

From Profound Knowledge to InThinking and Enterprise Thinking

Presented by

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Abstract: The aim of this session is to offer insights on how Dr. W. Edwards Deming's "new economics" and the underlying system of profound knowledge has been expanded upon by a "thinking network" within Pratt & Whitney Rocketdyne to initiate both "InThinking" and "Enterprise Thinking" networks. The "thinking expansion" includes the "variation management principles" of Dr. Genichi Taguchi and the thinking tools of Dr. Edward de Bono, among others whose thinking has been explored and united with profound knowledge. In doing so, the presentation will offer an introduction to ongoing activities within Pratt & Whitney Rocketdyne to convert the principles of Dr. W. Edwards Deming into practical ways that "reduce losses" to both society and improve corporate profitability.

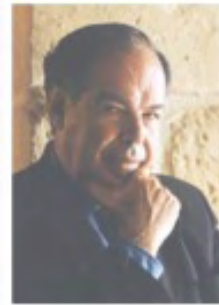
Agenda

- Aim
- Insights
- Interchangeable Parts
- Better Thinking About Thinking
- Imagine the Possibilities...

Aim

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

Dr. Genichi Taguchi



Dr. Russell Ackoff



Dr. W. Edwards Deming

Dr. Edward de Bono

and many others...

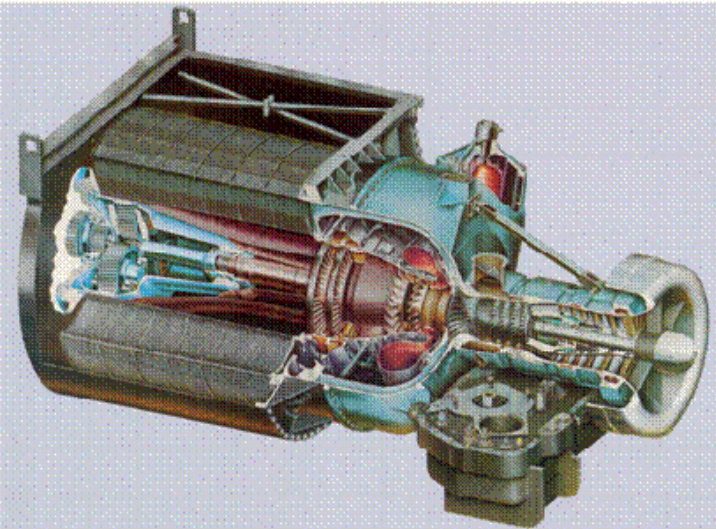
Perception & Thinking

“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

Tank Engines and Rocket Engines



AGT 1500 GAS TURBINE ENGINE

TEXTRON Lycoming
Stratford, Connecticut





Courage To Imagine...

“The courage to imagine the otherwise is our greatest resource, adding **color** and suspense to our life.”

Daniel Boorstin

InThinking & Enterprise Thinking



Insights

The image is a high-angle aerial photograph of a landscape. The ground is a mix of brown and tan colors, suggesting a dry or agricultural area. It is heavily obscured by a dense layer of white, puffy clouds that appear to be rising from the ground. The clouds are of varying sizes and are spread across the entire frame, creating a textured, three-dimensional effect. The sky above the clouds is a pale, clear blue.

