performance Information - #/Clients	7.00	2.00	15.00
5	Interview	8.0	9.3	5.7

- The best value vendor was 30-40% cheaper than other vendors
- Service response time will be within 4 hrs.
- Highest RAVA plan rating
- 2nd Highest interview rating (second to a vendor that did not send project people)
- High past performance on past State projects.
- Best Value selection was made within 10 minutes of last interview.

Value Added



No	Value Added	1	2	3
1	On-Site Training	x	x	x
2	Non-Proprietary Language	x	x	x
3	In-State Service Support	x	x	
4	Pre-Site Investigation and Survey	x	x	x
5	Automatic CTP	x	x	x
6	Automatic checking of format and fonts	x	x	x
7	Chemical free process	x		
8	Response time within 2 hrs.	x		
9	Plates are not light sensitive	x		

- Vendor 1 offered all of the value added options of the other two vendors
- Vendor 1 offered better service and lower maintenance system

Lessons Learned



- **Using technical specs as requirement instead of intent is not efficient**
- Best value process requires vendor to satisfy all client concerns before the award is made.
- Interview process minimizes client risk in selecting a non-performing vendor.
- Process requires vendors to differentiate themselves

Light Bulb Contract



Light Bulb Contract



- All light bulb and lighting fixtures for the State of Oklahoma
- Estimated Value: \$1M
- Current Contract:
 - Contract is not mandatory
 - Vendor takes orders and ships the products to state agencies.
 - The State receives incomplete and inaccurate information (how much they are spending, what they are buying, etc.)
 - There is no mechanism to track actual performance of the vendor (Customer Satisfaction, value of products, etc.)
 - Contract has had a history of protests



Selection Justification

Top Three Vendors

No	Summary Criteria	Unit	Vendor 1	Vendor 2	Vendor 3
1	Cost	#	\$117,440.47	\$104,017.99	\$108,295.70
2	RAVA Plan	(1-10)	6.10	8.2	6.3
3	PPI Survey	(1-10)	9.98	9.896	9.785
4	PPI #/Clients	#	10.00	10	8
5	Interview	(1-10)	7.5	5.25	8
Normalization					
No	Summary Criteria	Unit	Vendor 1	Vendor 2	Vendor 3
1	Cost	#	0.89	1.00	0.96
2	RAVA Plan	(1-10)	0.69	0.92	0.71
3	PPI Survey	(1-10)	1.00	0.99	0.98
4	PPI #/Clients	#	1.00	1.00	0.80
5	Interview	(1-10)	0.94	0.66	1.00
Final Scoring					
No	Summary Criteria	Unit	Vendor 1	Vendor 2	Vendor 3
1	Cost	#	39.86	45.00	43.22
2	RAVA Plan	(1-10)	10.28	13.82	10.62
3	PPI Survey	(1-10)	10.00	9.92	9.80
4	PPI #/Clients	#	5.00	5.00	4.00
5	Interview	(1-10)	23.4375	16.40625	25
			88.58	90.14	92.65

Awarded
Vendor

Dominant Information

- Vendor 2 did not complete pricing sheet
- Vendor 2 was using a middleman supplier to get products, the State saw this as a big risk.
- Backed by 2 out of 3 of the major lighting manufacturers.
- Offered to provide a State wide training program for all state end users.
- Offered audits of facilities for analysis to improve energy efficiencies and lighting products.
- Minimized the States risks the best

Lessons Learned



- **BV PIPS can minimize protests.**
- BV allows vendors to show their value.
- BV forces vendors to:
 - Measure and show their performance
 - Pre-plan
 - Think in the best interest of the client
- BV minimizes decision making.
- Due to the absence of information at the beginning of many services **bid prices often have no correlation to actual cost of service.**

Dan Little Residence Hall – Phase II

Oklahoma School of Science and Mathematics



Dan Little Residence Hall – Phase II



- Scope:
 - Provide the professional services required for updating existing construction documents and administration of the construction contract for the Dan Little Residence Hall.
- Estimated Cost: \$7.5M

