Quality in a Globalized World

Challenges in Global Quality Management

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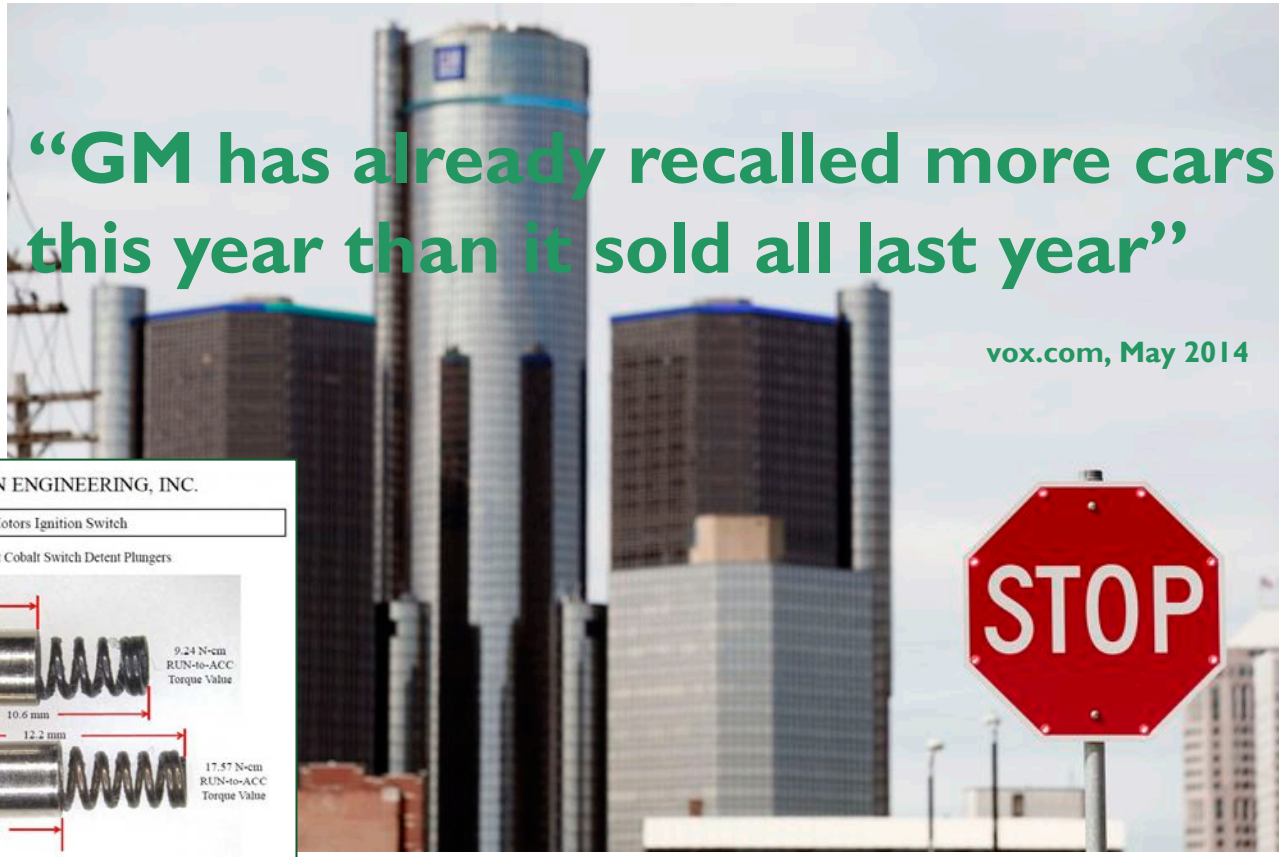
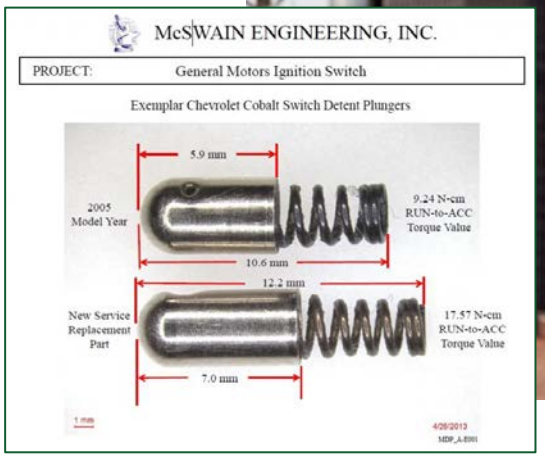
Structure