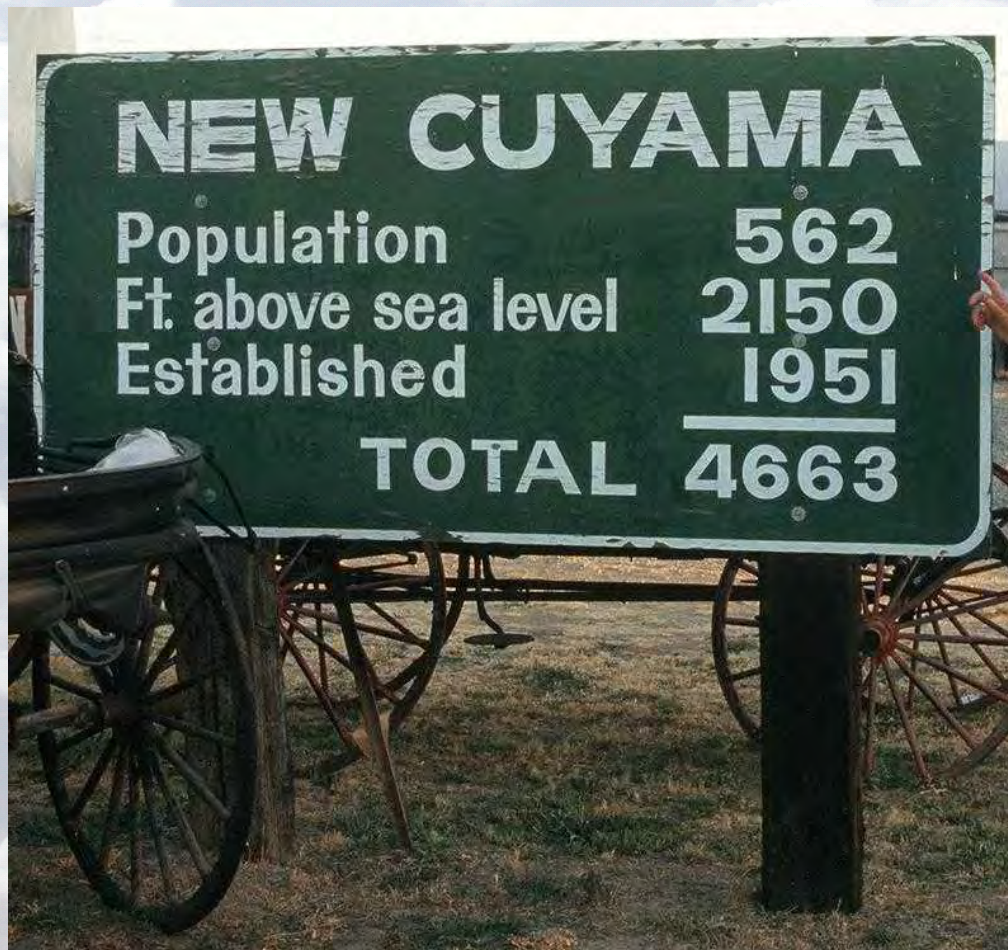
NEW CUYAMA

Population 562

Ft. above sea level 2150

Established 1951

TOTAL 4663



W. E. Deming on Quality

“A product or a service possesses quality if it helps somebody and enjoys a good and sustainable market”

*** Source: The New Economics, W. Edwards Deming, 1993**

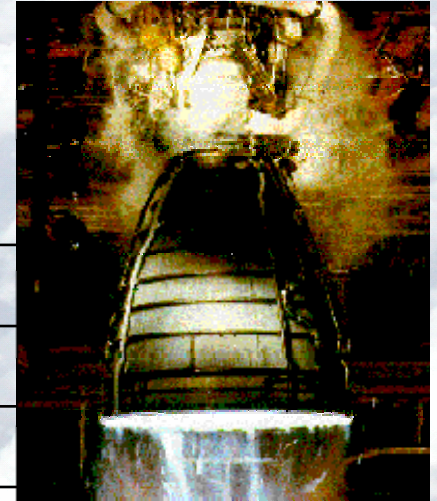
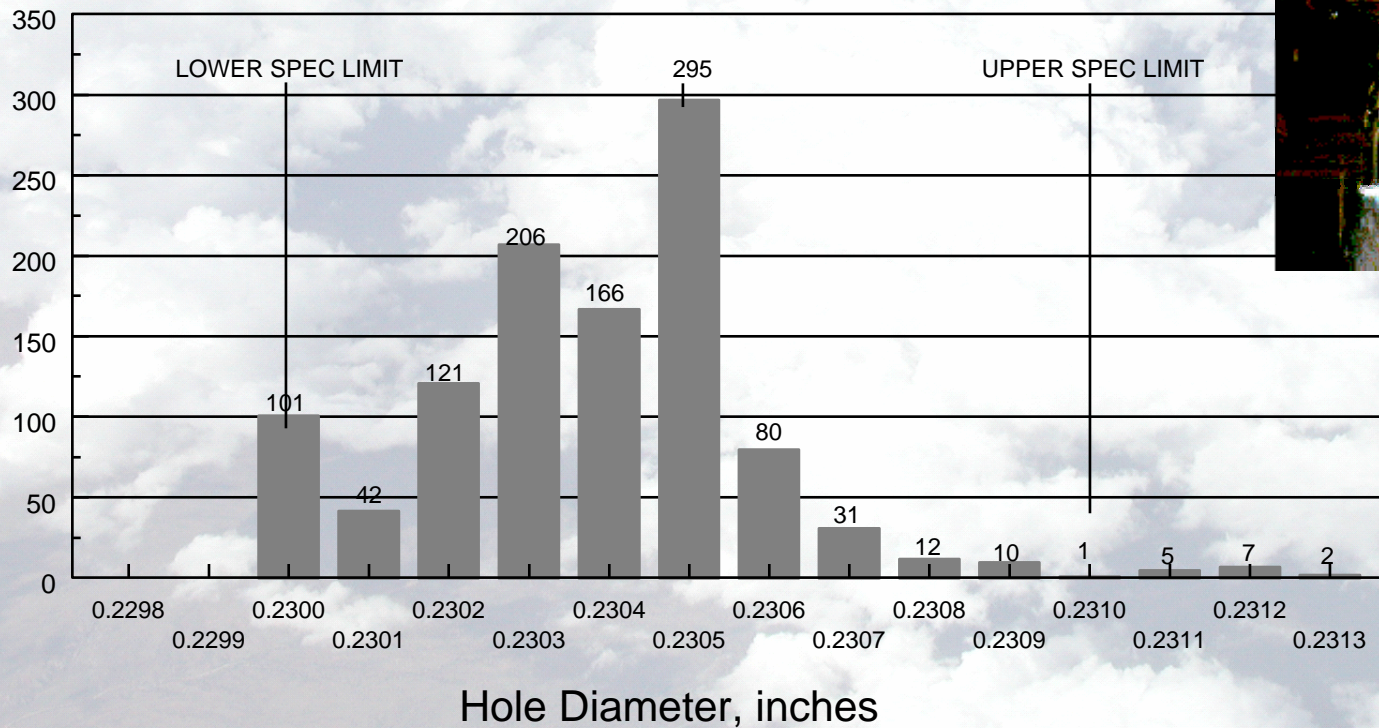
Philip Crosby on Quality

