



THE SURVIVAL OF THE FACILITY MANAGER

Dean Kashiwagi, P.E., PhD
Director, Professor, Fulbright Scholar

March 24, 2017

Successful FM of Future

- Become a part of ownership
- Have more power with ownership
- Create higher quality through efficiency [lower cost]
- Greater breadth of coverage
- Greater value
- Faster “spin-up” to create value

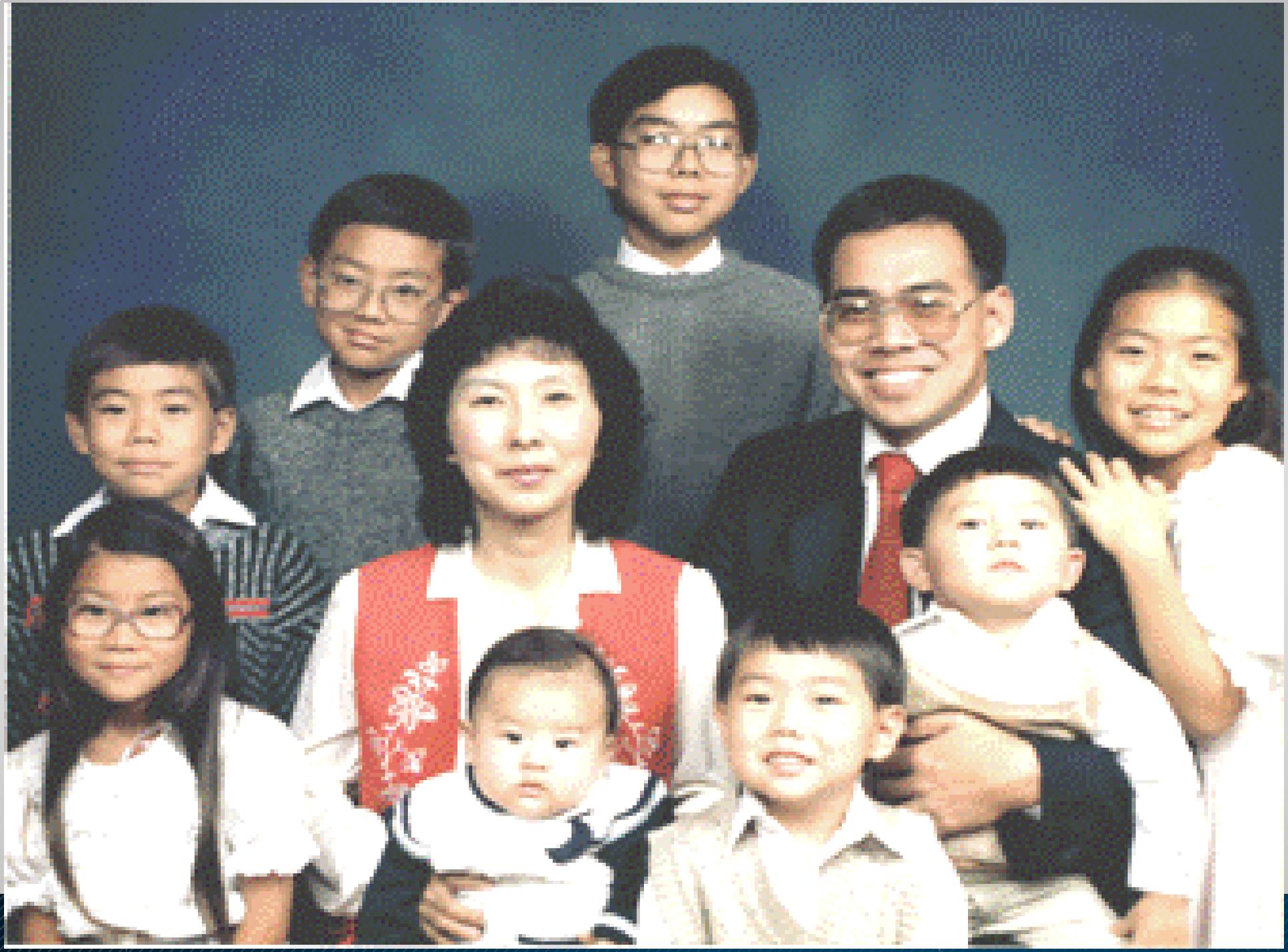
1976 (40)



MDC



Reactive



Change in Approach

- Problem was me and I didn't even know it
- I put rules on myself
- Talk less
- Talk simple
- Do not talk unless asked
- Do not try to influence or control
- You can possibly change yourself, you cannot change anyone else
- Accept everyone for who they are





Is Dr. Dean an
“Anchor of
Knowledge”?

