

Cultural Revolution

“Release of Control through Risk Transfer Structure”

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Performance Based Studies Research Group



www.pbsrg.com



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Best Value/PIPS Delivery of Construction



- ASU known worldwide as a leader in Best-Value Procurement
 - Conducting research since 1994 (\$6.2M)
 - 484 procurements
 - \$521 Million in construction services
 - 42 different clients (public & private)
 - 98% customer satisfaction
 - Decreased management functions by 80%
 - CIB TG 61 creators and coordinators
 - China, Malaysia, Netherlands, UK, Finland, Africa



Best Value/PIPS



- Meets legal conditions of FAR/AFARS
- Transfers risk, minimizes management, holds all parties accountable

Research Clients



Past Research Clients

- Intel
- Boeing
- Motorola
- International Rectifier
- IBM
- Federal Aviation Administration
- US Coast Guard
- State of Utah
- State of Georgia
- State of Hawaii
- Department of Transportation, HI
- University of Hawaii
- Dallas Independent School District

Current Research Clients

- US Army Medical Command
- AFMC
- City of Peoria, AZ
- City of Miami Beach, FL
- Baptist Health South Florida, FL
- State of Washington
- State of Missouri
- State of Wyoming
- General Dynamics
- United Airlines
- University of Minnesota
- Entergy, Southern US
- Schering Plough
- Neogard
- TREMCO
- Heijmans, Netherlands
- Ministry of Transportation, Netherlands
- Arizona State University
- School Facilities Board, State of Arizona

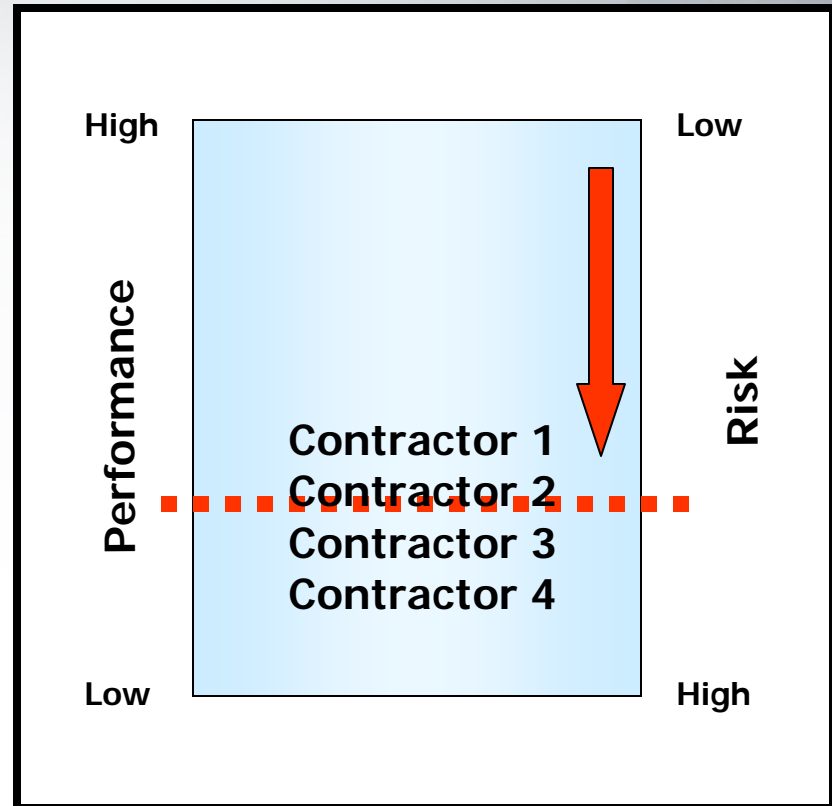
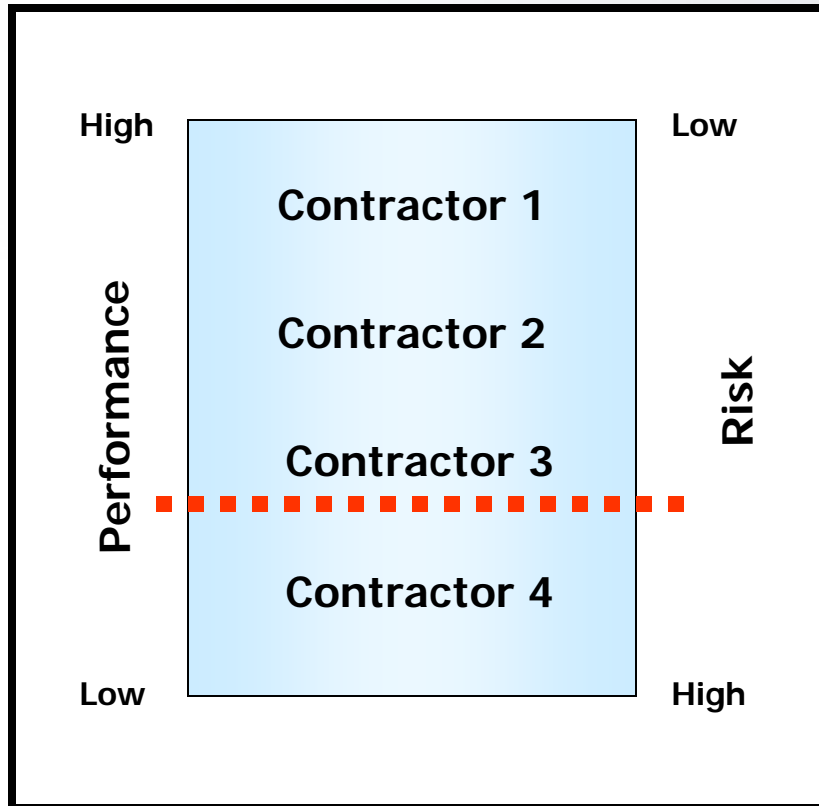


