

# **Red or White?** ***Decisions for Selecting Wine and Improving Quality***

*Presented by*

**Bill Bellows**

President

In2:InThinking Network, Canoga Park, CA, Email: [bill@in2in.org](mailto:bill@in2in.org)

Associate Technical Fellow & Lead

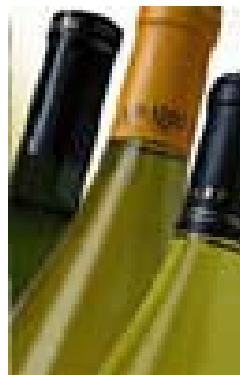
Enterprise Thinking Network, Pratt & Whitney Rocketdyne

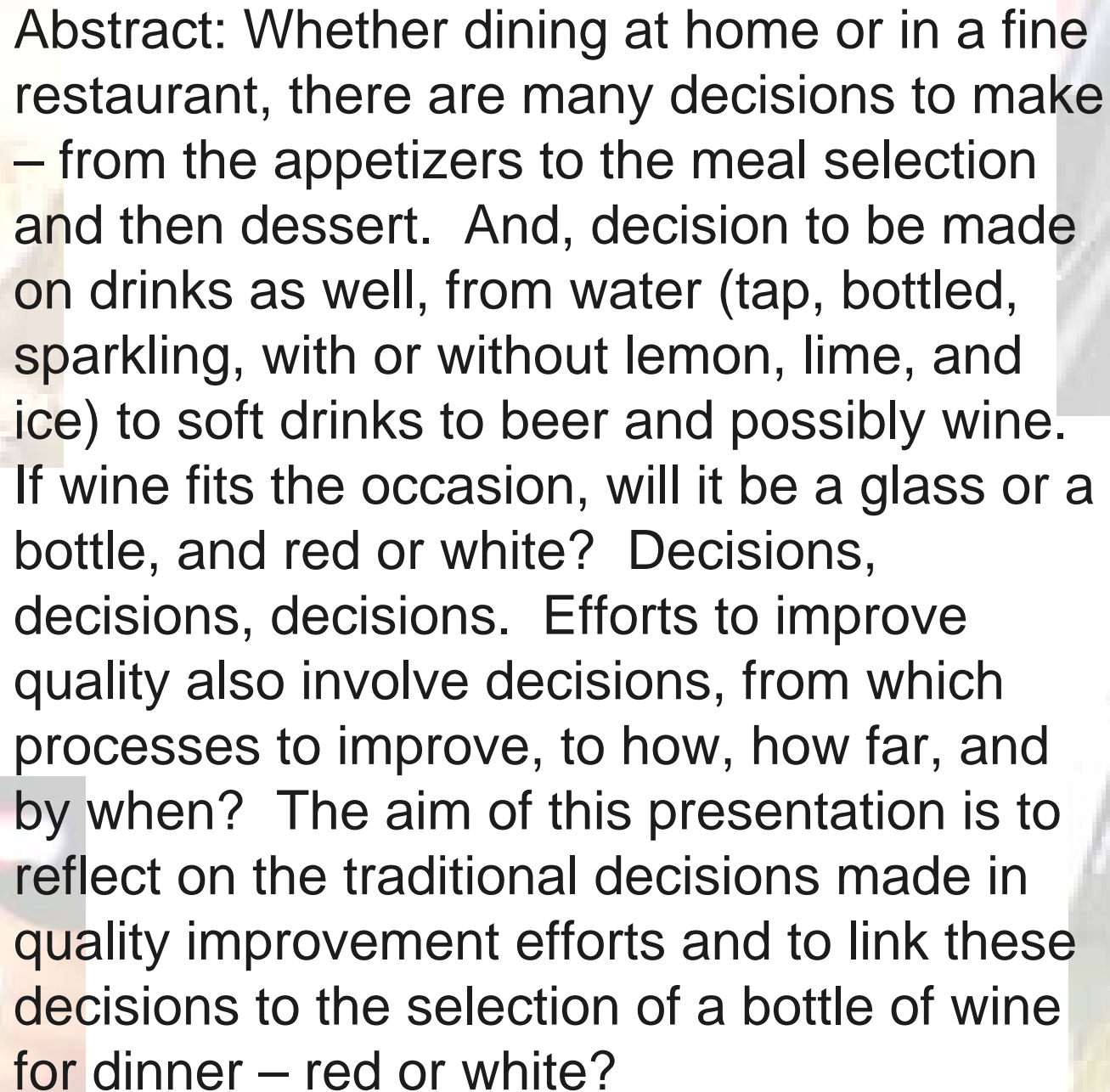
Canoga Park, CA, Email: [william.bellows@pwr.utc.com](mailto:william.bellows@pwr.utc.com)

July 27, 2007

Orange Empire Quarterly Breakfast Meeting

Tustin, California





Abstract: Whether dining at home or in a fine restaurant, there are many decisions to make – from the appetizers to the meal selection and then dessert. And, decision to be made on drinks as well, from water (tap, bottled, sparkling, with or without lemon, lime, and ice) to soft drinks to beer and possibly wine. If wine fits the occasion, will it be a glass or a bottle, and red or white? Decisions, decisions, decisions. Efforts to improve quality also involve decisions, from which processes to improve, to how, how far, and by when? The aim of this presentation is to reflect on the traditional decisions made in quality improvement efforts and to link these decisions to the selection of a bottle of wine for dinner – red or white?