Or is he just
simple minded
enough to see
the future?



Performance Based Studies Research Group Will Bring BV Technology to You

- 24 years, \$17.3M Research Funding, 1,900 tests delivering \$6.6B of services
- 98% customer satisfaction
- 10 Countries, 33 US States
- Minimized 5 - 30% project cost
- Increase quality, customer satisfaction and vendor profit
- Most licensed technology at ASU over the last 20 years [51 licenses]
- Mechanical, Electrical and Piping [MEP] Craft Area Expertise Project
- FM lower cost of services from 5 – 30%

FMs Today

- Overworked and undermanned
- Budgets are constrained
- Difficult time communicating needs to the stakeholders
- FM expert is trained to manage, direct and control [MDC]
- Constant pressure from the C-Suite to cut costs and maintain value

Is FM
professional
going to have a
bigger or
smaller role in
the future?

Copenhagen City
Center

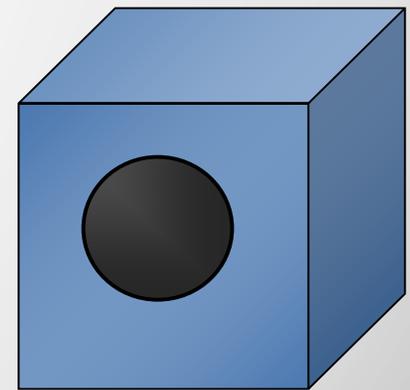


Traditional FM Professional Model [cost is 30% greater]

- “Leader” [FM] is the expert.
- Focus on changing people [education and training]
- Followers are the constraint
- Requires 30% more resources



Reactive

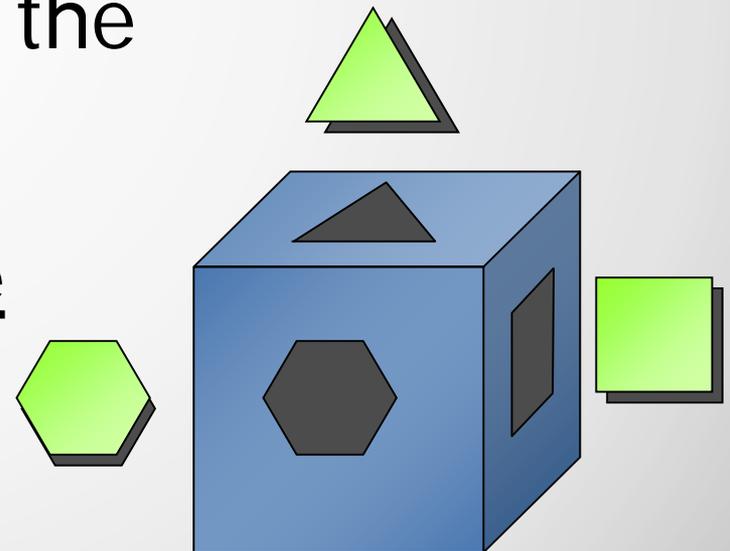


Leaders Utilize Expertise [save 30%]

- Focus on alignment of people.
- Identifies and utilizes expertise.
- People doing the work are the experts [30% savings].
- Focus is on changing the system and utilizing expertise.

