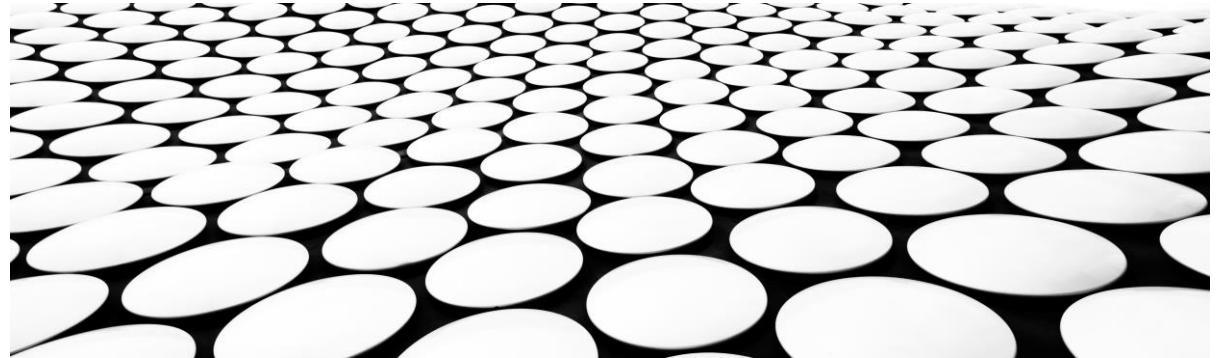


PACIFIC REGION
QUALITY
CONFERENCE

NOVEMBER 6 – 7 2020

DEVELOPING THE HUMAN ELEMENT
OF THE QUALITY 4.0 MODEL TO
ACHIEVE ORGANIZATIONAL
EXCELLENCE



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WHAT IS QUALITY 4.0?

WATSON (2020) DESCRIBES QUALITY 4.0 AS A “HOLISTIC SOCIOTECHNICAL SYSTEM THAT IS PURPOSEFULLY DESIGNED TO DISCOVER AND APPLY PROFOUND KNOWLEDGE IN PURSUIT OF CONTINUAL IMPROVEMENT AND CONSISTENTLY ACHIEVE AN ORGANIZATION’S PURPOSEFUL OBJECTIVES.” WATSON (2019) EXPLAINS THAT DISCOVERY MANIFESTS ITSELF IN SEVERAL WAYS IN

QUALITY 4.0:

DIGITIZATION IS USED TO OPTIMIZE SIGNAL FEEDBACK AND PROCESS ADJUSTMENT, AND ADAPTIVE LEARNING SUPPORTS SELF-INDUCED SYSTEM CORRECTIONS.



QUALITY 4.0 TOOLS

- **Artificial intelligence:** computer vision, language processing, chatbots, personal assistants, navigation, robotics, making complex decisions.
- **Big data:** infrastructure (such as MapReduce, Hadoop, Hive, and NoSQL databases), easier access to data sources, tools for managing and analyzing large data sets without having to use supercomputers.
- **Blockchain:** increasing transparency and auditability of transactions (for assets and information), monitoring conditions so transactions don't occur unless quality objectives are met.
- **Deep learning:** image classification, complex pattern recognition, time series forecasting, text generation, creating sound and art, creating fictitious video from real video, adjusting images based on heuristics (make a frowning person in a photo appear to smile, for example).

QUALITY 4.0 TOOLS

- **Enabling technologies:** affordable sensors and actuators, cloud computing, open-source software, augmented reality (AR), mixed reality, virtual reality (VR), data streaming (such as Kafka and Storm), 5G networks, IPv6, IoT.
- **Machine learning:** text analysis, recommendation systems, email spam filters, fraud detection, classifying objects into groups, forecasting.
- **Data science:** the practice of bringing together heterogeneous data sets for making predictions, performing classifications, finding patterns in large data sets, reducing large sets of observations to most significant predictors, applying sound traditional techniques (such as visualization, inference and simulation) to generate viable models and solutions.