Industry Structure

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

Competition

Impact of Minimum Standards



Industry performance and capability



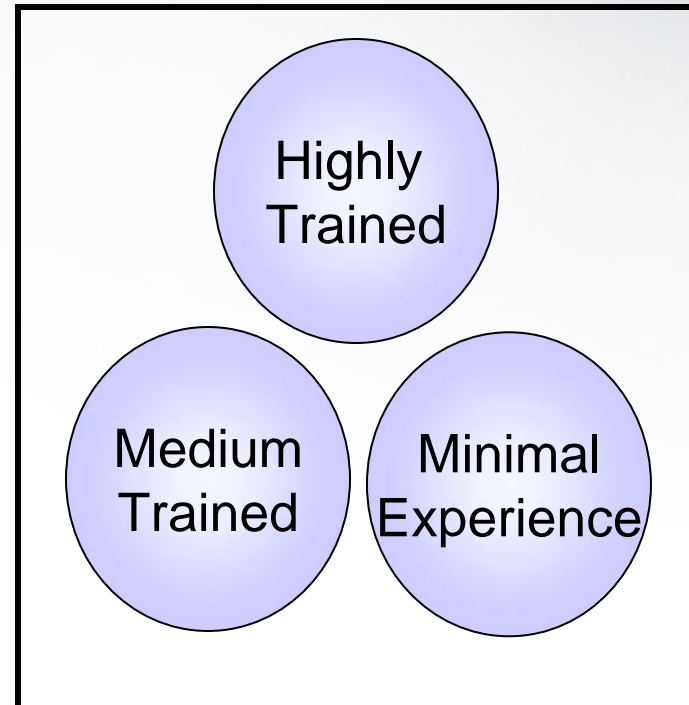
Customers

Outsourcing
Owner

Partnering
Owner

Price
Based

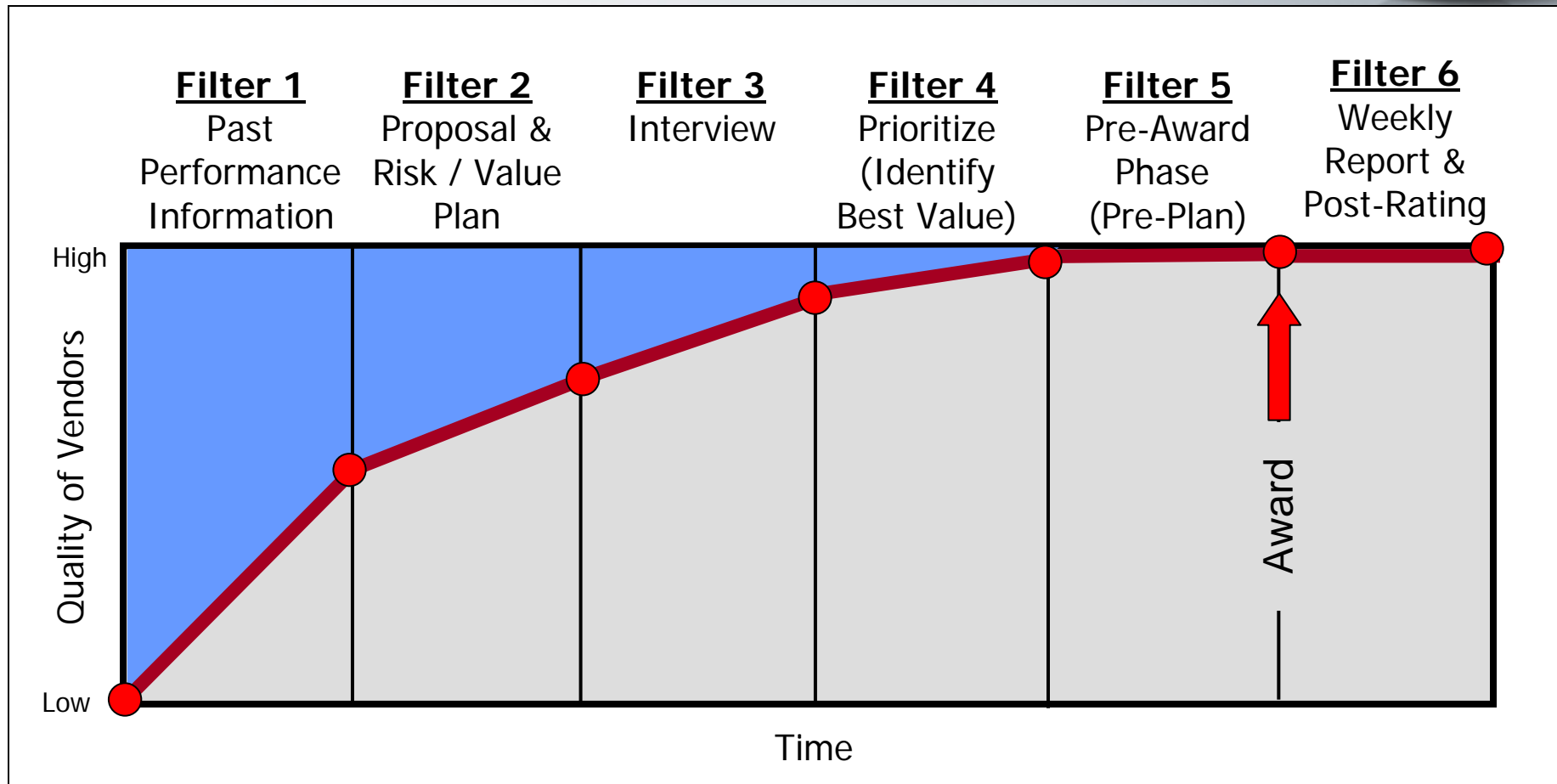
Vendor X



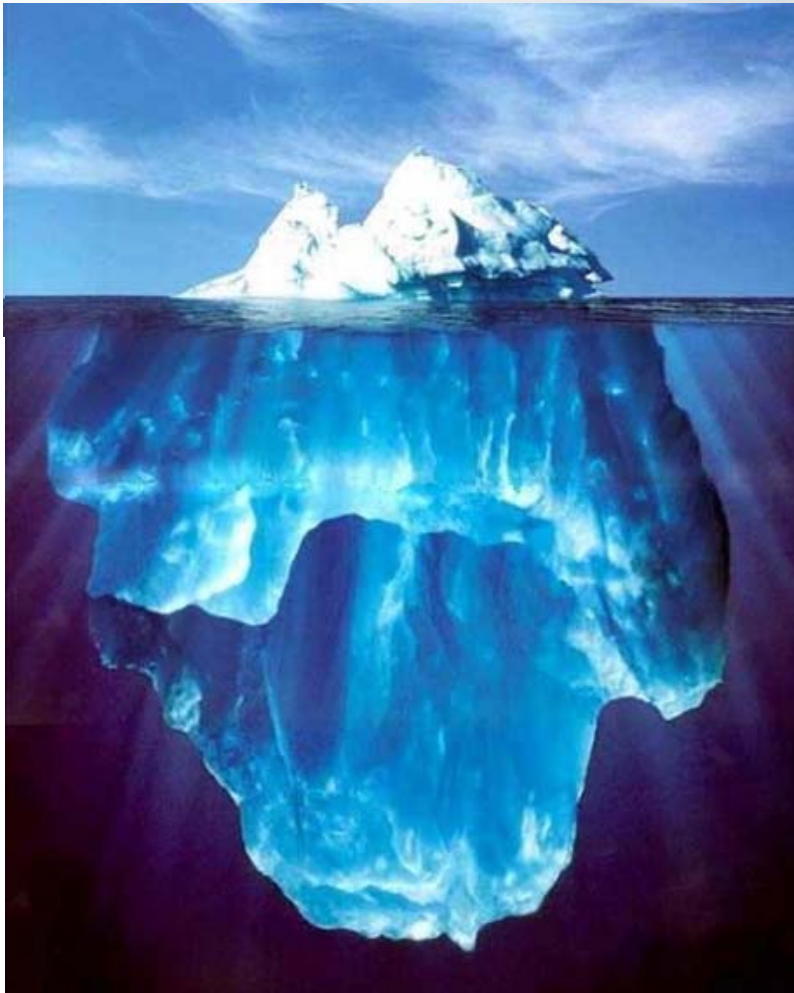
Best Value System Performance Information Procurement System (PIPS)



Performance Information Procurement System (PIPS)



There is something wrong with the delivery of services.....



No one knows how bad the problem really is.....