# Takeaways

1. The limitations of the popular focusing on customer satisfaction and striving to reduce variation
2. The opportunities for moving from the "Old Economics" of the quality of *parts* to the "New Economics" of the quality of *relationships*
3. Why Genichi Taguchi's *Quality Loss Function* is a "better description of the world"
4. An invitation to learn more about efforts underway for 10 years at Pratt & Whitney Rocketdyne to bring the ideas above in to daily practice

# Aim

Introduce the *potential energy* of integrating the management theories and thinking of

Dr. Genichi Taguchi



Dr. W. Edwards Deming



Dr. Edward de Bono



Dr. Russell Ackoff

and many others...



# Agenda

- Quiz
- Present State
- Future State
- Better Value
- What's Next?





# Quiz



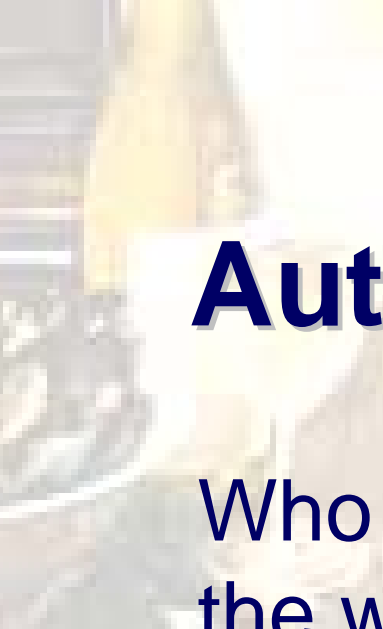
# Alligators

What is the leading use of alligator skin  
the United States today?



# Automobile Tires

Who makes the best automobile tires in the world today?





# Wine



Q: Are you having a glass of wine?

A: Yes

Q: Why don't we buy a bottle?

A: Sure

Q: Red or white?

A:

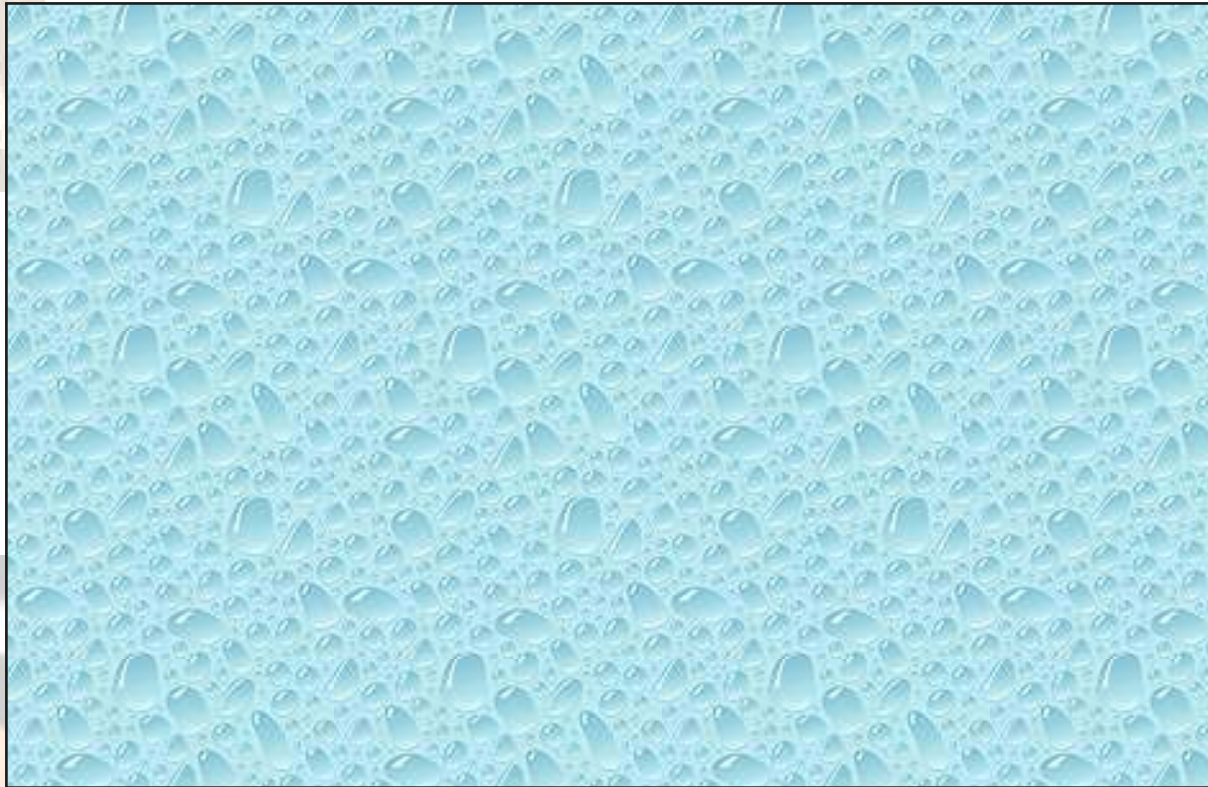


# Good

How much time is spent discussing parts which are good and arrive on time?