Selection



No	Summary Criteria	Unit	1	2	3	4	5	6	7	8	11	13	14
1	Technical Scope	#	8.0	4.0	12.0	20.0	4.0	4.0	40.0	40.0	26.0	25.0	16.0
2	RAVA Plan	(1-10)	14.00	12.00	26.00	12.00	4.00	10.00	33.00	18.00	21.00	30.00	16.00
3	Past Performance Information - Survey	(1-10)	9.55	9.58	9.89	9.15	9.88	9.27	9.74	9.88	9.81	10.00	9.58
4	Past Performance Information - #/Clients	#	10.00	3.00	10.00	5.00	10.00	6.00	10.00	7.00	10.00	6.00	8.00
5	Interview	(1-10)			4.0				20.0	40.0	20.0	12.0	

No	Summary Criteria	Best Score	1	2	3	4	5	6	7	8	11	13	14
1	Technical Scope	40	0.20	0.10	0.30	0.50	0.10	0.10	1.00	1.00	0.65	0.63	0.40
2	RAVA Plan	40	0.35	0.30	0.65	0.30	0.10	0.25	0.83	0.45	0.53	0.75	0.40
3	Past Performance Information - Survey	10	0.96	0.96	0.99	0.92	0.99	0.93	0.97	0.99	0.98	1.00	0.96
4	Past Performance Information - #/Clients	10	1.00	0.30	1.00	0.50	1.00	0.60	1.00	0.70	1.00	0.60	0.80
5	Interview	40	0.0	0.0	0.1	0.0	0.0	0.0	0.5	1.0	0.5	0.3	0.0

No	Summary Criteria	Weight	1	2	3	4	5	6	7	8	11	13	14
1	Technical Scope	20	4.00	2.00	6.00	10.00	2.00	2.00	20.00	20.00	13.00	12.50	8.00
2	RAVA Plan	25	8.75	7.50	16.25	7.50	2.50	6.25	20.63	11.25	13.13	18.75	10.00
3	Past Performance Information - Survey	10	9.55	9.58	9.89	9.15	9.88	9.27	9.74	9.88	9.81	10.00	9.58
4	Past Performance Information - #/Clients	5	5.00	1.50	5.00	2.50	5.00	3.00	5.00	3.50	5.00	3.00	4.00
5	Interview	40	0.0	0.0	4.0	0.0	0.0	0.0	20.0	40.0	20.0	12.0	0.0
	Total		27.3	20.6	41.1	29.2	19.4	20.5	75.4	84.6	60.9	56.3	31.6

Rating Proposals and Interviews



10

Dominantly minimize all the risk of the project.
Identifies risk, prioritizes risk, and shows tremendous capability to minimize risk.

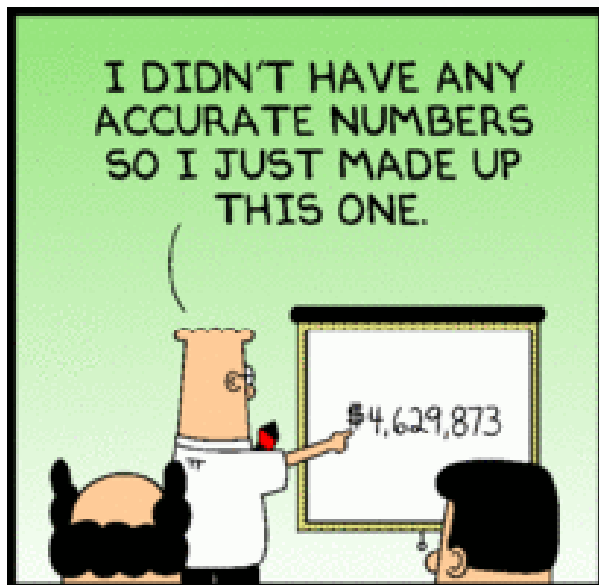
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Average ability to manage and minimize risk.
Insufficient information to make a clear determination if the contractor will minimize risk.