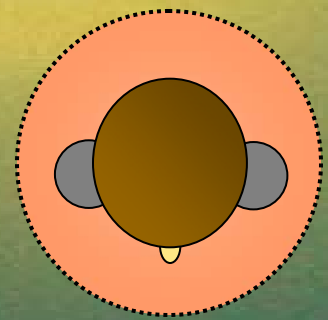
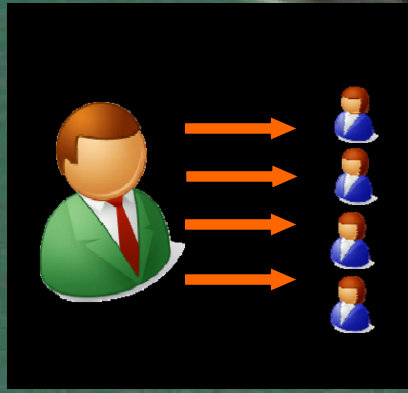
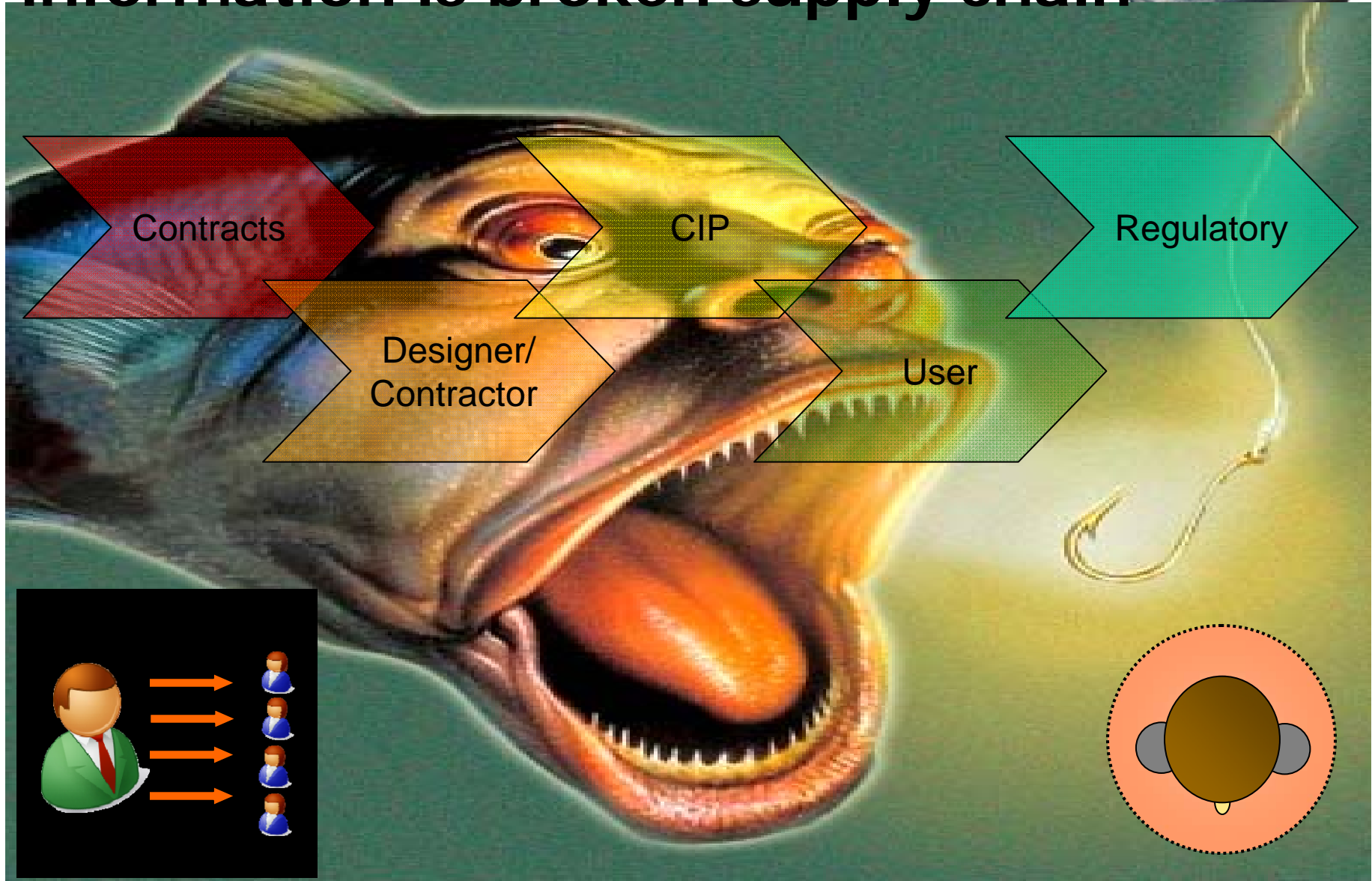
Entire system is broken....

Requires more management....

Performance is decreasing....

Relationships are more important than results....

Price Based / No performance information is broken supply chain



Leverage is not efficient



- All forms of leverage are inefficient
- Minimizes profit
- Increases stress
- Creates an adversarial climate

Best Value allows freedom and the transfer of risk



So long as effective freedom of exchange is maintained, the central feature...is that it prevents one person from interfering with another in respect of most of his activities. **Indeed, a major source of objection to a free economy is precisely that it does this task so well. It gives people what they want** instead of what a particular group thinks they ought to want. Underlying most arguments against the free market [and best value] is a lack of belief in freedom itself.

Milton Friedman

More from Milton Friedman



- “I am in favor of legalizing drugs....Most of the harm that comes from drugs is because they are illegal.
- If you put the federal government in charge of the Sahara Desert, in 5 years, there'd be a shortage of sand.
- Most of the energy of political work is devoted to correcting the effects of mismanagement....”

Minimize Management, Control, Directives



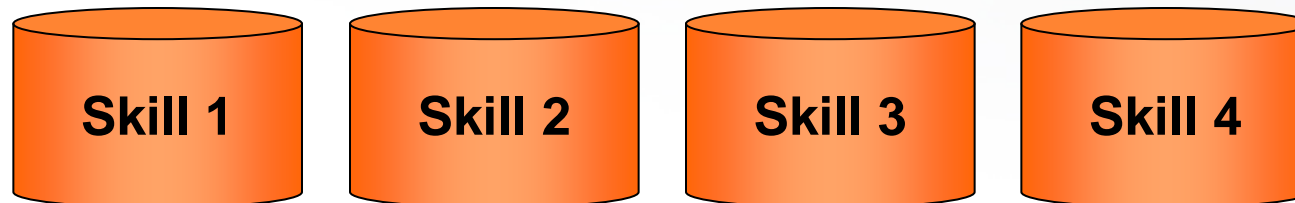
- Used by all parties
- Should be minimized by everyone
- Creates transaction costs
- Creates confusion
- Does not lead to continuous improvement

