

55th EOQ Congress
World Quality Congress
Budapest, Hungary - June 20-23, 2011

"Navigating Global Quality in a New Era"



June 21, 2011 (Tuesday) 55th EOQ Congress

KEMPINSKI HOTEL CORVINUS
BALLROOM

Erzsébet tér 7-8, Budapest V.
Tuesday 9:00 – 10:30

8.2. OPENING PLENARY SESSION

Tuesday 11:00 – 12:30

Session Chair: *Pál Molnár, President, Hungarian National Committee for EOQ and Professor at the University Szeged, Congress Chairman, Hungary*

11.00 Returning to our Roots: The Fundamentals of Managing for Quality

Gregory H. Watson, Acting Chairman and President, International Academy for Quality, Finland

Watson, Gregory (Finland), Acting Chairman and President of the International Academy for Quality (IAQ)

Mr. Watson, Academician, is the Acting Chairman and President of the International Academy for Quality (IAQ) and an Adjunct Professor of Industrial Engineering at Oklahoma State University. He has also been elected member in the International Statistical Institute and Fellow of the World Academy for Productivity Science. Previously, Mr. Watson has held quality executive positions with Xerox, Compaq Computer and Hewlett-Packard. He also consults on quality as Chairman of Business Excellence Solutions, a Finland-based company that focuses on developing and promoting advanced management methods.

Mr. Watson is a past-President and Fellow of the American Society for Quality (ASQ) and has been named honorary member of seven professional quality associations and Fellow of six others. He has consulted for many of the world's most admired companies including: Nokia Mobile Phones, Toshiba, ExxonMobil, RIM, Ritz Carlton Hotels, Ford and ABB. He has been the instructor for all Six Sigma training at the Black Belt and Master Black Belt level for the Center for Excellence of Finland and has helped over 60 Finnish companies to learn about and apply statistical problem solving and lean methods. He holds graduate degrees in systems management and industrial engineering and has been recognized as a European Engineer (EUING) by the European Federation of National Engineering Association (FENAI).

Mr. Watson has received numerous quality awards and recognitions including the first Deming Distinguished Service Award from the Union of Japanese Scientists and Engineers given to a non-Japanese individual.

Mr. Watson has authored or collaborated in ten quality-related books which have been translated into eleven languages. His books have received the Walter E. Masing Medal from IAQ and the Philip B. Crosby Medal from the ASQ. 4



INTERNATIONAL ACADEMY FOR QUALITY

"A community of the world's leading executives, practitioners and academics dedicated to promoting the cause of quality"

Returning to our Roots: The Fundamentals of Managing for Quality

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Gregory H. Watson

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Maintaining the proper historical perspective:



Confucius [Kong Qiu] (551-479 BC)

"What you know, you know; what you don't know, you don't know."

~ Confucius

In the pursuit of what is **new**
and different we must not
lose the focus on what is
wise and important.

"Wisdom is knowing what you know and what you don't."

~ Confucius

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Theory Related to Phenomena in Quality Science:

- **Good theory fits historical observations flawlessly and must be predictive of new experiences.**
- **Hypothetical theories must be tested to determine validity.**
- **Scientific theory results from testing and proving hypotheses.**

“**Scientific theory** comprises a collection of concepts, including abstractions of observable phenomena expressed as quantifiable properties, together with rules (called scientific laws) that express relationships between observations of such concepts. A scientific theory is constructed to conform to available empirical data about such observations, and is put forth as a principle or body of principles for explaining a class of phenomena.”

~ Merriam Webster Dictionary



Spectrum of Quality Applications:

- **Creating:** the **act of producing new ideas**, approaches or actions without regard to practicality or implementation; success is measured by the number of new ideas
- **Inventing:** the **imaginative discovery of ideas that define a potentially practical new device**, composition, gadget, or process that did not exist previously. Inventions may be either derived from pre-existing works (evolutionary), or they may be independently conceived (revolutionary or radical breakthrough).
- **Innovating:** ideas applied in practice; **the process of both generating and applying creative ideas** in some specific context.; a new way of doing something or for producing something that is **useful**.
- **Engineering:** **designing and implementing useful features and functions** at the lowest total cost (including the cost of failure).
- **Controlling:** managing output of a **process to produce consistent products** and operates reliably and predictably throughout its life cycle.