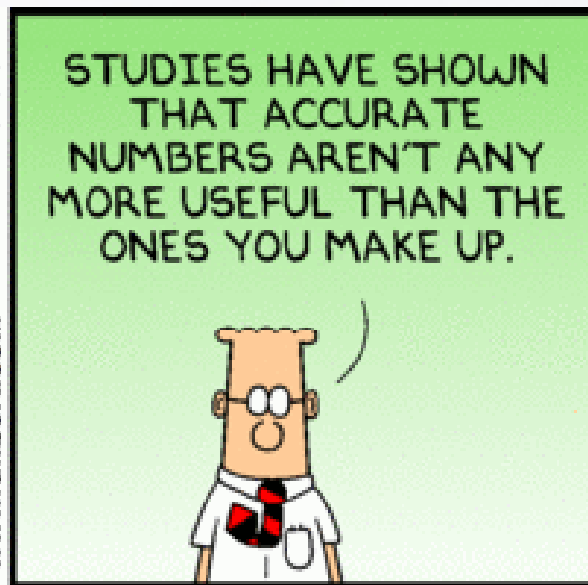
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Shows deficiency in identifying, prioritizing and minimizing risk.

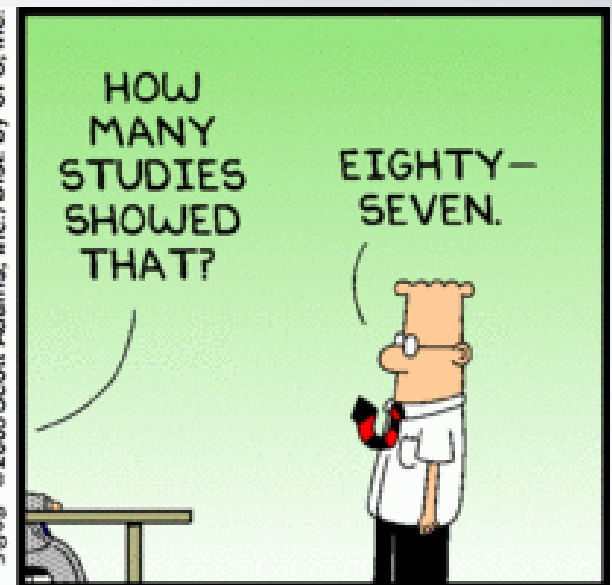
Not Dominant



www.dilbert.com scottadams@aol.com



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EIGHTY-SEVEN.

Pre-Planning (Pre-Award Phase)



Item No.	Risk Description	Solution
1	Existing Conditions may not be properly documented in Owner-provided documents	<ol style="list-style-type: none"> 1. The Design Team will tour and have a detailed discussion with the users about the existing building to which the addition will attach. 2. Since this project will be very similar to the existing dorm wing, the Design Team will document all design features that the user wants to preserve and any problems with the existing design or systems that should not be repeated in the new addition. 3. The new addition will rely on existing building system for power, data, communication, plumbing and heat & air systems. Any issues with existing systems will need to be identified by the Design Team with the assistance of the user. A study will be performed to determine that the existing building systems have adequate capacity to accommodate the addition. <p><i>Six weeks after consultant contract execution.</i></p>
2	Previously executed Phase 2 design may no longer meet code or current best construction systems. Materials specified may no longer be available.	<ol style="list-style-type: none"> 1. Design Team will develop a detailed assessment and evaluation of existing Construction Documents, focusing on constructability, material systems and equipment and identify issues and provide recommendations to mitigate the issues. A brief report will be issued with the Design Team's findings. <p><i>Six weeks after consultant contract execution.</i></p>
3	Project budget may not fund previously executed Phase 2 scope of work.	<p>ADG will engage a third party cost estimating consultant at three stages of document development:</p> <ol style="list-style-type: none"> 1. Estimate at end of Schematic Design Phase- purpose is to establish general expectations of construction budget and, therefore, budget remaining for other project costs. 2. End of Design Development Phase- purpose is to establish scope of work to be included in Bid Documents. 3. 95% Construction Documents Phase- purpose is to confirm design is within construction cost expectations and that bids will come in budget.