General Rule



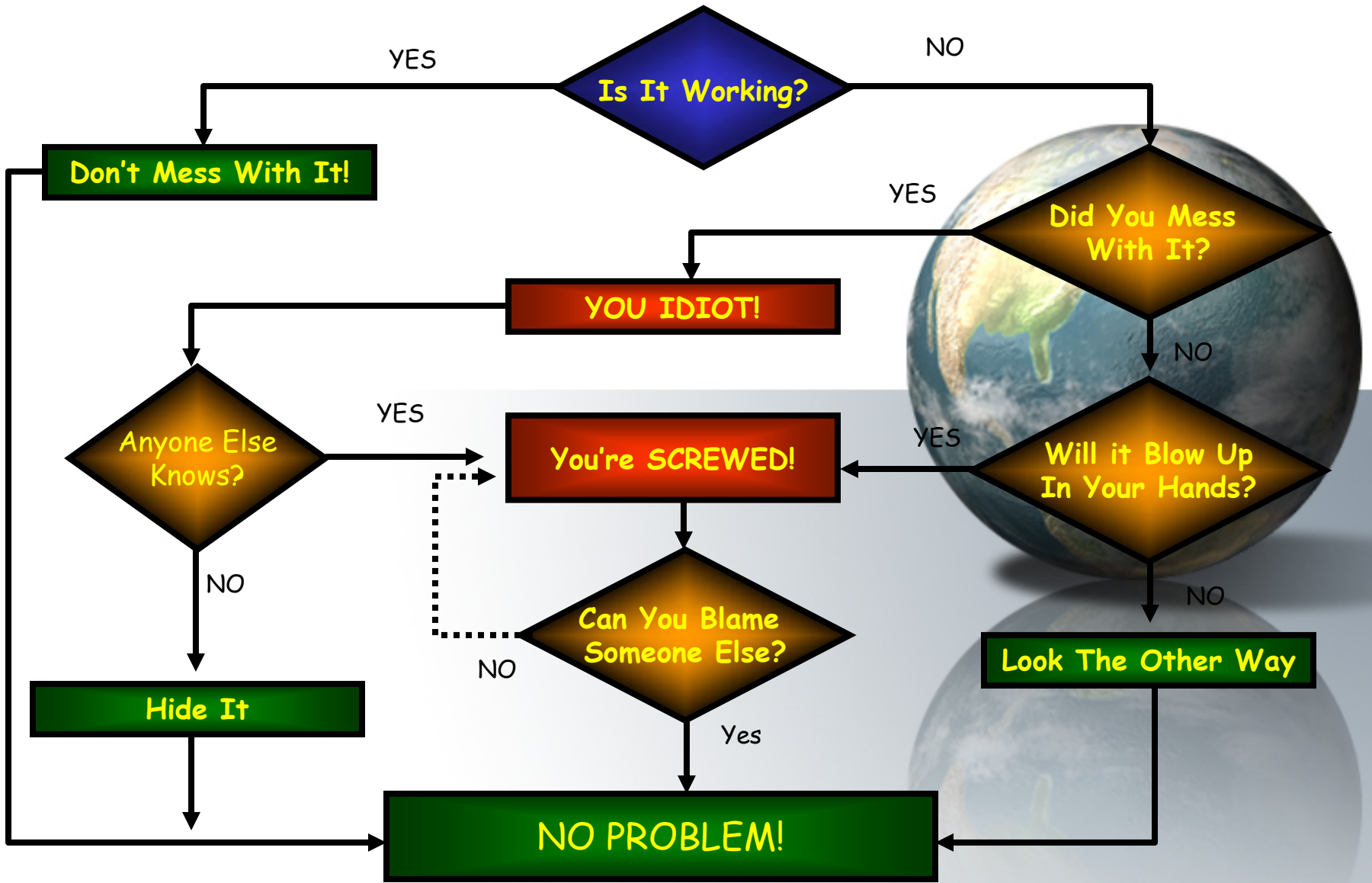
- If it isn't a win-win, it isn't possible
- If it makes someone look like they are not doing their job, you shouldn't copy the world
- Problems are usually misunderstandings and an unrealistic view of the event
- If someone isn't doing their job, it is usually out of ignorance

As management, control, and direction become more important.....

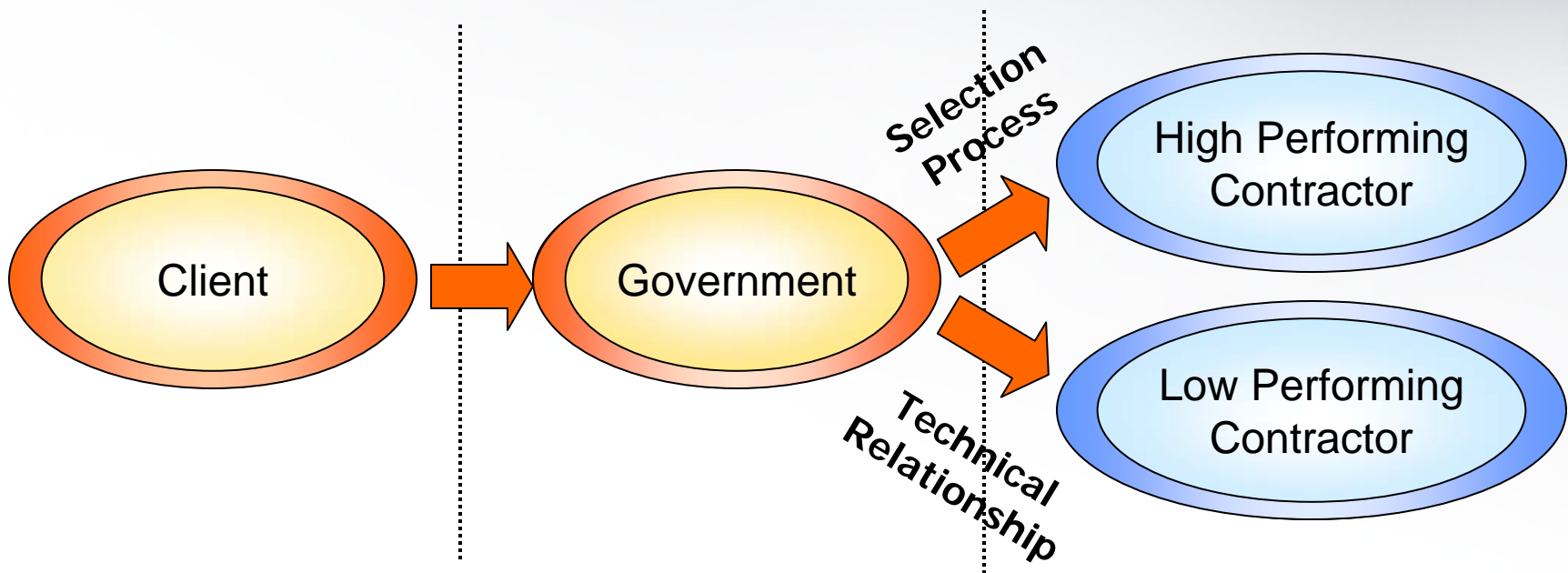


....it becomes less important to be skilled, accountable, and able to minimize risk

"Manager's Code"
The movement of risk.....



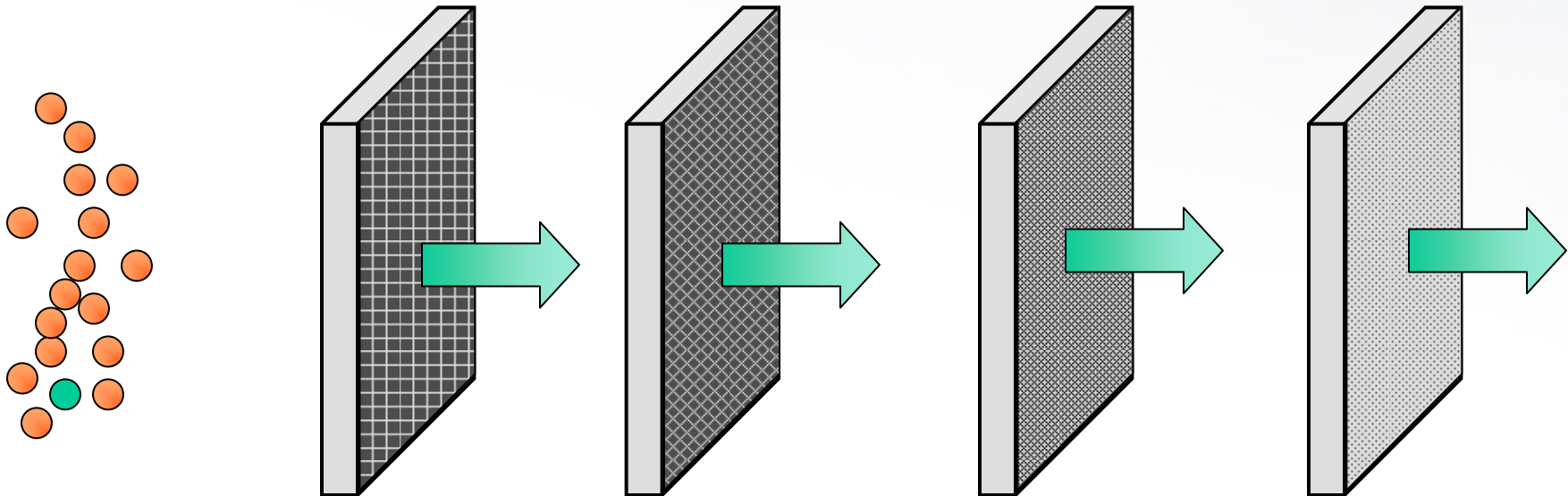
Who do the client's professionals feel more comfortable working with?



