# BLOCK & TACKLE
## Leveraging Process *for* Results

APQC'S 2012 Process Conference & Training
October 22-26, 2012
The Houstonian Hotel, Club & Spa - Houston, Texas

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# Using Enterprise Quality to Build Business Value

APQC Process Conference Breakout 2

October 25, 2012

# Agenda

- Introductions

- Why Are We Talking Quality?

- 'Measuring Enterprise Quality Research'
  - Governance
  - Measurement
  - Culture

- ASQ's Global State of Quality Project
  - Overview and Participation
  - Deliverables

- What's Next in Quality?

# Linking Quality to Process

# Measuring Enterprise Quality

# Background - Industry



15 Manufacturing Organizations

6 Service Organizations

# Background – Other Characteristics

| Characteristic | 25th Percentile | Median | 75th Percentile | n |
|---|---|---|---|---|
| # of employees | 4,000 | 13,800 | 63,000 | 21 |
| Annual Revenue | $987M | $4.7B | $31.5B | 20 |
| Products/Services | | | | |
| Services | 10 | 83 | 120 | 15 |
| Large Products | 33 | 250 | 3,000 | 11 |
| Small Products | 136 | 1,000 | 9,500 | 14 |

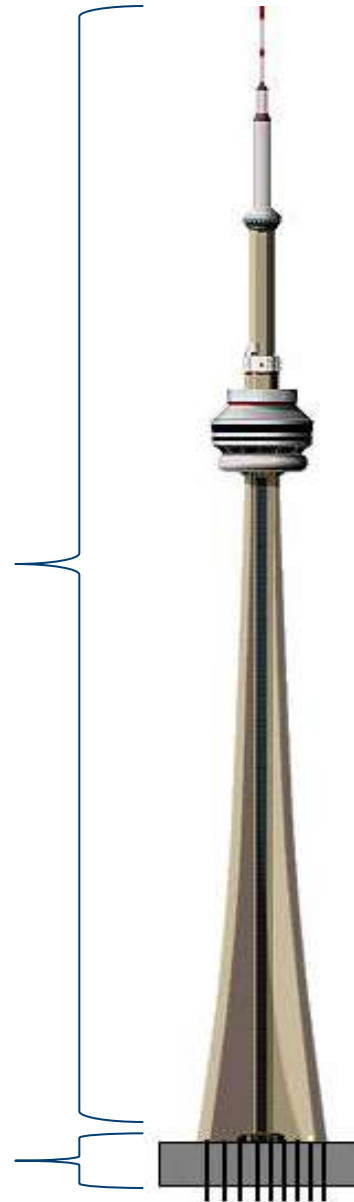ASQ  The Global Voice of Quality

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# Background: Outcome Measures

# Types of Practices



Emerging Practices

Foundation Practices

# The Learnings

➤ Foundation

- ■ Align quality measures to core business objectives
- ■ Central quality function reports to a C-Level executive
- ■ Accountability not mandatory
- ■ Provide direct line resources

➤ Emerging

- ■ Align quality measures to full product life cycle
- ■ Central quality function structure with distributed ownership
- ■ Tie resources allocation to quality strategy

# Quality Alignment

*My organization's enterprise quality management directly aligns with our overall enterprise strategic goals and initiatives.*
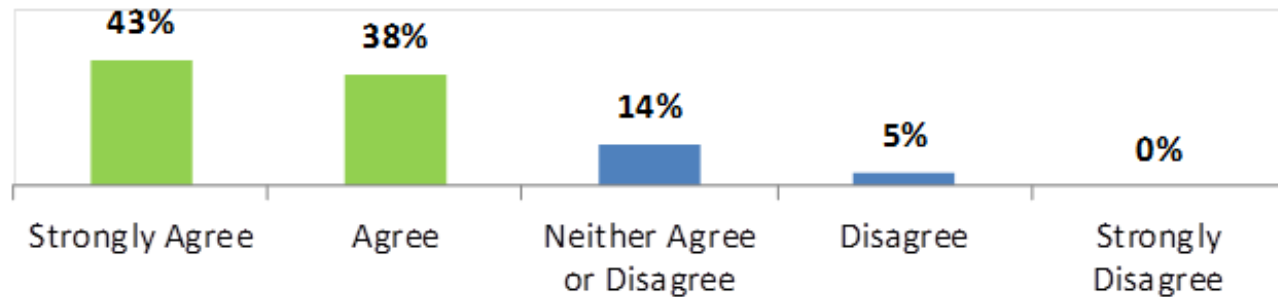


| | n | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| Manufacturing | 15 | 53% | 40% | 7% | 0% | 0% |
| Service | 6 | 17% | 33% | 33% | 17% | 0% |
| Peer | | | | | | |
| Your Data | | | | | | |

All participants: n=21

# Quality Office Overview

| | System Solutions Eng. | Software & IP Eng. | IC Design Eng. | Test & Product Eng. | Package Eng. | Process Tech. | Product Planning & Technical Services |
|---|---|---|---|---|---|---|---|
| **Quality Office** | | | | | | | |
| **CTO Office** | | | | | | | |
| **Design Methodology Office** | | | | | | | |
| **Program Management Office** | | | | | | | |
| **Engineering Infrastructure Office** | | | | | | | |

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# Quality Function Structure

