BUILDING ENERGY Boston 2016

Success Through Quality Management

Building a Stronger Company

TRAINER: MR. JOHN TOOLEY, ADVANCED ENERGY

John Tooley is the recipient of the BPI's Tony Woods Award for Excellence in Advancing the Home Performance Industry and trains contractors throughout the United States. As a senior consultant for Advanced Energy he has spent more than 15 years helping the industry implement quality process management. "There's no one in our industry who has advanced the delivery of quality contracting to customers more than John," said Larry Zarker, BPI CEO.
Pyramid of Power

Think in $$

Owners

Managers
Supervisors

Think in things

Workers
Agenda

- Creating a common language
- Offsetting the cost of high performance options, while increasing profit
- How to calculate the cost of inefficiency and poor quality to increase the bottom line
- Waste identification
- People – Performance - Profit
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
Quality is system (whole) that derives its characteristics (good or bad) from the interactions of its essential parts.....and none taken separately.

Quality Management

1. Quality Control
2. Quality Assurance
3. Quality Improvement

All are essential, none are sufficient
1. Do the right thing right
2. Do the right thing wrong
3. Do the wrong thing right
4. Do the wrong thing wrong

Four Ways to Do Work
What’s wrong with this picture?
Close is not good enough
3 Quality Greats

W. Edwards Deming
Joseph Juran
Philip Crosby
Three Important Facts

1. “Do it right the first time.“

Dr W. Edwards Deming
Three Important Facts

"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. Edwards Deming
Three Important Facts

3

“Fear must be driven out of the workplace”

Dr. W. Edwards Deming
Essential Parts of a More Profitable Company

• Clear requirements, standards, code, policies, procedures
• Focus is on process
• Culture is prevention
• Measurement of quality is the cost of poor quality and inefficiency $$

All are Essential None are Sufficient

Taken separately none will produce a more profitable company
We need to see things differently
Language is key to knowledge. Knowledge is key to understanding. Understanding is key to finding a common language.
Common Language

What is quality?
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
Creating A Quality Culture - Common Language

- Quality definition: Conformance to agreed upon requirements and standards.
- Quality culture: Prevention.
- Quality performance standard: Zero defects.
- Quality measurement: Cost of poor quality, inefficiency and waste.
- Waste: Anything that does not add value to the end product.
- Value: Is what the customer wants and is willing to pay for.
Sincerity Is Never Enough
Sincerity Is Never Enough
Quality is About...

PEOPLE
Internal & External

PERFORMANCE
Effective & Efficient

PROFIT
ROI
PEOPLE

Internal & External

PATH TO SUSTAINABLE PROFIT

Respect and Honor Each:

- Employees
- Customers
- Funders
- Trade Allies
- Suppliers
ATTENTION!

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 Free of Blame
Blame Never Pays
“We must drive fear out of the workplace.”

W. Edwards Deming
Fourteen Obligations of Management, point 8

“Quality is impossible if people are afraid to tell the truth.”
“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)
“To blame another for a nonconformance problem is naive at best.”

Philip Crosby
Quality Without Tears
Blame Falls on people when...

Wrong doing is done with -

intention
Innovative Thinking

• NASA needed world class employees, we were behind in the space race.
• Can we develop a test to measure who was a world class innovator?
• The test was given to 1,600 Kindergarteners
• What percentage were world class?
World Class Innovators

NASA TEST

Source: Breakpoint and Beyond
World Class Innovators

Source: Breakpoint and Beyond
World Class Innovators

Source: Breakpoint and Beyond
World Class Innovators

Source: Breakpoint and Beyond
A WORKPLACE WITH BLAME

• Drives out honesty
• Drives out improvement
• Stifles learning
• Drives out innovation
What part of the scope don’t they understand?

Fry Day
(out)

VER 1.2
Quality is About...

PEOPLE
Internal & External

PERFORMANCE
Effective & Efficient

PROFIT
ROI
Quality Interactions

Process converts input into output
Input
*Clear Scopes, Requirements, & Standards
*People
*Tools
*Materials

Process
*Standardized Training
*Standardized Work
*Mistake Proofing
*Critical details

Output
Meets Standards and desired outcome is

EFFECTIVENESS OF PROCESS
Ability to achieve desired outcome

QUALITY ASSURANCE
Monitoring, Measuring and Building Confidence

EFFICIENCY OF PROCESS
Results achieved vs. resources used

质量交互

输入
*清晰的范围、要求和标准
*人员
*工具
*材料

过程
*标准化培训
*标准化工作
*防错
*关键细节

输出
符合标准和预期结果

效果性
过程能力

质量保证
监控、测量和建立信心

效率
过程结果与资源使用比较

BUILD QUALITY IN
DON’T BOLT IT ON
Toyota HR Management

INPUT

PROCESS

OUTPUT

HUMAN RESOURCES MANAGEMENT

INPUTS

Philosophy of mutual trust & respect & continuous improvement

People Value Stream

OUTPUTS

A culture of empowered workers producing high quality, low cost, and on time products

DAILY MANAGEMENT

Sustainability

ATTRACT

Recruiting

Selection

Orientation

Develop

Job Instruction

Employee Development

Flexible Workforce

EMPOWER

Engagement & Retention

Community Environment

Teamwork/Workteams

Safety & Health

Worker-Management Communication

Leadership
Quality is About...