QUALITY 4.0 VALUE PROPOSITIONS

- Value propositions for Quality 4.0 initiatives fall into six categories, listed in order of significance:
 - Augment (or improve upon) **human intelligence**.
 - Increase the speed and quality of decision making.
 - Improve transparency, traceability, and auditability.
 - Anticipate changes, **reveal biases**, and adapt to new circumstances and knowledge.
 - Evolve relationships, organizational boundaries, and concept of trust to reveal opportunities for continuous improvement and new business models.
 - Learn how to learn by cultivating **self awareness** and other **awareness as skills**.

WHY QUALITY 4.0?

TO SUPPORT THE DIGITAL TRANSFORMATION COMMONLY REFERRED TO AS INDUSTRY 4.0

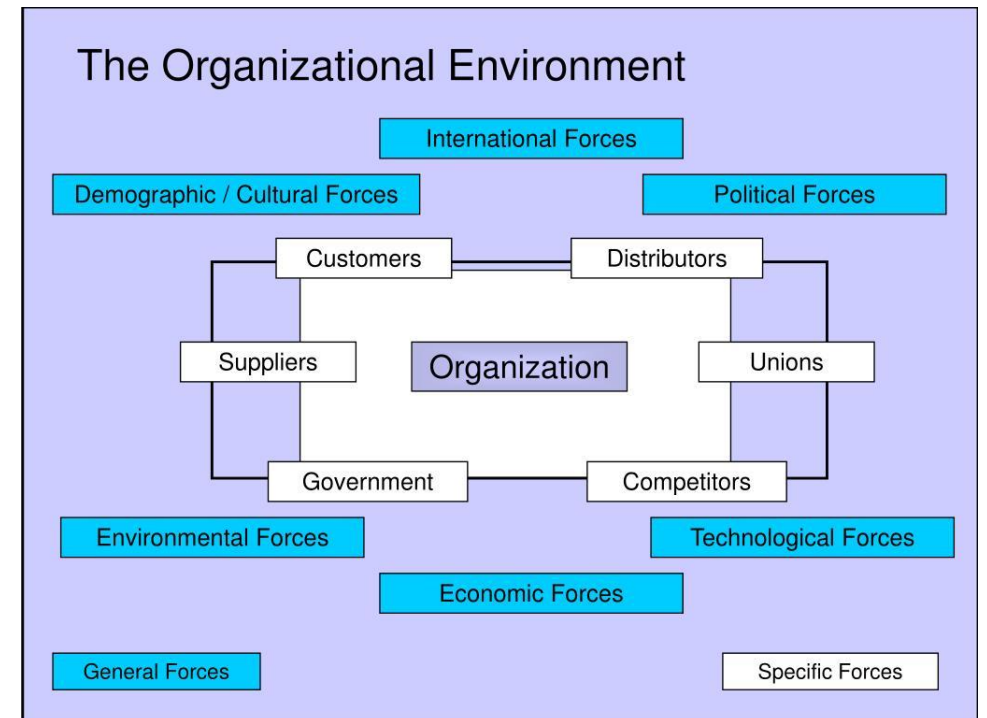


BOSTON CONSULTING GROUP DESCRIBED THE NINE PILLARS OF TECHNOLOGICAL ADVANCEMENT THAT UNDERPIN INDUSTRY 4.0:

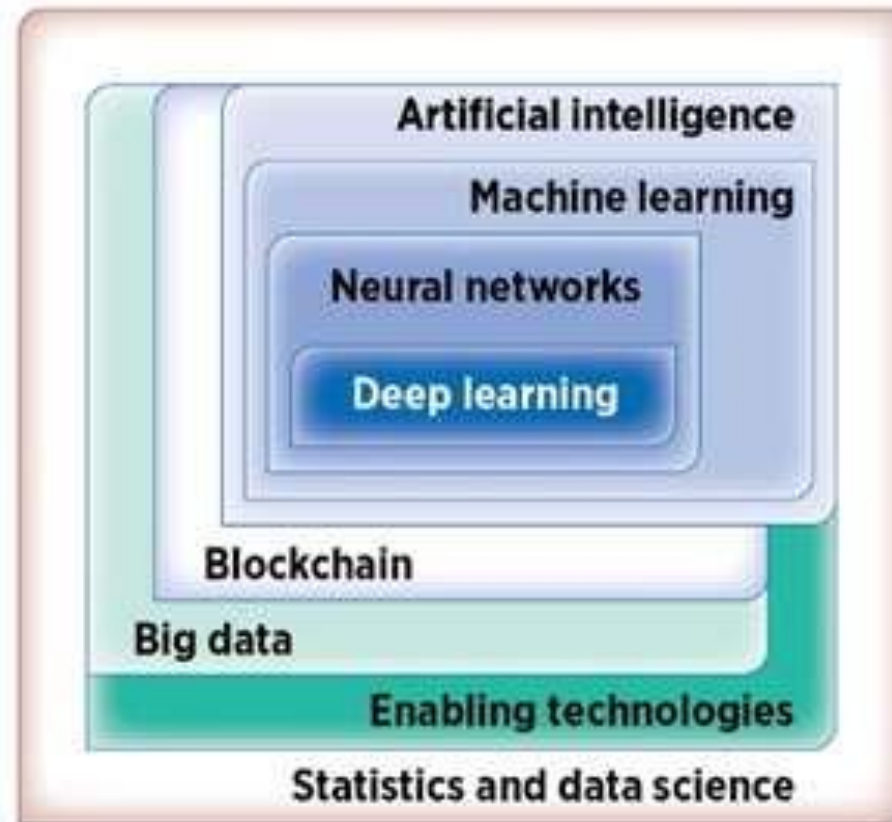
1. The Intent of Things – more devices will be connected to each other
2. Cybersecurity – need to protect critical industrial systems from threats
3. The Cloud – require increased data sharing across sites and boundaries
4. Additive manufacturing – describes technologies that build 3D objects by adding layer-upon- layer of material
5. Horizontal and vertical system integration – cross-company universal data integration networks
6. Big data and analytics – collection and comprehension evaluation of data from many different sources
7. Autonomous robots – more flexible and cooperative
8. Simulation – 3D of products, materials and production processes to mirror the physical world
9. **Augmented reality – operators will learn to interact with machines**

ORGANIZATIONAL ECOSYSTEMS

- Radziwall states:
 - **People – as well as people as teams**
 - Objects and machines – industrial equipment, operations technology such as historians or supervisory control of data acquisition (SCADA)
 - Data – values, objects, files, data repositories