- All risks and concerns given to the vendor
- Vendor creates Risk Management Plan (RMP)
- Vendor creates a weekly risk report.
- Vendor creates a project baseline. (Cost and Time)

Weekly Risk Report (WRR)



State of Oklahoma Department of Central Services Construction and Properties		Weekly Report Tuesday, December 01, 2009				
Project Title: rvoices - Dan Little Resider		Vendor: chitectural Design Group,				
Project ID / Task Order: 10154-C		Project Phase: Design				
Location: Oklahoma City, Oklahoma		NTP Date: 10/21/09				
Owner Satisfaction Level: 10.00		Project Risk Number: 1.00				
Current Completion Date: 08/02/11		(Scheduled Date: 08-02-11)				
Current Budget: \$416,500.00		(Orig. Budget: \$416,500)				
Safety Violations: 1						
Risk Aspect	Total	Contractor	Consultant	Using Agency	Owner	Unforeseen
Total No. of Risks	3	0	0	0	0	0
Late Risks	0	0	0	0	0	0
Days Delayed	0	0	0	0	0	0
% Delayed	0%	0%	0%	0%	0%	0%
Potential	0	0	0	0	0	0
Resolved	0	0	0	0	0	0
Over Budget	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Over Budget	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Potential	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Resolved	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Using Agency: Lynn Morgan, 405.521.6436 CAP Contracting: Pam Patrum, 405.521.3175 CAP Project Manager: Bill Harrell, 405.521.2145 Contractor: JC Witcher, Project Manager, 405.521.3175 Consultant: Consultant, PBSRG Contact: Jacob Kashiwagi, 480-577-3726						

- Vendor turns in WRR every week.
- Identifies any risks that is currently occurring on the project that they don't control.
- Any deviations caused by the risks are documented in terms of \$\$, time, and quality.
- Milestone schedule allows client to see progress every week.

Lessons Learned



- Important to have dominant information documented on why vendors were rated very highly or poorly.
- **Interviews are the most important filter in the selection process.**

State of Oklahoma Lessons Learned



- PIPS minimizes effect of protests
- Many times **vendors do not know what the actual cost of their service is.**
- PIRMS holds everyone accountable for following the system.
- Changing the Paradigm and implementing the system is the most important part of PIPS/PIRMS.
- PIPS gives smaller high performing vendors a greater opportunity to compete with larger more established vendors.
- Don't make decisions!