PEOPLE
Internal & External

PERFORMANCE
Effective & Efficient

PROFIT
ROI

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How can we offset the cost of quality and performance?

### Consumer Cost Per Housing Type Per Month

<table>
<thead>
<tr>
<th>Code</th>
<th>Energy Star</th>
<th>Net Zero Ready</th>
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<tbody>
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<td></td>
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<tr>
<td>12K</td>
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How can we offset the cost of quality and performance?
Pre and Post Construction Expense Can Lock Up Opportunity

What does it cost?
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.
What does a hamburger cost?
What does a gallon of regular gas cost?
What does a tube of latex caulk cost?
What does a bucket of mastic cost?
What does it cost to go back and fix attic hatch weather-stripping done improperly?
What is the level of our quality?

• The level of quality of any company is its acceptance to non-conformance to requirements, standards and codes, etc.

• What is the Cost of Poor Quality (COPQ) or inefficiency?

• Quality is measured in money
"The cost of poor quality consists of all costs that would disappear if there were no deficiencies."

J.M. Juran

How much does it cost?
STEP 1 Name Cost Areas of Doing Business
Calculate The Cost of Poor Quality (COPQ) or Inefficiency

STEP 2
You can get the spreadsheets free at...

www.advancedenergy.org/success_with_quality_management
____ reworks, ___% houses (100) = ___ Reworks

$ _____________
A Sustainable Process Must Be Founded On Defect Prevention

Three Types Of Inspection
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
Cost Control and Waste

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

1. Processing - Scope variation
2. Rework - Any repair
3. Transport – People, materials
4. Waiting - Waiting on material or people
5. Waste - Time, materials
6. Intellect - Failure to fully utilize the time and talents of people
We must stop wasting money
A Sustainable Process Must Eliminate Complexity/Waste

Mistakes
Rework
Delays
Waste
Inefficiencies
Variations
$1.00 spent on prevention saves

- Prevention Cost
- Correction Cost
- Failure Cost

Source: Total Quality Management, Joel E. Ross
A homeowner had a beautiful view of the mountains, until a new neighbor purchased the lot below his house and built a new home. The new home was 18 inches higher than the ordinances would allow, so the homeowner with a view got mad about his lost view, went to the city to make sure they enforced the lower roof line ordinance. The new neighbor had to drop the roof line, at great expense. Recently, the first homeowner called the city again, and informed them that his new neighbor had installed some vents on the side of his home and he did not like them. When the city went to see what the vents looked like, this is what they found...

ANGRY HOMEOWNERS = LOSS
If you lock your best friend and your dog in a trunk for 2 hours, which will be happy to see you, when you open the trunk?
One is the function of another

“Companies can’t give job security, only customers can.”

- Jack Walsh

1. Profitability & Job Security
2. Satisfied and Loyal Customers
3. Quality Products and Services
4. Satisfied & Loyal Employees

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Delivering what the customer wants and is willing to pay for…
THAT IS THE DEFINITION OF VALUE

1. CUSTOMER WANTS NOT NEEDS

2. DEFECT FREE PRODUCTS, ON TIME AND PRICED RIGHT

3. INCREASED PROFIT

DNA of Building a More Profitable Company
Thank You
16 Attributes of a Quality Company

1. A company that has a clear set of standards, policies and procedures (hereafter called requirements). They know that all ambiguity must be removed; they believe work is either done right or wrong. They believe that there cannot be good quality or poor quality, nor high quality or low quality.

2. A company that holds requirements as the plumb line for training, inspection (QC and QA) and process improvement.

3. A company that has a common language.

4. A company that knows and conveys the cost of nonconformance to requirements. They know that where there is no understanding of what nonconformance costs they will have very little conformance.

5. The company measures the cost of nonconformance as the measurement of quality.

6. The company that knows that if they are centered on motivation by carrots or sticks it is destined to be a company that is not sustainable.

7. A company that holds contractors responsible for their own quality.

8. A company that has an attitude of zero defects. They know good enough is not good enough.

9. A company that has a process Improvement focused on prevention of defects and has it as a center point of the company.

10. A company that is stern and has an attitude of zero defects.

11. A company that is willing and dedicated to process improvement as the only path to acceptance.

12. A company that seeks prevention of defects more than detection.

13. A company that knows that to focus on detection of defects and not improvement of processes is doomed to constant failure.

14. A company that knows that to obtain quality through inspection has a fate of increased cost.

   Other inspections a good company knows should be avoided
   
   a. To inspect a process without the objective being prevention of defects
   b. To inspect and then blame workers for process problem that are beyond their control
   c. To inspect and try to improve a process that produces the wrong outcome
   d. To inspect a flawed process expecting quality

15. A company that understands that it must seek the root cause of all problems.

16. A company that understands how to judge intention and how to take proper actions when considering defect, and dissatisfaction of customers and deceitful behavior.