

SUCCESS THROUGH QUALITY MANAGEMENT

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Who are we

- Your name
- Position in the company
- Number of years in this field of work

System Thinking

A system is a whole that derives its characteristics (good or bad) from the interactions of its essential parts.....and none taken separately.



All are essential, none are sufficient

A House Is a System

A house is system that derives its characteristics (good or bad) from the interactions of its essential parts.....and none taken separately.



All are essential, none are sufficient

Quality Is a System

Quality is system that derives its characteristics (good or bad) from the interactions of its essential parts.....and none taken separately.

Quality Management Plan (QMP)



All are essential, none are sufficient

"QMP is a ballet, not hockey. A ballet is deliberately designed, discussed, planned, examined, and programmed in detail before it is performed."

Philip Crosby, Quality is Free



The DNA of Success

- ✓ DNA of maximizing profits
 - 1) Cost control
 - 2) Value creation investment
 - 3) Advocate production





COMMON LANGUAGE THE MUNKEN AGENDA

Language is key to knowledge. Knowledge is key to understanding. Understanding is key to finding a common language.

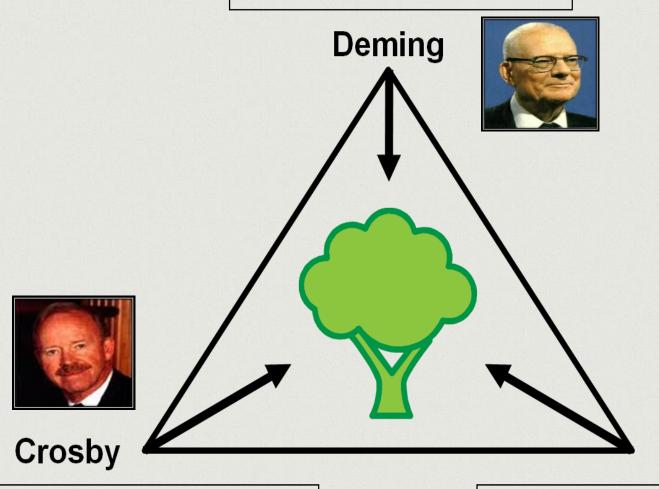


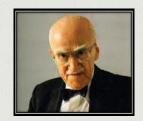
What is quality?



- 3X5 Cards what is quality?
- Quality is doing agreed upon requirements and standards
 - Either you did or your did not
- Not high quality, not low quality, not good quality, not bad quality

The only meaningful definition for quality is that which the customer defines





Juran

The definition of quality is "Conformance to requirements"

The definition of quality is products and services that are "Fit for Use"

The quality of a person's life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor.

-Vince Lombardi







- Quality: Doing work to agreed-upon standards and requirements.
- Quality Control (QC): A no logical standards and read there is no logical nat prevents as standard there is no logical nat prevents as standard there is no logical nat prevents as standard there is no logical nat nat prevents as standard there is no logical nat nat prevents as standard there is no logical nation."
 Qual basis for making a decision or taking a decision.
 Qual basis for making a decision or taking a decision or taking a decision.
 - confidence to the extent that customers' wants, needs and expectations are being met.

Creating A Quality Culture-Common Language









Sincerity Is Never Enough



Winning

"Winning is not a sometime thing; it's an all time thing. You don't win once in a while, you don't do things right once in a while, you do them right all the time. Winning is a habit. Unfortunately, so is losing."

Vince Lombardi

The DNA of Success

- ✓ DNA of maximizing profits
 - 1) Cost control (80/20)
 - 2) Value investment
 - 3) Advocate production



80/20 Rule



The 80/20 rule was discovered 115 years ago, by Italian economist Vilfredo Pareto (1848-1923). His discovery has since been called many names, including the Pareto Principle, the Pareto Law, the 80/20 Rule, the Principle of Least Effort and the Principle of Imbalance.

80/20 Thinking

- 80% of results come from 20% of effort
- 80% of outputs result from 20% of inputs
- 80% of consequences flow from 20% of causes
- 80% of value is produced with 20% of resources

 80% of defects can be eliminated by correcting 20% of causes

Effort 20% 80% Results

Quality Improvement Path to The Bottom Line

√ Improve Quality

(Effective Work)

√ DECREASED COST

√ Improve Productivity

(Efficient Work)

√ Stay In Business

Increase Market Share

✓ Provide Employment

E.W. Deming

Return on Investment

Name Cost Areas of Doing Business



Continuo	OST AREAS OF DO			
Cost Area	Dini	DING BUSINI	223	
Labor - Management			200	
	\$/Hour	\$/Month	Cost to Business	
Labor - Schooler		o) Wonth	C/D	c n.
Lauor - Cross F				\$/Ho
1 PUCK Parme				
Puck Mainten				
- Luck Insurance				_
uas				
Tools and Equipment				
Software and C				
Accounting				
Payroll				
Materials				
Licensing & Certifications Health Insurance				
Health Insurance				
Workers Comm.				
				$\overline{}$
Marketing & Advertising				
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What is the level of our quality?

- The level of quality in any company is its acceptance to non-conformance to its own standards.
- What is the Cost of Poor Quality (COPQ)?

ACTIVITY – CACULATION Cost of Poor Quality (COPQ)

The obvious and "visible" costs are a small portion of the overall cost

The bottom of the iceberg represents the majority of the cost and are not easily identified and measured.



\$1.00 Spent on Prevention Saves



Source: Total Quality Management, Joel E. Ross

80/20 Rule

Cost of Poor Quality

Cost of nonconformities

Cost of inefficient processes

Cost of lost opportunities for sales revenue

1

2

3

Advantages to Cost Control

- Improves profits
- Improves financial position
- Improves competitive capabilities
- Serves as an index of efficiency
- Company serves as a trend setter for other companies
- Efficient utilization of scarce resources

House of cards



Areas of Waste

Waste: Anything that consumes resources and does not add direct value to the end product



- 1. Processing Process variation
- 2. Rework Any repair
- 3. Transport People, ma
- 4. Waiting Waiting on mater people
- 5. Intellect Failure to fully utilize the time and talents of people

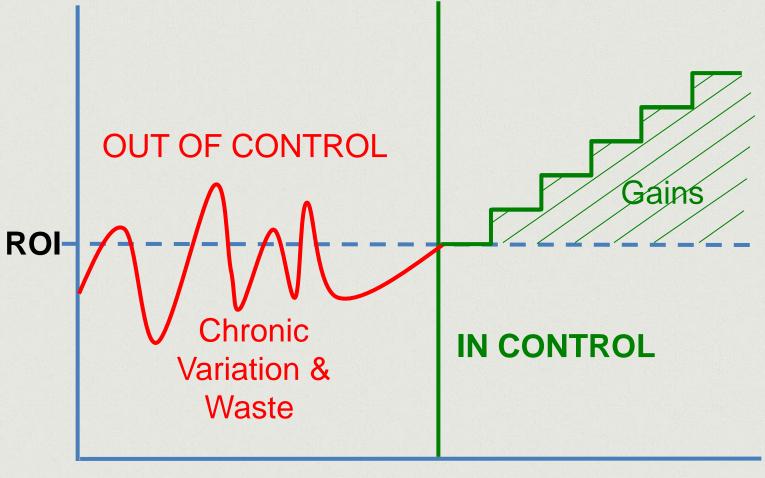
"If I had to reduce my message for management to just a few words, I'd say it all had to do with reducing variation."

