

IT QM Part1 Lecture 6

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Lectures at the University of Bratislava/Spring 2008

- 21.02.2008** **Lecture 1 Impact of Quality-From Quality Control to Quality Assurance**
- 28.02.2008** **Lecture 2 Organization Theories-Customer satisfaction-Quality Costs**
- 06.03.2008** **Lecture 3 Leadership-Quality Awards**
- 13.03.2008** **Lecture 4 Creativity-The long Way to CMMI level 4**
- 03.04.2008** **Lecture 5 System Engineering Method-Quality Related Procedures**
- 10.04.2008** **Lecture 6 Quality of SW products**
- 17.04.2008** **Lecture 7 Quality of SW organization**

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19.02.2007	Lecture 1 Impact of Quality-From Quality Control to Quality Assurance
05.03.2007	Lecture 2 Organization Theories-Customer satisfaction-Quality Costs
12.03.2007	Lecture 3 Leadership-Quality Awards
19.03.2007	Lecture 4 Creativity-The long Way to CMMI level 4
02.04.2007	Lecture 5 System Engineering Method-Quality Related Procedures
16.04.2007	Lecture 6 Quality of SW products
23.04.2007	Lecture 7 Quality of SW organization

- 28.02.2007** **Vorlesung 1 Bedeutung der Qualität, Qualitätsbegriff und Normen**
- 06.03.2007** **Vorlesung 2 Von der Qualitätsprüfung zur Qualitätssicherung**
- 14.03.2007** **Vorlesung 3 Meilenstein des Qualitätswesens-Arbeitsorganisation**
- 21.03.2007** **Vorlesung 4 Qualitätskosten-Führungsverhalten 1**
- 28.03.2007** **Vorlesung 5 Führungsverhalten 2- Q-Awards**

- 02.03.2007** **Vorlesung 1 Bedeutung der Qualität, Qualitätsbegriff und Normen**
- 07.03.2007** **Vorlesung 2 Von der Qualitätsprüfung zur Qualitätssicherung**
- 21.03.2007** **Vorlesung 3 Meilenstein des Qualitätswesens-Arbeitsorganisation**
- 23.03.2007** **Vorlesung 4 Qualitätskosten-Führungsverhalten 1**
- 30.03.2007** **Vorlesung 5 Führungsverhalten 2- Q-Awards**

- 04.03.2008** **Lecture 1 Impact of Quality-Quality Definition-Standards**
- 11.03.2008** **Lecture 2 From Quality Control to Quality Assurance**
- 01.04.2008** **Lecture 3 Organization Theories-Product Liability-Emphasis from Quality Control
to Prevention**
- 08.04.2008** **Lecture 4 Customer Satisfaction-Quality Costs**
- 15.04.2008** **Lecture 5 Team Work-Leadership Behavior-Deal with Changes-Kind of Influencing
Control-Conflict**
- 22.04.2008** **Lecture 6 Tasks &Responsibility of Leading Personnel-Audits-Quality Awards**
- 06.05.2008** **Lecture 7 Management Science-Creativity Techniques-Embedded Systems-FMEA**

- **Tasks & Responsibility of leading personnel**
- **Audits**
- **Quality Awards**

- Impact of Quality
 - Quality wins
 - Quality deficiencies
- Standards
 - Quality definition
- Evolution from quality control to TQM
 - Shewhart, Deming, Juran, Feigenbaum, Nolan, Crosby, Ishikawa
- Evolution of organization theory
 - i.e. Taylorism, System Dynamics, System Thinking, Quality Assurance
- Product liability
- Customer satisfaction
 - Criteria, two-dimension queries, inquiry methods

- Quality costs
 - Failure prevention, appraisal, failure, conformity, quality related losses, barriers
- Leadership
 - Behavior, deal with changes, kinds of influencing control, conflict resolution, syndromes to overcome when introducing changes
- Audits
- Quality awards
- Creativity techniques
 - Mind Mapping, Progressive Abstraction, Morphological Box, Method 635, Synectics, Buzzword Analysis, Bionic, De Bono
- Embedded Systems
- FMEA-Failure Mode Effect Analysis

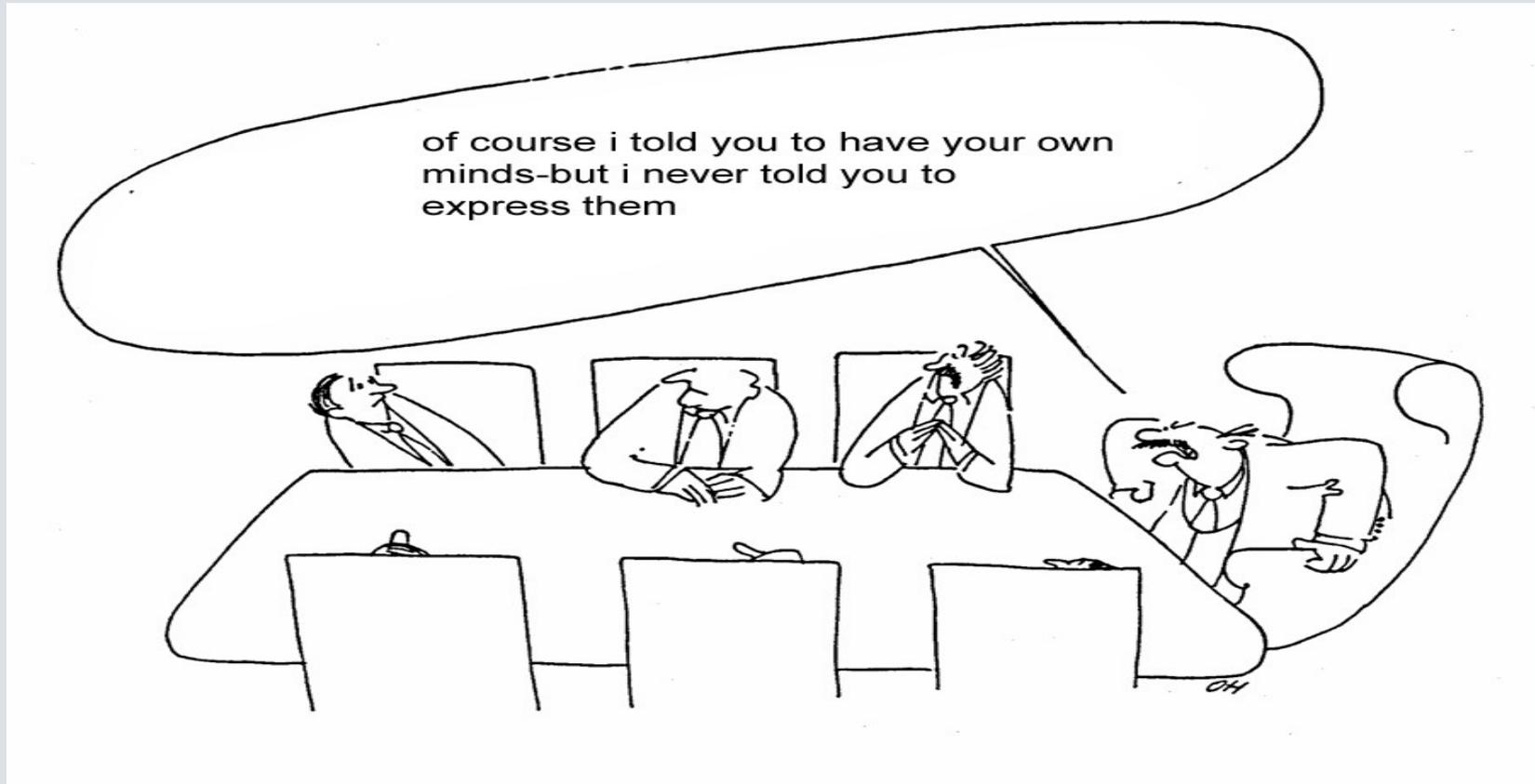
Tasks & Responsibility of leading personnel/1