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

* Source: Let's Talk Quality, P. Crosby, 1989

Defects

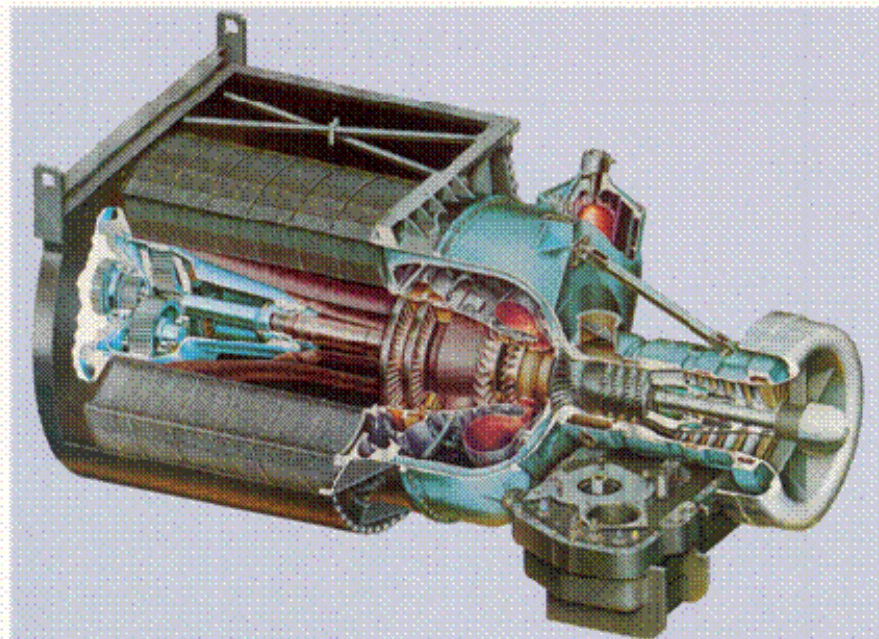
Frequency



Genichi Taguchi on Quality

“Quality is the minimum of loss imparted to the Society by a product after its shipment to a customer”

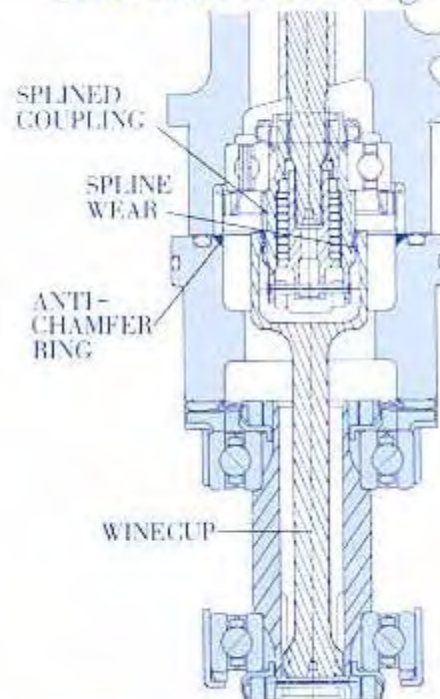
*** Source: Introduction to Quality Engineering , G. Taguchi, 1983**



AGT 1500 GAS TURBINE ENGINE

TEXTRON Lycoming
Stratford, Connecticut

Anti-Chamfer Ring



Edward de Bono on Quality

“The quality of our thinking will determine the quality of our future.”

Edward de Bono

Resource Management



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



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

Counting Heads



Togetherness

- What does it mean to *“work together”* ?
- What does it mean to *“learn together”* ?
- What does it mean to *“think together”* ?