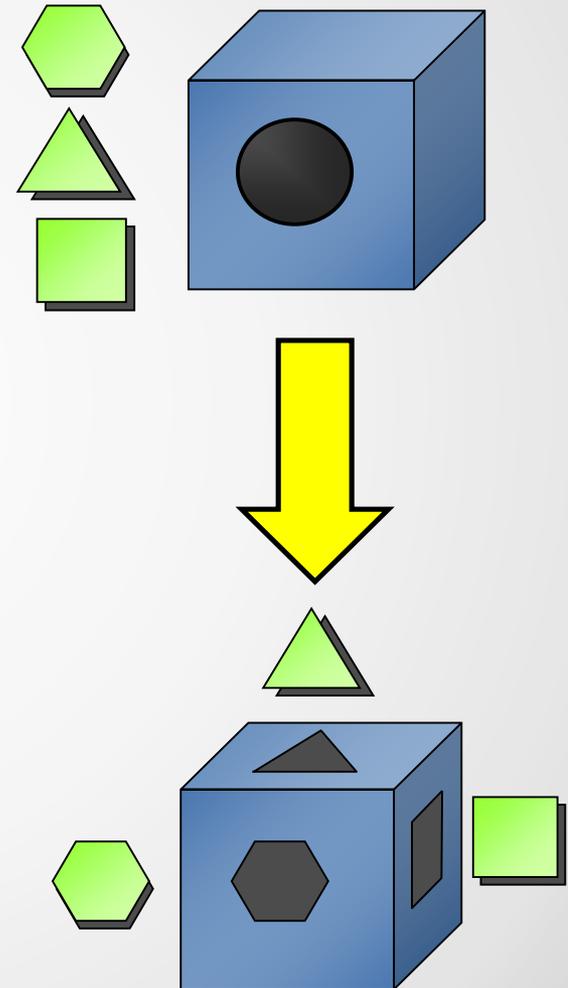


Proactive



Continue to increase stress?

- Optimal to minimize the following:
 - Stress level
 - Decision making
- Results in leadership approach called the best value approach (BVA)