Accomplish organizational changes

- Transformation of the product range
- Creation of result responsible divisions
- Decentralization
- Transfer of activities into other countries
- Mergers, co-operation and Joint ventures

Tasks & Responsibility of leading personnel/2

Participation of the coworkers in decisions



Tasks & Responsibility of leading personnel/3

Create an intact social work surrounding field

- In order to create a good social work surrounding
 - high-level personnel must have joy in handling humans
 - and a good feeling for their emotional condition.

Tasks & Responsibility of leading personnel/4

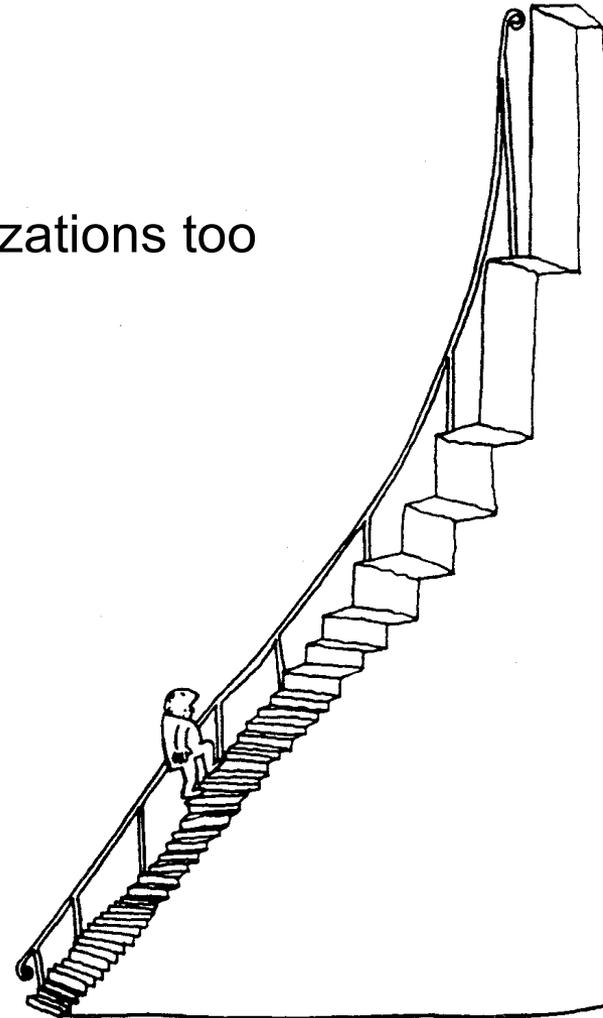
Dismantling of hierarchical barriers

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Too many hierarchy levels make organizations too ponderous



in the future ways must be shortened and levels minimized



Tasks & Responsibility of leading personnel/5

Lead independent organizational units

Flexible work forms and work time models

Tasks & Responsibility of leading personnel/6

Produce achievement by synergies



Tasks & Responsibility of leading personnel/7

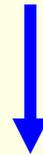
Organize learning and development

Women in hierarchical position

Management in conflict situations

Tasks & Responsibility of leading personnel/8 Power formation by communication

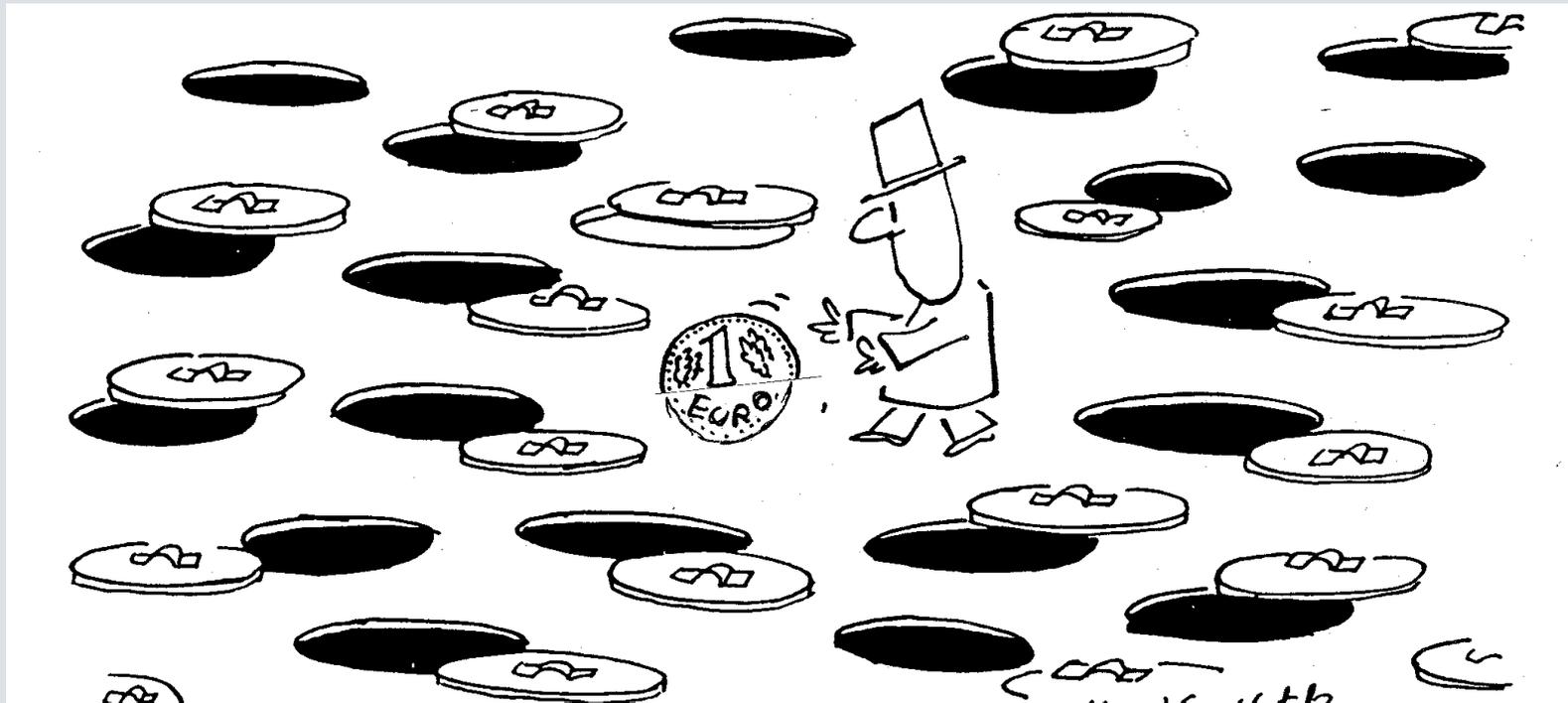
"it does not concern what is, but what is believed by the majority.