➤ Structure

- ■ Council with representatives from business units
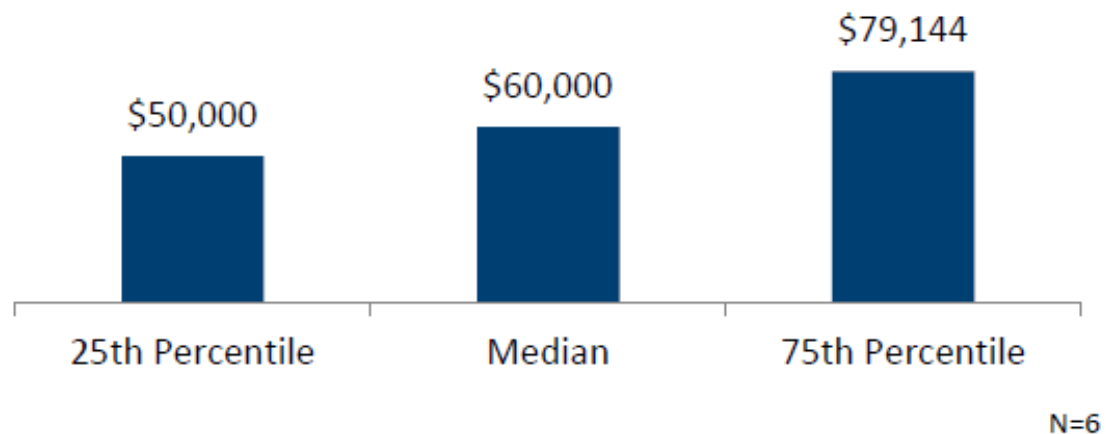- ■ Strong central department
- ■ Strong business unit focus

➤ Responsibilities

- ■ Loose: strategy, policy, training; all tend to be recommendations and not mandatory
- ■ Tight: compliance, action reviews; tend to have more mandatory

# Financial Resources (cont'd)



$122,572

$75,000          $81,456

25th Percentile     Median     75th Percentile

N=6

Personnel Costs per Direct FTE
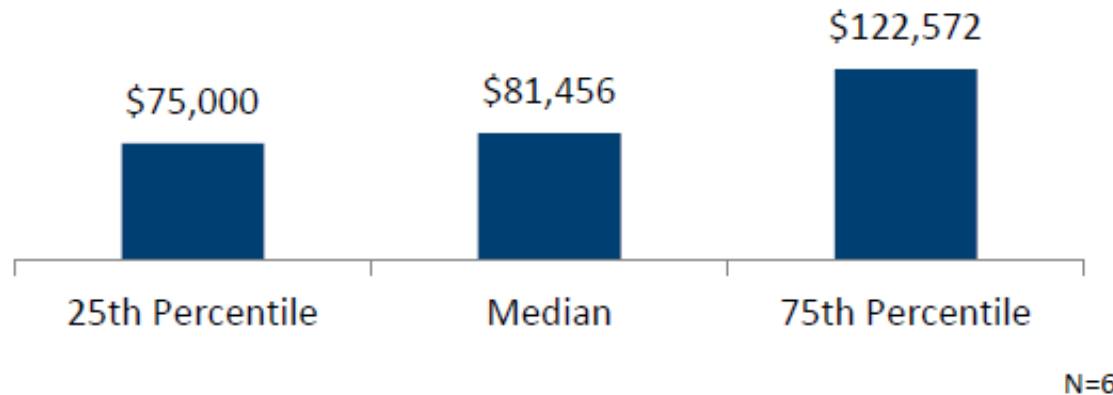
Personnel Costs per Indirect FTE



$79,144

$50,000          $60,000

25th Percentile     Median     75th Percentile

N=6

# The Learnings

➤ Foundation

- ■ Just enough measures to create value
- ■ Establish measures at the enterprise level with as much standardization as possible
- ■ Cover core value-added processes

➤ Emerging

- ■ Standardize measures across all business unites
- ■ Cover all processes of the life cycle, including business operations
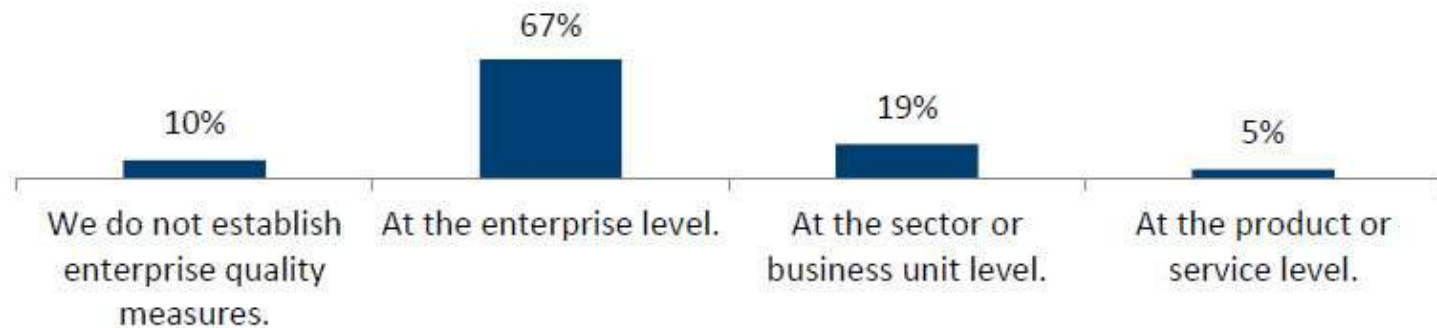
# Reporting Up



CEO : 5
Manuf.:

C-level : 8
Manuf.: 7

Business Unit : 9
Manuf.: 8

Median # of metrics reported to each level (all

# Establishing the Measures

## How organizations establish enterprise quality measures



| | N | Not Established | Enterprise Level | Sector or Business Unit | Product or Service Level |
|---|---|---|---|---|---|
| Manufacturing | 15 | 0% | 80% | 20% | 0% |
| Service | 6 | 33% | 33% | 17% | 17% |

# Internal/External Scorecard

| Weight | Customer Category | Altera Internal Metrics Scoring |
|---|---|---|
| 25% | Product Quality | Electrical DPM, programming DPM, Scrap, ERMA TPT, ERMA DPM, IP and Software Testing Effectiveness, # of Silicon Revisions, Quartus Stability, Warranty Costs |
| 25% | Technology | Technology Node, Quartus Quality of Results, IP Offering, Device Features (Density, Power, XCVRs, Embedded Memory, IO, DSP), SerDes Perf |
| 25% | Technical Support | Customer satisfaction ratings, Service Request TAT, Device Family errata, Protocol Support |
| 25% | Delivery & Customer Service | On Time Delivery, Delivery to Customer Request, Quote TAT, Business Viability |

# Quality Metrics / Cost Of Quality

# Measurement Examples

| Group | Org | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Reliability | Field Reliability | | | | | x | | | | x | | | x | | | | | | | x | | 4 |
| Customer | Avg. Complaints per Customer | | | | | | | | | | x | | | | x | | | | | | | 2 |
| | Customer Sat | | | | | x | | x | | x | | | x | | x | | | | | x | | 6 |
| | Customer Response Time | | | | | x | | | | | x | | x | | | | | | | | | 3 |
| Deivery | On-time Delivery % | | | | | | | | | x | | | x | | | | | x | | | | 3 |
| | Customer Impacting Excursions | | | | | x | | | | x | | | | | | | | x | | x | | 4 |
| Defects | Defets per Million | | | | | | | | | | | | | x | x | | x | | | | | 3 |
| | Defects per Unit | x | | | | x | | | | | | | | | x | | | | | | x | 4 |
| Rework & Scrap | Scrap | | | | | | | | | | | | | | x | | | | | x | | 2 |
| | First Pass Yield | | | | | | x | | | | x | | | | | | | | | | | 2 |
| | First Time Acceptance | | | | | | x | | | x | | | x | | | | | | | | | 3 |
| | Cost of Quality | | | x | | | | | | | x | | | x | | x | | | | x | x | 6 |
| Other | Quality Improvement Initiatives ($ saved) | | | | | | | | | | | | | | | | | | | x | | 1 |
| | Supplier Performance | | | x | | | | | | | | | | x | | | x | | | | | 3 |
| | Compliant to Release Standards | | | | | x | | | | | | | | x | | | | | x | | | 3 |

# Example Scorecard Summary of Results

| Scoring<br>Internal/External<br>Lowest Score | | Category | Comments (from customers' scorecards) |
|---|---|---|---|
| 78<br>65 | 68 | Product Quality | Device errata and silicon respins still an issue. Continual discovery of issues and corrective actions applied |
| 84<br>69 | 75 | Technology | No weakness, 28nm Transceiver Demo a plus |
| 76<br>70 | 80 | Technical Support | Good but Errata are effecting the score |
| 72<br>68 | 72 | Delivery & Customer Service, Financial Stability & Health | Customers frustrated with unpredictable lead-times |

# Performance Standards

How organizations establish performance targets for quality measures
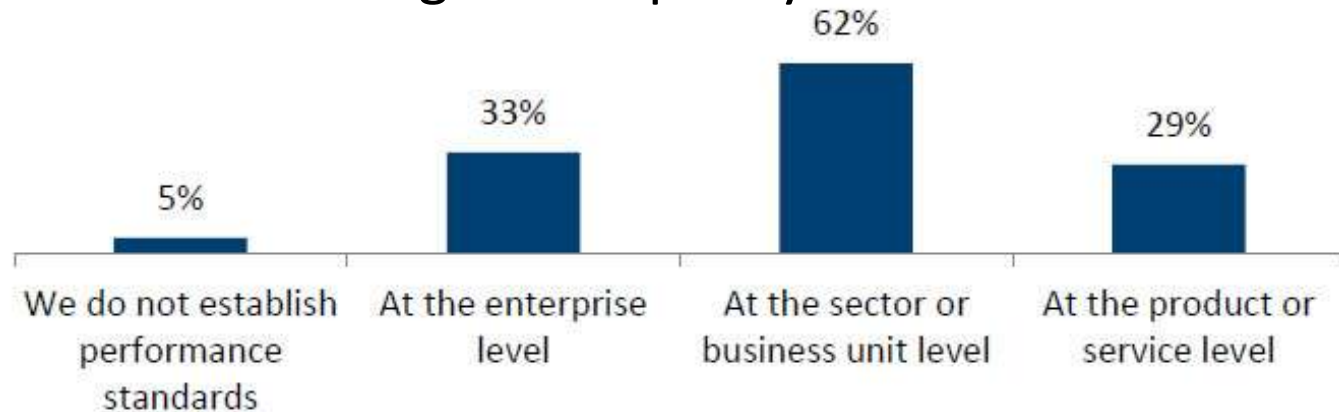


All participants: N=21

|  | N | No performance standards | At the enterprise level | At the sector or business unit level | At the product or service level |
|---|---|---|---|---|---|
| Manufacturing | 15 | 0% | 27% | 67% | 27% |
| Service | 6 | 25% | 75% | 75% | 50% |