Information Environment

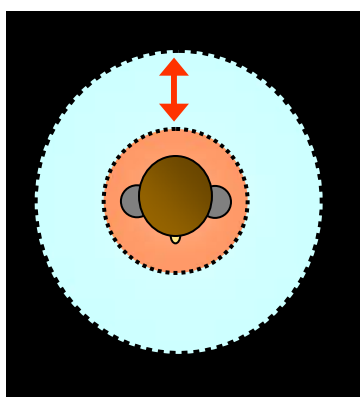
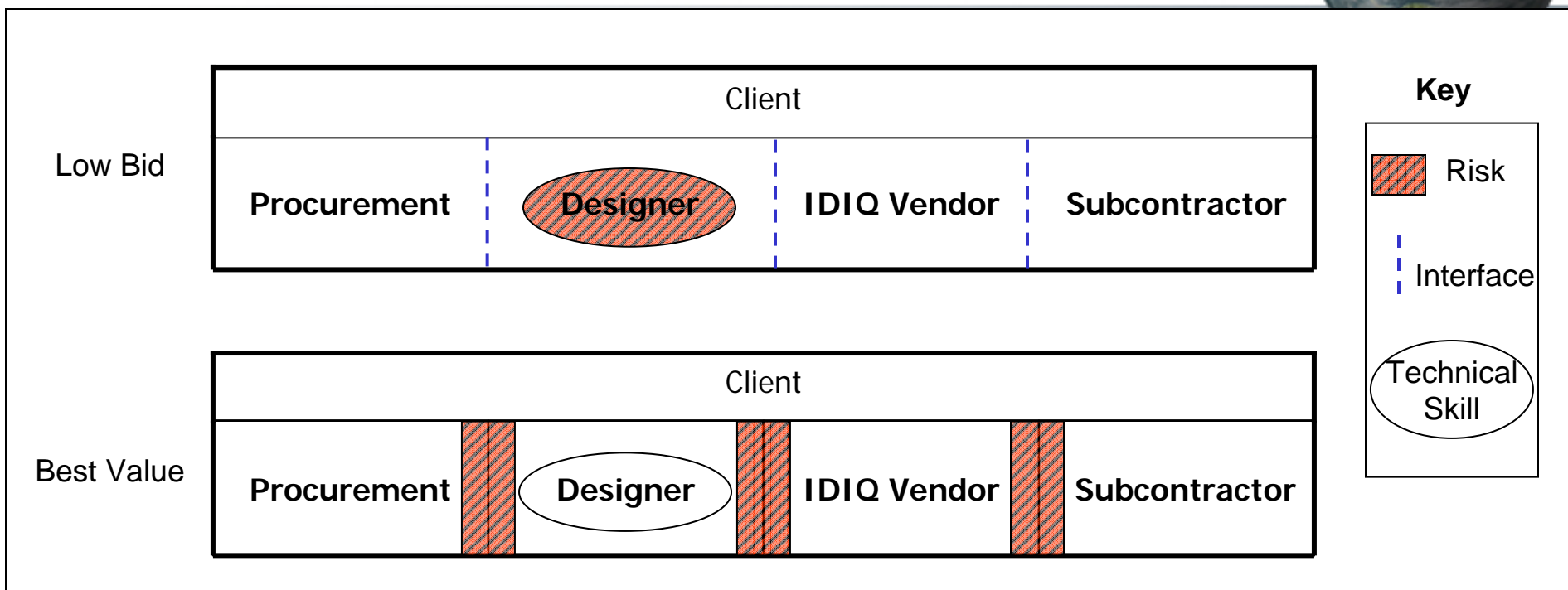


- Minimize documentation/information flow
- Minimize decision making
- Look for dominant information
- Minimize work for everyone
- Transfer risk to someone who can minimize risk





Structure Forces Performance



Risk in the seams where only perceptive people see.

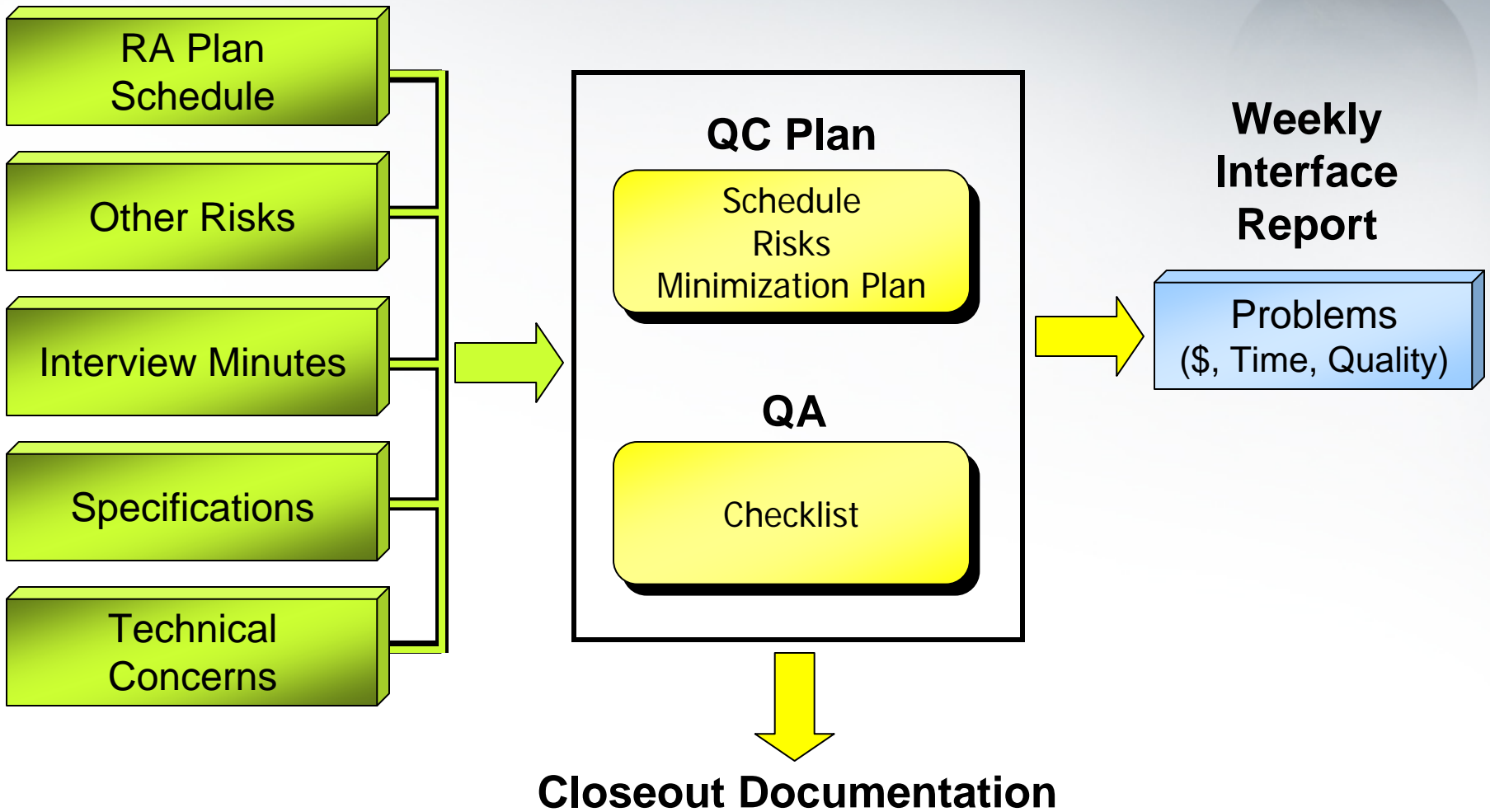
Best Value System Performance Information Procurement System (PIPS)