Reliability in statements and expression, to be spontaneous and quick witted (ready answer) and good feeling are success factors for high-level personnel."

Tasks & Responsibility of leading personnel/9 Future planning of complex scenarios

Away of extrapolating - to the scenario



- Particularly within change processes
 - which are dependent on the introduction of TQM systems
 - some syndromes are potential sources of danger
 - which endanger the desired change process.

Fixing on objectives

- Particularly in the 70's:
 - Successes of Japanese companies (automotive industry, semiconductor manufacturing) excite attention
 - Market share gains, large customer loyalty, high quality level
 - Some company, particularly in the USA have taken an attitude following the slogan: "If they (Japan) CAN DO it, we CAN DO it."



- Quality circle were arranged, statistic steering of processes became must in the manufacturing.
- BUT: fundamental differences (especially cultural ones..) were ignored

Ivory tower

- A program with defined start and end time
 - and still in addition
 - detached by the actual business activity
 - is to be condemned to work as an external appendage
 - similarly a backpack
 - without a material effect on process execution
 - and without lasting effect.

Delegation

- Some manager understands itself as a responsible person for certain activities and for execution of tasks.
- If now a problem in quality arises and is addressed as "problem in quality",
 - he recognizes that is a problem
 - that he can delegate to the quality department.
- Additional documentation and test units are the consequence
 - which makes the process more complex and slower
 - and does not guarantee any improvement of the performance.

Toothless tiger

- If TQM initiatives are started,
 - it is particularly important,
 - That the occupation of the quality manager
 - will be accomplished with a technically experienced
 - and socially accepted person.
- If on the other hand a manager
 - who cannot keep itself longer in the business field
 - because of the rapid progress
 - or because of the personnel policy plans
 - Occupies -quasi as toothless tiger- the job of quality manager
 - then the effect is more than doubtful.

Quality champion

- In order to occupy the position of a leader of a TQM initiative prominent
 - e.g. a vice director is established as quality manager.
 - This vice director and its coworkers enjoy success and can be celebrated as champions
 - at the same time the true problem in the organization continues to exist
 - since our champions are called only to certain places and there the danger exists that the problem was delegated to the champions.

Hollow clichés

- If after the announcement of a TQM initiative
 - including objectives, necessities and use
 - the Top Management does not precede with good example
 - but by ambiguous statements does not commit itself
 - focusing on personal interests
 - advancing itself
 - After being asked to participate
 - Pretending to have no time
 - Coming later
 - Leaving earlier
 - then it is not a miracle that the remaining high-level personnel and coworker
 - consider this topic as hot steam
 - and no genuine improvement and transformation is visible within the organization.

Fast simmer course

- In order to get the core manager troop rapidly on preceding endorser
 - these are sent on x-days Crash seminars.
- If they come immediately back
 - They are beginning here and there some tasks uncoordinatedly
- Success bleaches,
 - because the activities run off uncoordinatedly
 - an inflation of the quality issues are demonstrated to the coworkers
 - true professionals cannot be trained in x-day simmer courses.

De inspiration syndrome

- After a terrific start of for instance the TQM - initiative all are enthusiastically
 - everyone wants nevertheless a better job
 - better conditions,
 - satisfied customers
 -
- Because however the improvement activities run during longer periods
- and because not directly a change/an improvement is recognizable
 - it comes to a reaction
 - the joy is losing,
 - disappointment increases as there still nothing happens
 - and turns in the long run again the used proceedings and behaviors
 - as if there would have not been a TQM initiative.

- Barriers for the change improvement process lurk everywhere.
- There are 4 general barrier types
 - which arise independently of the persons or the industry.
- Functional barriers
- Business process barriers
- cultural barriers
- spare processes

Audits – Driver of Change/1

What isn't an audit?