State of Oklahoma Lessons Learned Continued

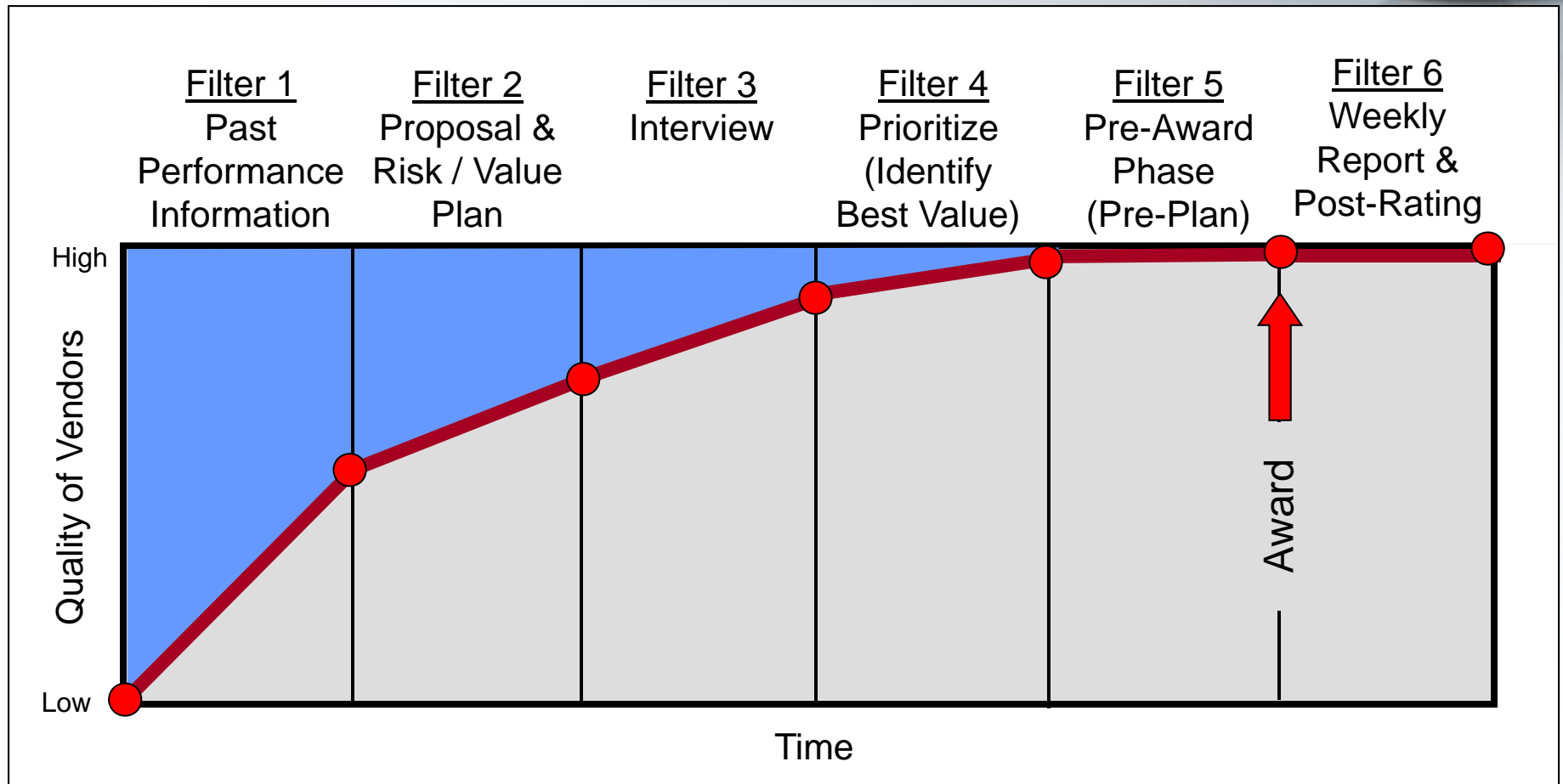


- PIPS minimizes the amount of technical expertise that is needed
- PIPS can save time.
- PIPS can help high performing contractors to differentiate themselves.