Preplanning/Quality Control

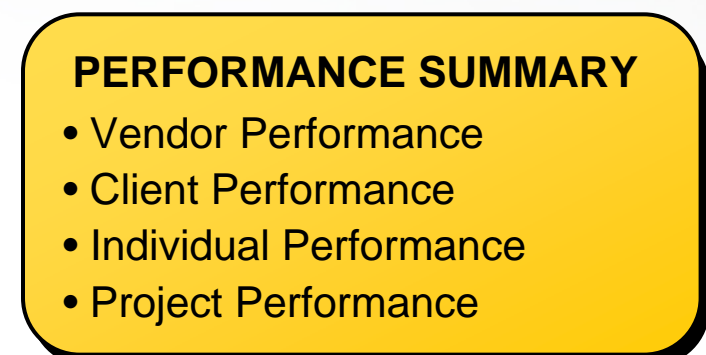
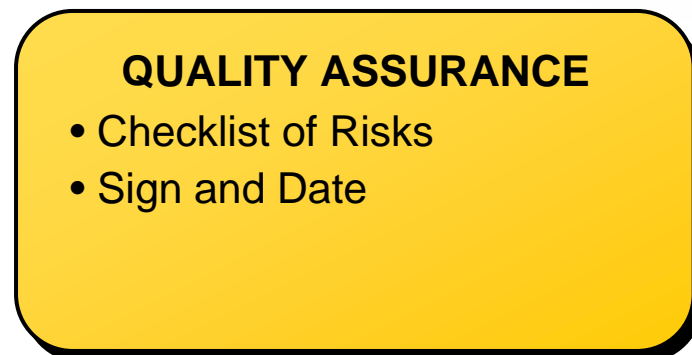
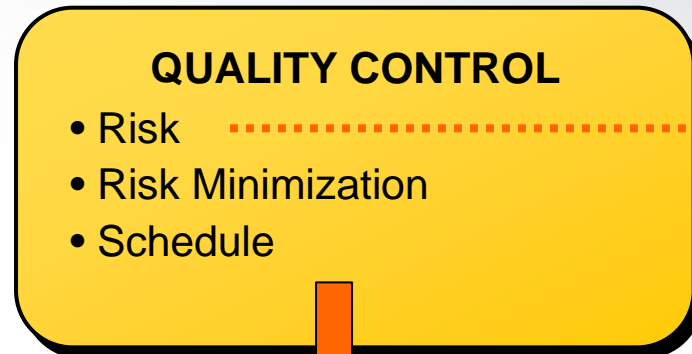


Pre-Award Period



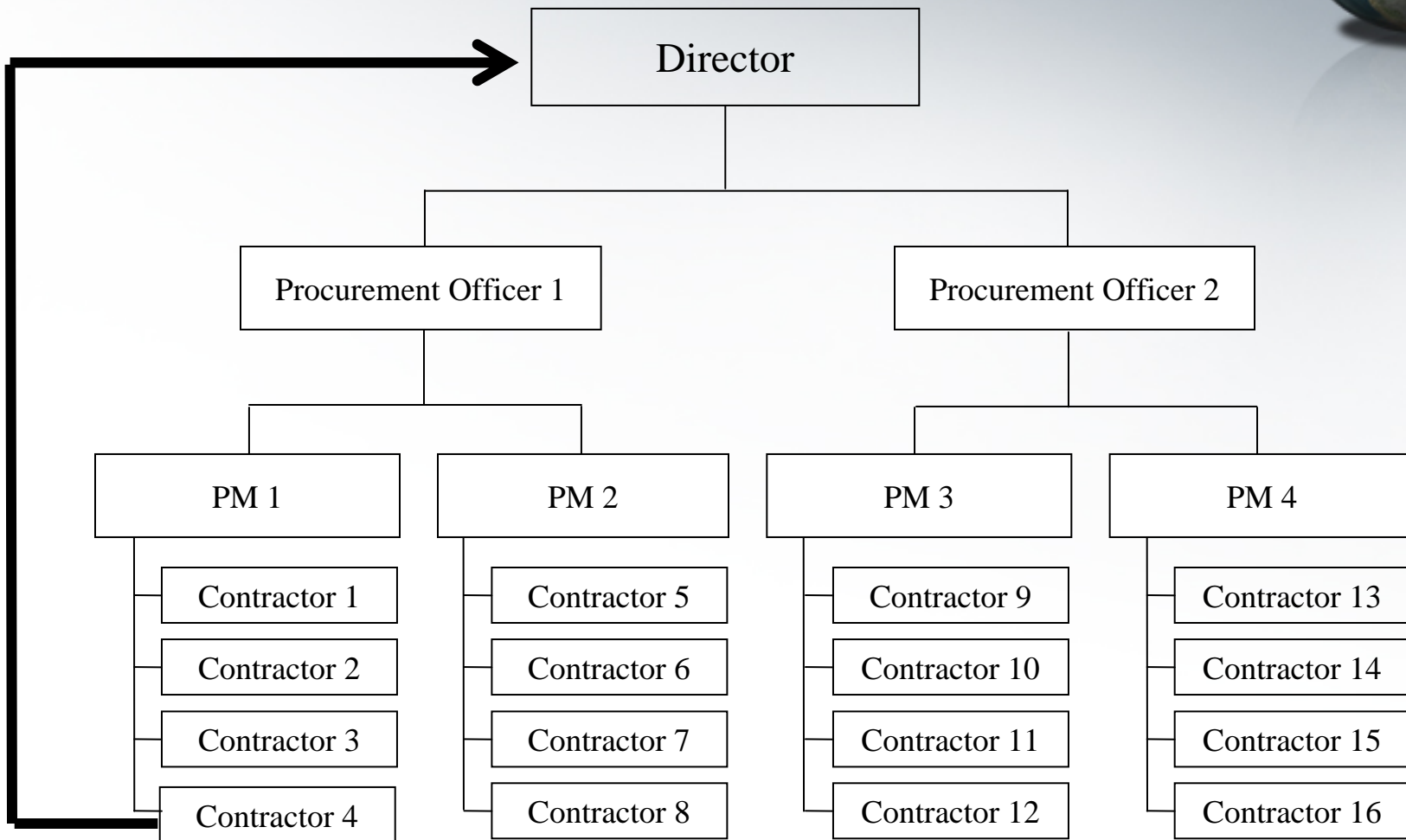


Unforeseen Risks



- Diagram illustrating the flow of information and risk management:
- QUALITY CONTROL** (Left Column) includes:
 - Risk
 - Risk Minimization
 - Schedule
 - WEEKLY REPORT** (Right Column) includes:
 - Risk
 - Unforeseen Risks
- Flow: **QUALITY CONTROL** leads to **QUALITY ASSURANCE** (Left Column). **WEEKLY REPORT** leads to **PERFORMANCE SUMMARY** (Right Column). A dashed orange arrow labeled "Unforeseen Risks" connects the "Risk" item in the Quality Control box to the "Unforeseen Risks" item in the Weekly Report box.