Theories Related to Quality as a Science:

Many theories inspire the quality sciences!

**“You must know why, not just know how!”
~ Shigeo Shingo**

Focus on theories that defines architecture of quality systems.

- Theory of Productivity – Frederick W. Taylor
- Theory of General Systems – Ludwig von Bertalanffy
- Theory of Attractive Quality – Noriaki Kano
- Theory of Competition – Michael E. Porter
- Theory of Participation – Mary Parker Follett
- Theory of Cooperation – Chester I. Barnard
- Theory of Profound Knowledge – W. Edwards Deming
- Theory of Innovation – Joseph A. Schumpeter
- Theory of Diffusion – Everett M. Rogers
- Theory of Invention – Genrich S. Altshuller
- Theory of Entrepreneurship – Peter F. Drucker
- Theory of Economic Efficiency – Ronald H. Coase
- Theory of Quality Management – Joseph M. Juran
- Theory of Administration – Herbert A. Simon
- Theory of Human Motivation – Yoshio Kondo
- Theory of Control – Walter A. Shewhart

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System for Obtaining Profound Knowledge



W. Edwards Deming (1900-1993)
Quality Advisor to Japan (1950)

“Theory of Profound Knowledge” (1992)

“The theory of knowledge teaches us that a statement, if it conveys knowledge, predicts future outcomes, with risk of being wrong, and that it fits without failure observations of the past.”

“To put it another way, information, no matter how complete and speedy, is not knowledge. Knowledge has temporal spread. Knowledge comes from theory. Without theory, there is no way to use the information that comes to us.”

“You don’t have to do this; survival is not compulsory.”

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Theory of Profound Knowledge:

What is profound knowledge?

Deming identified four aspects of **profound knowledge**:

- **System**: understanding the system in which work is being done.
- **Variation**: knowledge of how a system operates comes from a study of its variation in performance.
- **Knowledge**: knowledge comes from observation of work and the definition of a theory which is then tested and confirmed.
- **Psychology**: human behavior must be understood, motivated and coordinated to achieve cooperative work outcomes.



Understanding dynamics in consumer choice:



Noriaki Kano 狩野紀昭 (1940-)
Japanese Quality Professor

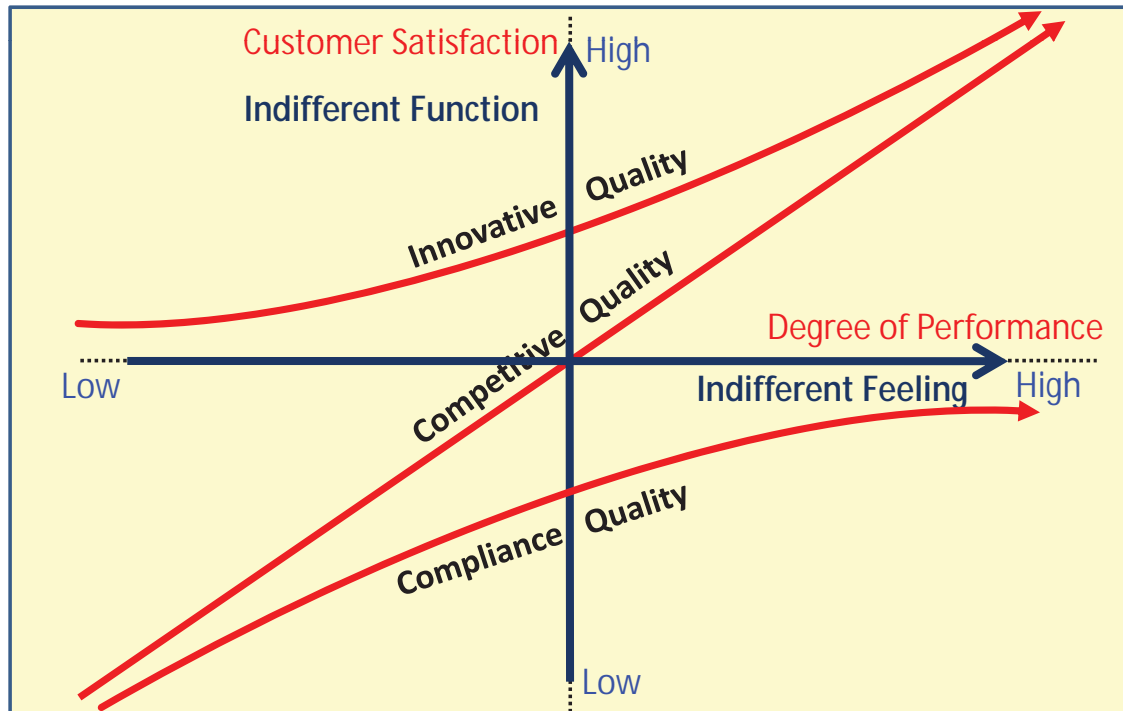
“Theory of Attractive Quality” (1984)