- W. E. Deming

VARIATION



Building a Successful Future



Before Success

After Success

Controlled Variation Must Equal Profit



Let's Invest \$10,000



Variability

Airline Industry Data

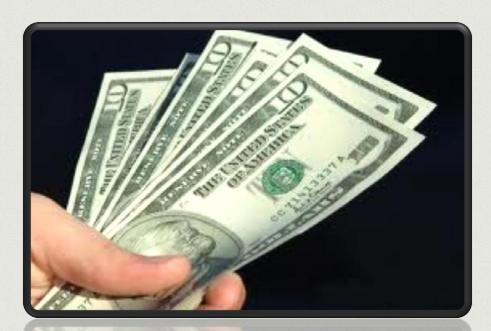


Higher, Faster, Farther Network Carrier Hub & Spoke Networks Wide Body Planes



Better, Faster, Cheaper Low-Fare Carrier Point to Point Networks Narrow Body Planes Let's Invest another

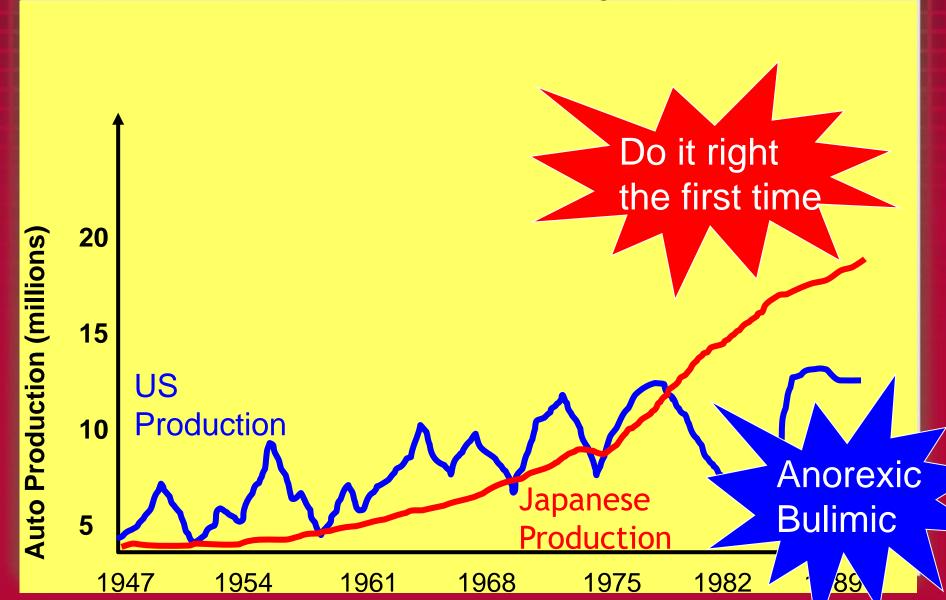
\$10,000



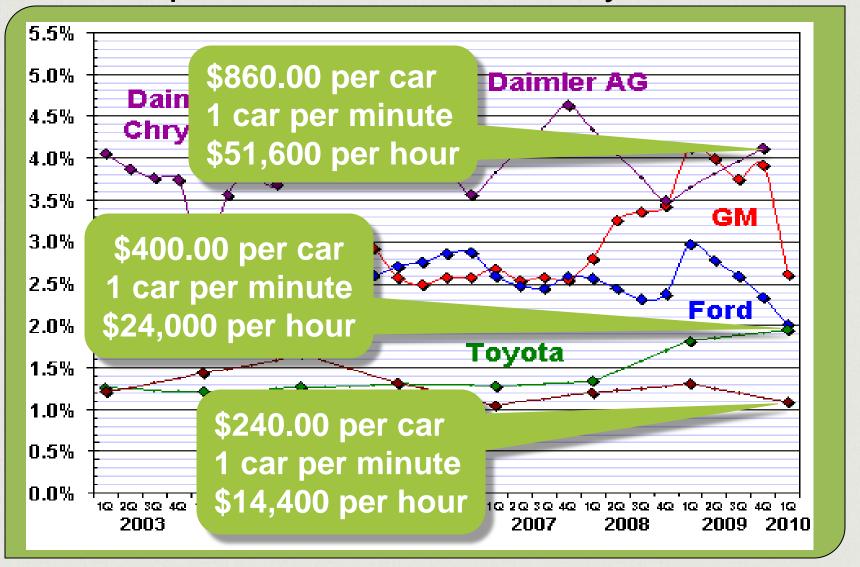
Variability

Auto Industry Data

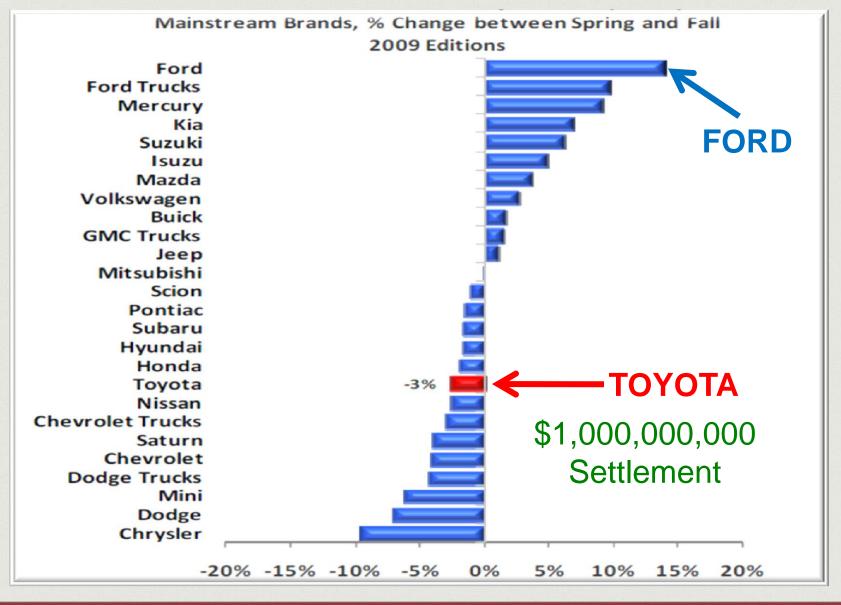
Source: The Machine That Changed The World