# Q: Number of Passes

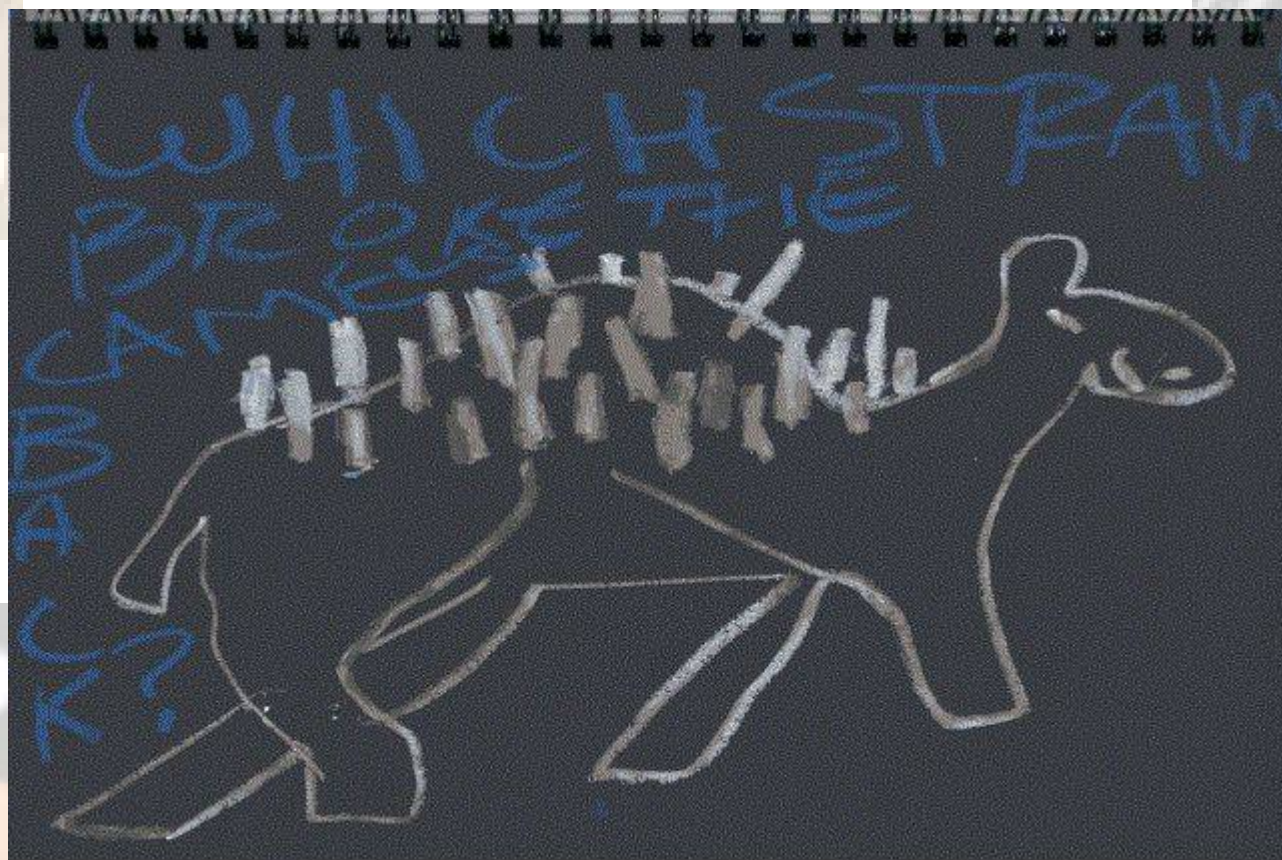


# Q: Sorting Fruit

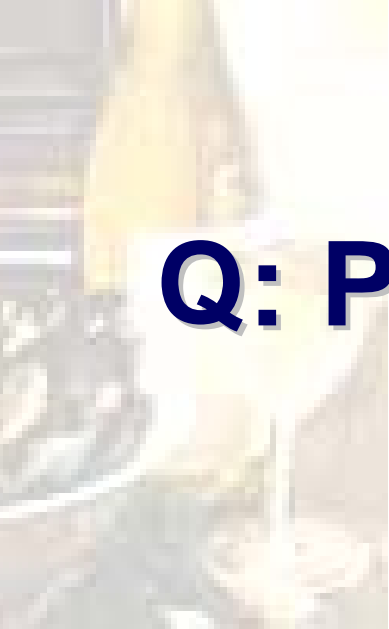




# Q: The Last Straw



# Q: Pulse



# The Boeing Company - Vision 2016

- Core Competencies

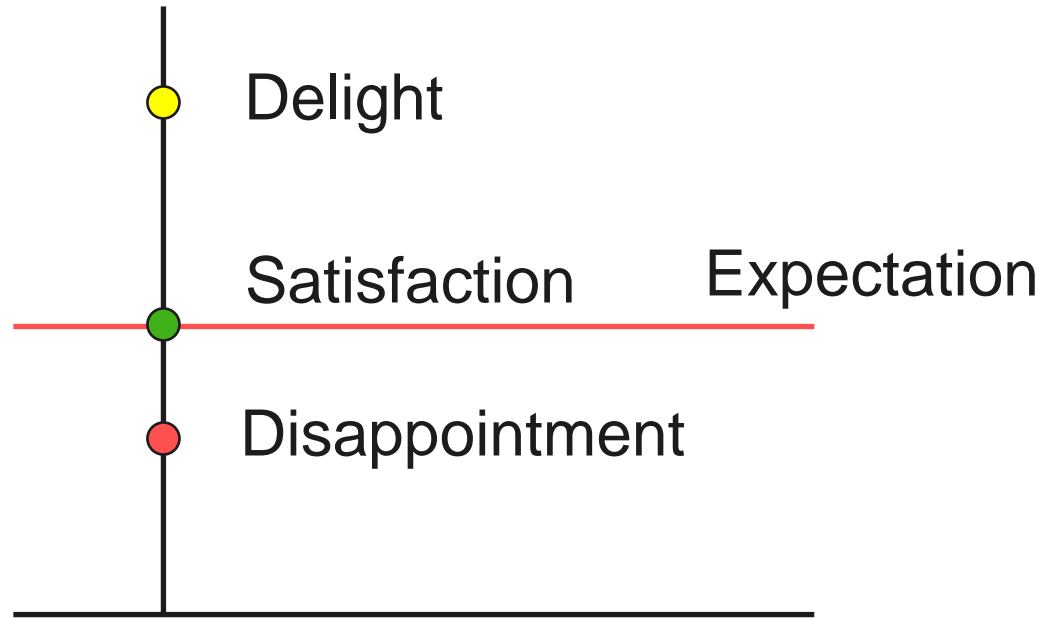
- detailed customer knowledge
- large-scale systems integration
- lean enterprise