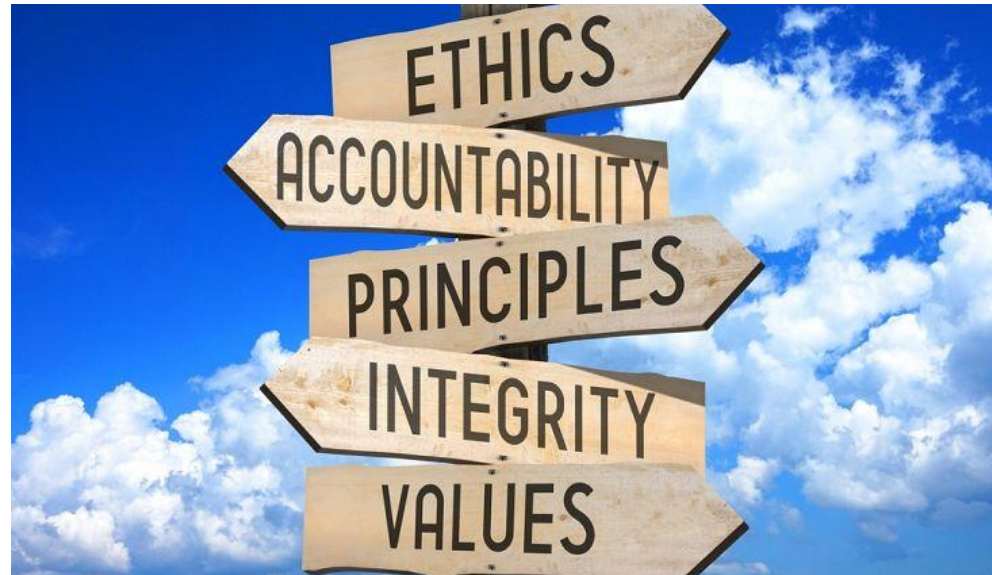


ECOSYSTEM OF QUALITY 4.0 TOOLS



CULTURAL RELATIVITY

- The impact of culture on human interactions -
 - Digital
 - Company
 - International
 - Generational



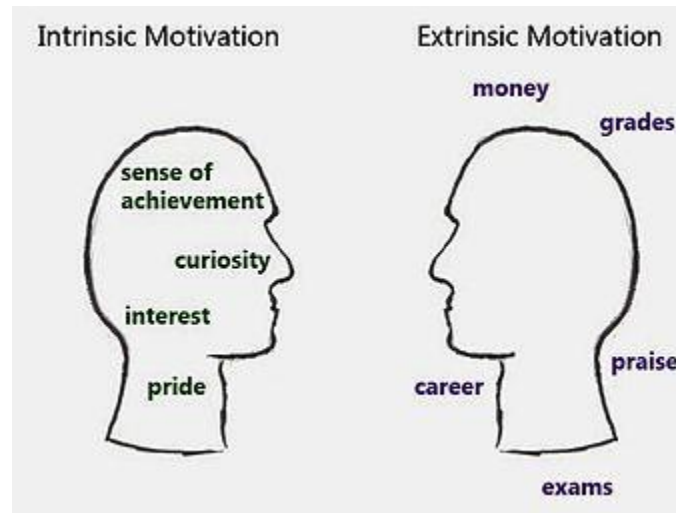
MOTIVATING OTHERS MEANS UNDERSTANDING:

- What is important to them-their values
- What they want to do with their life – their personal goals
- What beliefs will help them to get what they want
- What skills will help them realize their dreams



MOTIVATORS

- Intrinsic motivators – when individuals are motivated by factors such as personal growth or development, working to a common purpose, values, being part of a larger purpose
- Extrinsic motivators – refers to organizational rewards or any motivation that comes from outside an individual



TEAM MEMBER EXPECTATIONS

- Where the team and individuals are headed
- Why they are headed there
- What it looks like when they get there
- How should we behave and work together as a team





COMMUNICATIONS

CLARITY, EXPLICITLY, AND ACCOUNTABILITY

**THE COMMON REQUIREMENTS THAT SUPPORTS SUCCESS IN
ADDRESSING THESE CONCERNS**





LEADING A MULTI-GENERATIONAL TEAM TO SUCCESS IN QUALITY 4.0

A CHALLENGE IN A VIRTUAL ENVIRONMENT



CURRENT GENERATIONAL WORKFORCE



BABY BOOMERS
(born 1946-1964)



GEN X
(born 1965-1976)



MILLENNIALS/GEN Y
(born 1977-1994)



GEN Z
(born 1995-2010)

GENERATIONAL ATTRIBUTES

	BABY BOOMERS	GENERATION X	GENERATION Y
VALUES	Personal Growth Team work Personal Uniqueness Personal gratification	Self-reliance Autonomy Independence Entrepreneurship Diversity	Honesty Integrity Diversity Responsibility Team work
CHARACTERISTICS	Individualistic Competitive Materialistic Relationship focused Team player Sensitive to feedback Respectful of authority	Comfortable with change Cynical Pragmatic Flexible Multi-tasking Creative Resourceful Autonomous Goal-oriented	Social Confident Optimistic Achievement oriented Co-operative Educated Tech Socially aware Altruistic Multi-tasking Practical Team worker
WORK PREFERENCES	Job-focused “Live to work” mentality Job security Power Career progression	Career focused Work life balance Lack of job security Informal approach to work	Meaningful work Flexible work Mentoring/Feedback Career Focused