Quality in the Automotive Industry

Consequences of a Defective Ignition

Prominent Examples



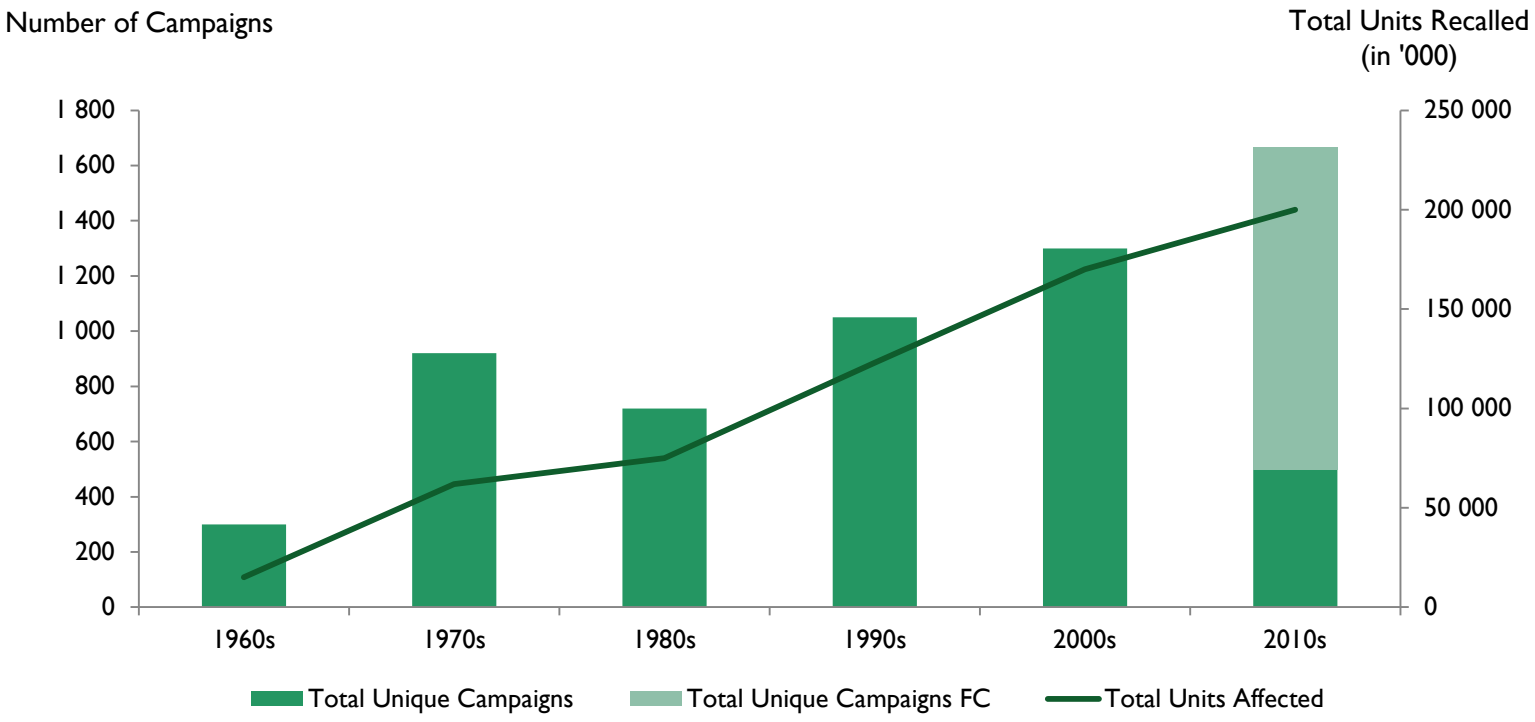


Source: http://www.vox.com/2014/5/21/5738204/record-car-recalls-this-year (Last accessed: 02.May 2014)

Towards a Global Manufacturing

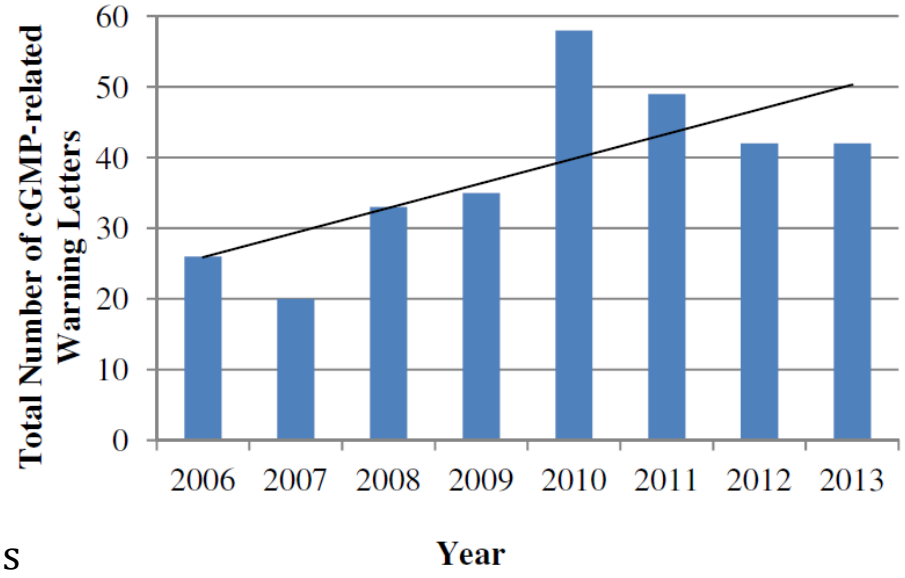
Consequences

Increasing Recall Statistics Over the Previous Decades



Source: Society of Automotive Analysts (2014)

Quality Issues in the Pharmaceutical Industry



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Stericycle, 2014

Source: Calnan, N. (2015)