- Values

- leadership
- integrity
- quality
- customer satisfaction
- people working together
- a diverse and involved team
- good corporate citizenship
- enhancing shareholder value

# Expectation Dynamics

Value





# Q: Cutting Wood

Given a piece of wood that will be cut into 2 pieces....



how many lines will be drawn across the top face before the cut is made ?

# Cutting Wood



# Cutting Wood



target

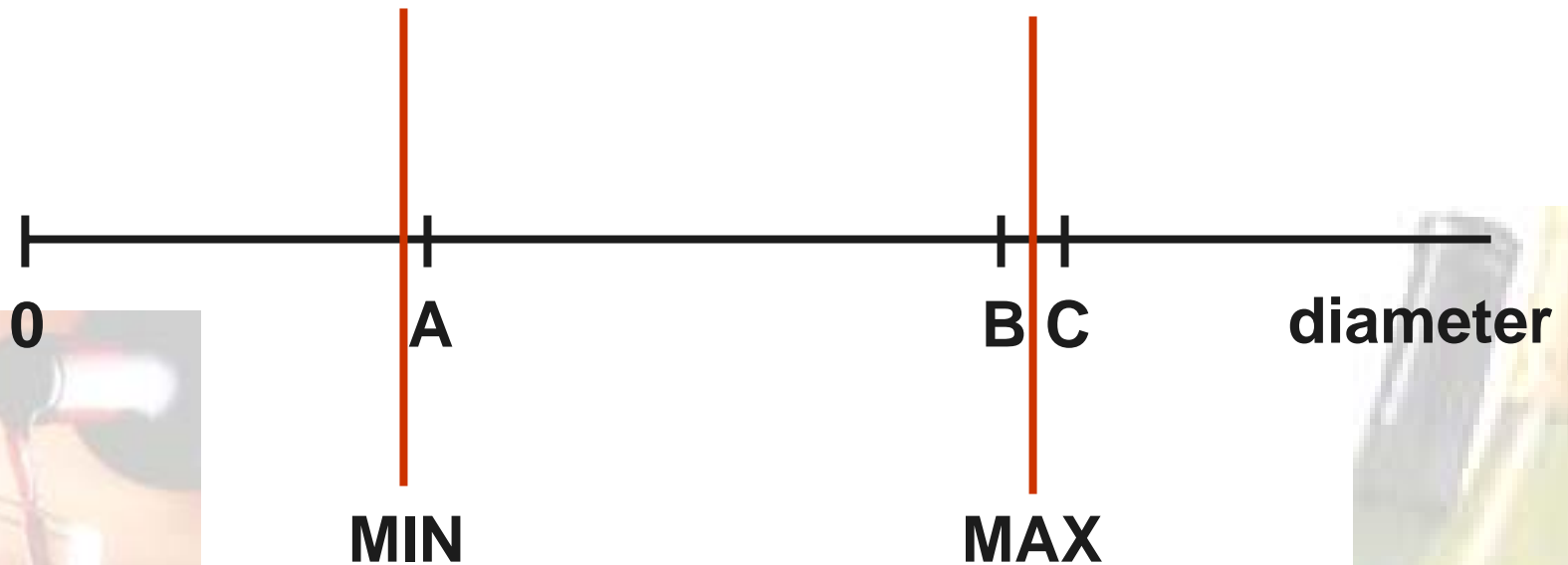
# Q: Sorting Circles

Which 2 of these 3 circles are closest to having the same diameter?



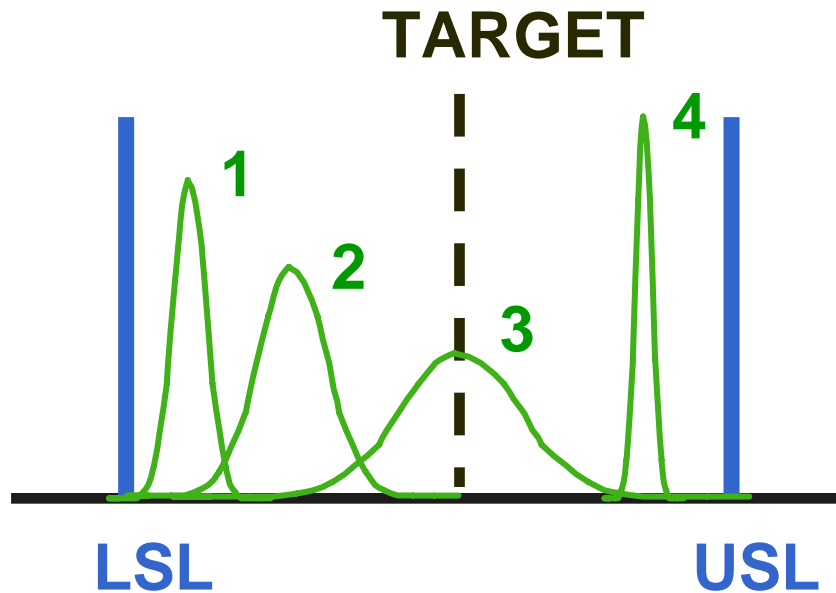
# Decisions Decisions

Which 2 of these 3 circles are closest to having the same diameter?