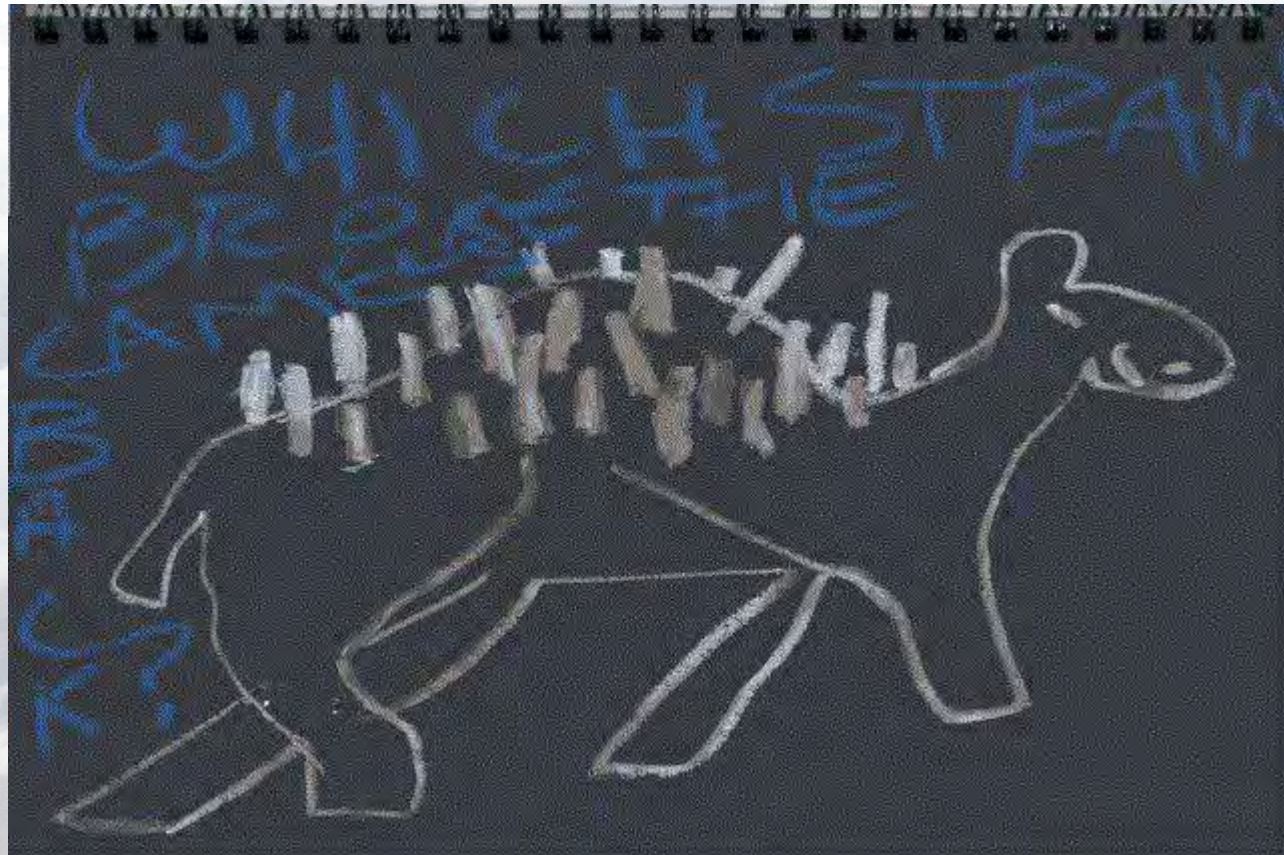
Together

“In or into contact or association”

“In or into harmony or coherence”

Merriam-Webster Dictionary

Counting Straws



Team?



United We Stand



United We Eat?



Special Reserve Blend

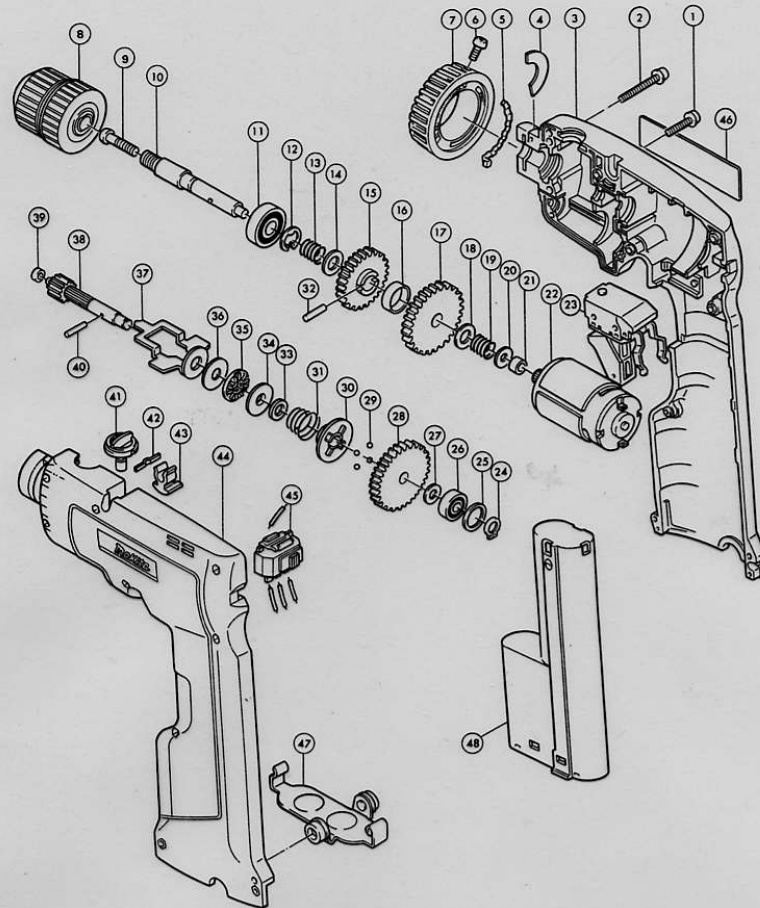
Coffee farmers around the world were invited to send us their best beans for our annual coffee competition. Through precision and artistry, we blended and roasted the finest into something extraordinary.