HOW ARE HIGH PERFORMING TEAMS DEVELOPED WITH SUCH DIVERSE ATTRIBUTES

THROUGH THE APPLICATION OF QUALITY TOOLS AND METHODOLOGIES



GENERATIONAL ASSESSMENT OF TEAM MEMBERS

Performance Excellence Team

Name	Baby Boomer	Gen X	Gen Y – Millennial
Nilubon			X
Bob R.	X		
Maria		X	
Luca			X
Sue			X
Prasant			X
Bob G.	X		
Sakgaem			X
Helga		X	
Juan		x	



WHAT INFORMATION CAN BE GAINED FROM THIS TABLE?

- High level of technical competence
- Probably minimal tacit knowledge
- A less structured approach to the team leadership would be more effective
- Mentoring and (cautiously provided) feedback a major element of the team process
- Potential for competitive conflict

FURTHER TEAM SELF-ASSESSMENT

Performance Team, by Socio Culture

Name	Baby Boomer	Gen X	Gen Y – Millennial
High Context Culture			
Bob R	X		
Luca	X		
Sue			X
Bob G.	X		
Helga		X	
Juan		X	
Maria		X	
Low Context Culture			
Nilubon			X
Prasant			X
Sakgaem			X



SOCIO CULTURAL COMPARISONS

Low Context Cultures (US, Canada, Europe, Australia)

- Effective communication must be simple, clear and explicit
- Messages are understood at face value

High Context Cultures (South America, China, India)

- It's often inappropriate to spell out certain messages too explicitly
- Good communication is sophisticated, nuanced, and layered
- Messages are spoken and read between the lines

WHAT DOES ALL OF THIS MEAN TO LEADERS?

- Today's core competence is not core technical competence, but rather core cultural competence which encourages flexibility, change learning and adaptability to customers
- The machines driving our digital society were built by people
- Interpersonal sensitivity , AI with empathy is decades away
- People remain a core element of Quality 4.0 and Industry 4.0

HIGHLY EFFECTIVE VIRTUAL TEAM MEMBERS NEED:

- The Three A's –
- Assertiveness
- Accountability
- Ability to work independently

Virtual Team – Best use of communication tools

	Information sharing	Discussion or brainstorming	mutual decision making	Working together on deliverables
Voice mail	Very effective	Not effective	Not effective	Not effective
Tele Conference	Effective	Very effective	Very effective	Not effective
Email	Effective	Very effective	Not effective	Not effective
Instant Messaging (IM)	Effective	Very effective	Not effective	Very effective
Video Conference	Effective	Very effective	Effective	Not effective
Web Conference (Shared audio, video and editing)	Effective	Effective	Effective	Effective



PROJECTIONS OF VIRTUAL TEAMS FOR THE NEXT DECADE

- Organizational cultures in 2030 will undoubtedly be flexible as more and more “musts” existing the traditional workplace are eliminated
- Team members with cross-functional expertise – or knowing how to do work in a variety of ways- hold greater value for employees than ever before
- Career experiences will need to be maximized to achieve both business results and individual employee satisfaction



LEADERSHIP IN 2020 ARE ENCOUNTERING EVER CHANGING ENVIRONMENTS, BOTH BUSINESS AND SOCIAL

IT IS NOT EXPECTED THAT ALL OF THE ISSUES CAN BE ADDRESSED



CONSTANT FACTORS FOR LEADERS TO APPLY:

- The value of human capital, the employees to an organization
- Quality tools and methodologies to address the human needs of the organization and the individual
- Change is going to be constant in the next decade
- The best mix of technology, people and quality-focused actions will support developing organizational excellence



SUMMARY

- This one-hour presentation probably raised many questions and concerns
- If this is the case, then this presentation was successful
- The next decade offers challenges, but these challenges can be addressed as opportunities
- The business world of the 2020's will be impacted by more than economics
- Quality 4.0 can assist with achieving organizational excellence
- This presentation was a very small introduction to one of the many attributes of Quality 4.0

THANK YOU



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