# Q: Decisions Decisions

Background: Consider the following four processes and the specification limits and target provided.



# The Paradigms of Variation

- Paradigm A
  - focus: meet specification limits (“any”)
  - expectations: meet
- Paradigm B
  - focus: piece-to-piece consistency (“4”)
  - expectations: ?
- Paradigm C
  - focus: piece-to-target consistency (“3”)
  - expectations: exceed

# Paradigms

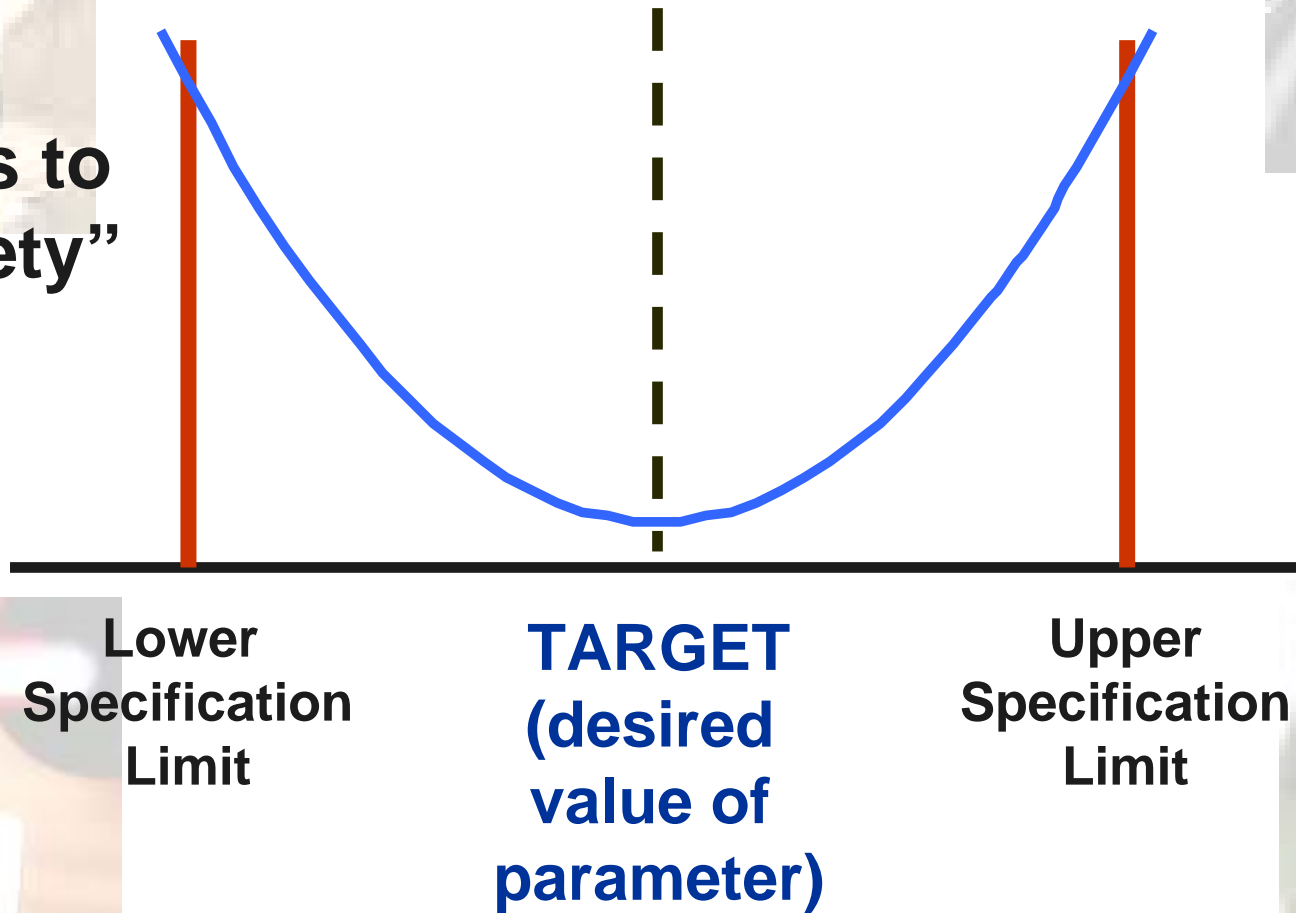
- Paradigms are mindsets
- Paradigms are common. We have them in all aspects of our life
- Paradigms are useful. They focus our attention

Source: *Future Edge*, Joel Barker



# Taguchi's Quality Loss Function

“Loss to Society”



# Taguchi on Quality Loss

“Quality is the loss a product causes to society after being shipped, other than losses caused by its intrinsic functions.”