Top Automakers: Warranty Claims



Perceived Quality



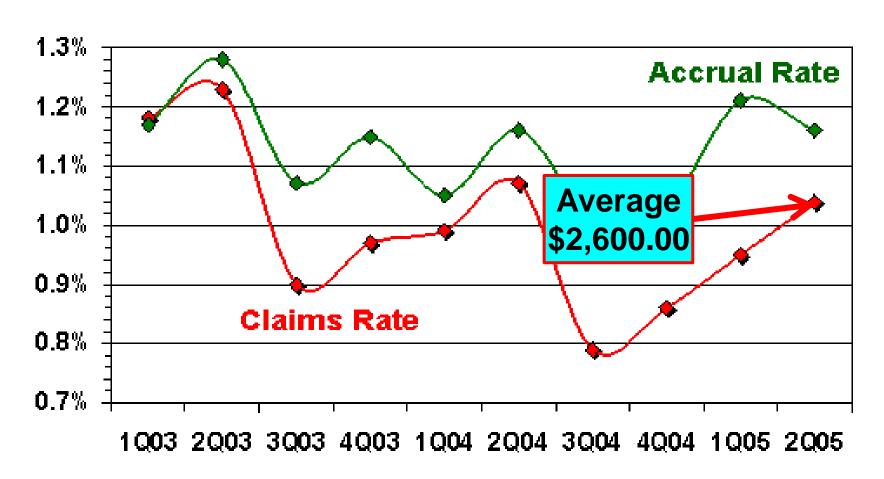
Let's invest one more time \$10,000



Variability

Cost of Poor Quality % of Sale Price

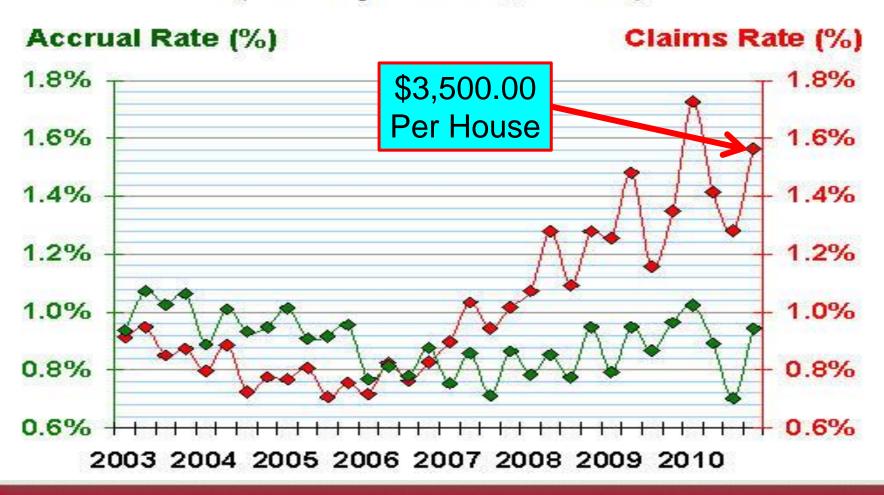
New Home Warranty Claims & Accrual Rates First Quarter 2003 - Second Quarter 2005



US Based Homebuilders Average Warranty Claims & Accrual Rates

U.S.-based Homebuilders

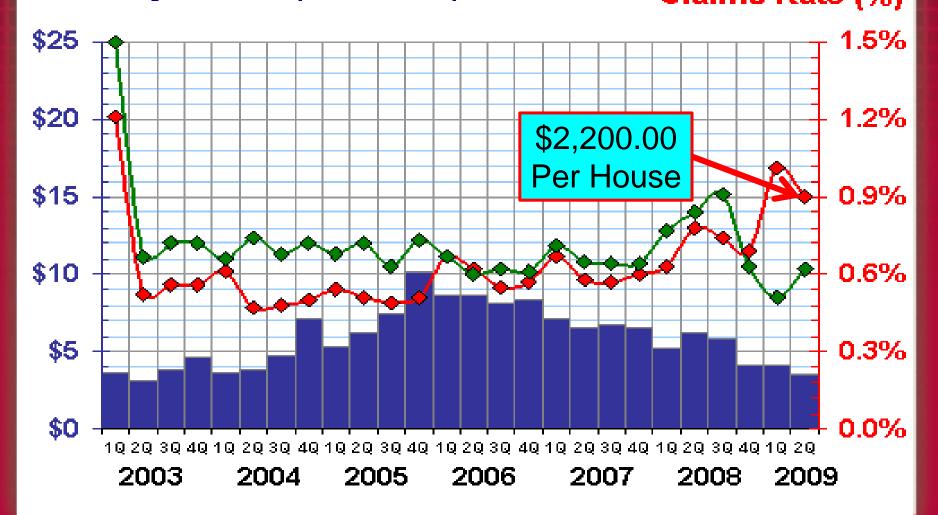
Average Warranty Claims & Accrual Rates
(as a % of product sales, 2003-2010)



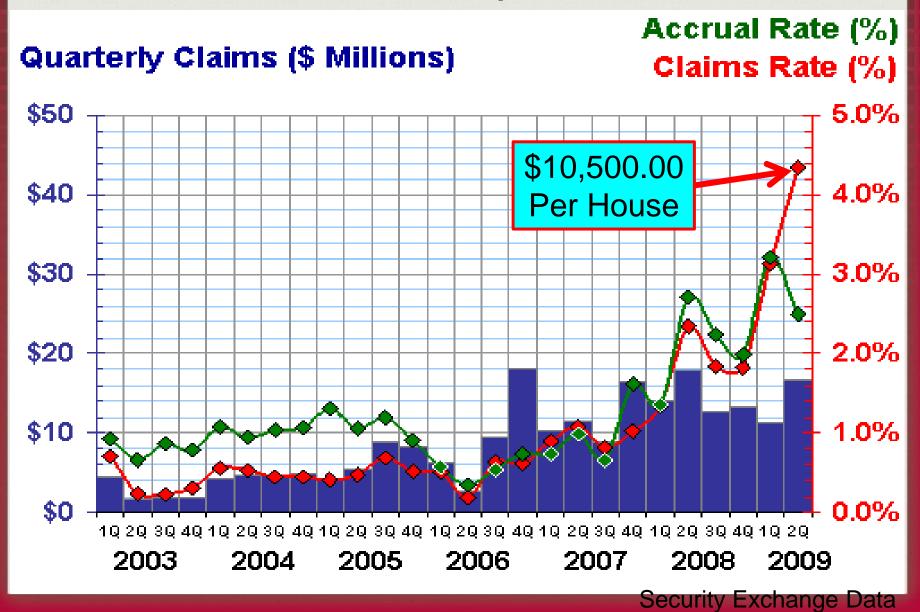
Cost of an Inadequate Process

Quarterly Claims (\$ Millions)

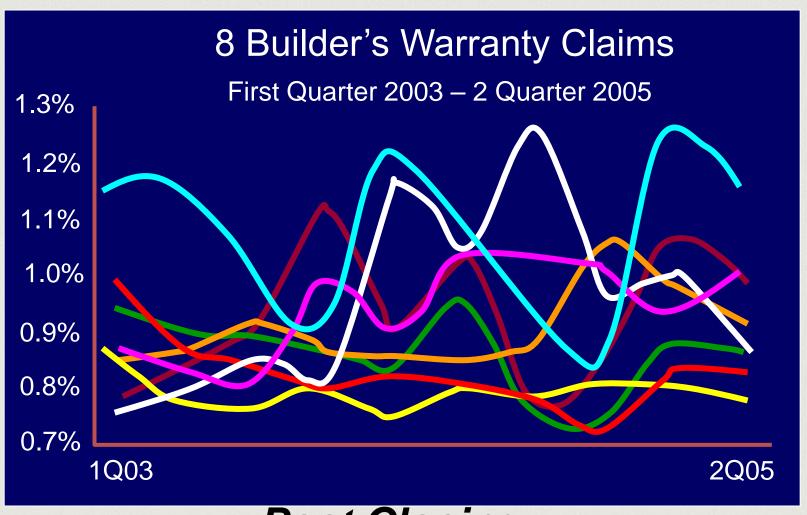
Accrual Rate (%) Claims Rate (%)



Cost of an Inadequate Process



Security Exchange Data



Post Closing

Security Exchange Data



Two Types of Variation

Common cause variation:

- Always occurs and cannot be traced to a specific cause (e.g., location, time of day, day of week)
- Reduction requires fundamental change in the process

Special cause variation:

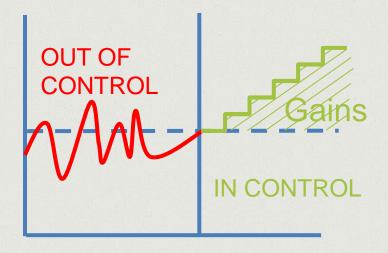
 Assignable cause is outside of common variation. It can easily be traced to a specific cause, usually relating to the six key elements: people, environment, material, method, machinery, and measurement



Count the "Es"

How Do We Control Variation?