# Target Establishment Methods

Key Business Indicators

- SQDIP based, Relentless Improvement
- **BREAKING THE NUMBERS** to achieve "Entitlement" Performance
- Culture of Prevention for Safety and Quality
  - Near Miss, Lost Time, Quality Defects
- Delivery: On-time Delivery
  - Takt time Interruption
  - Rolled Thruput Yield
  - First Pass Yield
  - Capability Index (Cpk)
- Cost: Inventory levels
- Leadership and Team Work

# Measurement – Reporting To?

Quality measures are reported:

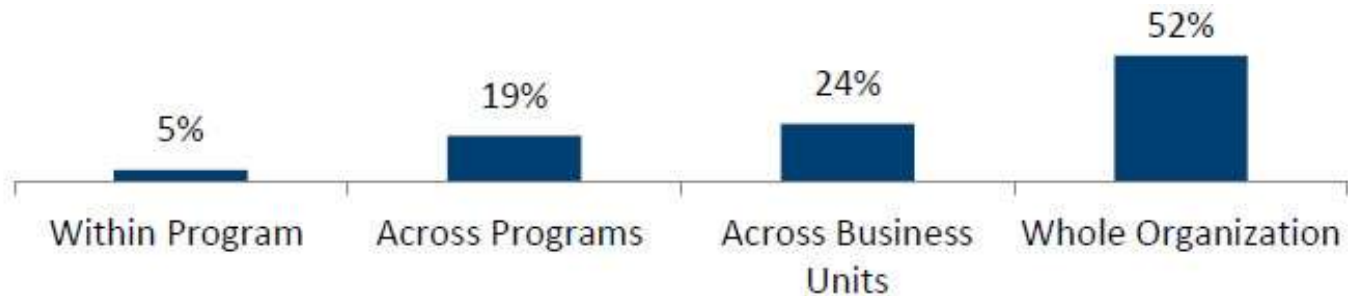Across the organization: 52%

Across business units: 24%

Within product/service groups: 5%

Within business units: 19%

*Based on all participants*

# Reporting Transparency

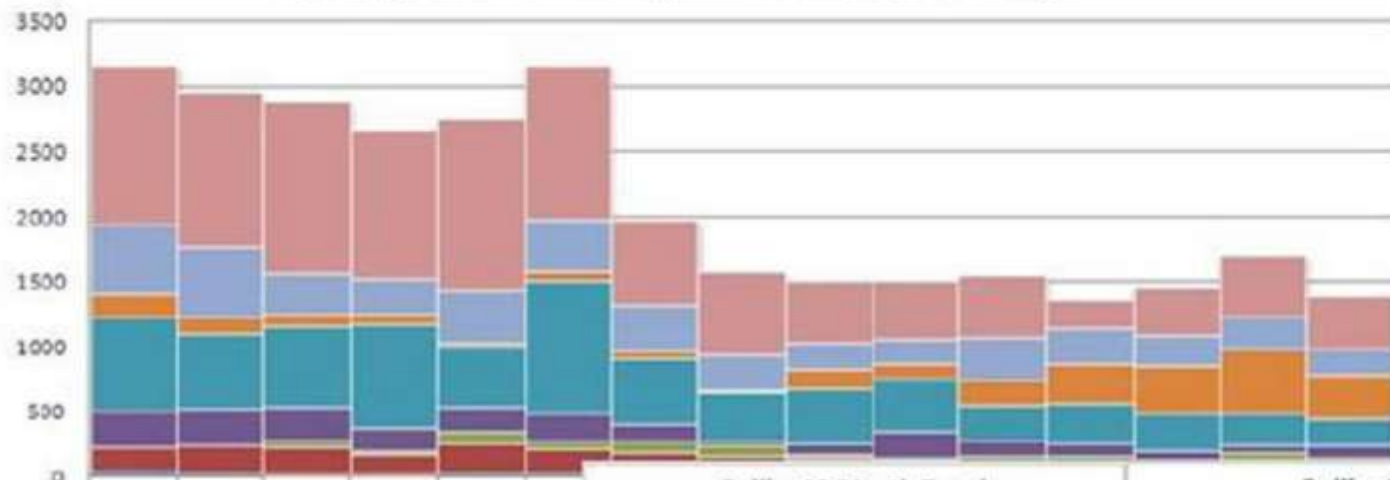## Level of reporting transparency for enterprise quality measures



All participants: N=21

|  | n | Within Program Only | Across Programs Within a Business Unit | Across Business Units | Across the Whole Organization |
|---|---|---|---|---|---|
| Manufacturing | 15 | 0% | 13% | 27% | 60% |
| Service | 6 | 17% | 33% | 17% | 33% |

# Quality Improvement Process



Quality Impact Score per week (shown Quarterly)