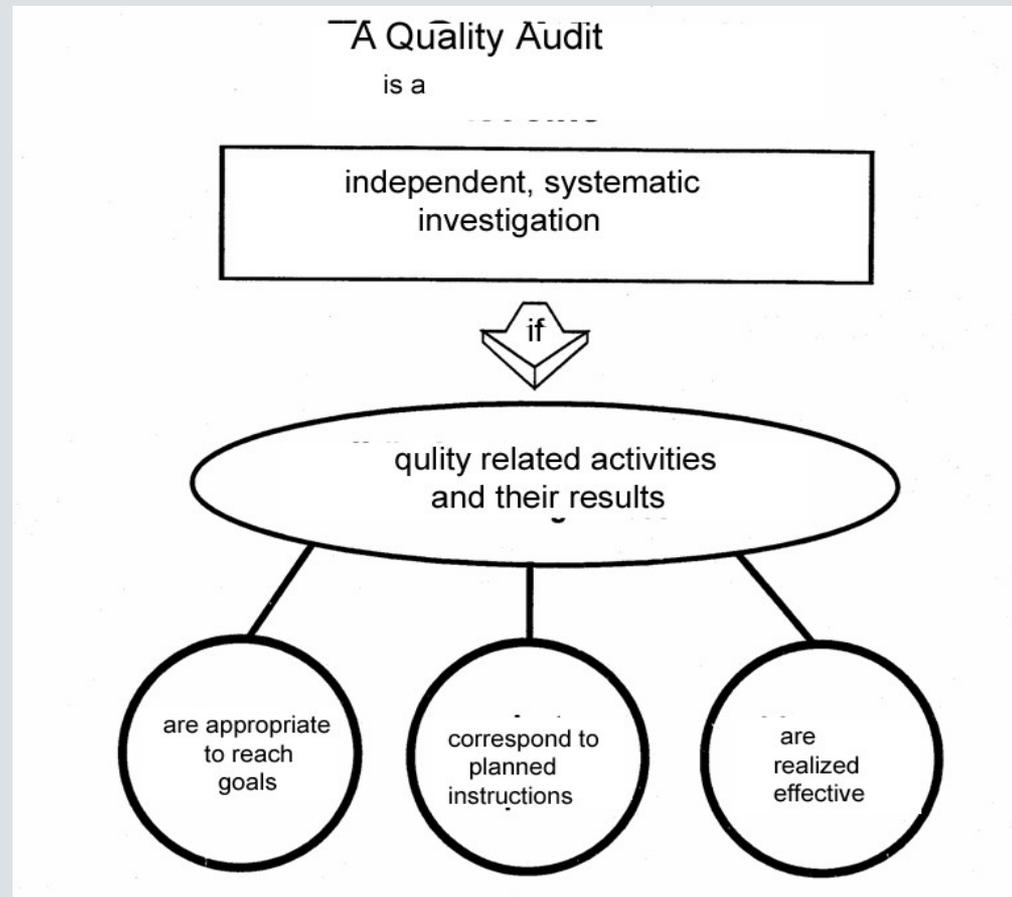


That is not an
AUDITOR

Audits – Driver of Change/2

Audit: Term explanation

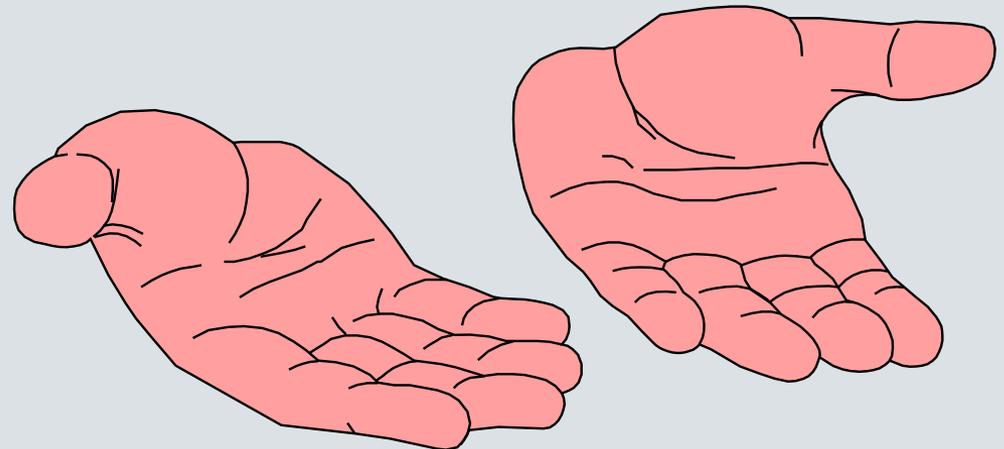
Audits are a systematic measure, in order to reduce the operating blindness and to promote the know-how exchange between the ranges.



Audits – Driver of Change/3

Goal of an audit

- systematic advancement of the management system
- Improvement potentials and weak points are recognized and corrected by improvement measures
- in the report also the strengths are represented, in order to show a balanced picture



Audits must be balanced

Audits – Driver of Change/4

Kinds of audits

- First party: An organization has Auditors at their disposal
 - which accomplish the audit,
 - put a report
 - and thus activate improvement measures.
- Second party: Customers audit a supplier.
- Third party: Independent organizations have Auditors at their disposal
 - which accomplish the audit
 - (e.g. authorities, certification bodies)

Audits – Driver of Change/5

Partitioning after audit contents

- Product audit
- Process audit
- System audit

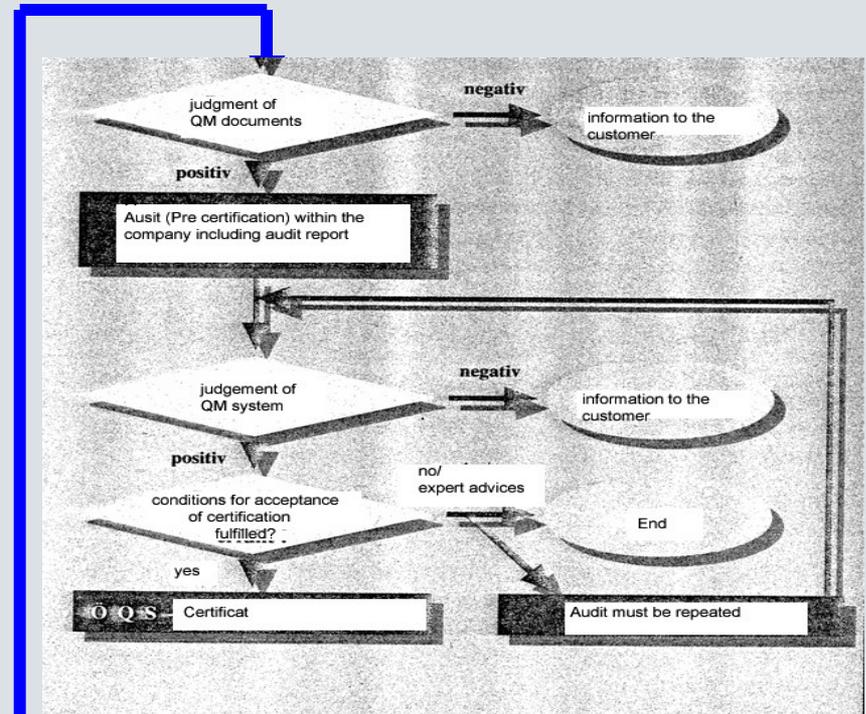
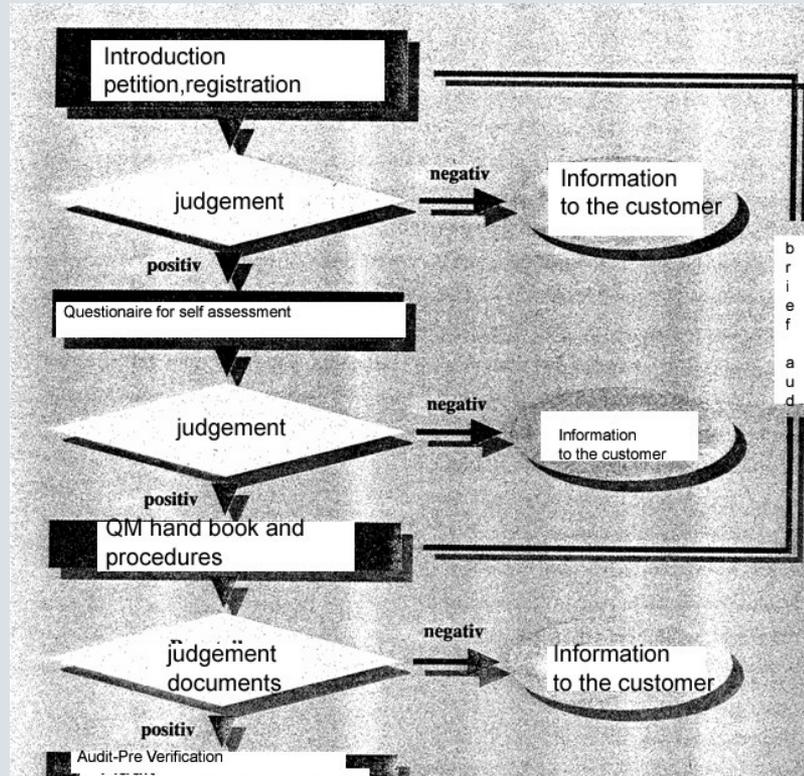
Audits – Driver of Change/6