“Quality activity can only begin if top management is conscious of the critical need for organization wide commitment to quality and its own responsibility for introducing such activity. ”

“Improving all attributes of quality will not lead to satisfied customers as not all attributes are equal in their eyes. Some quality attributes will increase the value to customers because they are attractive and do not detract even when their physical fulfillment is not strong.”



Theory of Attractive Quality:

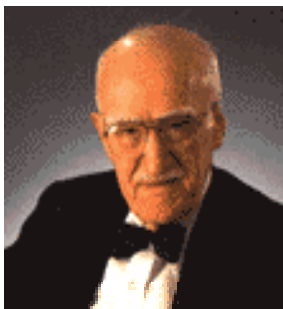


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Theory of Quality Management:



Joseph M. Juran (1904-2008)
Quality Management Consultant

“Quality Trilogy” (1986)

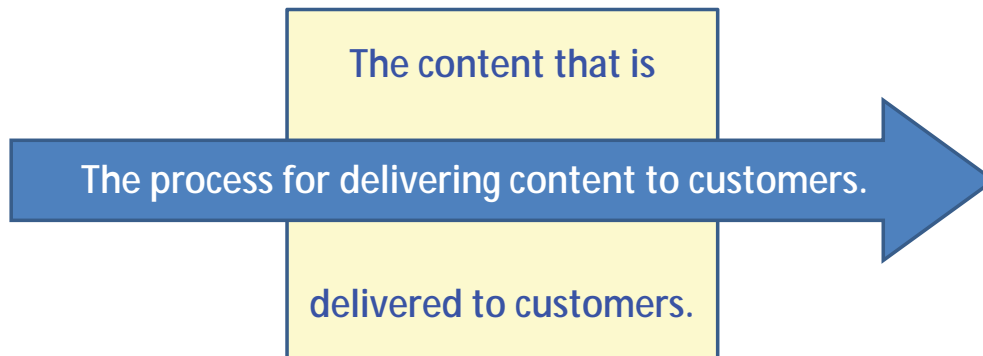
Management's Emphasis	Management Activity
Quality Planning	<ul style="list-style-type: none"> Identify the customers Determine the needs of customers Translate customer needs into internal language Develop a product that responds to these needs Optimize product design for internal and external needs
Quality Improvement	<ul style="list-style-type: none"> Develop a process to effectively produce the product. Optimize the process.
Quality Control	<ul style="list-style-type: none"> Prove the process can produce reliable results. Transfer the process to operational control.

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Quality is both content and delivery process:



We often use the word “quality” to refer to the **attributes** of a product (its content) as well as the **methods** by which these attributes are produced (the process).