| | 1Q 2007 | 2Q | 3Q | 4Q | 1Q 2008 | 2Q |
|---|---|---|---|---|---|---|
| Flag 8 (40) | 1220 | 1190 | 1320 | 1140 | 1320 | 119 |
| Flag 7 (40) | 530 | 540 | 310 | 280 | 390 | 400 |
| Flag 6 (40) | 180 | 120 | 90 | 80 | 30 | 60 |
| Flag 5 (20) | 715 | 575 | 615 | 795 | 470 | 102 |
| Flag 4 (10) | 287 | 290 | 260 | 175 | 192 | 222 |
| Flag 3 (5) | 0 | 0 | 57 | 25 | 97 | 50 |
| Flag 2 (2) | 177 | 207 | 201 | 153 | 215 | 182 |
| Flag 1 (1) | 50 | 35 | 29 | 19 | 37 | 32 |
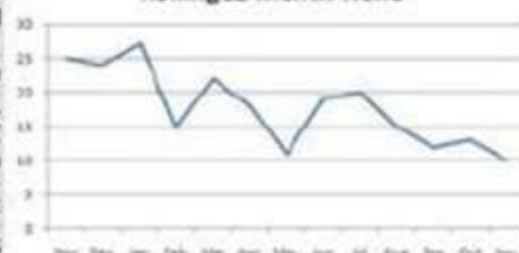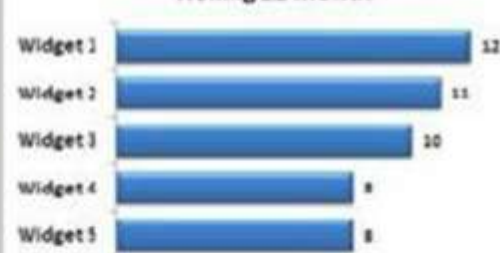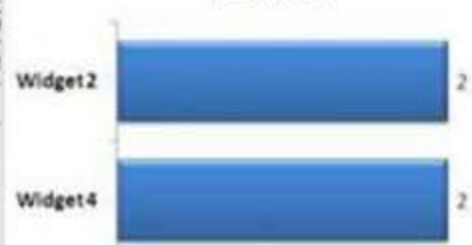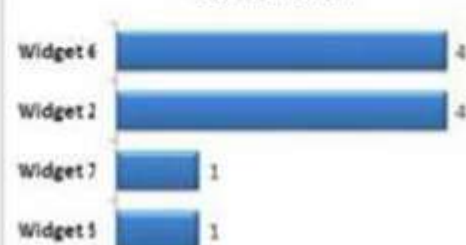
# The Learnings

➤ Foundation

- ■ Use quality activities and data to influence actions

- ■ Celebrate quality performance

➤ Emerging

- ■ Be transparent with quality data

- ■ Provide training to as many staff as possible

- ■ Create a stronger link between enterprise quality and continuous improvement

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# My organization use quality measures:

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| ...as leading indicator(s) of quality issues or risks. | 10% | 38% | 5% | 33% | 14% |
| ...to drive higher performance by promoting challenging goals. | 29% | 52% | 10% | 5% | 5% |
| ...as part of variable performance compensation (at any level of the organization). | 29% | 38% | 19% | 0% | 14% |
| ...to inform the continuous improvement process. | 33% | 48% | 10% | 0% | 10% |
| ...for trending and/or predictive analytics in either operations or business processes. | 19% | 62% | 10% | 5% | 5% |
| ...to improve customer satisfaction. | 57% | 33% | 5% | 0% | 5% |

# Linking to Core Objectives

➤ Quality measures are reported to C-Level along with business operations (e.g., balanced scorecards)

➤ Some direct linkage to customer satisfaction scoring (both internally and externally driven)

➤ Very little 'direct' linkage to understand relationships

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# How to Change the Quality Culture

- ➤ Increased transparency of quality measures is creating tremendous awareness

- ➤ Quality training part of new employee orientation

- ➤ Enterprise awards and recognition

- ➤ Linking quality measures to customer satisfaction and cost issues through CoQ are increasing executive interest

# The ASQ Global State of Quality Research

APQC| October 2012
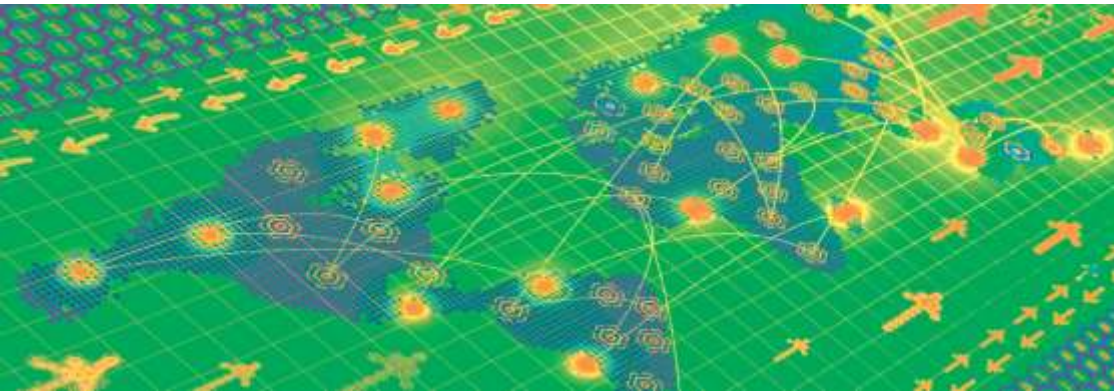
# ASQ

is the world's leading community of people passionate about quality – experienced individuals and companies who strive for continual improvement and help each other achieve it.

# ASQ Today: Reach and Impact

- Largest Community of Quality Resources and Experts
- 150 countries
- 65-year anniversary in 2011
- Global/Local networking
- Certification recognized worldwide
- Leader in quality management knowledge and information
- Not-for-profit

# **ASQ Vision**

By making quality a global priority, a business imperative and personal ethic, ASQ becomes the community for everyone who seeks quality concepts, technology, and tools to improve themselves and their world.