Dr. Genichi Taguchi

Source: *Introduction to Quality Engineering*, Dr. Genichi Taguchi

# **Perception & Thinking**

**“How the world we perceive works depends on how we think.**

**The world we perceive is a world we bring forth through our thinking.”**

**H. Thomas Johnson**

Source: Profit Beyond Measure, H. Thomas Johnson, 1999



# Present State



# Philip Crosby on Quality

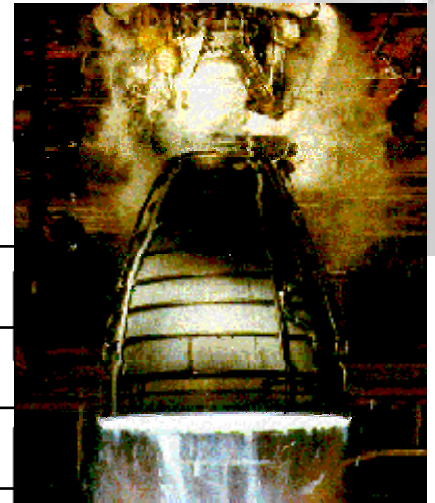
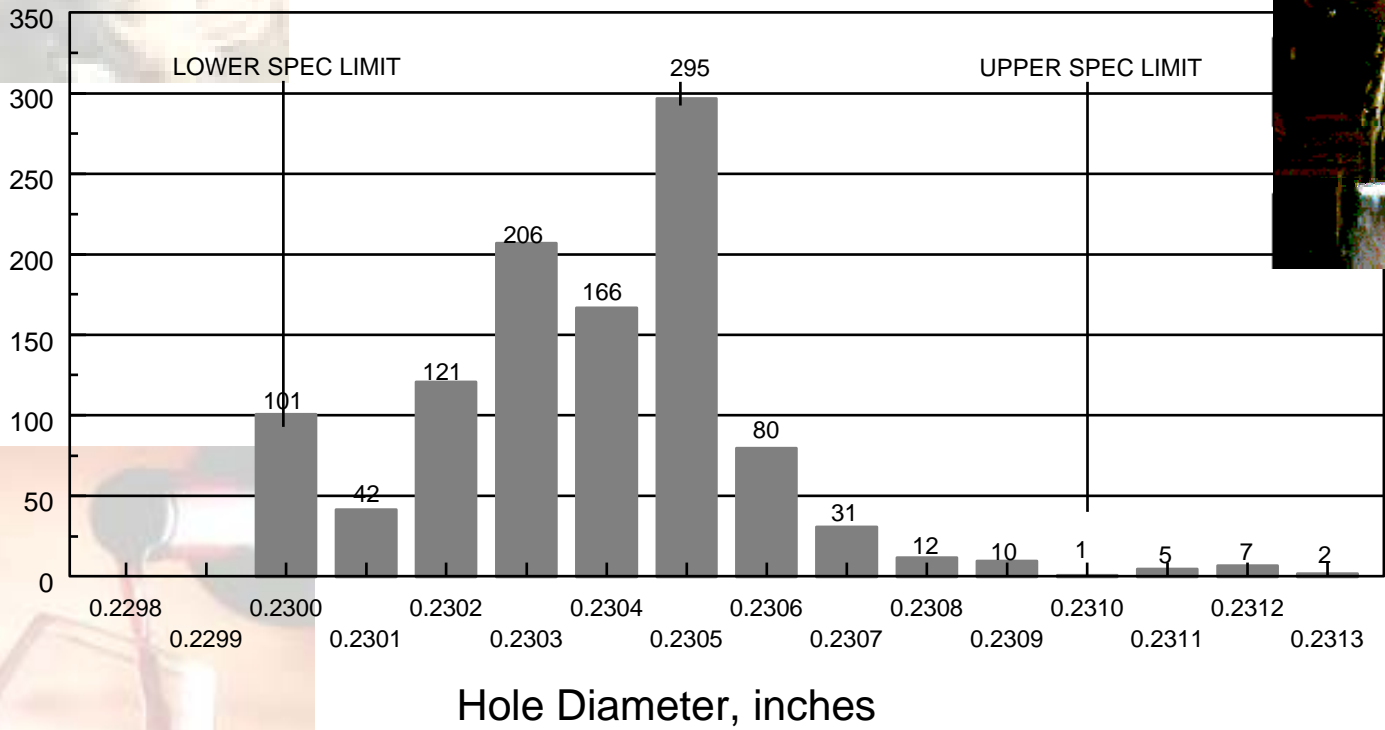
- “Zero defects is another way of saying ‘do it right the first time’”
- Quality is defined as conformance to requirements

# Crosby on the Absolutes of Quality Management

1. Quality is defined as conformance to requirements, not as 'goodness' nor 'elegance'.
2. The system for causing quality is prevention, not appraisal.
3. The performance standard must be Zero Defects, not 'that's close enough'.
4. The measurement of quality is the Price of Non-conformance, not indices.

# Defects

Frequency



# Six Sigma Quality

In the late 1980's, Motorola introduced The Six Sigma Quality management theory. The popularity of this theory spread world wide through the active pursuit of Six Sigma (and often higher) Quality levels. Consider the following statement from then Chief Executive Officer Jack Welch included in a 1997 letter to GE shareholders as evidence of this pursuit...