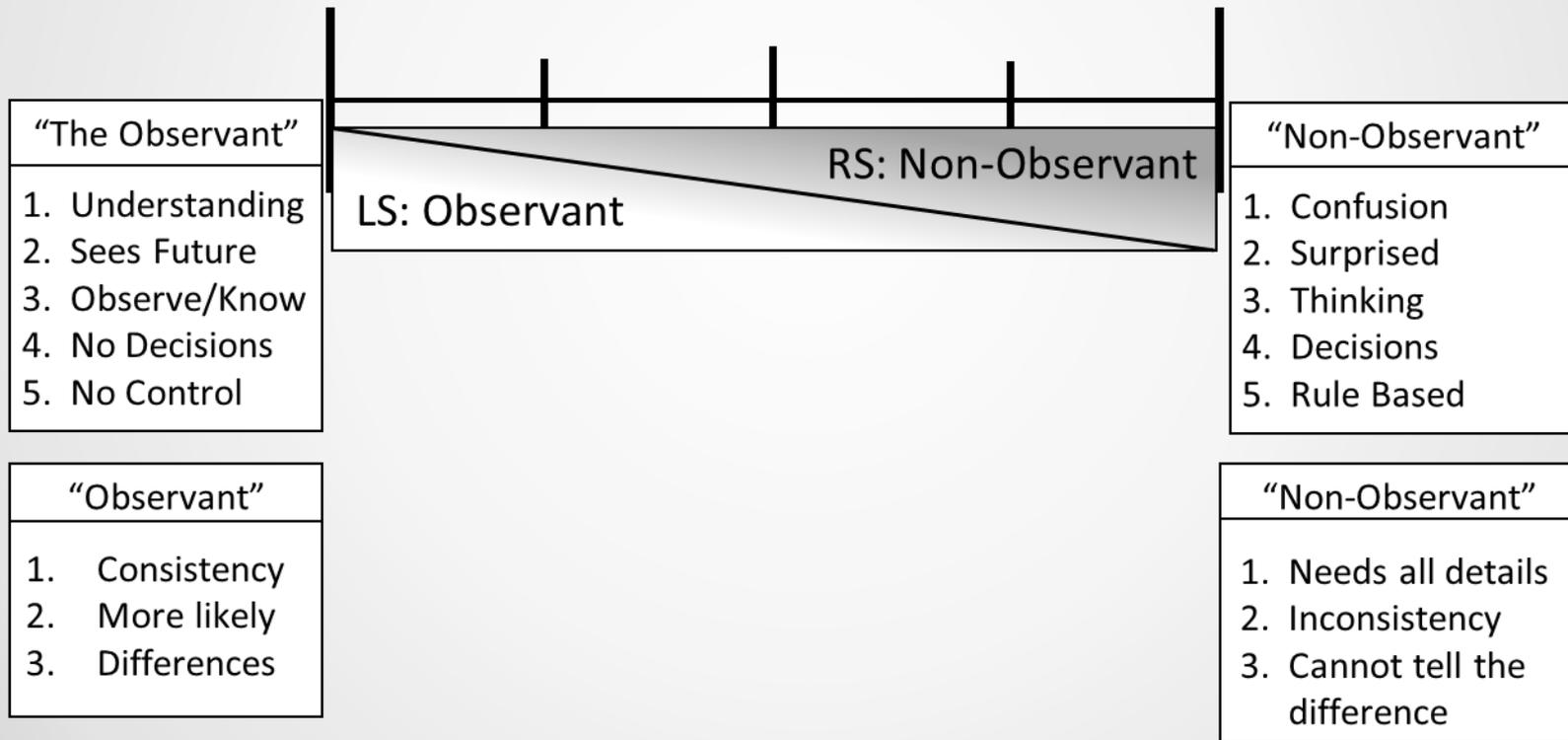


“FM of the Future” Must Be Done in a Computerized and Digital Age

- Leadership based and not a manager/controller
- Identify and utilize expertise
- Minimizes management, direction and control [MDC] and decision making [DM]
- Understands that MDC costs 10 to 30% more
- Technology is driving change

Where is Technology Taking Us?

Develop Approach that Simplifies, Uses Transparency to Assist People Become the Best that they can Become



Technology Created to Assist People to See



Technology developed to minimize thinking and decision making



Minimize Risk by Minimizing T&DM



Robots in China



In Tokyo...

- 5M+ vending machines [VMs] nationwide (highest density worldwide).
- 1 vending machine per every 23 people.
- Annual sales: \$60B+.
- Items: Soda, coffee, tea, cigarettes, candy, soup, hot food, sake, beer, fruit, umbrellas, eggs, pet supplies, etc.



Leadership: Utilize expertise and transparency

- Optimizes supply chain
- Changes approach to people
- Change from MDC to utilizing expertise and transparency
- Optimizes profit, minimizes cost, develops people
- Decreases stress



Subdivisions of Work in Digital Age

- Robotics, Automation
- Identification and utilization of expertise
- Expertise [non-automated]

FM Professional of the Future

- Robotics, Automation
- **Identification and utilization of expertise**
- Expertise [non-automated]

FM Requirement of the Future

- More efficient in all areas
- More quality
- Minimize cost
- Increase value of people

Is there opposition to this movement? No change and higher pay

Fast Food Company Develops Robots



https://www.youtube.com/watch?v=iQ_fSP3LGw8

WHDT
WORLD
TELEVISION
SERVICE

FAST FOOD COMPANY DEVELOPS ROBOTS
AMANDA GABRIEL REPORTING



▶ ⏪ 🔊 0:05 / 1:28



Change the Paradigm with Simplicity

2016 Summer Program Results



73%

Are Less Stressed

66%

Are More Confident

57%

Feel More Accountable

52%

Feel Happier

Morgan Percy-Fine



"[The program] was so enjoyable. I wish all school was like this"

- 1 week after course
- Friend contacted her while standing on a ledge ready to jump
- Saved his life using IMT concepts
- Concepts included:
 - Our life has a purpose
 - It is predictable
 - There are no mistakes
 - Mistakes are only areas of our life that were less efficient and can learn from
 - We have full control over our lives and could improve it
- Both are planning on taking Summer 2017 Course
- Parents were amazed!!!