Consider Quality as Content:

Content

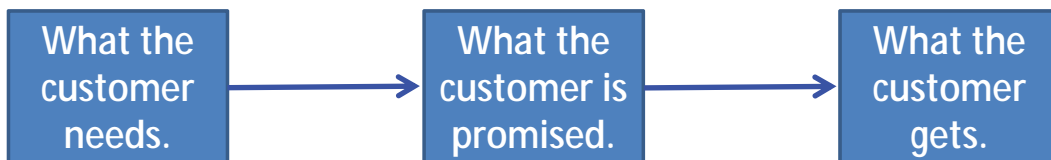
- We often think of quality in terms of the **attributes** of a product or service – the **outcome** that it delivers or the characteristics that define its performance as better than its competitive alternative.
- When judged as **“content” of a deliverable**, quality can be used as a **“relative indicator of worth”** and a standard of value in comparing choices between alternatives.
- If defined this way, then the economic impact of the **process** for delivering quality is not included in the definition. **Here is a case where quality can ‘cost too much’** because the means for the delivery of quality outcomes is not included in the definition (e.g., does waste occur in the process that produces the result?).



Consider Quality as Process:

The process for delivering content to customers.

- Another viewpoint on quality is that it consists of a set of procedures, tools, methods, and philosophies that must be followed to assure work performed meets its standard. In this approach, quality is a "checklist" item where each of the activities required to practice quality is specified and evaluated for its presence or absence.
- **Quality 'content' is delivered by a set of processes that coordinate activities in the 'value delivery process.'**



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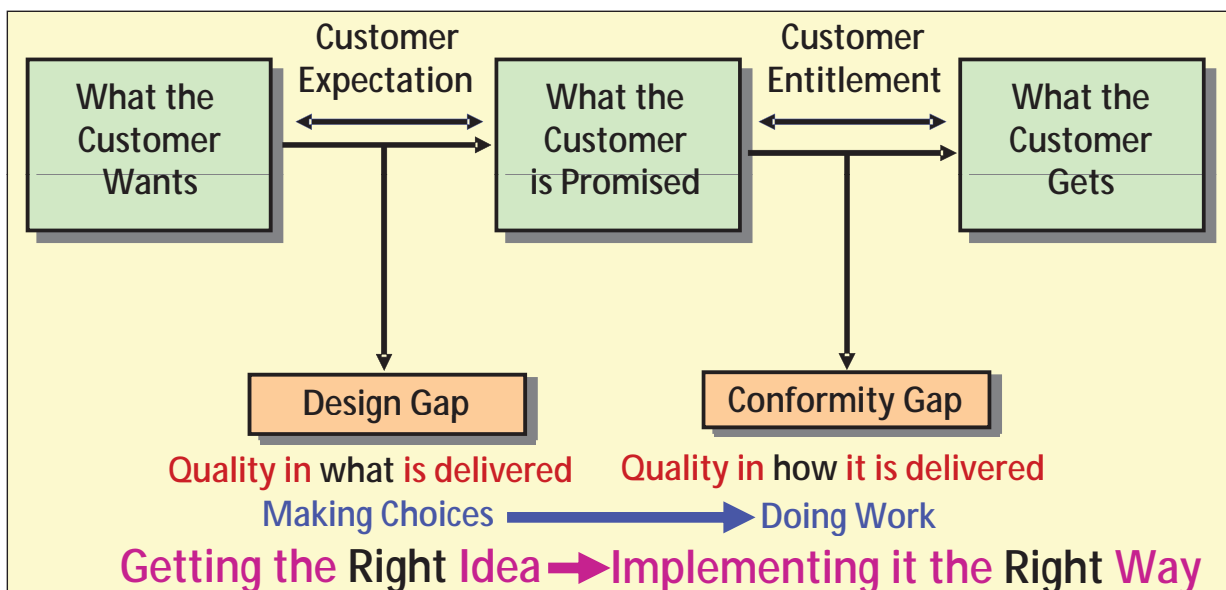
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Consider Quality as a Process-Content System:

Innovation is getting right ideas that can be implemented the right way.

Quality methods aid the journey to identify and implement these ideas.