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# ASQ Mission

To increase the use
and impact of quality in
response to the
diverse needs of the
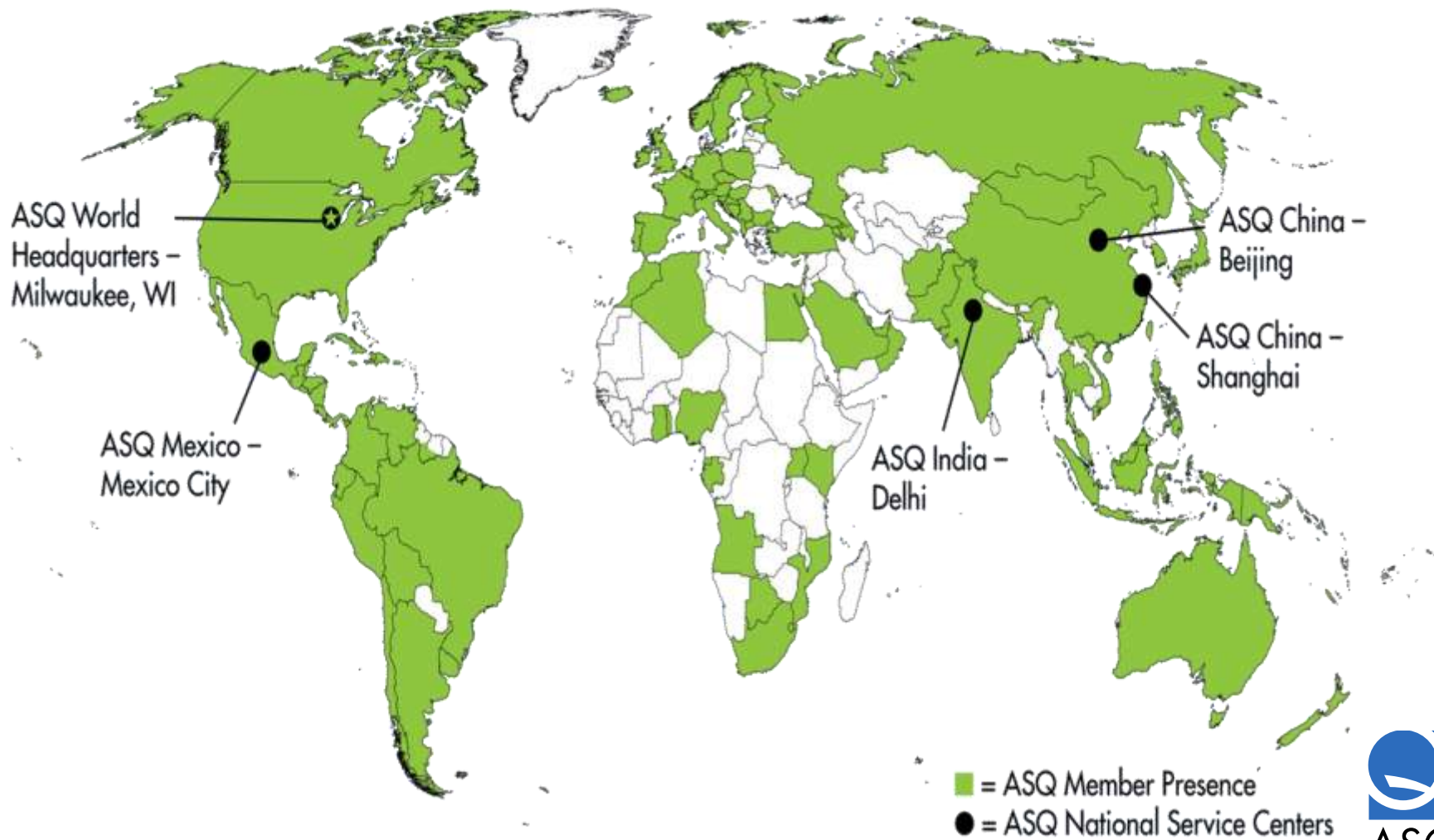world.