Structure

1 **Current Issues in Quality Management**

2 **Development Stages**

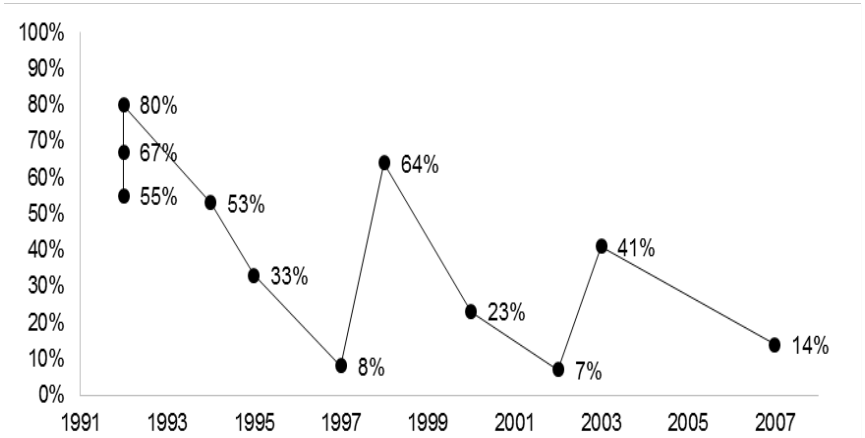
3 **Managing Quality in a Globalized World**

4 **Summary and Outlook**

Theoretical Explanation for QM Issues

Scope and Related Research Streams

QM Implementation Failures



- Meta-study of QM failure rates shows that there is a high (but volatile) number of QM implementation failures

Source: Cândido and Santos (2011)

Theoretical Foundation

- Best practice paradigm
  - QM as universal approach (On-Size-Fits-All)
  - Quality management approaches can be copied regardless from the contextual and competitive environment
- Strategic choice paradigm
  - Contingency research
  - AMR landmark special issue
  - Failure of QM programs is found to be correlated to the presumption of a universally applicable QM
  - Instead the contextual environment takes a significant role in QM implementation

Source: Nair (2006), Sousa and Voss (2001)

Evolution of Quality Management

The Major Steps and Orientations

Approaches in QM

Statistical Quality Control (SQC), *1960-1980*

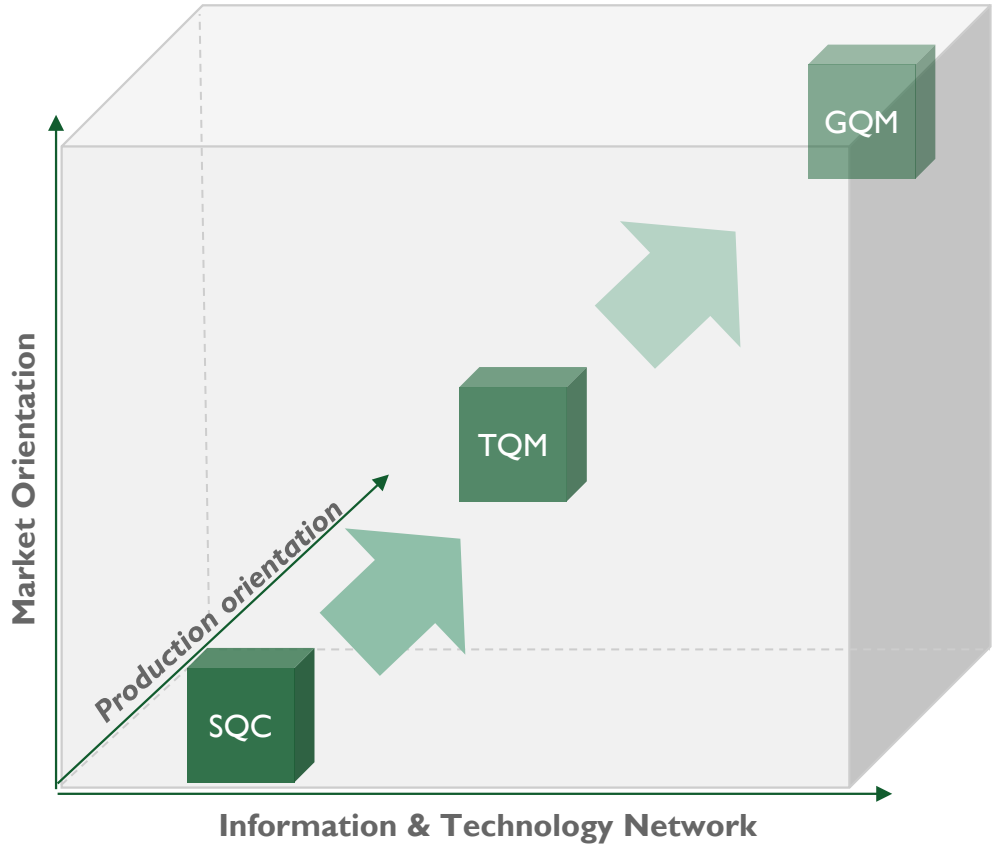
- **Market orientation:** Low priority of customer values and cultural sensitivity
- **Production orientation:** Operation focus on product with low flexibility
- **Information & Technology:** Plant level

Total Quality Management (TQM), 1980-2000

- **Market orientation:** High priority of customer values and moderate cultural sensitivity
- **Production orientation:** Operation focus on organization with moderate flexibility
- **Information & Technology:** Corporate level