Current Efforts

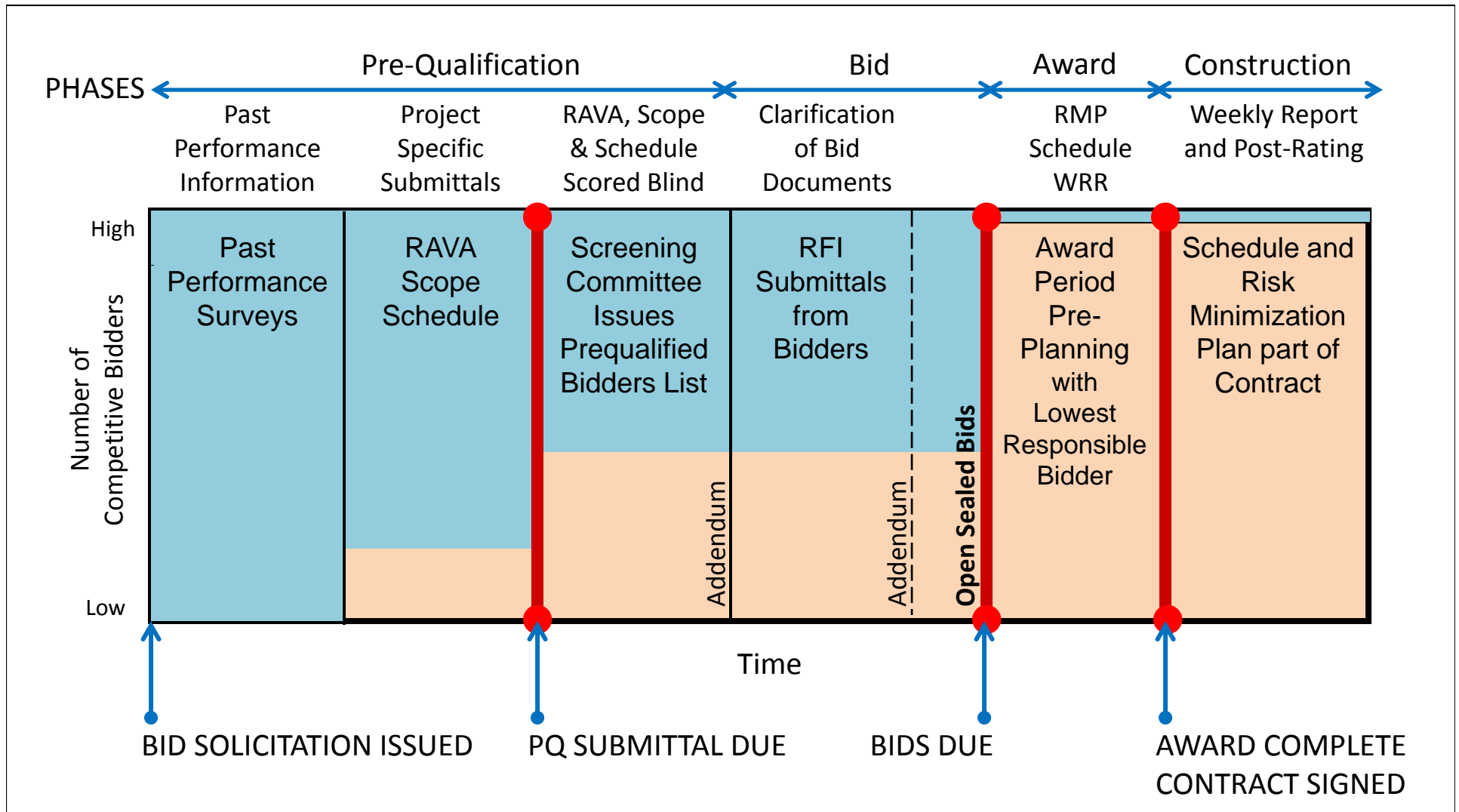
- **Construction Contracting**
 - Incorporating PIPS into Existing Law
- **Two Possibilities under current Law:**
 - Use PIPS to Pre-Qualify Bidders (PPI, RAVA, Scope)
 - Use PIPS to determine “Lowest Responsible Bidder” after bids are received

Performance Information Procurement System (PIPS)



Construction Contract Award

PIPS as a Method to Pre-Qualify Bidders





Changing the Paradigm

**A Vision for Building
Greatly**

Department of Central Services
Construction and Properties Division

PIPS: We now have a simple choice

- Beat up the vendor and get concessions
or...
- Use Best Value PIPS process, increase efficiency and get a “win-win-win”
 - Vendor wins
 - Procurement wins
 - Customer wins

Years 3-5

- **More Education and Training**
 - Must have buy-in from stakeholders
- **Legislation**
 - Current Law requires a “Bottom Up” approach
 - Pure PIPS is a “Top Down” Selection Process
 - Legislation is a Priority
- **Culture Change: Don’t Control – Measure!**
- **Use PIPS for Complex, Risky Projects**

A New Operating Environment

- Set up all Stakeholder to Succeed
- Attract Highly Skilled, Efficient Vendors
- Let the Experts Manage Risk
- Measure, Measure, Measure!
- Deliver the Project On-Time, In the Budget, with High Customer Satisfaction

Vision (from 2005)

In partnership with our clients (State Agencies) and vendors (Consultants and Contractors), Construction and Properties will strive to create an operating environment that allows each stakeholder to excel at their respective roles.

Vision 2010

*In partnership with our clients (State Agencies) and vendors (Consultants and Contractors), Construction and Properties will **Build Greatly** by creating a **Best Value** environment that allows each stakeholder to excel at their respective roles.*

Building Greatly

The American, by nature, is optimistic. He is experimental, an inventor and a builder who builds best when called upon to Build Greatly.

- JFK



Building
Greatly

HOLY SOLICITATION !
ALL OF OUR PROJECTS ARE
LATE AND OVER BUDGET !
WHAT CAN WE DO ??!! HELP !!





Who you gonna
call?

Best Value Man!



Best Value Contracting

A new Paradigm for State
Construction



John W. Morrison AIA
Department of Central Services
Construction and Properties Division