ASQ
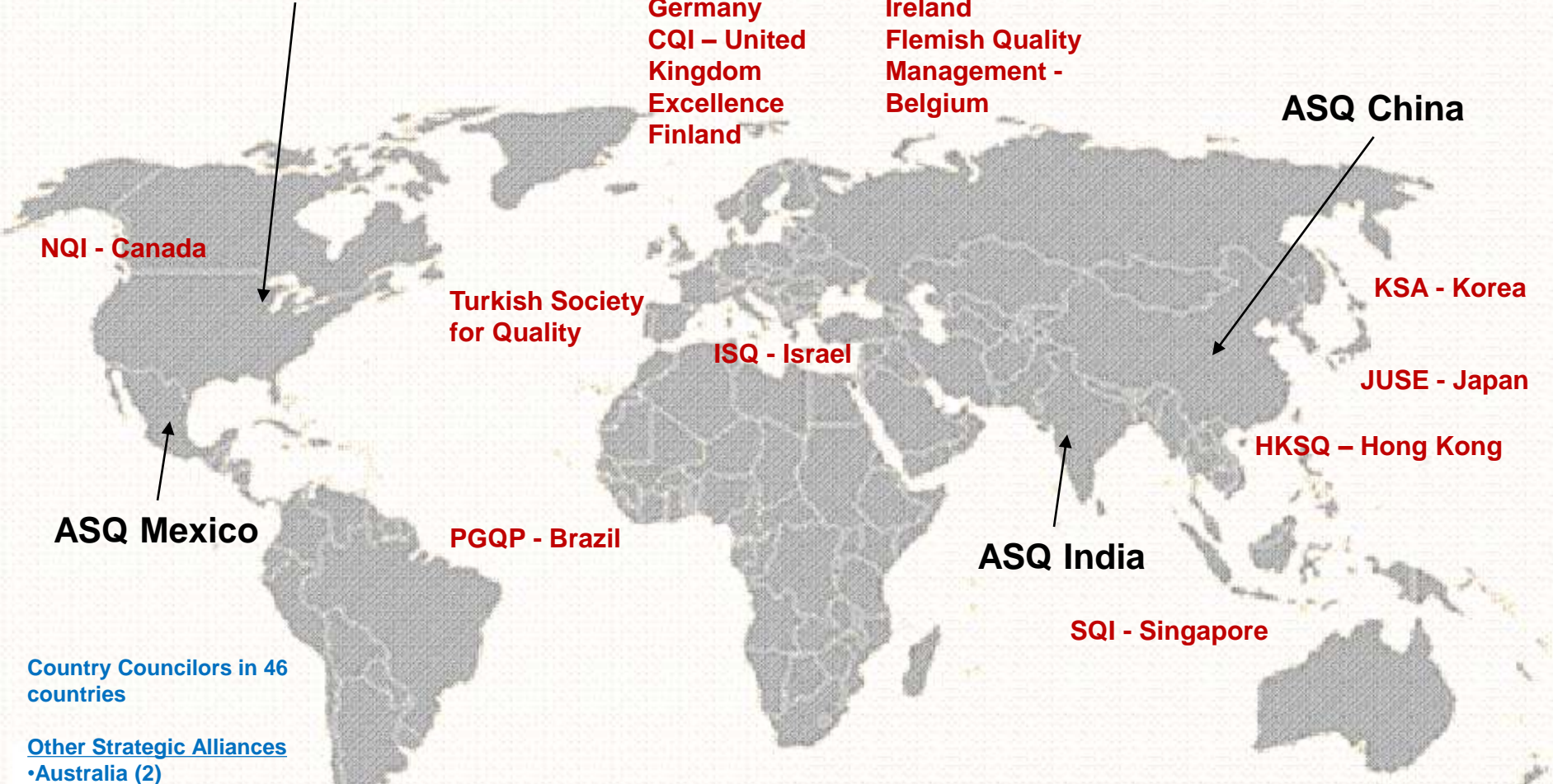The Global Voice of Quality™

# ASQ Brand Promise

ASQ joins you with a global network of the best quality resources and experts.  In our world you'll find the ideas and tools you need to improve yours.



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**ASQ Global Headquarters**

EOQ - Europe
DGQ – Germany
CQI – United Kingdom Excellence Finland

AEC – Spain
Excellence Ireland
Flemish Quality Management - Belgium

**ASQ China**

NQI - Canada

Turkish Society for Quality

KSA - Korea

ISQ - Israel

JUSE - Japan

HKSQ – Hong Kong

**ASQ Mexico**

PGQP - Brazil

**ASQ India**

SQI - Singapore

Country Councilors in 46 countries

Other Strategic Alliances
•Australia (2)
•Belgium
•China (5)
•Cyprus
•Ecuador
•Egypt (2)
•Malaysia (2)
•Mexico (7)
•Peru (2)
•Trinidad
•United Arab Emirates (2)

IPACE - Argentina

**ASQ GLOBAL REACH**

ASQ Offices
ASQ World Partners

For more information go to:
http://asq.org/global/world-map.html

# World Quality Month

- A global stage for the quality community
- 3$^{rd}$ annual event
- Provides a platform for acknowledging the global quality community
- Showcases the valuable contributions of the quality community

# Web site evolving since summer

- A one-stop resource
- worldquality month.org

# Future of Quality Study Process

- Electronic involvement

- Anonymous entries

- Delphi technique

- Seeded with 43 forces

- Three rounds of "Pick 10" and tell why

- Consider new suggestions

- Rank in order

# Research Initiative Background

ASQ, in partnership with APQC, is leading an unprecedented worldwide research initiative to fill a gap of facts, figures, insights and analysis, creating **The ASQ Global State of Quality Research and Report**.

The research will:

- Gather information from organizations using quality and continuous process improvement techniques and systems

- Provide a comprehensive view and report on the results, insights, progress, gaps and opportunities from around the world

- Help organizations understand the quality trends and growth opportunities worldwide

- Involve ASQ World Partners, Enterprise Quality Roundtable organizations, other quality leaders around the globe

- Be conducted in three-year cycles, quantitative and qualitative



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# Global Collaboration

- ASQ's Board provided seed funding for 2012-13
- ASQ selected APQC as its research and knowledge management partner for this initiative
- ASQ developed a Global State of Quality Advisory Panel
- ASQ World Partners, Enterprise Quality Roundtable members, and other quality organizations are involved

World Partners

Enterprise Quality Roundtable Members

Quality Organizations
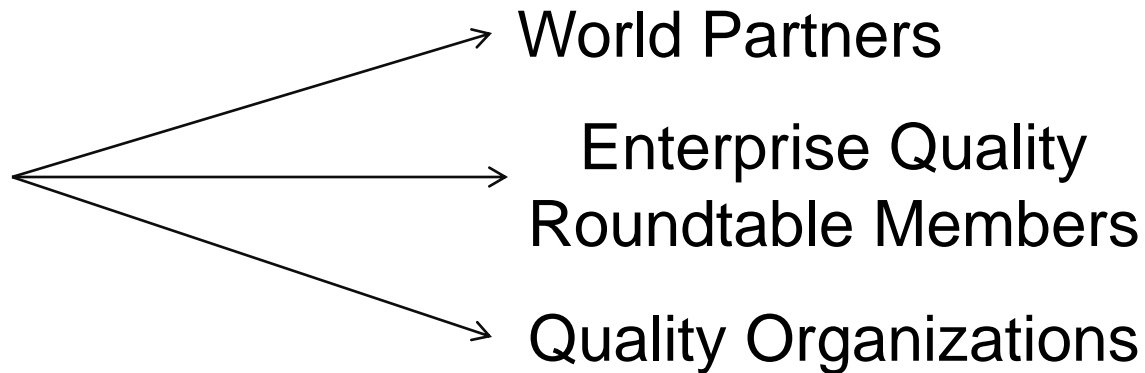
# Planned Results and Report