Global Quality Management (GQM), Since 2000

- **Market orientation:** High and diversified priority of customer values and high cultural sensitivity
- **Production orientation:** Operation focus on cross country organization with high flexibility
- **Information & Technology:** Global integration

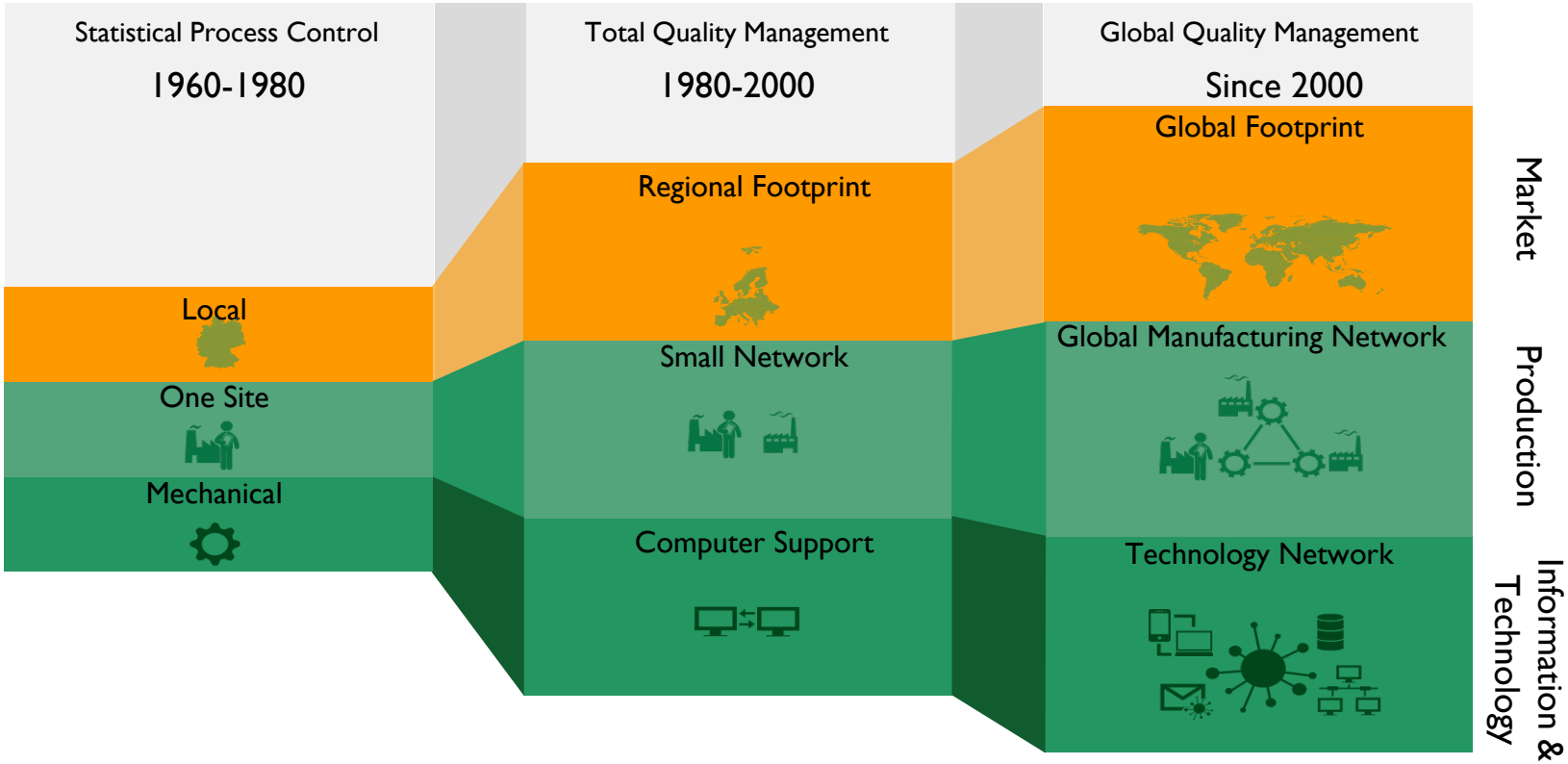


Source: Kim (1995)