Starbucks' Special Reserve Blend 2004

Parts or Parts Of?

Feb.-04-'92 US

CORDLESS DRIVER DRILL Model 6011D



Note: The switch and other part configurations may differ from country to country.

Systems Perspective

“When we try to pick out anything by itself, we find it hitched to everything else in the universe.”

Thomas Muir

Water Logic





We all live downstream

What's Old?

- 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**

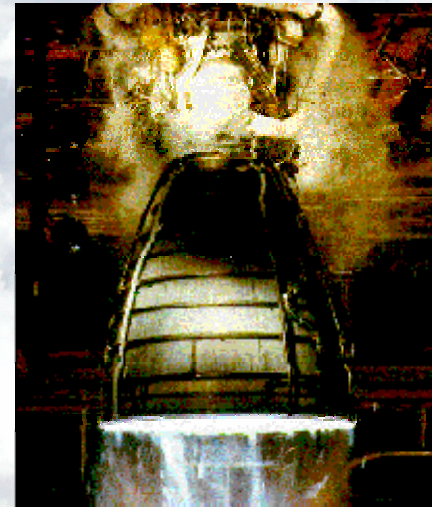
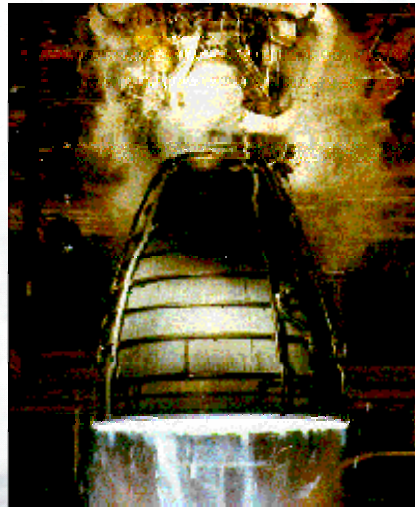
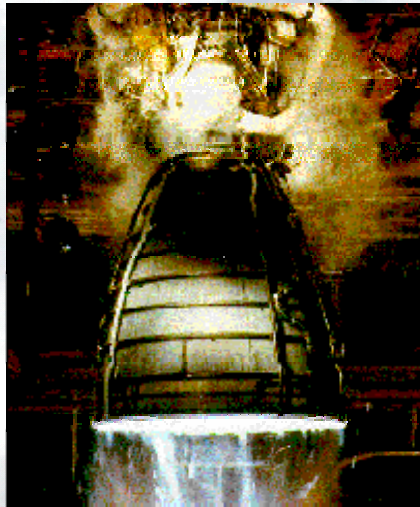
What's New?

- 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

An aerial photograph showing a vast expanse of white, fluffy clouds covering a landscape. In the distance, a small body of water is visible. The text "Interchangeable Parts" is overlaid in the center.

Interchangeable Parts

Interchangeable Parts ??