Preparation of an audit

- set up inspection plan
 - regard all locations and characteristics
 - regard all ranges
 - follow if possible the logical process course
 - collect impressions
 - regard special areas
 - think on elements, which are everywhere relevant (marking,...).
 - place NO audit questions
- specify important issues
 - regard mechanisms
 - regard transportation conditions

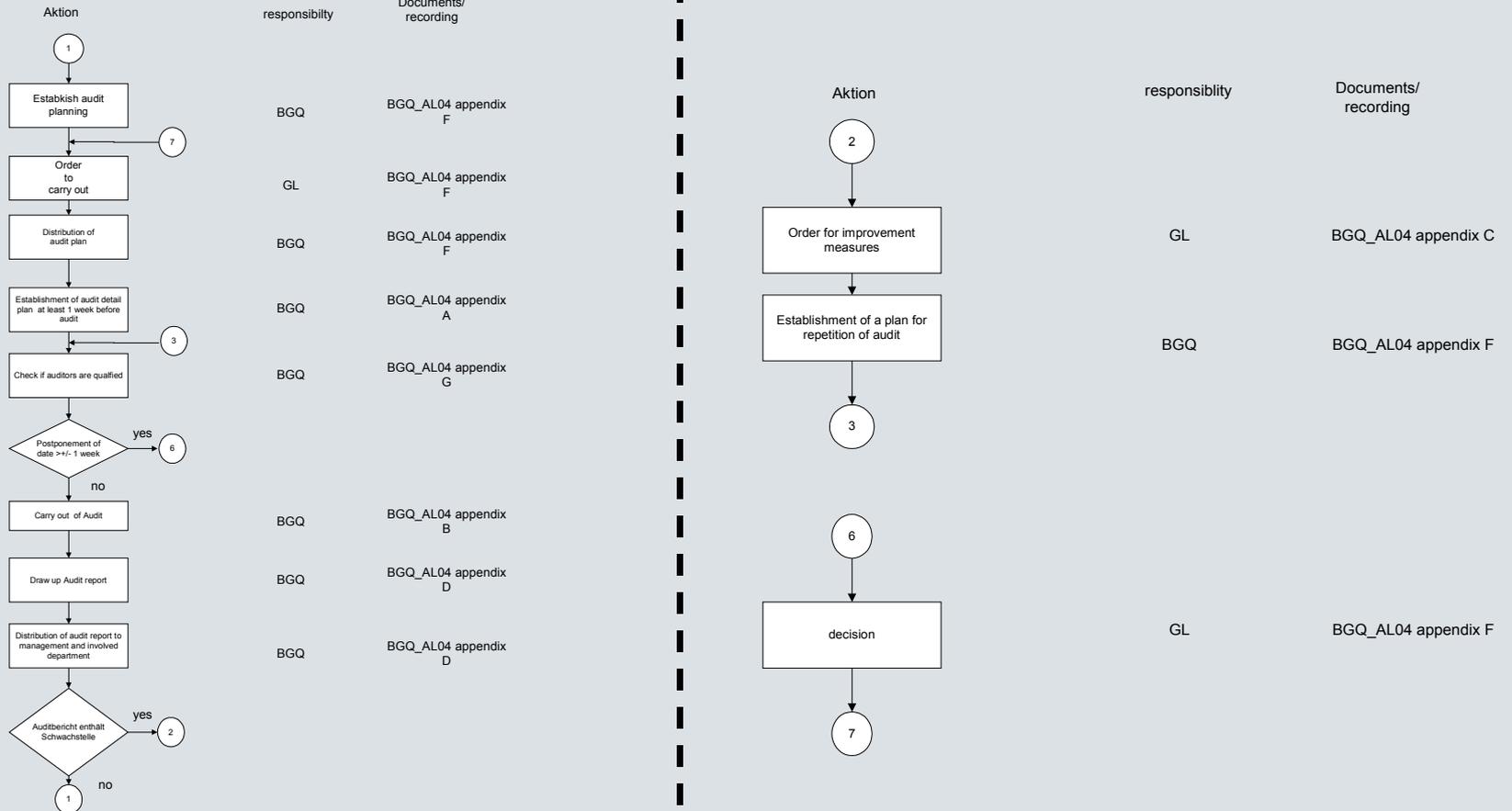
Audits – Driver of Change/7

external expiration of audit



Audits – Driver of Change/8

internal course of audit



Personal characteristics that auditors must fulfill:

- Having open attitudes
- Having experience
- a healthy faculty of judgment
- analytic abilities
- being persistent
- Grasp situations realistically
- recognize complex procedures comprehensively
- and to be able to understand the role of the individual units within the overall organization of the audited unit.

Audits – Driver of Change/10

Requirements at Auditors – general/2

Knowledge that auditors must have:

- sufficient knowledge over the system requirements
- techniques of the quality assurance
- the use of statistic methods i.e.
 - evaluation of series of measurements
 - machine and measuring instrument ability
 - SPC
 - experimental design
 - Pareto analyses
 - FMEA.
- Evaluation methods i.e.
 - investigation
 - Questioning
 - Evaluation
 - and reporting
- the management of an audit, e.g. guidance, planning, organization, conversation-und interview technology.

Experience - for internal Auditors

- longer practical activity (at least 3 years) at the management system is necessary



- the knowledge of the current operational processes, procedures, techniques and proceedings within the own department and other ranges from own practice,

- in order to keep these as basis for a comparison of the shaping of quality elements at the supplier.

Audits – Driver of Change/12

Requirements at Auditors – general/4

Maintenance of the capability

- By pursuit of the current conditions
 - Quality management system standards and demands
 - Audit procedures and methods
- By participation in refresher courses.
- By common audits at other locations