Evolution of Quality Management

The Major Steps and Orientations

Incremental Evolutions of Manufacturing Networks



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Research Sample

Sample Overview

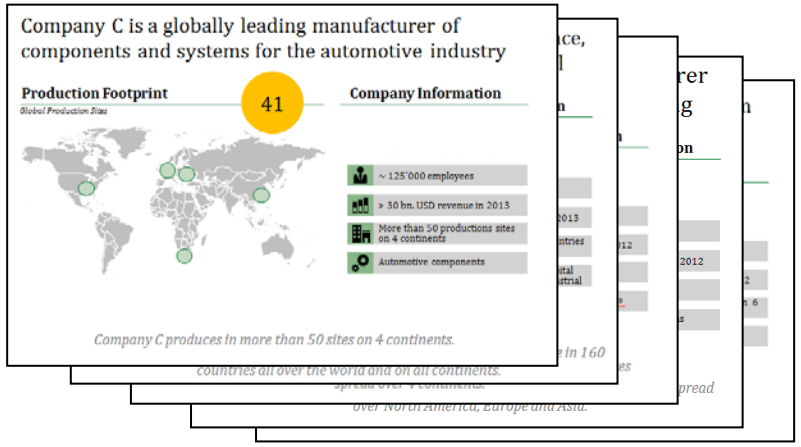
Consortium

Company	Industry	Employees	Revenue
Comp. A	Automotive	105'876	76,8 bil. (EUR)
Comp. B	Plant manufacturing	10'346	2,409 bil. (CHF)
Comp. C	Automotive	275'087	114,297 bil. (EUR)
Comp. D	Electronics, automotive, inspection technology	14'403	1,833 bil. (EUR)
Comp. E	Construction, automotive, polymeric products	>17'000	2,8 bil. (EUR)
Comp. F	Industrial sensors	6'302	0,9713 bil. (EUR)
Comp. G	Packaging	~4'950	1,620 bil. (EUR)

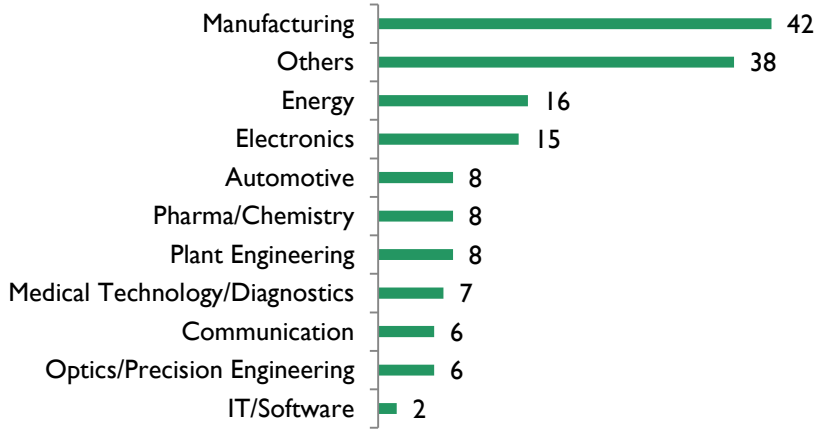
Benchmarking Screening

- 112 participants completed the survey
- The participating companies came from various industries and range from international medium sized companies to conglomerates
- All companies are globally operating companies