Isaac Arcilla

- Senior High School Quarterback
- Struggling in school
- Left home, sleeping on couches
- Returned home after 2 class periods
- Repaired relationship with his mother
- Mother attended parent conference with son

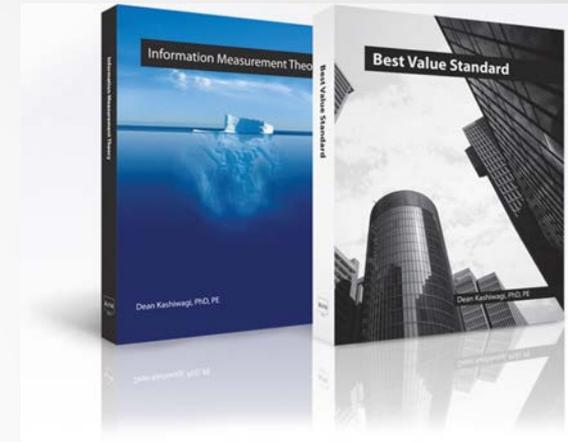


FM of the Future

- Greater span of control of Facility Services [IT, construction, space planning, services]
- Create transparency with metrics and simplicity
- Utilize technology and systems that make FM job easier, better and more efficient
- Transforms people into our most valuable assets

For More Information

- Two book giveaway
- Electronic copy of the newest manual and roofing paper
- Pass a business card into the hat



Automated FM Assist



- Robot utilizes the language of metrics
- Transparency created by language of metrics
- Simplification of environment

FM Robot Uses Language of Metrics

- Simplifies communication
- Creates transparency
- Identifies expertise
- Specific vendor capability
- Simple reports to show time, cost, & project deviations
- Metrics will end blame, errors, & performance problems
- It will not require the C-Suite to think or make decisions
- Increase the breadth of the FM's role & ability to optimize FM operations

Leadership Roadmap

- Technology is the BVA
- More important than technical knowledge
- Utilizes expertise to create transparency
- Language of metrics helps non-experts to see
- Thinking, decision making and MDC is minimized
- The PM of the future will identify and utilize expertise

Future FM is Leadership Based

- Leader and not a manager
- **Identify and utilize expertise**
- Uses the language of metrics (Robot)
- Minimizes management, direction and control [MDC]
- Understands that MDC costs 10 to 30% more
- Technology is not the issue; it is aligning human beings based on their capability to deliver an unique service

Low Price and High Performance Roofing

Budget: \$560K Total Funding \$750K

Company	System	Cost	\$ SF	Annual \$	Age of Roofs	# of References	Warranty
Vendor 1	BUR 3 Ply New Roof	\$761K	\$10.74	\$31K	Avg: 2 yrs. Max: 4 yrs.	3	25 years [QA]
Vendor 1 modified	BUR 3 Ply Gravel Reuse existing insulation	\$659K	\$9.30	\$27K	Avg: 2 yrs. Max: 4 yrs.	3	25 years [QA]
Vendor 2	PVC Grade 2	\$630K	\$8.53	\$32K	Avg: 2 yrs. Max: 4 yrs.	5	20 years [NDL]
Vendor 3	SPF	\$528K	\$7.54	\$27K	Avg: 4 yrs. Max: 5 yrs.	Surveys: 94 Roof list: 47	20 years
Vendor 3 System 2	PVC Grade 1	\$504K	\$7.19	\$26K	Avg: 5 yrs. Max: 15 yrs.	30	20 years



School District 287
Plymouth, MN
Tom Shultz, CFM





School District 287 Report



Intermediate
District 287

Project Name	Value (\$M)	Percent Complete	Duration (Months)	Schedule Delay %	Change Order	Client Satisfaction
NEC – General Construction	\$25.9	100%	17	0%	2.8%	10.0
NEC – Technology Systems	\$1.6	100%	7	32.7%	0.9%	7.6
NEC – Demountable Walls	\$2.0	100%	7	0%	0.4%	9.0
TOTAL:	\$29.5	100%	11	11%	2.9%	8.9

Notes:

1. Technology Systems vendor was not selected using BV
2. CM done by owner saving client \$2.6M
3. Tom Shultz won the 2011 IFMA FM of the Year award

FM of the Future: Dhaval Gajjar, PhD

Pre-BVA:

- Unsure of future career
- Biology major [Pharmacy]

Post BVA:

- Completed Master's and Doctorate programs
- Tracked performance on over 1,500 roofing projects
- Published 24 research papers
- Youngest Construction Manager to work for Harkins Theaters [no experience but can track performance of vendors, personnel, projects etc.]