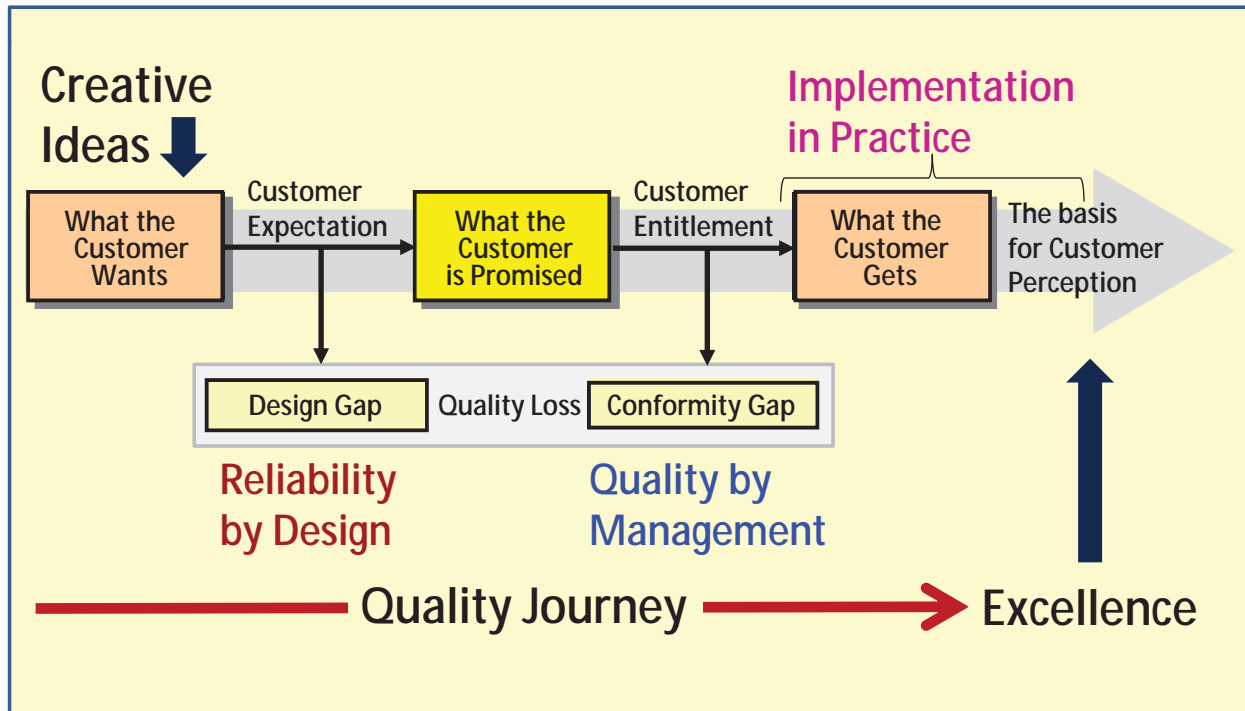


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Excellence is a milestone on the quality journey:



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Tools & Methods of Quality Management:

ISO9000 Standard +

- Customer Management
- Commercial Requirements
- Work Standards
- Process Mapping
- Work Documentation
- Control Plans
- Documentation Control
- Management Review
- Work process Audit
- Managing by Fact
- PDCA Problem Solving
- Basic Quality Toolkit
- Basic Statistics
- Corrective action
- Preventive action
- Continuous improvement

Lean Six Sigma Method +

- Exploratory Data Analysis
- Variation Reduction Process
- DMAIC Problem-Solving
- Risk Analysis
- Hypothesis Testing
- Measurement System Analysis
- Pull System Work Flow
- Cycle Time Reduction
- Constraint/Bottleneck Relief
- Waste Elimination
- Mistake-Proofing
- Just-in-Time/Kanban flow line
- ANOVA/Regression
- Design of Experiments
- Statistical Process Control
- Visual Factory

Business Excellence

- Leadership and Governance
- Strategic Linkage
- Strategic Plans and Projects
- Ethics and Social Responsibility
- Organizational Assessment
- RADAR Methodology
 - Review
 - Approach
 - Deployment
 - Assessment
 - Results
- Performance Measurement
 - Business Results
 - Operational Indicators
 - Comparative Benchmarks
- Knowledge Management