Through a capable process



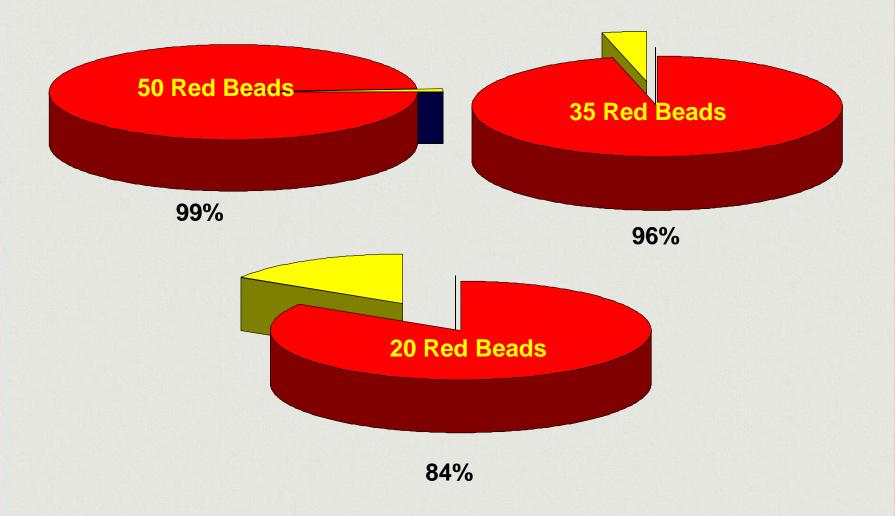
Let's Improve a Home!

- 1,840 white beads = basic home components, including combustion appliances, air sealing, insulation, etc.
- 50 red beads = retrofit processes or subsystems that have complex relationships with the home and can cause failure.
- Filling the scoop represents the retrofit of a home. The components, processes, and subsystems mix together for the final result.

Scope of Work

- Scoop all the way to the bottom of the bucket.
- Use only one hand and the scoop to remove beads.
- Fill the scoop completely.
- There cannot be any red beads in 3 consecutive scoops.

Probability of Scooping One Red Bead



What Did They Rely On?

4 Acts of Futility

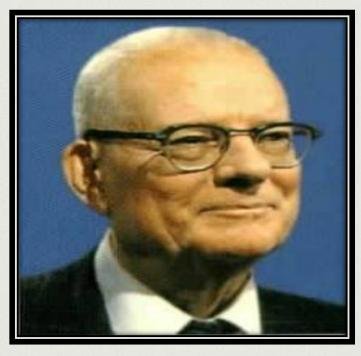
All work is a process.

ATTANTION! All work is a Process

- Process fails more than people
- Blame should fall on the process not people
- All defects are caused, all causes can be prevented

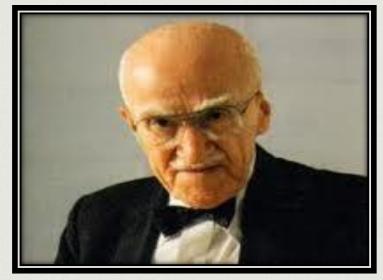
A Quality Culture Must Be Blame Free





W. Edwards Deming

"We must drive fear out of the workplace."



Joseph Juran

"Creating a strategic plan that is customer-focused requires that leaders become coaches and teachers, personally involved, consistent, **eliminate the atmosphere of blame**, and make their decisions on the best available data." Juran (1988)



Philip Crosby

"To blame another for a nonconformance problem is naive at best."

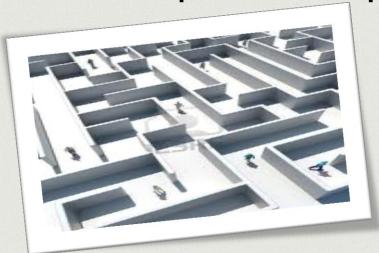
A Workplace With Blame

- Drives out honesty
- Drives out improvement
- Stifles learning
- Drives out innovation



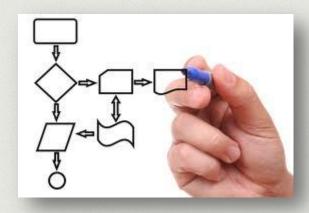
Accountability and Responsibility

- A blame free workplace never dismisses assignment of accountability and responsibility.
- We need both at the table in order to solve the problem and improve the process.



How do most inefficiencies and defects happen?

1. Process



2. Mistakes



Distribution of Defect Cause



Examples of Mistakes at Home

- To run out of gas
- Locking your keys in your car
- Failing to stop at a stop sign
- Forgetting to turn off the coffee pot or sprinklers
- Forgetting to unplug the iron

Mistakes are inevitable, we all make them

We make mistakes because of.....

- Forgetfulness
- Lack of experience/skills
- Laziness
- Taking short cuts
- Lack of Training

- Misunderstanding
- Lack of concentration
- Lack of standards
- Busy-ness/Rushing

Mistakes

 The majority of workers do not come to work with the intention of doing work wrong



Understanding Mistakes and Error

- Intentional Wrong Doing: The issue of volition is fundamental to the notion of doing wrong; therefore, the term error can only be applied to intentional actions.
- Unintentional Wrong Doing: Failure of work to go as intended (slips or lapses of attention) or failure of work to achieve its desired objective (mistakes) are action with no intent to do wrong.

Name some times when blame must fall on people

- Stealing from customer(s) or company
- Constant lying
- Intentionally doing work wrong
- Insolence towards customers
- Drinking on the job
- Misrepresenting product or service
- Repeated bullying

We Must Build Quality In - Not Bolt It On



Maximizing Waste Reduction

Quality Interactions

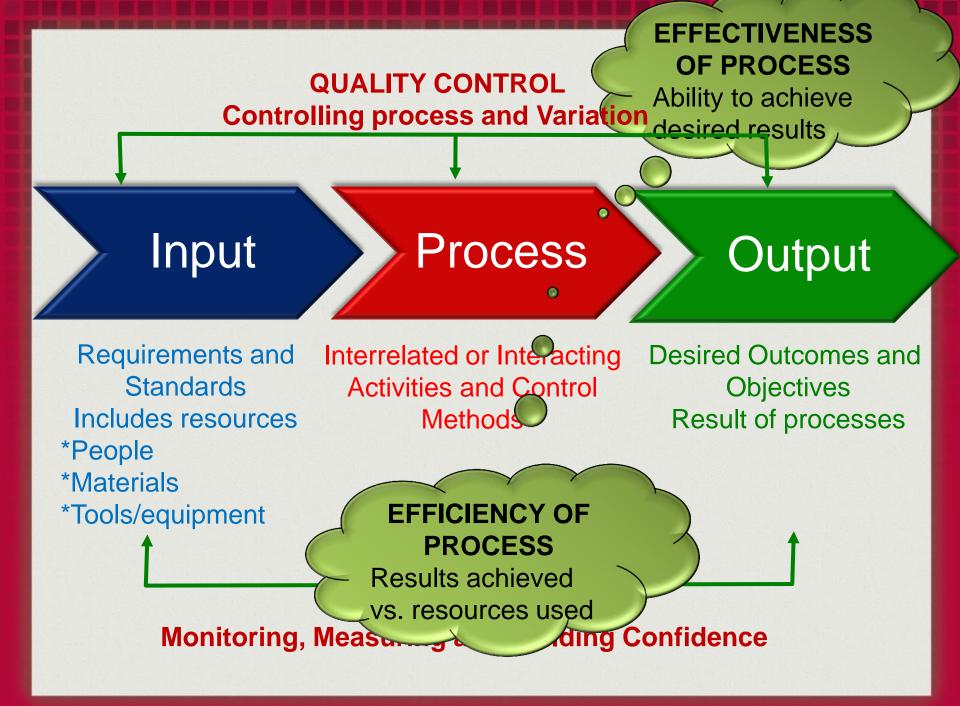
Process converts input into output

Input

Process

Output





Input

Process

Output

- High performance standards
- People
 - Trade Ally
 - Non-Trade Ally
 - Air Sealer
 - HVAC Contractor
 - Insulator
 - Electrician
- Material needs
- Tools/equipment

PEOPLE

Input

Process

Output

- Training
- Coaching
- Mistake Proofing
- Critical Details
- Quality verification

Input

Process

Output

- Increased value
- Reduced cost
- Fewer defects
- Fewer callbacks
- Reduced cycle time
- Satisfied homeowners
- Loyal Customers and employees



PLAN

What is the goal and path to achieve?