How Buyer Communicates Project Requirements using metrics

- Software package for ERP System
- Number of entries per year: 20,000
- Number of existing software/platforms integrated into system: 6
- Number of heavy users: 20
- Number of organizations using system: 10
- Average number of trained personnel: 2

Project Specific Performance

Requirement	Client Requirement
# of Projects	1
Type	ERP
Average budget	\$ 2.5M
# of employees serviced	1,000
Transactions / month	20,000
Existing interfacing software	3
# of departments	6
Time Deviation	-
Cost Deviation	-
Customer Satisfaction	-

Project Specific Performance

Requirement	Client Requirement	Vendor's Project Performance
# of Projects	1	2
Type	ERP	ERP
Average budget	\$ 2.5M	\$ 3.0M
# of employees serviced	1,000	800
Transactions / month	20,000	22,000
Existing interfacing software	3	5
# of departments	6	5
Time Deviation	-	.5%
Cost Deviation	-	0%
Customer Satisfaction	-	9.5 / 10



Mission: Increase quality of environmental engineering services

Timeline: 1 year

Projects:

- Yuma: Air Quality
- ASRAC: Water Quality
- Brownfields: Waste Management

Executive Team:

- Teena Ziegler
- Erik Massey



ADEQ Yuma Project



- Client: Arizona Department of Environmental Quality
- Project scope: Environment air quality
- Challenges:
 - Engineer services.
 - Complex, lots of data.
 - Complete the project without a scope of work.

ADEQ Process Improvement

Criteria	% Diff	Traditional	Best Value
Required time to evaluate proposals	- 95%	286 hrs.	13 hrs.
Protests	0%	0	0
Avg. Customer Satisfaction of process (1-10)	63%	5	9
ADEQ Administration Cost	- 96%	\$ 98,520.00	\$ 3,840.00
ADEQ Admin. Cost Savings		\$ 94,680.00	

Traditional vs. Best Value Project

ADEQ PM Criteria	Pinal County (Traditional)	Yuma (Best Value)
Total Cost of Projects	\$400K	\$138K
Overall Client Satisfaction	6/10	10/10
Project Duration (days)	730	352
% Total Schedule Deviation	150%	23%
% Schedule Deviation Due to ADEQ	-	23%
% Schedule Deviation Due to Vendor	-	0%
% Cost deviation	300%	0.5%*
% of Milestone Deliverables Requiring ADEQ Revisions	100%	0%
% of ADEQ Time Required to Complete Vendor Milestones	50%	15%

*Deviation caused by unforeseen risk (EPA implementing new requirements)

Overall Program Performance

No.	Criteria	Traditional	Best Value
1	Total # of projects	35	60
2	Total cost of projects	\$5.5M	\$5.8M
3	% of projects SOW completed in fiscal year	50%	99%
4	# of ADEQ PMs to manage projects	7	5
5	Customer satisfaction of vendor performance	6.9/10	8.3/10 D1 (7) D3 (9)

*Data was adjusted due to project de-scoping (29 projects, \$1.2M (22%), 479 days (4%))

- ADEQ PMs increased work capacity by 140%
- Vendors performed 94% more work in 33% less time
- ADEQ customer satisfaction of vendor work increased by up to 30%

1st Government Test in Netherlands

\$1B Infrastructure Delivery

- Infrastructure repair critically needed [drivers spend 1-2 hours on road going and coming].
- Procurement and execution takes too long [12 years].
- Over-management of vendors
- 16 project, 6 awards, \$1B test of best value PIPS.
- Goal is to finish 10 projects in 3 years.