Audits – Driver of Change/13

Discussion and interview techniques - question techniques

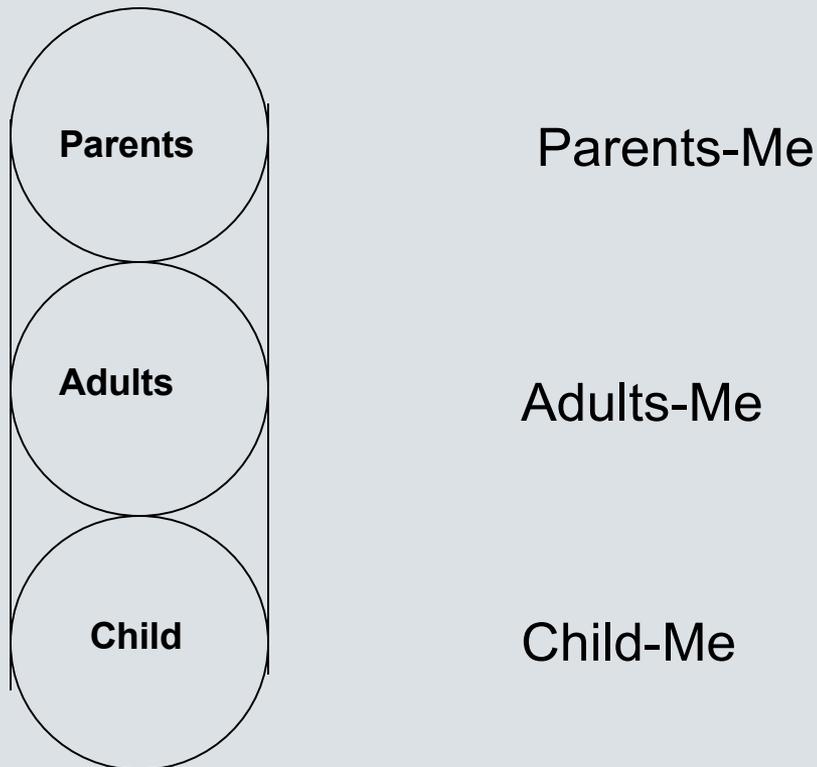
Open questions

alternative questions

closed questions

Audits – Driver of Change/14

Transaction analysis

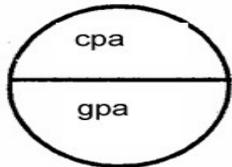


Parents-Me: recording of events (trained life concept)

Adults-Me: recording of information which are obtained and processed by exploration and by trying out (imaginary life concept)

Child-Me: recording of internal events (felt life concept)

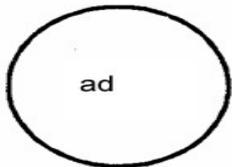
Audits – Driver of Change/15



parents-me

⇒ subjective values, standards, attitudes

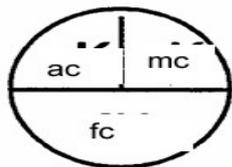
- instructions
- accusation, punishment
- relief, consolations



adult-me

⇒ objective evaluations

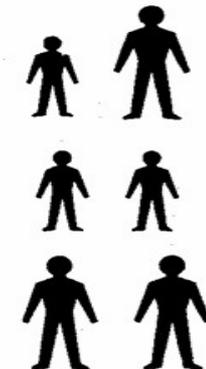
- figures, data, facts
- active listening
- wording without attacks
- describing
- open questions
- feed back



child-me

⇒ feelings

- excuses, justifications
- ask for help
- resignation
- express feelings openly



Initially the Deming price in Japan was lent by a fund, which W. E. Deming donated. Today the JUSE (Japanese Union of Scientists and Engineers) bears the cost of the price.

The Deming price is three-divided:

- The actual Deming price for individuals.
- The Deming price for applications, which is assigned at enterprises.
- The Deming factory price.

Criteria of the Deming price for applications:

- Managerial policy
- Organization and administration
- Basic training and further education
- Execution
- Effect
- Future planning

Measurable effects within enterprises, which have received the Deming price:

- Expansion of the market share
- Increase of sales
- Increase of the production volume
- Successful development of new products
- Shorter time for product development
- Development of new markets
- Improved quality
- Decrease of the customer complaints
- Reduction of the error costs
- Rationalization of the processes
- Higher participation of the coworkers in the suggestion scheme
- Fewer industrial accidents

Not measurable effects within enterprises, which have received the Deming price:

- Consciousness and inclusion of the coworkers
- Quality and problem consciousness
- Horizontal and vertical communication
- Quality of Work
- Relationship of work
- Feedback and information
- Management ability
- Dealing with market requirements
- Definition of the responsibility and authority
- Courage to develop new products
- Goal-oriented thinking
- Standardization

Quality Awards/4

Malcolm Baldrige National Quality Award/1

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USA:

National quality price:

The Malcolm Baldrige national quality Award

Is assigned by the **President of the USA** to the winners

under broad medium presence in order to inform as much as possible citizens about the importance.

Criteria of the MBNQA in the year 1989

Leadership

- Senior leadership
 - Quality values
 - Management system
 - Public responsibility
-

Information analysis

- Scope of data and information
- Data management

Criteria of the MBNQA in the year 1989

Strategic Planning

- Planning process
 - Plans for quality leadership
-

Human resource focus

- Management
- Employee involvement
- Quality education and training
- Employee recognition
- Quality of worklife

Criteria of the MBNQA in the year 1989

Quality assurance of products and services

- Design and introduction of products and services
- Operation of process
- Measurement and standard
- Audit
- Documentation
- Quality assurance of operation and Business of processes
- Quality assurance of external providers of goods and services