Identify Wants, Needs, and Expectations of Customer(s)

Statement of
Specifications,
Standards and
Requirements
needed to satisfy
#1. above

2.

DO

What meets the goal.

CHECK

Did it work?

<u>ACT</u>

Standardize and stabilize work and try again.

Evaluation

80/20 Rule

Simple flow plan

3. 4. 5. 6. Check Work Conforms Yes Work Plan

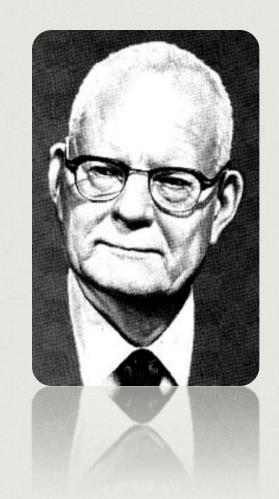
Remedial Action and Process Improvement

7a. Customer(s)

It's All About the Process

"Inspection with the aim of finding the bad ones and throwing them out is too late, ineffective, costly. Quality comes not from inspection but from improvement of the process."

- Dr. W. E. Deming



Three Approaches To Inspection

Discovers
defects
but does
not reduce
them

Reduces
defects by
informing
the process
after it
happens

Eliminates defects by catching and fixing their cause

3 Inspection Types

- 1. Self
- 2. Success
- 3. Sampling (QA)

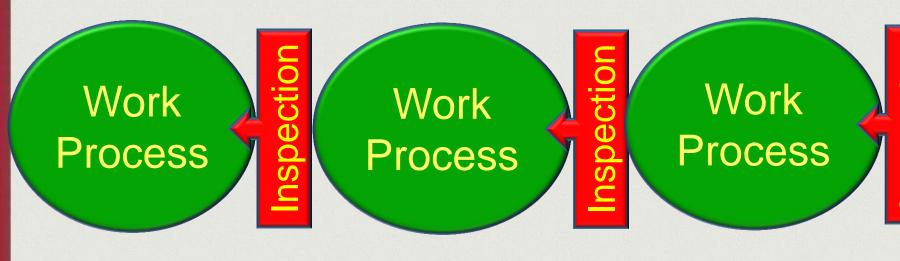
Judgment

Informative

Source



Judgment Inspection Detection



Inspection after the work is done Costly delays and rework

Self Inspection Prevention



Inspection at the point of work little to no cost to fix

BENEFITS OF EARLY DETECTION

Defects
Found At:

Self Inspection Successive Inspections

Judgment Inspection

Homeowner Dissatisfaction

Cost To The Company





S



Impact To The Company Very Minor Minor delay

Significant rework

Reschedule of work

Additional inspection

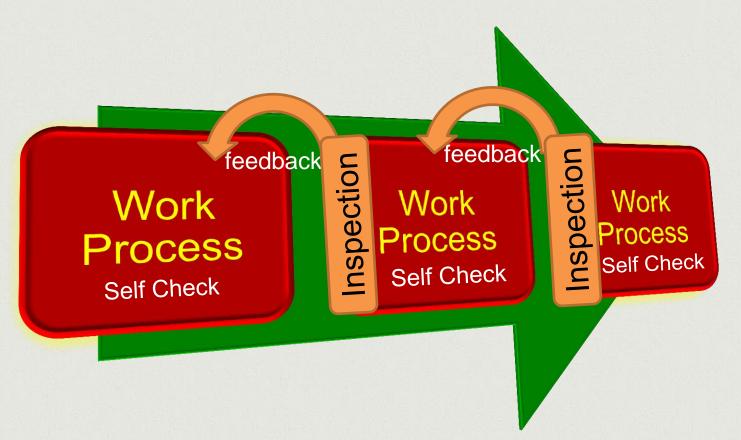
Warranty cost

Administrative cost

Reputation loss

Loss of market

Successive Inspection Prevention



Job Ready - Job Complete

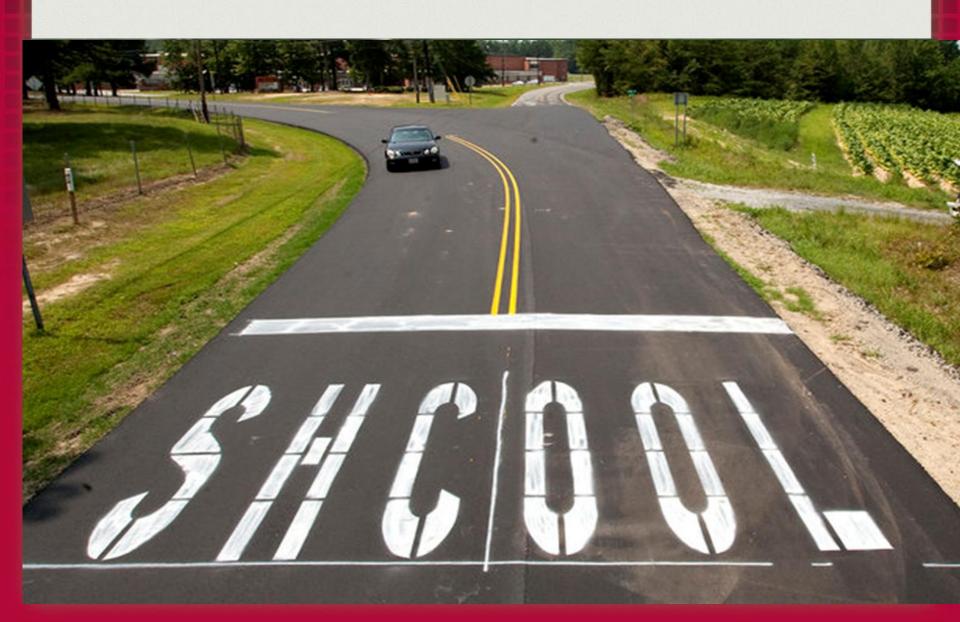
Source Inspection Prevention



Inspection before the work process

MISTAKE PROOFING

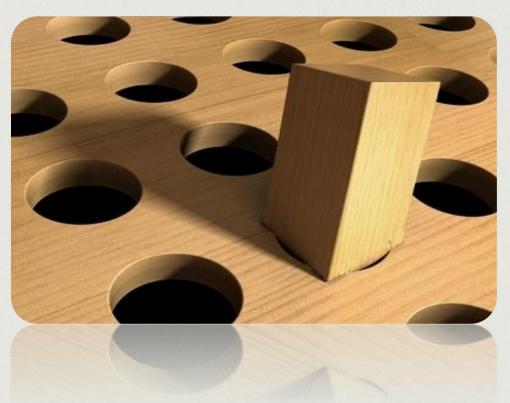
Source Inspection





Want to win?

Focus on Prevention of Mistakes More Than Detecting Them



Understanding Mistakes and Error

Unintentional Wrong Doing: Failure of work to go as intended (slips or lapses of attention) or failure of work to achieve its desired objective (mistakes) are action with no intent to do wrong

Prevention Costs Less Than Detection





Mistake-proofing for tailgaters



Which dial turns on the burner?