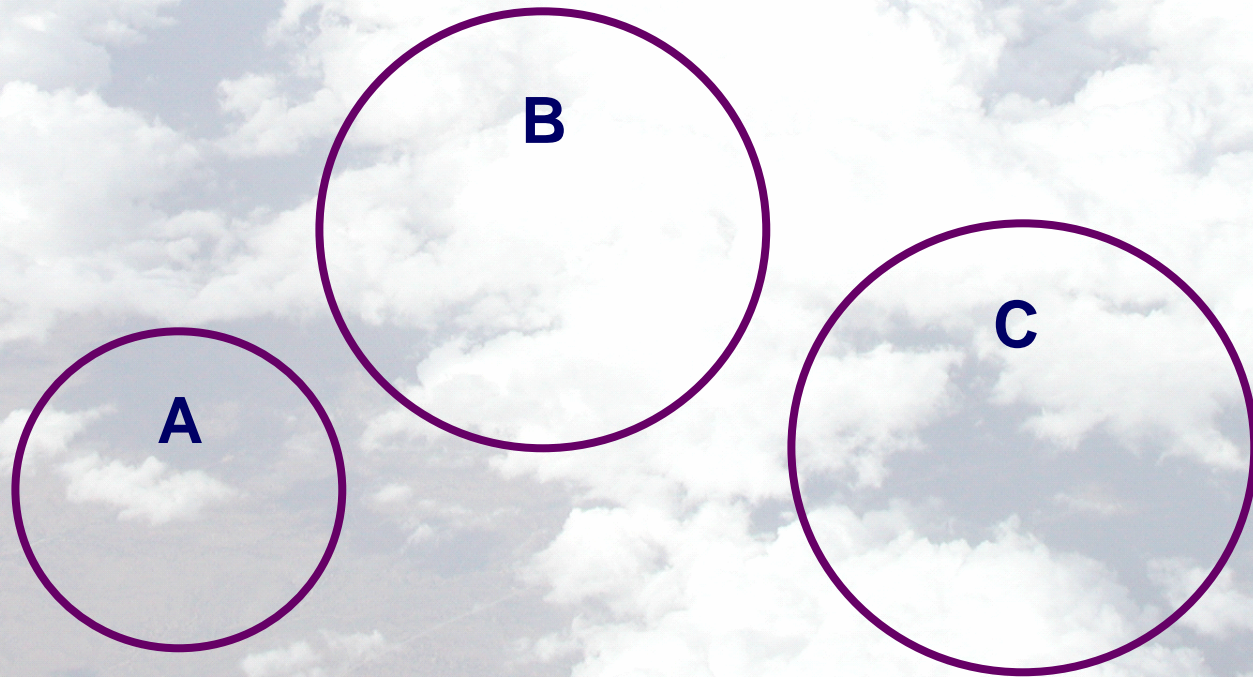
Space Shuttle Main Engine

Interchangeable Parts ??



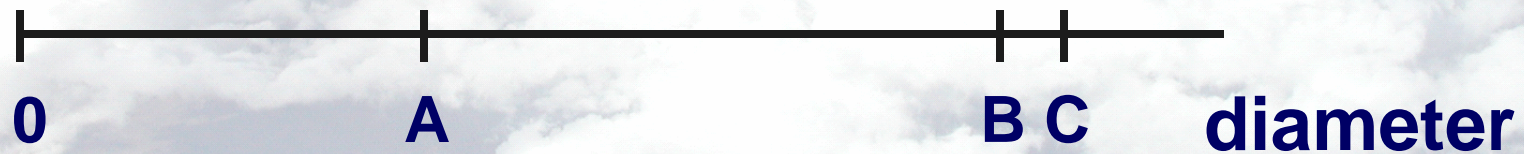
Sorting Circles

Connect the 2 of these 3 circles that are closest to being the same.