Results

- Program results: 15 projects finished (expectation was 10)
- Delivery time of projects accelerated by 25%
- Transaction costs and time reduced by 50-60% for both vendors and client
- 95% of deviations were caused by Rijkswaterstaat or external [not vendor caused]
- Organizational change was the biggest challenge
- NEVI , Dutch Professional Procurement Group [third largest in the world] adopts Best Value PIPS approach
- Now being used on complex projects and organizational issues



NEVI [3rd largest professional procurement group after ISM and NIGP]: BV is Mainstream Approach



<PREV | Home> Best Value Procurement



BEST VALUE PROCUREMENT

Put parties in their power to create maximum value for the common goal

"Best Value moves the procurement function in paradigm, the function and the approach. It is of this movement in the Netherlands." - Dean K



- N**
- Intro
- Trainings (license)
- BVP Certification
- Extras
- Certified Trainers

Best Value is more than a procurement method; it is a philosophy that all parties must fully come to be in their power to create the most value for the

Of "monitoring and controlling of providers" to "let go and trust". That is easier said than done. A paradigm shift is necessary and will only succeed if

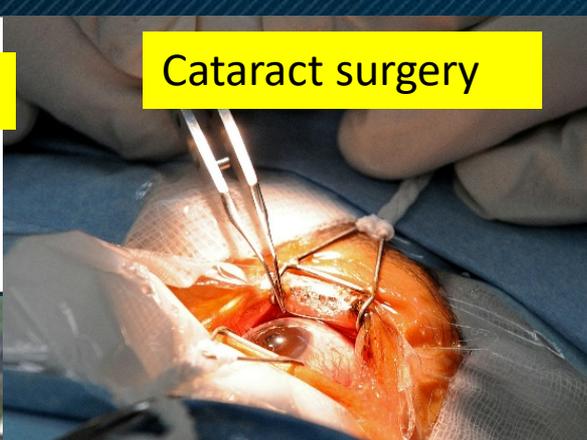
NE Be
**Program Dir. of Training:
Jeroen van de Rijt**



Food Services



Complex IT project



Cataract surgery



Fast-track €800M



Supplies of routine products



Airport, €100M



Parking Garage €55M



Construction works



Super complex Bio repository



Maintenance 8 year contract

Advancements

- Norway and Poland running first tests
- India is importing technology
- Saudi Arabia is moving ahead with implementation
- State of Utah returning to BVA after 16 years of first implementation
- Education programs flourishing in Phoenix metropolitan area

Performance Based Studies Research Group Will Bring BV Technology to You

- 24 years, \$17.3M Research Funding, 1,900 tests delivering \$6.6B of services
- 98% customer satisfaction
- 10 Countries, 33 US States
- Minimized 5 - 30% project cost
- Increase quality, customer satisfaction and vendor profit
- Most licensed technology at ASU over the last 20 years [51 licenses]
- Mechanical, Electrical and Piping [MEP] Craft Area Expertise Project
- FM lower cost of services from 5 – 30%

“Kissing Bridge” is 3 years late



Finished Bridge July 2016



FM of the Future

- Join the ownership
- Identification and Utilization of Expertise
- Reduce costs by 30%
- High Quality: Deliver services on time with high quality
- Language of Metrics: Use the language of metrics to become a persuasive force
- More important: become a very valuable FM professional with a greater breadth of impact [more than furniture, janitorial and landscaping services]

Q&A



Linked in
Dean.kashiwagi@asu.edu

YouTube

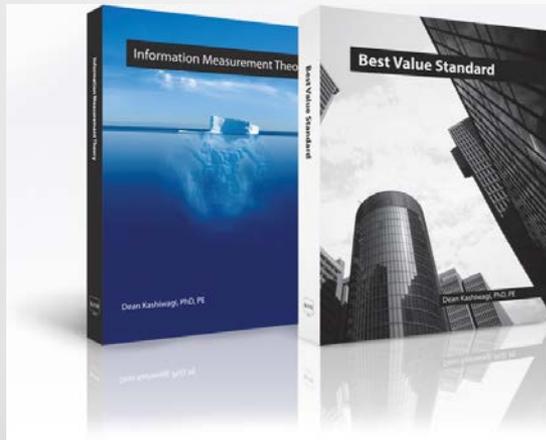
Pbsrg.com

ksmleadership.com

Jan 15-19, 2018

Tempe, AZ

2018 Best Value Education and
Training



PBSRG.com

Research partnerships

KSM Inc.

Leadership Society of Arizona
[LSA]