*“We didn't invent Six Sigma — we learned it. Motorola pioneered it and AlliedSignal successfully embraced it. The experiences of these two companies, which they shared with us, made the launch of our initiative much simpler and faster.”*



# Six Sigma Quality – Part 2

From Motorola:

*On the definition of Six Sigma - "A defect rate of no more than 3.4 per million; statistically, allowing for some variation in mean, this approaches zero defects.....At Motorola, we actually have a measure for quality which we call "Six Sigma" , and this literally affects everybody and everything we do, every minute, of everyday. Six Sigma is basically a target based on zero defects per million manufactured parts. At present we are hitting 99.9996%, which is so close to perfection that we are now using a parts-per-billion measure for defects."*

# Six Sigma Quality – Part 3

From Honeywell:

On the implementation of Six Sigma Quality: *“Six Sigma is a breakthrough change strategy for accelerating improvements in processes, products and services. It is a statistical term, first used in the electronics and computer industries, to describe an almost-perfect process. A company reaches the Six Sigma level of perfection when its processes are 99.99966 percent error-free, and defects measure a mere 3.4 per million.”*

# Present State

- Driving Change
- Reliance on Reforming
- Reducing Variation, Cost, Waste, Inventory, etc
- Talk about “Working Together”
- Striving for “Zero Defects” and “Zero Waste”
- Continuous Improvement
- Using Metrics for Alignment\*

**\*without a thinking transformation**



# Future State



# Assumptions

- A better way to operate an organization is to invest resources with the ability to manage customer delight, satisfaction, and disappointment
- Better investment results from discovering opportunities to invest
- The discovery of opportunities for investment is limited by how thinking is conditioned



# What is needed ?

Thinking that  
promotes  
*better*  
discovery

# InThinking

InThinking is about a transformation of the ways people think into effective predetermined patterns and sequences of thinking. The organization of thinking itself and the awareness that there is a choice of alternative ways of thinking when creating better solutions, presents a significant and exciting departure from traditional approaches.

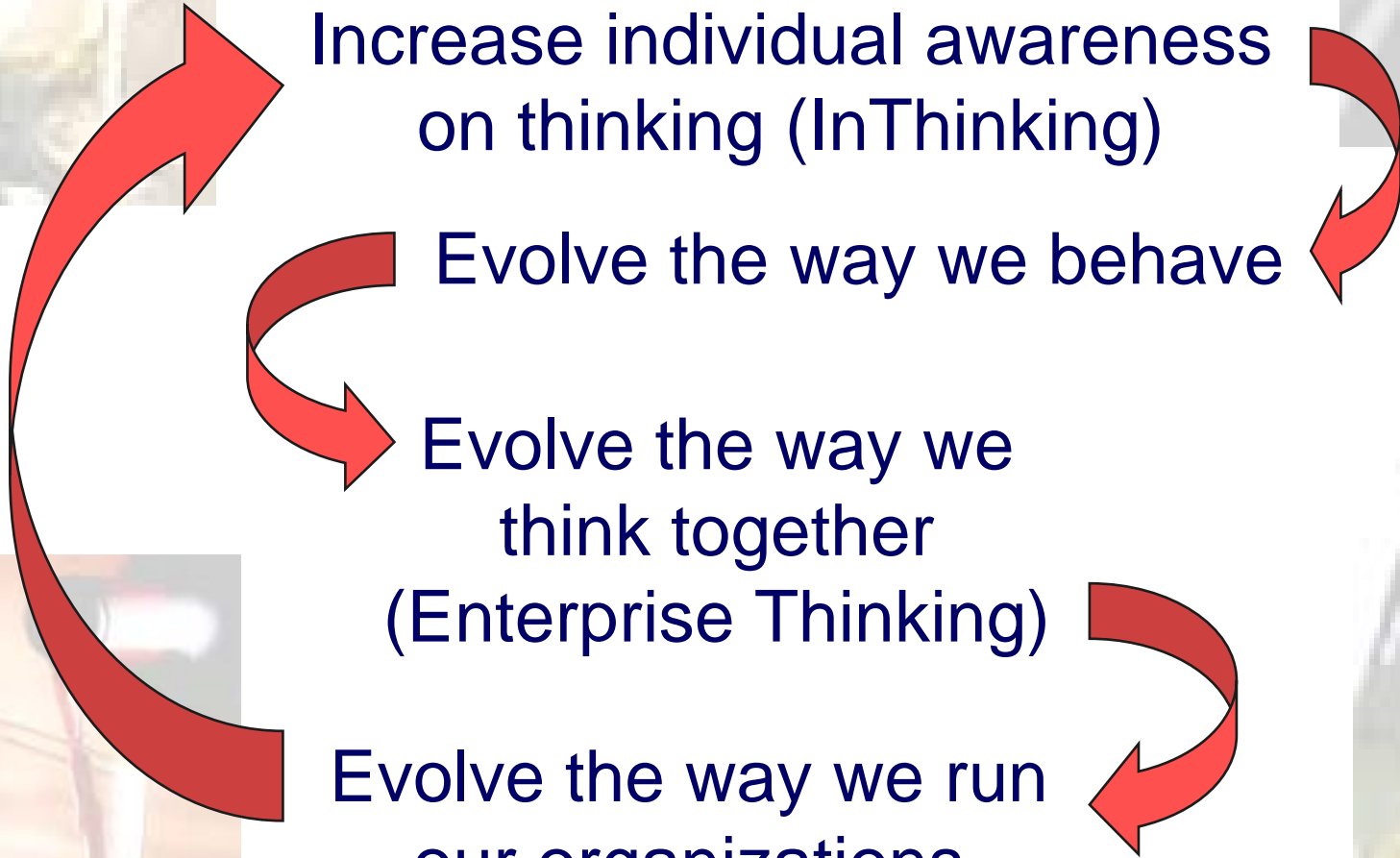
# InThinking & Enterprise Thinking

Increase individual awareness on thinking (InThinking)