Stove A

Stove B



Fins inside that prevent the glass from nesting all the way down





Check Lists are Essential

Pilot Check List

REFORE START

+ CUSTOMS/CANPASS	UPDATED
PREFLIGHT	COMPLETE
LOG BOOK / NAV PUBS	ON BOARD
CXYGEN SYSTEM PLU	IGGED & CHECKED
CXYGEN CONTROL VALVES	NORMAL
→ CB'S IN	
+ ALL SWITCHES	OFF/NORM/AUTO
→ STANDBYATT	CHECKED & ON
+ GENERATORS GEN (OFF IF GPU START)
+ FOOT WARMERS	
THROTTLES	
BATT BMER	CHECKED
+ BATTERY ON	CHECKED
GEAR HANDLE DOWN	& 3 GREEN/NO RED
→ PARKING BRAKE	SET
PARKING BRAKE	CONNECTED
AVIONICS	ON
WARNING SYS	CHECKED
CROSSEED	CHECKED
INVERTERS	CHECK SYNC
+ PRESS / ENVIRO	
→ TRIM/ FLAPS	
CVB	
AUTOPILOT	
+ ATIS & CLEARANCE	
+ GPS CHECKED/SET	OB IMMED
+ DATA/T.O. BRIEF	COMPLETED
CLOCKS/BUGS	SET
+ PAX ADVISORY	
COFFEE	ON
+ FUEL	CUEE / DAI
7 FUEL	
DOORS	
BEACON	
AVIONICS/INVERTER	CEE
THOMOGRAFIED CO	

→ ■ THROUGH FLIGHT ITEMS

SPEED BRAKES -----CHECK

FREON AIR-----OFF

AFTER START

GPU	-DISCONNECT
GENERATORSC	N & CHECKED
AVIONICS POWER/INVERTER	ON
GPS	ON
ANTI-ICE & W/S BLEED	SET
EXT LIGHTS	AS REQ'D
STANDBY ATT	ON
PRESS SOURCE/ FREON	AS REQ'D
AVIONICS COOLING FAN	CHECK
AUTOPILOT	CHECK
GYRO PRESSURE	CHECK
BELTS&HARNESSES	FASTENED

TAXI

BRAKES/ NWS	CHECKED
ANTI-SKID	ON
CONTROLS	CHECKED
TRIMS	SET 3 WAYS
FLA PS	SET
STANDBY ATT.	
THRUST REVERSERS	-TEST&STOWED
FLT INST'S / AVIONICS	SET
FLIGHT DIRECTOR GA / H	
ENGINE INST	
FUEL	
DATA/T.O. BRIEF	
ANTI-ICE & W/S BLEED	
2 FANS / EMER PRESS	
TCAS	TA

BEFORE TAKEOFF

ANTI-ICE/WS BLEED	
RADAR	
PRESS SOURCE	NORM
PHESS SCONCE	MHCM:

I GIALL OF		
PITOTH	EAT	0
ANNUNG	ATORS	CLEA
435666	SMIDI IEIED TA	DATA

RUNWAY AV	AILABLE > 0	r = 5000 feet
WT.	<13300	<12500
PRESS	<3000.	<5000
TEMP.	-7C - +25C	-7C- +25C
V1	106	103
VB	106	103
V2	114	111
VENR	149	143

AKE-OFF N1		97.3%
LIMB S.E.		95, 1%
	FLAPS 15	

ANTHICE OFF NO TAILWIND DRY RUNWAY! NO GRADIENT NO OBSTACLES

AFTER TAKEOFF (@ 10.000 FT)

IGNITION	NORM
A/S BUGS AND VREF	SET
CLIMB POWER	SET
PAX ADVISORY	AS REQ'D
LIGHTS	OFF
GEAR LIGHTS	UP & NO RED
PRESSURIZATION / TEMP	CHECK
FLA PS	UP
YAW DAMPER	ON
T/O TIME	RECORD

TRANSITION

ALTIMETERS	SET
AIR CONDITIONER	OFF OR FAN
OXYGEN MASKSPL	UGGED/ CHECKED
OXYGEN CONTROL VALVES -	NORMAI
BEACON	BEACON
RECOG LIGHTS	OFF

CRUISE

ANNUNCIATOR PANEL M	ONITOR
ENGINE INSTRUMENTS M	NOTOR
FUEL MC	ROTING
PRESSURIZATION/OXYGEN	CHECK
PASSENGER COMPORT	CHECK
TRIMS	CHECK
ENGINE TREND RECORD IN JOURN	EY LOG

DESCENT

FOOTWARMERS	
DEFOG FAN	ON
AIRFLOW	COCKPIT
PRESSURIZATION / TEMP	SET
ANTI-ICE & W/S BLEED	AS REQ'D
FUEL	
CB'S	IN
STANDBY ALTIMETER	SET
ATIS / DATA / BRIEF	COMPLETE
FBO / TAXI / CUSTOMS CALL	AND CONFIRM

TRANSITION

ALTIMETERS L / R	SET
RECOG LIGHTS	ON
BEACON	ON/TAIL

APPROACH

COFFEE OF	-F
ALTIMETERS L / R SE	ΞT
ENGINE SYNC OF	F
BELTS & HARNESSESFASTENE	
PAX ADVISORYOI	N
AVIONICS / FLT INST / BUGSSE	
RADAR ALTIMETERSE	
FUEL CROSSFEEDOF	F

LANDING DATA

WT 14,000 13,000 12,000 11,000 10,000 9,000 8,000 VREF 114 110 106 101 97 92 87

IN ICING CONDITIONS INCREASE VREF BY 30 KTS CLEAN 20 KTS FLAPS APPROACH 10 KTS FLAPS FULL

BEFORE LANDING

FLAPS	APPROACH
GEAR DOWN	N/3 GREEN / NO RED
LIGHTS	ON
ANNUNCIATORS	CHECKED
IGNITIONS	ON

FLAPS	LAND
ATTOURING / VAW DAMP	OFF

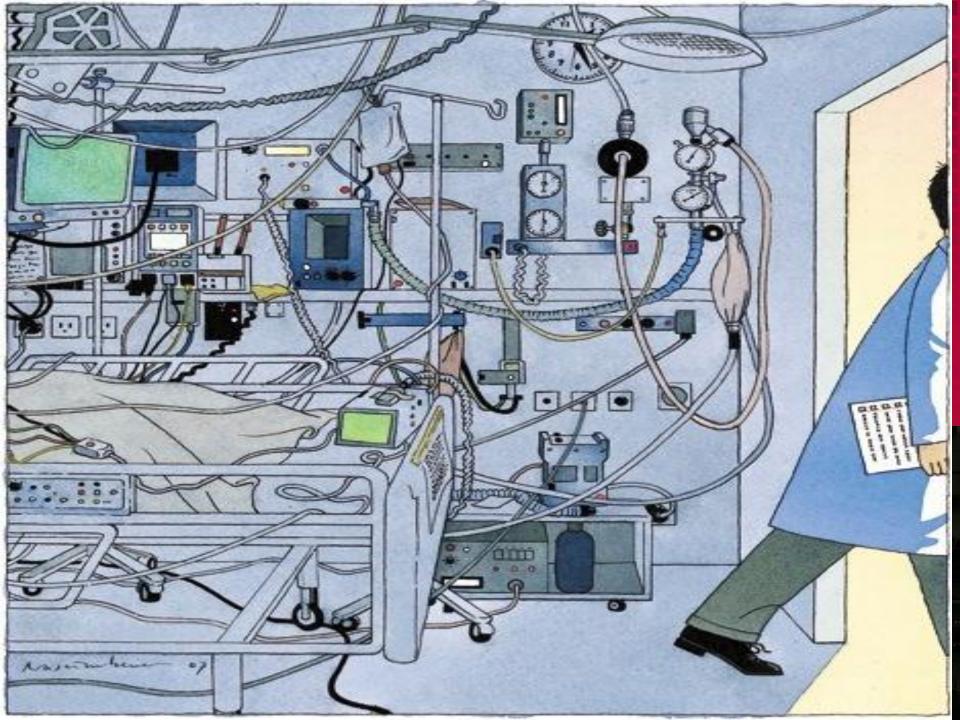
AFTER LANDING

THRUST REVERSERS	STOWED
FLAPS	
TRIMS	-SET FOR TAKEOFF
SPEEDBRAKES	
IGNITION	
PITOT HEAT	OFF
ANTI-ICE & W/S BLEED	OFF
EXT. LIGHTS	AS REQ'D
TRANSPONDER	STANDBY
RA DAR	STANDBY
TME / FUE	RECORD