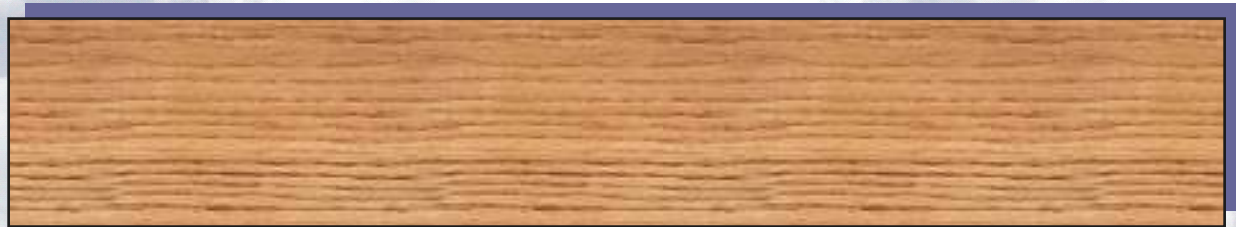
Sorting Circles, Part 2

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



Cutting Wood

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

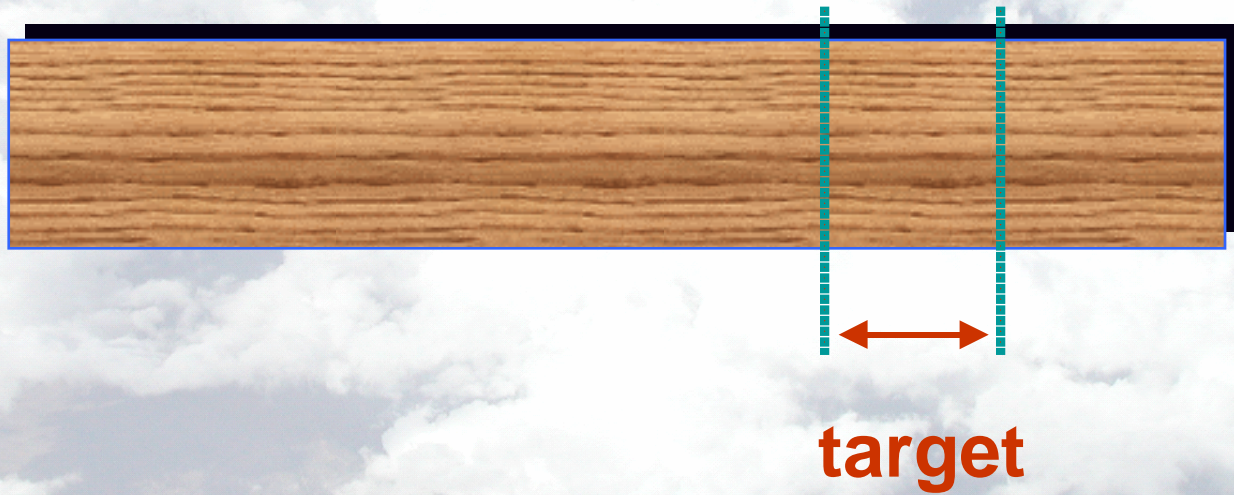


how many lines will be drawn across the top face before the cut is made ?

Cutting Wood



Cutting Wood

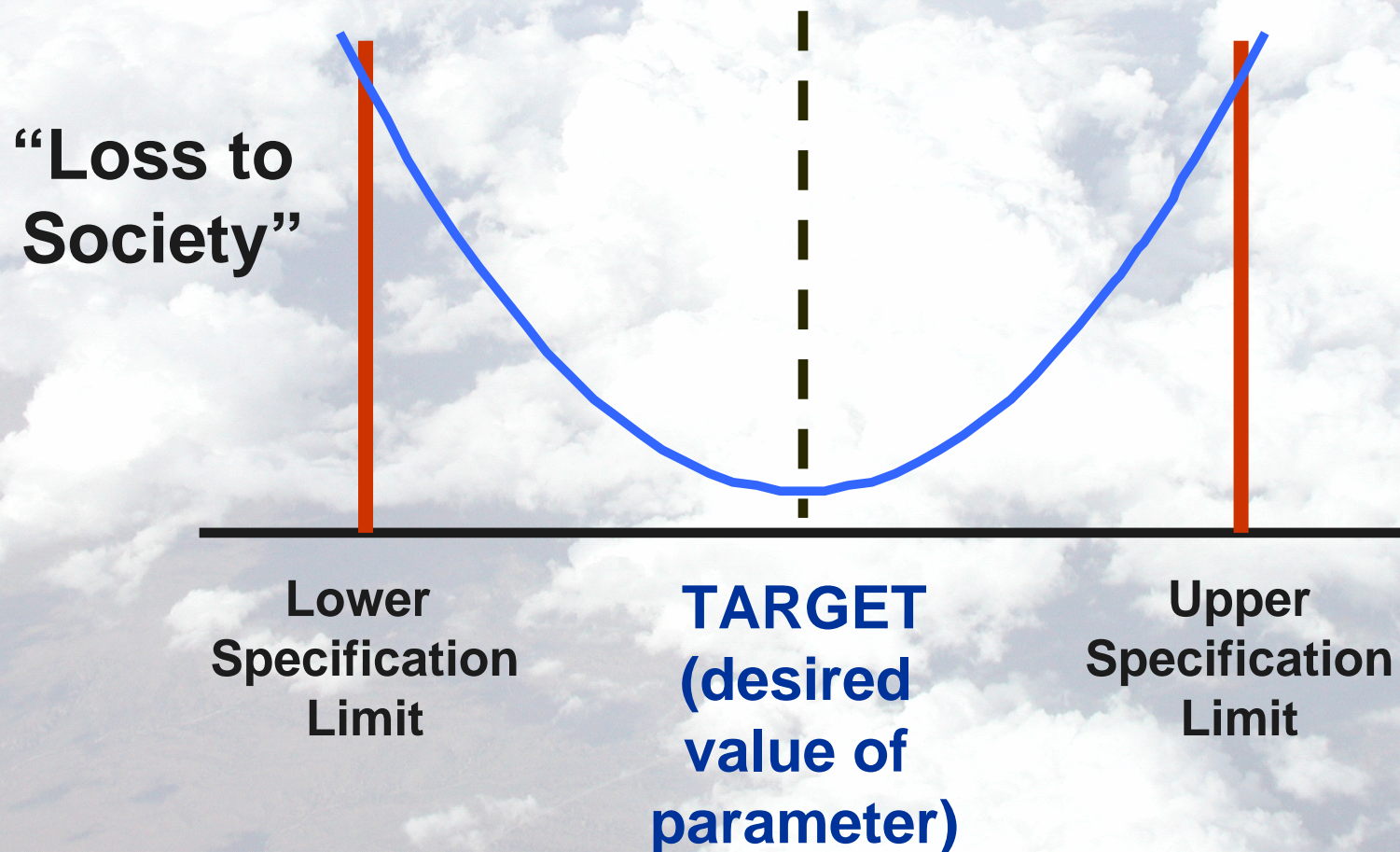


Decisions Decisions

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



Taguchi's Quality Loss Function



A Better View

“The Taguchi Loss Function is
a better view of the world.”