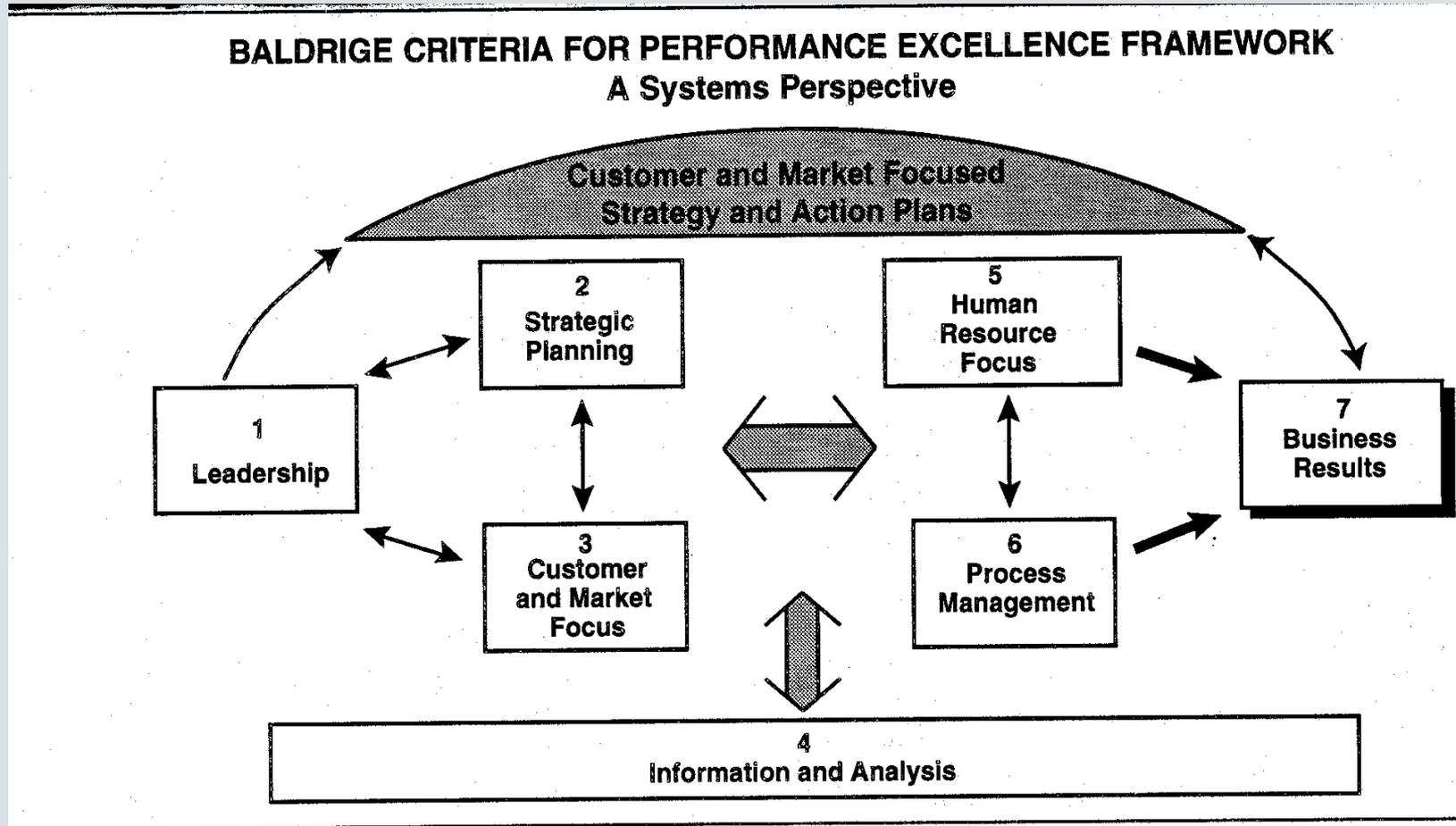
Criteria of the MBNQA in the year 1989

Quality results

- Quality of products and services
 - Operational and business processes
 - Quality improvement applications
-

Customer satisfaction

- Knowledge of customer requirements and expectations
- Customer relationship management
- Customer satisfaction methods of measurement and results



Quality Awards/11

Malcolm Baldrige National Quality Award/8

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07. 04. 1995

Contact: Jan Kosko
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QUALITY MANAGEMENT
PROVES TO BE A SOUND
INVESTMENT, SAYS NIST

The Commerce Department's National Institute of Standards and Technology said today that investing in quality management can result in an impressive payoff.

NIST "invested" a hypothetical \$1,000 in each of the five publicly traded, whole company winners of the Malcolm Baldrige National Quality Award and the parent companies of seven subsidiary winners. The success of the investment was tracked from the first business day in April of the year they won the award (or the date they went public) to Oct. 3, 1994. Adjustments were made for stock splits and/or stock dividends. Another hypothetical \$1,000 was invested in the Standard & Poor's 500 at the same time.

NIST found that the five whole company winners--Eastman Chemical Co., Federal Express Corp., Motorola Inc., Selectron Corp. and Zytac Corp.--outperformed the S&P 500 by 6.5 to 1, a 188 percent return on investment compared to a 28 percent return for the S&P 500.

A hypothetical \$1,000 also was invested in seven publicly traded parent companies--Westinghouse Electric Corp., Xerox Corp., General Motors, IBM, AT&T and Texas Instruments--of subsidiaries that had won, and the five whole company winners. The result was a 92 percent return on investment, compared to a 33 percent return for the S&P 500. All together these companies outperformed the S&P 500 by almost 3 to 1. Other independent studies have shown similar results.

Quality Awards/12

Malcolm Baldrige National Quality Award/9

2

The winning subsidiaries are: Westinghouse's Commercial Nuclear Fuel Division; Xerox Business Products and Systems; GM's Cadillac Motor Car Division; IBM Rochester; two of AT&T's winning units--Network Systems Group/Transmission Systems Business Unit and Universal Card Services; and Texas Instrument's Defense Systems & Electronics Group.

In addition, NIST invested a hypothetical \$1,000 in the publicly traded Baldrige Award applicants receiving site visits during 1990 through 1993. As with the other companies, the investment period began the first business day in April of the year the companies were site-visited or the date they went public. The eight whole company applicants outperformed the S&P 500 by 4.5 to 1. As a group of 32, which includes the whole-company applicants and the parent companies of subsidiary applicants, they outperformed the S&P 500 by 2 to 1. (Names of applicant companies are kept confidential.)

Says Curt W. Reimann, director of the Baldrige award program at NIST, "This review adds to the mounting evidence that, done right, quality management can lead to outstanding returns in many business areas, including financial performance, satisfied customers and improved market share."

While quality management cannot guarantee success, Baldrige award winners report many improvements as a result of investing in quality management. For example,

- o According to Ko Nishimura, president and chief executive officer of Solectron Corp., "We continue to use the Malcolm Baldrige National Quality Award criteria even after winning the award in 1991. These criteria have helped us build a quality company and return substantial value to our shareholders." Adds Nishimura, "From 1989 to 1994, sales have increased from \$130 million to \$1.457 billion, net profit has increased from \$4 million to \$56 million, Solectron's stock price has had an average growth of 82 percent per year, and the number of customer awards for quality and service has increased from 14 to 63."
- o Another 1991 winner, Marlow Industries, reports that through the Baldrige criteria, it has developed a wide variety of quality tools and a quality system that has resulted in successful penetration of new markets and a sales increase of 35 percent for 1994.
- o For 1992 winner, Ritz-Carlton Hotel Co., quality management has helped the company eliminate \$75 million in waste through project improvements.
- o A 1993 winner, Ames Rubber Corp., reports that through sharing total quality management techniques, its suppliers have achieved a 99.9 percent quality and on-time delivery status.

Quality Awards/13

Malcolm Baldrige National Quality Award/10

3

- o Cumulative manufacturing cost savings at Motorola, a 1988 winner, for the years 1987 through the second quarter of 1994 were over \$5.5 billion.

Other reports also show that "quality pays." In a 1991 study of 20 U.S. companies, the U.S. General Accounting Office found that "in nearly all cases, companies that used total quality management practices achieved better employee relations, higher productivity, greater customer satisfaction, increased market share, and improved profitability."

A more recent report by The Conference Board says, "A majority of large U.S. firms have used the criteria of the Malcolm Baldrige National Quality Award for self-improvement, and the evidence suggests a long-term link between use of the Baldrige criteria and improved business performance."

In conjunction with the private sector, NIST developed and manages the award program. A non-regulatory agency of the Commerce Department's Technology Administration, NIST promotes U.S. economic growth by working with industry to develop and apply technology, measurements and standards. NIST was selected by Congress to design and manage the award program because of its role in helping U.S. companies compete, its world-renowned expertise in quality control and assurance and its reputation as an impartial third party.