Successful Practices



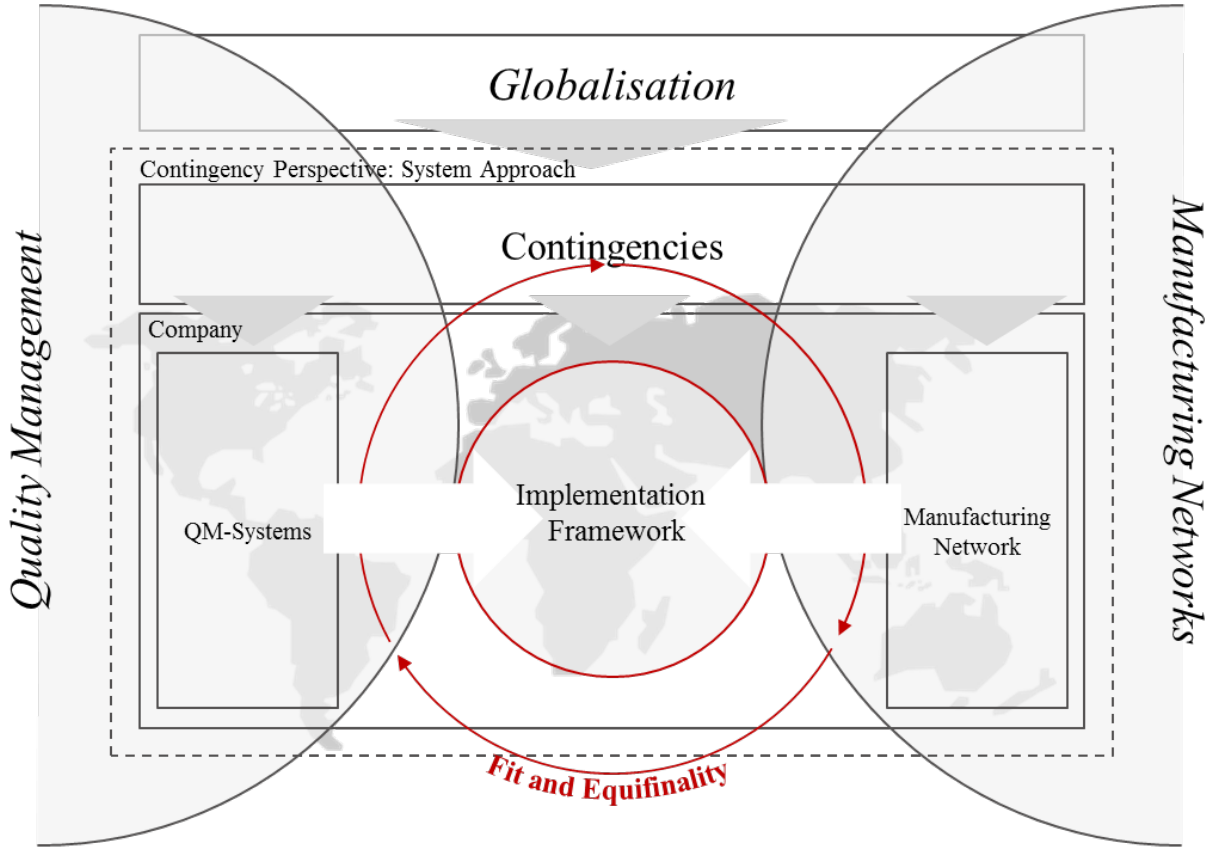
*(n=112, multiple answers)**



Quality Management in a Globalized World

Scope and Related Research Streams

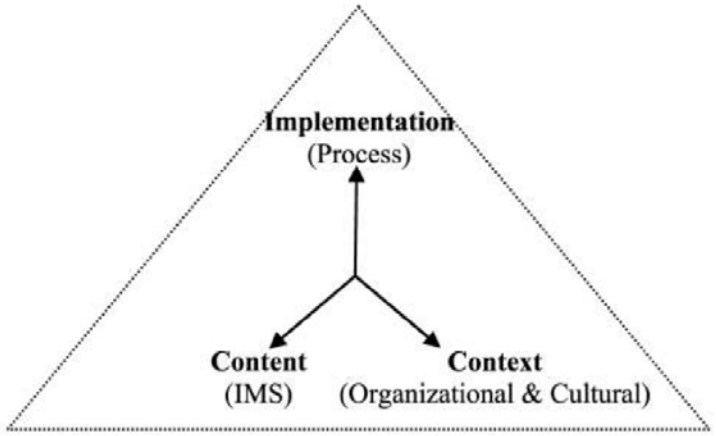
Scope of Global Quality Management



Quality Management in a Globalized World

Scope and Related Research Streams

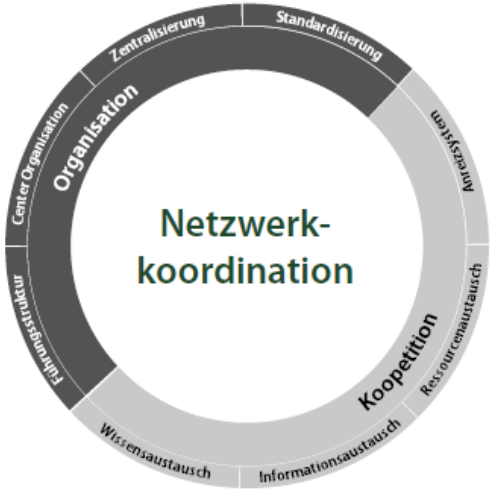
Quality Management Implementation



- Successful implementation of (QM) initiative is determined by three factors, content, context, process
- Content is well researched and results shows validity

Source: Asif et al. (2009)

Global Manufacturing Networks



- Coordination of manufacturing networks requires thorough understanding of the impact of specific functions
- QM activities across the network have not been well covered in research

Source: Institute of Technology Management (ITEM-HSG), University of St.Gallen, Thomas (2013), Dissertation

Current Challenges in Quality Management

Results of the Focus Groups Discussions

6 Major Challenges for Global Manufacturing Networks

Consolidated results from various QM focus group discussions

Integration of Programs

The Case of a Pharmaceutical Company

"The independence of quality control from production is considered fundamental." – WHO GMP for Pharmaceutical Preparations*

Initial Situation: Both departments rather work against each other than cooperating in order to attain their individual targets and KPIs

Manufacturing Department

"Without manufacturing there is no quality to control or assure" statement of a manufacturing department representative

Quality Department

"On-time-delivery and other manufacturing KPIs are not my business" statement of a quality representative