**ASQ plans to begin release of an initial report in live and online events during proceedings at the ASQ World Conference on Quality and Improvement in May 2013.**

*Other proposed reports and information to be available include:*

- *Reports that include derivatives of data, case studies and spotlight reports on strong performances of industries and regions, to be released in the fall 2013*

- *Customized reports available to sponsors, providing comparative data*

- *10 whitepapers*

# Stakeholders

The Global State of Quality research and report project is spearheaded by ASQ and APQC. To assist in project development and success, the following stakeholders have been identified:

- ASQ Project Team
- APQC Project Team
- ASQ's Conference Team
- Advisory panel
- World Partners
- Enterprise Roundtable Members
- Global Quality Supporters

- ASQ Management Committee
- ASQ Executive Committee
- ASQ Board of Directors
- National Service Center General Managers (India, China, Mexico)

# Work to Date Overview

- Advisory Panel formed, ongoing work as of June 2012

- Research in field October-November 2012

- Data collection in quantitative and qualitative formats

- Survey at least top 16 countries representing 80 percent of the global GDP (U.S., India, Canada, Mexico, China, Brazil, Japan, Germany, France, UK, Italy, Russia, Spain, South Korea, Australia, The Netherlands)

**Initial ASQ Global State**

**of Quality Report**

**Set to Debut**

**At World Conference**

**May 2013**

# Advisory Panel

An advisory panel was developed to guide the project and components of the study. Advisory panel members represent organizations worldwide and are well-versed in quality and industry.

Panel member duties include:
- Providing input regarding the GSoQ survey
- Review GSoQ survey data and provide insight into the findings
- Attend ASQ's World Conference in May 2013 and attend release of initial report
- Provide written thought leadership input for the final GSoQ report

# Advisory Panel Members

- Joal Tietelbaum, PGQP, Brazil
- Tiia Tammaru, Estonian Association for Quality
- Lloyd Barker, Alcoa
- Paulo Sampio, University of Minho, Portugal
- Harriet Nembhard, Pennsylvania State University
- Sister Mary Jean Ryan, SSM Health Care
- Roberto Saco, Aporia Advisors
- M. Niyazi Akdas, European Organization for Quality
- Carl Thor, JarrettThor International
- Steven Bailey, DuPont

# Enterprise Sponsors

## Abbott Laboratories, CareFusion, Tata Group,
## The Coca-Cola Company and Xerox

As Tata officer Bharat Wakhlu wrote to Tata Quality Management Services Chair Prasad Menon on the importance of this initiative:

"*This research is expected to be world class…capture perspectives…at the leading edge….This very ambitious research program is being implemented on a scale that has never been attempted before by any institution. The research outcome is attempting to identify the multidimensional influences on Quality – variables such as the geographical, demographical, cultural and sectoral contexts - so that best practices across the world would drive its future evolution.*

***I suggest that it would be worthwhile… to be a part of this unique research initiative and support the cause of quality at a global scale.*** *My reasoning is simple. Tata companies in India and around the world are striving for growth, branding and global leadership through quality. Many of the bigger companies operate globally across diverse sectors and cultures. The research outcomes would be beneficial for Tata companies to understand the quality profile of markets and customers across geographies, demographies and cultures being covered under this very comprehensive research .*

*I think this is a very unique opportunity…contributing to the understanding of the quality practices through the process of sharing and learning.*"

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# Additional Sponsors

World-class organizations from around the world are sponsoring the Global State of Quality – a report that will help these organizations understand the quality trends in their regions and build stronger relationships with quality leaders.

Other Sponsors:

- **ASQ World Partners**
  - European Organization for Quality (EOQ)
  - Regional Program of Quality and Productivity (PGQP)
  - German Society for Quality (DGQ)

  - Israel Society for Quality (ISQ)
  - Slovenian Quality and Excellence Association
  - Portuguese Association for Quality (APQ)
  - Finnish Quality Association
  - The Chartered Quality Institute (CQI)

- **Quality Supporters**
- Czech Society for Quality
- Ukrainian Association for Quality
- Dubai Quality Group
- Italian Association for Quality Culture

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# Involved Sponsor and Supporters

- Knowledge and participation in ASQ communications and marketing of the study and results

- Connect with ASQ and Ogilvy in creative collaboration at World Conference, World Quality Month 2013

- Live and virtual events to leverage study data, insights

- Strategic dialogues on practices, comparisons, contrasts

- Advance understanding and response to data at governmental, agency and leadership levels

- Support continued evolution of the study, report and opportunities in three-year cycles

# For More Information

For further details on the research and report, contact:

- **Laurel Nelson-Rowe** , ASQ Managing Director, at <u>lnelson-rowe@asq.org</u> or 414-298-8789
- **Travis Colton**, APQC Research Director, at <u>tcolton@apqc.org</u> or 713-685-4722





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