SHUT DOWN

RADAR	OFF
FREON AIR	OFF
2 FANS	OFF
STBY ATT	CAGED/OFF
LEFT THROTTLE	OFF
AVIONICS/INVERTERS	
RIGHT THROTTLE	OFF
CHOCKS / BRAKES	AS REQ'D
GENERATORS	OFF
EXT. LIGHTS	OFF
PAX ADVISORY	OFF
DATTERY	OFF

CONTROLS SECUREAS	REQ'D
HEADSETS	-OFF
OXYGEN MASKSUNPLU	IGGED



2013 WEATHERIZATION SPECIFICATIONS MANUAL

Existing Homes Attic Insulation Complete Measure Checklist

EXISTING HOMES		
ATTIC INSULAT Check step or reference guide only. Please refer to the reference guide only. Please refer to the reference of	X	
Determine if storage or human contact areas are present. IN 1.8		
Install baffles at eave vents, heat-producing fixtures, flues and chimneys. AT 1.3 and 1.5		
Dams shall be installed at interior accesses and where insulation is at different levels to prevent loose-fill falling out of attic. AT 1.4 and AT 1.10		
Interior ceiling accesses shall be insulated to a minimum of R-30 and Knee wall access doors shall be insulated to a minimum of R-15. Interior accesses shall have permanent weatherstripping. AT 1.10 and AT 2.6		
Verify all exhaust fans are vented completely to the exterior with no gaps. AT 1,6, 1.7, and 1.8 Washington customers shall insulate all exhaust fan ducts in unconditioned spaces to a minimum of R-4		
Insulate water lines in attic space. AT 1.9		
Insulate and weatherstrip access panel or pull-down stairs. AT 1.10, 1.11, and 1.12		
Insulate vertical walls and cover with air barrier, install blocking in floor under Knee wall. AT 2.6		
Verify R-value and condition of installation of insulation. Appendix R	Y	

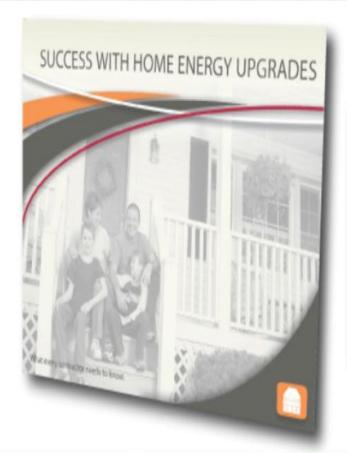
Quality Check: All work was	quality checked to ens	sure it was completed and defect free.
Print Name	Signature	Date

Mistake Proofing Check List

- Increases accountability
- Is a strategy for preventing mistakes
- Makes it impossible for defects to pass unnoticed
- Corrects problems as soon as they are detected
- Prevents defects from being covered up
- Stabilizes our processes
- Escalates effectiveness and efficiency
- Eliminates waste
- Creates a safer work environment
- Makes quality problems more visible
- Produces pride of work
- Increases profit



Quality Tool Kit Infield Training Tools





















How are products and services priced?



The DNA of Success

- ✓ DNA of maximizing profits
 - 1) Cost control
 - 2) Value creation investment
 - 3) Advocate production







 Value is what the customer(s) wants and will pay for.





 Sell them what they want not what they need, causing no harm to the customer or

home



How Do You Define Customer Success?

SUCCESS /sak'ses/·····

PUSH:

I HAVE THE BEST MADE TIRES AT THE BEST PRICES PULL:

HERE, I FOUND YOU ON THE INTERNET



What are we selling?

Solutions Solutions Solutions



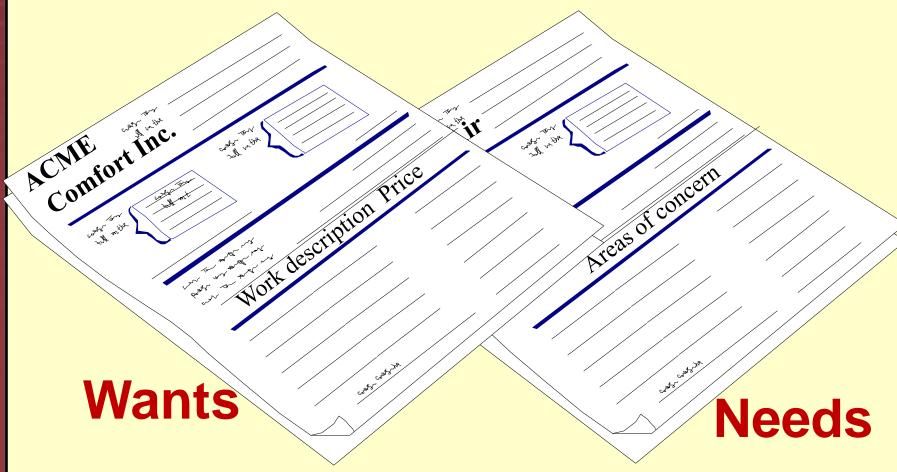




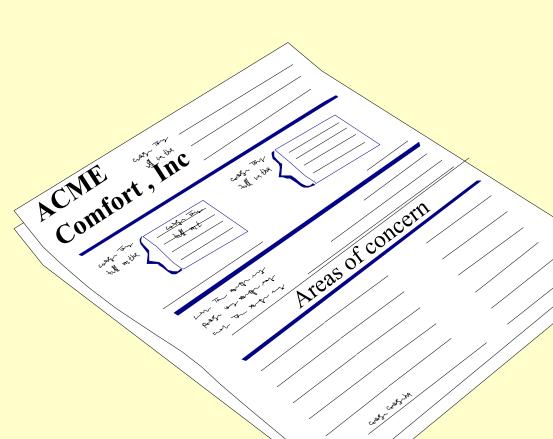
Repeat Sales



Sales contract and document of concerns...



Document of concern... Repeat Sales





Generates

- 1. Diagnostic needs
- 2. Relationships

3 Things People Buy

- 1. Good Feelings
- 2. Solutions to Problems
- 3. What They Value



The DNA of Success

- ✓ DNA of maximizing profits
 - 1) Cost control
 - 2) Value creation investment
 - 3) Advocate production

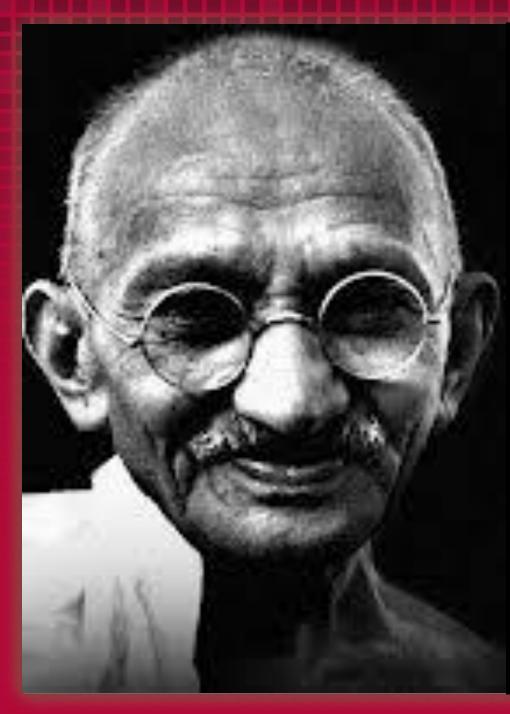




ADVOCATE

A quality culture must produce loyalty





CUSTOMER

A customer is the most important visitor on our premises.