Risk Management by Contractor



Division Overview



DIVISION OVERVIEW	2/3/2006
Total Awarded Budget	\$100,000,000
Current Cost	\$120,000,000
Over Budget	\$ 20,000,000
PROJECT OVERVIEW	
Total Number of Projects	100
% Projects Completed On Time	90%
# of Jobs Delayed	10
% Projects Completed On Budget	90%
# of Jobs Over Awarded Budget	10
AVERAGE PROJECT	
Project Budget	\$ 1,000,000.00
# of Days Delayed	20
Number of overdue risks	2.1
Owner Rating	9.8
Risk Number	1.56

Top Risks



No.	Project	Rating
1	Project 1	8.00
2	Project 2	7.56
3	Project 3	4.32
4	Project 4	3.20
5	Project 5	3.01
6	Project 6	2.75
7	Project 7	2.20
8	Project 8	2.16
9	Project 9	1.18
10	Project 10	1.17

Contractors



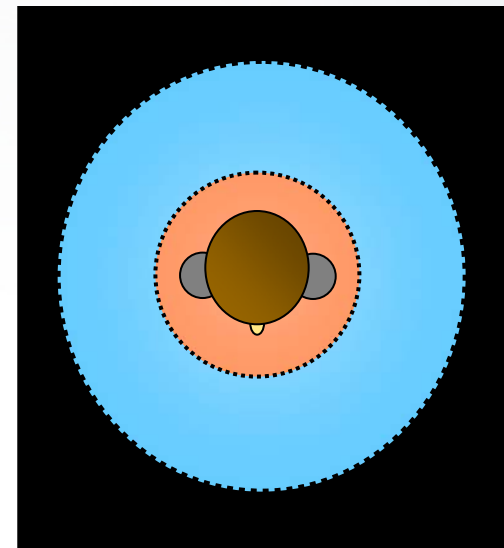
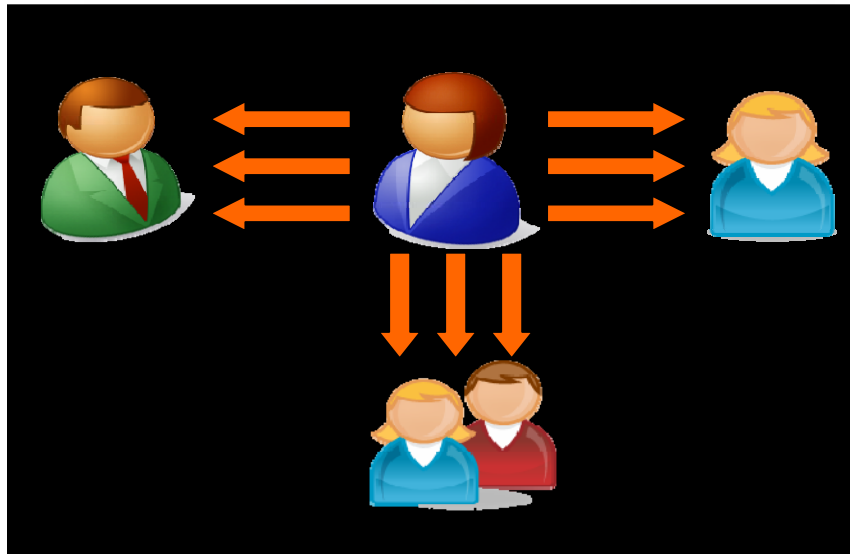
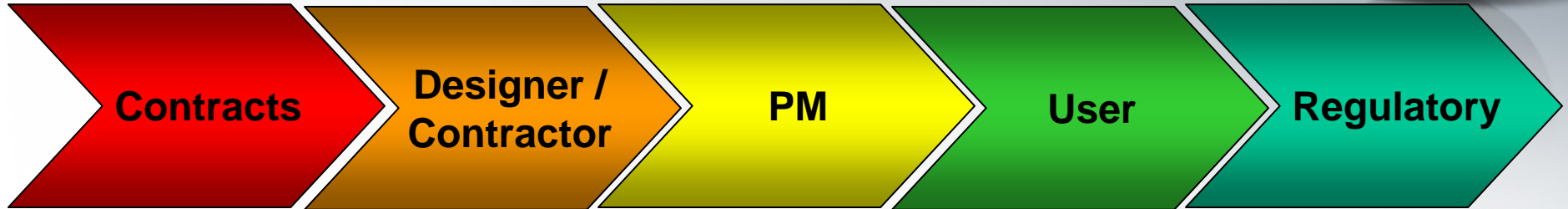
CONTRACTOR OVERVIEW	A	C	D	F	B	E
Total Awarded Budget	\$6,020,317.04	\$13,564,350.92	\$79,631,067.55	\$66,890,916.82	\$45,920,051.27	\$47,666,021.99
Current Cost	\$6,045,317.04	\$14,306,152.85	\$81,484,864.64	\$66,890,916.82	\$45,941,515.48	\$47,976,259.39
OVERVIEW OF PROJECTS						
Total Number of Projects	10	16	48	22	30	14
% Projects On Time	70%	56%	65%	73%	87%	93%
# of Jobs Delayed	3	7	17	6	4	1
% Projects On Budget	80%	56%	73%	100%	93%	71%
# of Jobs Over Awarded Budget	2	7	13	0	2	4
AVERAGE PROJECT						
# of Risks per Job	4.10	6.44	2.02	5.32	1.13	6.50
Owner Generated Risks	0.70	3.19	1.25	4.41	1	3
Number of overdue risks	0.00	0.44	0.23	0.32	0.03	0.29
% Over Awarded Budget	5.78%	30.02%	2.21%	0.00%	0.03%	0.86%
% over budget due to owner	4.42%	29.97%	1.67%	0.00%	0.01%	0.83%
# of Days Delayed	8.00	43.50	66.92	20.18	27.00	5.29
# of days delayed due to owner	2.60	43.50	53.17	20.18	24.00	3.79
Owner Rating	10.00	8.58	8.23	9.06	9.37	9.64
Risk Number	7.09	4.30	4.04	2.18	2.06	1.61

PM/PI Performance Line



OVERVIEW	PM 1	PM 2	PM 3
Total Awarded Budget	\$50,000,000	\$10,000,000	\$45,000,000
Current Cost	\$51,250,000	\$10,000,000	\$45,800,000
Over Budget	\$1,250,000	\$0	\$800,000
OVERVIEW OF PROJECTS			
Total Number of Projects	15	3	6
% Projects Completed On Time	87%	100%	83%
# of Jobs Delayed	2	0	1
% Projects Completed On Budget	93%	67%	100%
# of Jobs Over Awarded Budget	1	1	0
AVERAGE PROJECT			
Project Budget	\$3,333,333	\$3,333,333	\$7,500,000
% Over Awarded Budget	2.5%	0.0%	1.8%
# of Days Delayed	15	0	11
Number of overdue risks	0.51	1.20	0.92
Owner Rating	9.81	9.71	10.00
Risk Number	1.80	1.40	1.03