Solution: So called **Supply Teams**

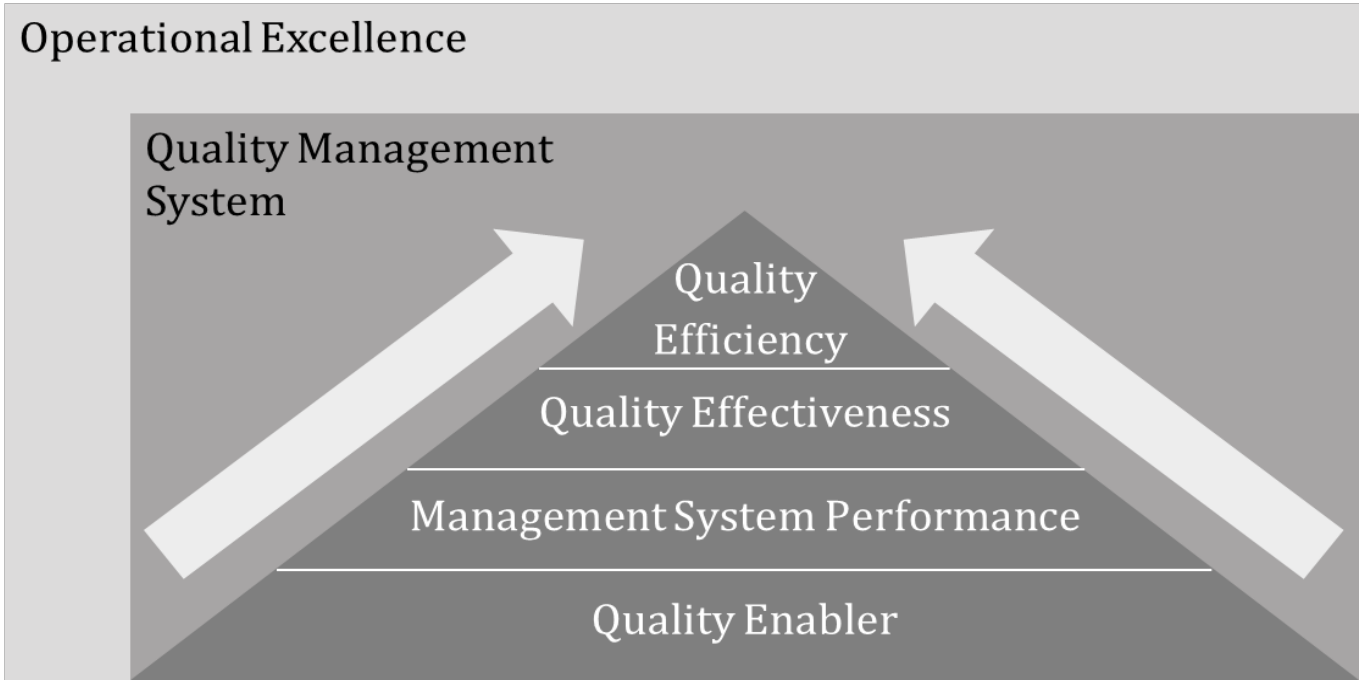
- ***Consist of a manufacturing and a quality representative***
- ***3 Supply Teams for a product each***
- ***Their job description is to optimize the end-2-end process***

- ***Reports to the site head of quality and site head manufacturing***
- ***2 site heads discuss and agree on optimization suggestions***
- ***Supply teams means job rotation for the two members***

Significant improvement of essential KPIs, such as OTIF, which provides a comprehensive manufacturing perspective

Source: "WHO Expert Committee on Specifications for Pharmaceutical Preparations" Section 17.2. WHO technical report series; 908, 2001: Geneva, Switzerland