He is not dependent upon us. We are dependent on him.

He is not an interruption in our work. He is the purpose of it.

He is not an outsider in our business. He is part of it.

We are not doing him a favor by serving him.

He is doing us a favor by giving us an opportunity to do so.

-Gandhi

Loyalty Based Business System

 Loyal customers are critical, however, they are not the first step



Loyal employees are

Loyalty

Employees who are not loyal are not likely to build an inventory of customers that are





We need to build employee loyalty and use it to improve customer retention



Loyal customers are advocates for your company (Sales Staff)

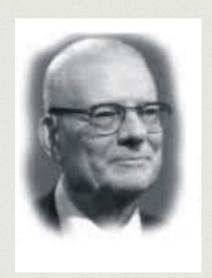






REAL FINANCIAL CONSEQUENCES!

"Profit in business comes from repeat customers, customers that boast about your project or service, and that bring friends with them."



-W. Edwards Deming

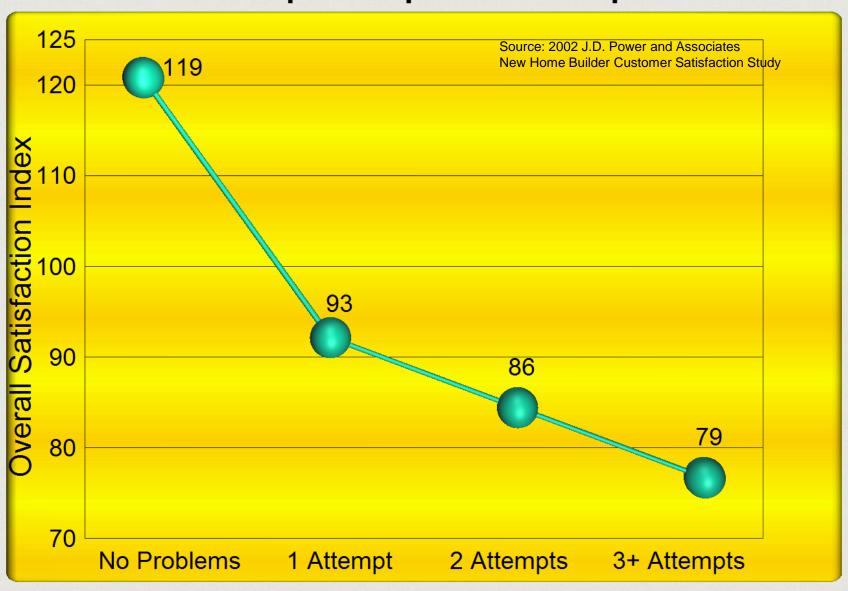
Advocate Production

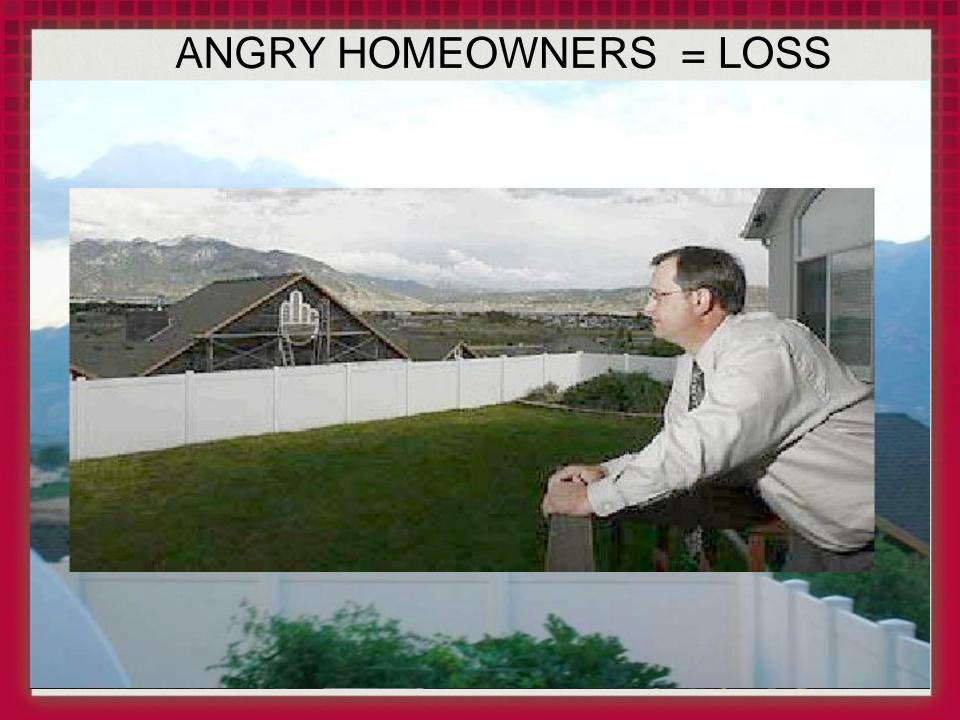
- Customer satisfaction is a feeling
- Customer loyalty is a behavior





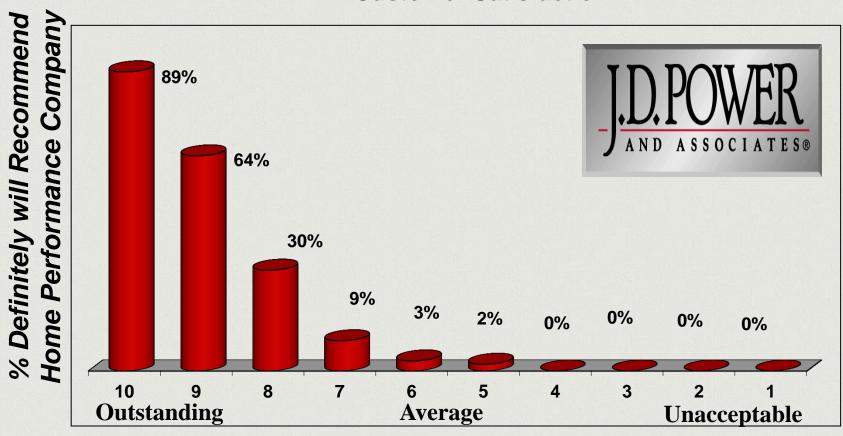
Overall Satisfaction Declines Dramatically When Problems Require Repeated Attempts To Fix





Increased Word of Mouth

Decline in Word of Mouth Based on Decline in Customer Satisfaction



Overall Satisfaction with Contractor

With an increase in positive recommendations, Home Performance Contractors have the potential to significantly increase retrofit sales.

56

Average

Homes per

Contractor

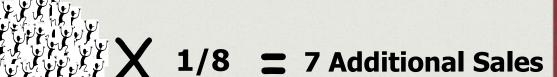
+ .56 Additional

Recommendations

per satisfied

customer





X \$5,000 Average Sale Price

= \$3,500 Additional Revenue

Per advocate

Loyal Customer

Loyal customers are advocates for your company



REAL FINANCIAL CONSEQUENCES!

Review

- 3 Major areas we will master together
- 1. Cost control
- 2. Value Creation
- 3. Advocate production

What must I do to join the pilot?

Good Faith Payment \$2000.00 Adopt the common language

Join in Cost and Quality Control

Devotion to value creation

Dedication to Production of Loyal Customers

What's in it for me?

Training

Coaching 20+ hours Mentoring at the place of work Quality Tool Kit

Lower Costs

Greater
Presence
and
Market
Share