Benefits of Thinking as a Supply Chain



Dallas Independent School District



School	Budget	1st	2nd	3rd	4th	5th	6th
Edison	\$1,153,634	Cont A	Cont B	Cont C	Cont G	Cont H	
		\$875,818	\$1,084,712	\$1,133,200	\$1,017,998	\$1,835,664	
Carver	\$548,347	Cont A	Cont B	Cont C	Cont G	Cont H	Cont L
		\$474,418	\$428,540	\$541,300	\$545,820	\$461,415	\$560,000
Madison	\$587,336	Cont A	Cont B	Cont C	Cont G	Cont H	
		\$575,799	\$703,571	\$589,300	\$673,276	\$936,517	
Johnston	\$716,928	Cont K	Cont B	Cont A	Cont C	Cont G	Cont H
		\$447,000	\$654,378	\$509,719	\$635,000	\$580,846	\$790,663
Donald	\$175,576	Cont B	Cont A	Cont K	Cont G	Cont C	Cont H
		\$187,054	\$155,694	\$178,000	\$186,498	\$244,700	\$281,746
Long	\$437,080	Cont A	Cont B	Cont C	Cont G	Cont H	
		\$425,281	\$529,801	\$501,500	\$512,752	\$875,750	
Foster	\$434,444	Cont B	Cont A	Cont K	Cont G	Cont C	Cont H
		\$352,770	\$328,086	\$368,500	\$388,502	\$595,900	\$608,617
Auburn	\$434,120	Cont B	Cont A	Cont K	Cont G	Cont C	
		\$406,531	\$365,981	\$533,000	\$420,989	\$487,700	
Macon	\$336,892	Cont B	Cont A	Cont K	Cont C	Cont G	Cont H
		\$366,445	\$295,739	\$334,200	\$397,600	\$353,588	\$373,174

Comstock Hall

- Scope = Replace existing lighting fixtures
- Budget = \$180,000



No	Criteria	1st	2nd	3rd	4th
		CH04	CH03	CH02	CH01
1	Price	\$ 72,400	\$ 70,350	\$ 87,850	\$ 96,575
2	Risk Assessment Plan	7.5	5.8	4.2	2.7
3	Schedule	35	30	35	25
4	PPI (1-10) Average	9.7	9.6	9.8	9.6
5	PPI (Jobs & People) Average	20	18	16	23

- Awarded to Gephart Electric
 - Estimated budget \$180,000
 - Award cost \$72,400 (-60%)

- Results:
 - On time
 - No cost change orders
 - Client highly satisfied



Physics Tate Building



- Scope = Chilled water lines
- Budget = \$490,000



No	Criteria	1st	2nd	3rd
		T1	T3	T2
1	Price	\$ 465,700	\$ 489,545	\$ 538,500
2	Risk Assessment Plan	8.1	7.1	2.3
3	Schedule	75	61	120
4	PPI (1-10) Average	9.6	9.6	9.8
5	PPI (Jobs & People) Average	19	24	11

- Awarded to Metropolitan Mechanical
 - Estimated budget \$490,000
 - Award cost \$465,700 (-5%)
 - Award schedule 87 days
- Results:
 - On time
 - No cost change orders
 - Client is highly satisfied





Overall Analysis

- 16 Projects Procured/Awarded

- 6 Electrical
- 5 Mechanical
- 5 Roofing

- 13% below budget

- \$4.9M Budget
- \$4.3M Award

- 10 projects completed

- 100% Satisfaction
- 9.1/10 Average Rating

No	Project	Trade	Estimated Budget	Awarded Cost
1	Comstock Hall	Electrical	\$180,000	\$72,400
2	Elliot Hall	Electrical	\$120,000	\$93,850
3	Masonic Center	Electrical	\$220,000	\$200,700
4	Middlebrook	Electrical	\$120,000	\$68,400
5	Mondale Hall	Electrical	\$160,000	\$134,780
6	Parking Ramps	Electrical	\$168,000	\$192,185
7	Child Care	Mechanical	\$550,000	\$443,100
8	Cooke Hall	Mechanical	\$50,000	\$64,500
9	Lions Chiller	Mechanical	\$143,000	\$170,608
10	Mayo Building	Mechanical	\$52,000	\$46,525
11	Tate Physics Lab	Mechanical	\$490,000	\$465,700
12	Andrew Boss Lab	Roofing	\$120,000	\$178,440
13	Mayo Building	Roofing	\$850,000	\$893,861
14	Smith Hall	Roofing	\$1,250,000	\$947,296
15	Stakman Hall	Roofing	\$64,000	\$101,900
16	University Office	Roofing	\$410,000	\$225,395

Total \$ 4,947,000 \$ 4,299,640

Project Manager Comments



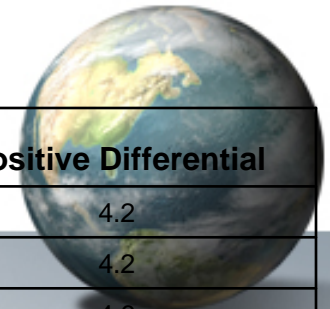
- UMN Project Managers were originally skeptical about the process (minimize directions, control, management)
- UMN PM Observations:
 - Immediate change in attitude from vendors
 - Although the Pre-Award Period takes time and effort, the overall duration of procurement was the same (saved a lot of time when dealing with RFI's)
 - PM stated he spent about 10% of the time managing the projects (90% reduction of effort). Nearly all issues were resolved during PA Period.
 - Substantial amount of time saved since no change orders
 - End users/clients were asking PM's to use PIPS process on other projects

Latest Implementations at PBSRG



- \$30M / year, 10 year contract for food services at Arizona State University (Ray Jensen) – process has changed the way food services are delivered
- Partnering with National Institute of Government Purchasing, Project Management Institute (PMI), and International Facility Management Association (IFMA) groups

Improvement of Best Value/PIPS



	Factor	Positive Differential
1	Confidence in vendor	4.2
2	Knowledge of the vendors' capability, before contract award	4.2
3	Satisfaction with the proposal (expectation of "promises" being executed)	4.6
4	Understanding of project risks, before the contract begins	6.8
5	Ease in differentiating between vendors' capabilities/values	5.4
6	The amount of pre-planning, risk minimizing, and value added by the vendor, before contract award	6.6
7	The process is logical	2.2
8	The process transfers a large amount of meaningless information	7
9	The process promotes win-win situations (benefits all parties)	5.6
10	The process imposes unnecessary management and decision making efforts on the part of the client	4.8
11	The process creates adversarial relationships (unaligned interests/motives)	6.4
12	The process encourages risks to be identified by all parties	7.2
13	The process transfers risk to the most appropriate party	7.4
14	The process generates a contractually binding flow of efficient communication, throughout the life of the contract	6.6
15	The process documents performance via contractually binding measurements, which create accountability for all parties involved	6.4
16	The process is fair for all parties involved	5.6
17	The process is a step in the positive direction, in the world of service procurement	7.8
	Individual Averages	
	<u>Differential Between Best Value and Normal Process</u>	5.81

Incumbent

Awarded vendor



Financial Criteria	A	B	C
Commissions	\$30,254,170	\$60,137,588	\$64,000,000
Capital Investment	\$14,750,000	\$20,525,000	\$12,340,000
Equipment Replacement Reserve	\$ 7,213,342	\$ 4,100,001	\$ 8,171,811
Total	\$52,217,512	\$84,762,589	\$84,511,811

Total financial distance between incumbent and awarded vendor over 7 year guaranteed contract with potential +3 years:

\$ 32,545,077

Advantages



- Proven delivery structure for services (non-technical)
- Measures
- Forces preplanning and minimization of risk
- Attracts the best contractors/personnel
- Increases value and performance at the lowest price



Comments / Questions



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