W. Edwards Deming

Source: *Out of the Crisis*, W. Edwards Deming, 1986

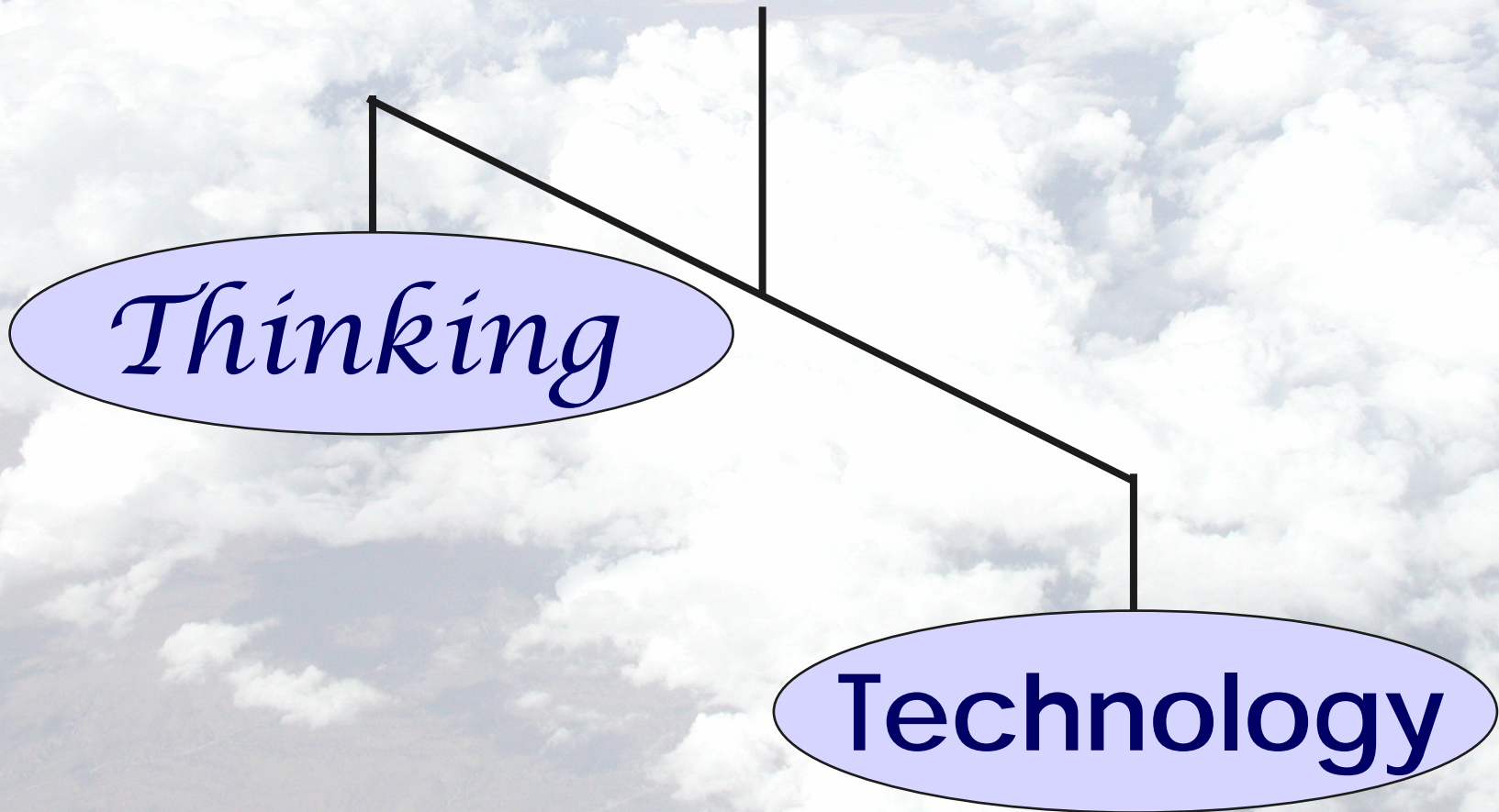


**Better
Thinking About
Thinking**

InThinking & Enterprise Thinking



Investment Opportunities



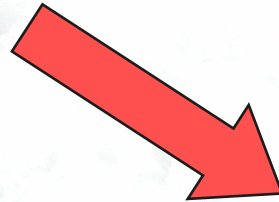
“The significant problems we face cannot be solved at the same level of thinking we were at when we created them.”

Albert Einstein



Transformation

Potential Energy
“Better Thinking”



Kinetic Energy
“Better Value”

Visioning

“it’s not what the vision is that
is important...

it’s what the vision does...”

Robert Fritz

Source: *The Fifth Discipline*, Peter Senge, 1992



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

What's Next?

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

What's Next?

“The greatest discovery of my generation is that human beings can alter their lives by altering their attitudes of mind.”

William James