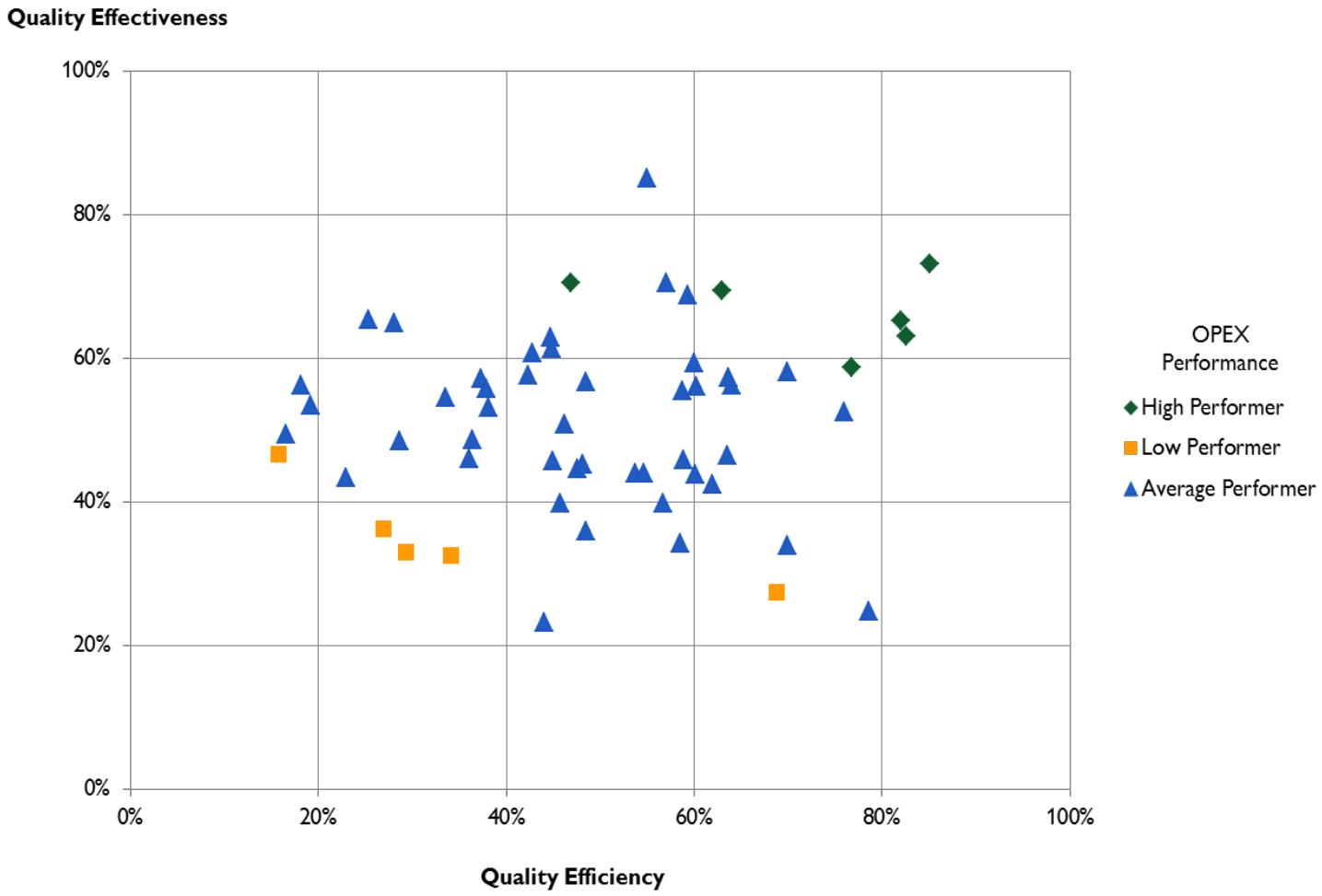
Quality as basis for OPEX



Quality Management System is based on OPEX and structured along different levers

Source: Institute of Technology Management (ITEM-HSG), University of St.Gallen

OPEX and Quality



A high OPEX performance indicates a high overall Quality system performance

Source: Institute of Technology Management (ITEM-HSG), University of St.Gallen

OPEX and Quality

OPEX high performers have a high Quality Effectiveness, Efficiency and a very good Quality Culture

Source: Institute of Technology Management (ITEM-HSG), University of St.Gallen

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Summary and Outlook

Research Agenda and Activities

Summary

- Current challenges in quality management
- Theoretical basis
- Suggestion of a research framework
- Quality management in the pharmaceutical industry

Outlook

Reconcile Quality Management Practice and Quality Management Theory

- Analysis of the impact of contextual factors on QM content and context
- Identification of relevant contextual factors in global quality management
- Analysis of the resource-based view as theoretical foundation in Global Quality Management: To what extent is global quality management a competitive relevant capability

Quality Management Implementation Model

- Analysis of quality management implementation content and process
- Identification of relevant implementation principles

Integrate Quality Management and Operational Excellence

- Reconcile quality management and operational excellence research
- Form the basis for the integration of both in practice

Thank You – Q&A

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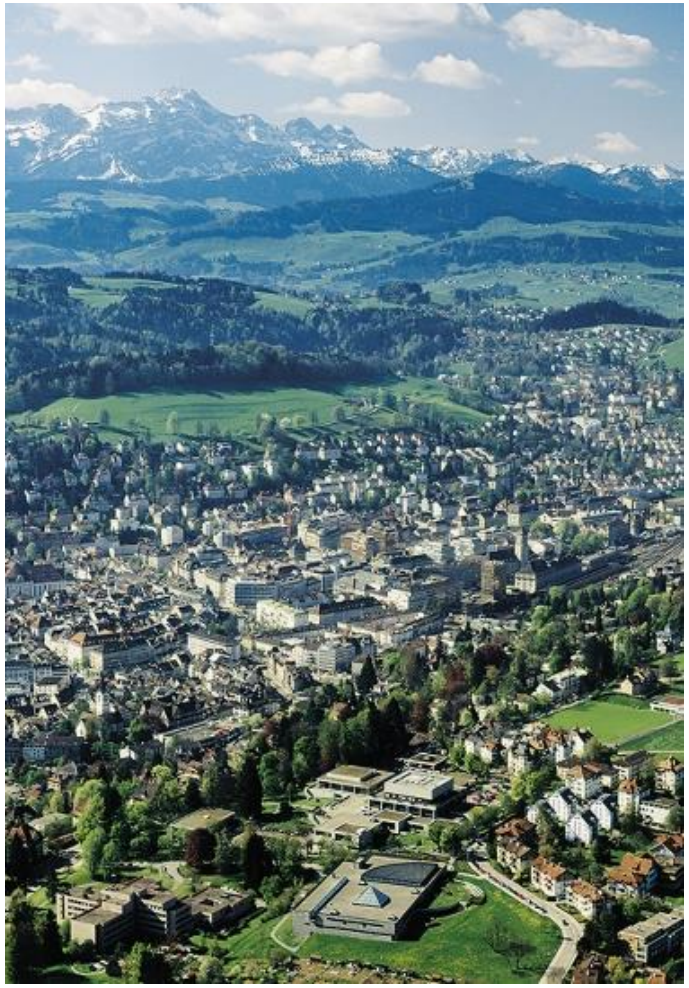
University of St.Gallen (HSG)

An Extensive Focus on Industry



University of St.Gallen (HSG)

- Founded in 1898
- Ranked 1st in the German speaking area in the Financial Times Executive Education Ranking 2009
- 39 institutes and 5 schools (Management, Economics and Political Science, Finance, Law, Humanities and Social Sciences)
- 6,941 students (25% international students), 725 research associates, 91 professors

Institute of Technology Management (ITEM-HSG)

- Founded in 1988
- 4 professors for Production Mgmt., Innovation Mgmt., Operations Mgmt. and Entrepreneurship with 40+ research associates

Chair of Production Management

- Prof Dr. Thomas Friedli
- 12-15 research associates
- **High industry focus with 20+ industry-, 3 benchmarking- and 3-4 industrial CTI research projects every year**

Institute of Technology Management (ITEM-HSG)

An Extensive Focus on Industry

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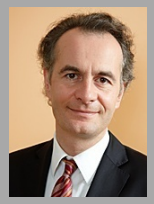

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