Evolve the way we behave

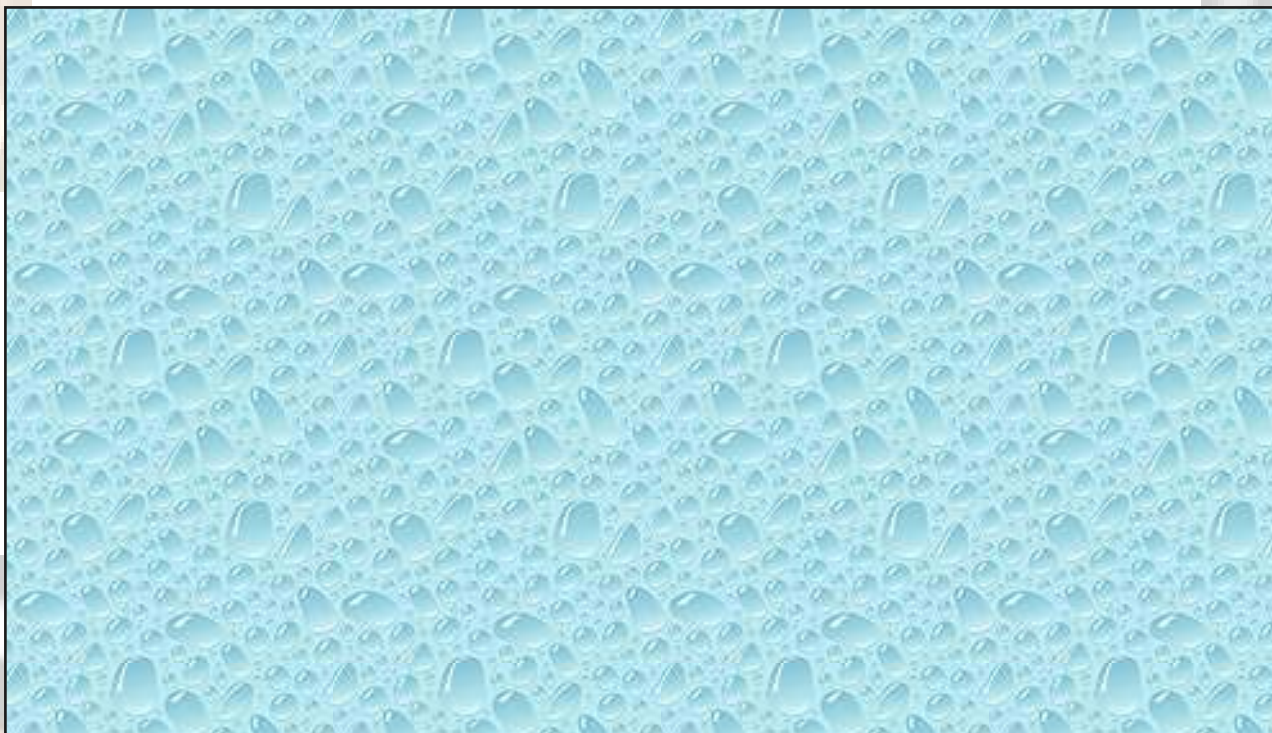
Evolve the way we think together (Enterprise Thinking)

Evolve the way we run our organizations





# Rafting



# In2:InThinking Network

The In2:InThinking Network was formed in 2001 by a group of students of the work of W. Edwards Deming and related theorists. The **aim of our network** is to make thinking about systems, variation, knowledge, and psychology, and their interaction – which comprises Deming's System of Profound Knowledge <sup>tm</sup> - more conscious. We believe that such thinking about thinking, which we call "inthinking," will allow people to better perceive relationships and interdependencies in human endeavors, and consequently act to make those endeavors more valuable, more satisfying, and more joyful.

# The In2:InThinking Network

**2002 - Creating New ROIs - Transforming the Economics of the 21st Century**

**2003 - What's New? What's Next? – Better Thinking for a Better Future**

**2004 - Making a Difference From Where You Are – Better Thinking For a Better Future**

# The In2:InThinking Network

**2005 - Daring to Lead - Influencing Better Thinking for a Better Future**

**2006 - Daring to Explore –  
Creating Possibilities Together**

**2007 - Passion Flowing In2 Purposeful Action –  
Unleashing the Power of Us**

# 2004 In2:IN Forum: “Making a Difference From Where We Are”



**In2:InThinking Network - [www.in2in.org](http://www.in2in.org)**

# 2005 In2:IN Forum: “Daring to Lead”



**In2:InThinking Network - [www.in2in.org](http://www.in2in.org)**

# Future State

- Leading Transformation
- Use of Reformation and Transformation
- Resource & Relationship Management (Striving for Balance)
- Thinking & Learning Together - Then Working Together
- Continuous Investment
- Using Thinking for Alignment
  - InThinking and Enterprise Thinking



# What's Next?

- Thinking Together
- Rethinking “Working Together”
- Rethinking “Learning Together”
- Rethinking “Management”
- Rethinking “Leadership”
- Rethinking “Interchangeable parts”
- Rethinking ???





# Imagine the Possibilities...

- when operating in an “Enterprise Thinking” environment
- if we could develop a broader appreciation of “continuous and connected learning”
- if we could develop a deeper appreciation of “*working together*”, “*learning together*” and “*thinking together*”

# Imagine the Possibilities...

- and the markets we could create

Working Together

Investing Together

Designing Together

Building Together

Learning Together

Thinking Together

Leading Together

# Takeaways

1. The limitations of the popular focusing on customer satisfaction and striving to reduce variation
2. The opportunities for moving from the "Old Economics" of the quality of *parts* to the "New Economics" of the quality of *relationships*
3. Why Genichi Taguchi's *Quality Loss Function* is a "better description of the world"
4. An invitation to learn more about efforts underway for 10 years at Pratt & Whitney Rocketdyne to bring the ideas above in to daily practice