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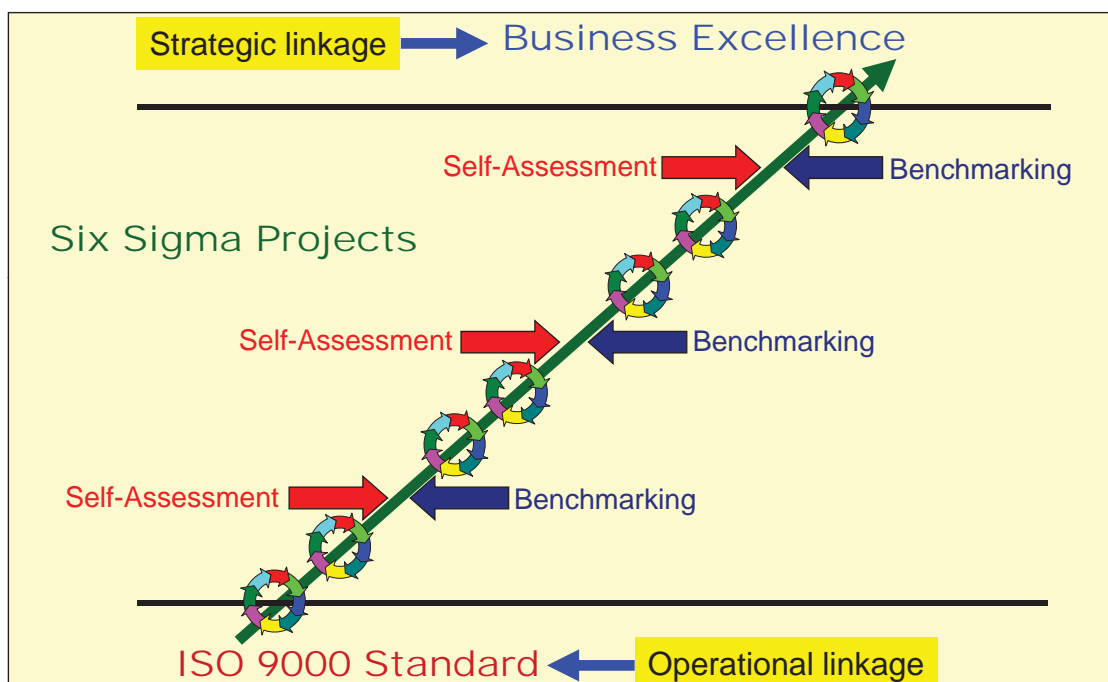
Business Excellence

Operations Excellence

Big Q – Strategic Quality	Little Q – Operational Quality
<p>Culture (Company) Vision, Mission and Values Policy and Philosophy</p> <p>Competition (Business Learning) Innovation Leverage Benchmarking</p> <p>Change (Renewal) Strategic Operational</p> <p>Cascade (Alignment) Improvement Projects Objectives and Targets Measures</p> <p>Communication (Awareness) Message Media</p>	<p>Competence (People) Individual and team development Training/development program</p> <p>Capability (Process) Daily process management Data bases and analytic software</p> <p>Compliance (Product) Quality management system Performance agreements</p> <p>Certification (Standardization) System certifications/standards Functional certifications/standards Industry certifications/standards</p> <p>Conformity (Learning) Business and operational reviews</p> <p>Correction (Repair & Improvement) Corrective / Preventive Actions</p>



Systems Approach to Quality Management:





Quality is about action; it is not just theory:

Lack of quality is demonstrated in the following behaviors:

- Divisive, aggressive behavior demonstrating disrespect for individuals
- Prejudiced communication with an intent to obscure (unfair, inequitable, biased treatment)
- Extreme positions, fueled with inaccurate information, and purposeful misinterpretations
- Disrespect for behavioral norms – attacking others
- Narrow, single-purposed perspectives
- Vague, opaque, closed viewpoints and positions on issues and concerns
- **Summary: Rigidity and extremism**

BUT, an attitude of quality is demonstrated in the opposite behaviors:

- Collaboration and cooperation showing respect for individuals
- Clear communication – with intent to clarify (fair, equitable, even-handed treatment)
- Ethics, honesty, integrity of information (our words are authentic and say what we mean)
- Etiquette and respect for behavioral norms
- Broad systems perspective
- Transparency, openness to consider options and alternatives regarding issues and concerns
- **Summary: Flexibility and moderation**

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End of today's presentation... but, our quality dialogue continues!



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