- 30 -

Quality Awards/14

Malcolm Baldrige National Quality Award/11



Date of Investment	Whole Company Winner or Parent (Subsidiary Winner)	Stock Purchases		OCT. 3, 1994 CLOSE		
		Price	Invested	Price	SValue	%Change
4/4/88	Motorola	11 ¹ / ₈ **	\$1,000	52 ³ / ₈	\$4,730	373.0
4/4/88	Westinghouse (CNFD)	25 ⁹ / ₁₆ *	1,000	12 ⁷ / ₈	504	-49.6
4/3/89	Xerox (Business Products and Systems)	60 ¹ / ₄	1,000	106	1,759	75.9
4/2/90	General Motors (Cadillac Motor Car Division)	45 ¹ / ₂	1,000	46 ¹ / ₄	1,016	1.6
4/2/90	Federal Express	55 ³ / ₈	1,000	61 ¹ / ₄	1,106	10.6
4/2/90	IBM (IBM Rochester)	105 ⁷ / ₈	1,000	68 ⁷ / ₈	651	-34.9
4/1/91	Sollectron	4 ³ / ₁₆ **	1,000	26 ¹ / ₄	6,269	526.9
11/11/93	Zytec	10 ³ / ₄	1,000	11 ¹ / ₄	1,084	8.4
4/1/92	AT&T (Universal Card Services)	40 ³ / ₈	1,000	53 ³ / ₈	1,322	32.2
4/1/92	AT&T (Transmission Sys. Bus. Unit)	40 ³ / ₈	1,000	53 ³ / ₈	1,322	32.2
4/1/92	Texas Instruments (Defense Sys. & Elec. Group)	32	1,000	66 ¹ / ₄	2,068	106.8
1/4/94	Eastman Chemical	45 ¹ / ₄	1,000	53 ⁵ / ₈	1,185	18.5
TOTALS	S&P 500 Baldrige Award Companies		12,000 12,000		15,911 23,016	32.6 91.8

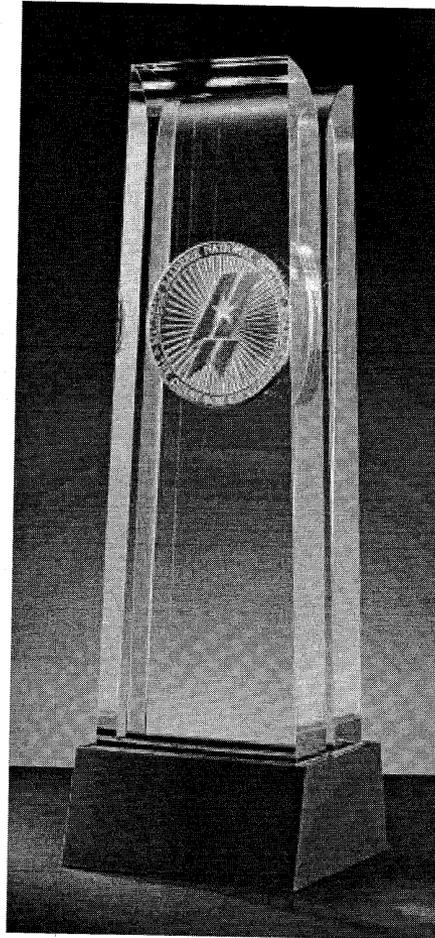
* Adjusted for 2 for 1 stock split after investment date

** Adjusted for two separate stock splits of 2 for 1 after investment date

Quality Awards/15

Malcolm Baldrige National Quality Award/12

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Crystal by Steuben
Medal by The Protocol Group

Quality Awards/16
EQA European Quality Award/1

Competition with Japan and the USA

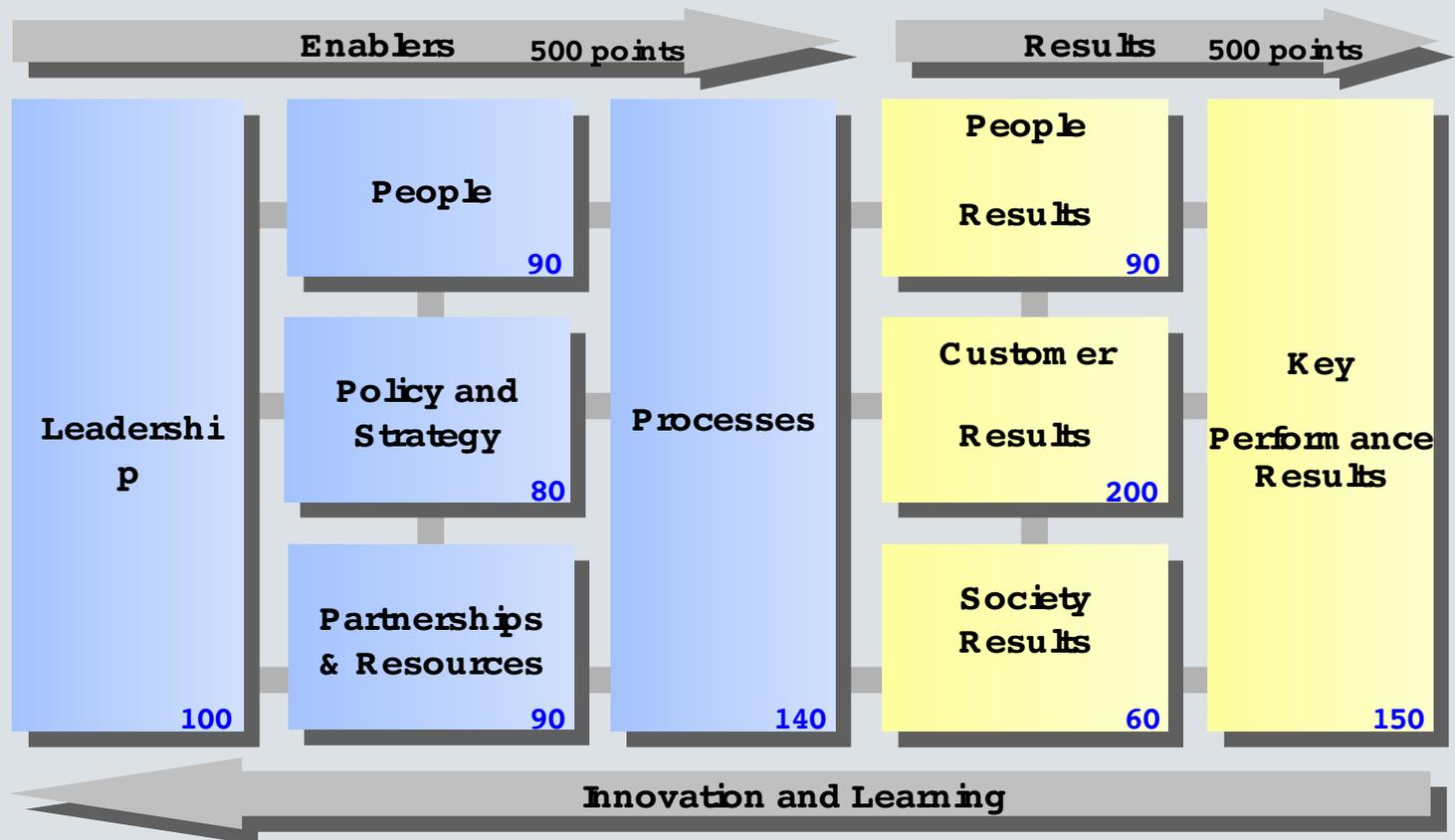


End of the 80's: Establishment of the
**EFQM European Foundation for quality
Management**

Goal: Model, which supports Business Excellence.

Quality Awards/17

EQA European Quality Award/2



Nine elements of the EFQM - model

Leadership

The behavior of the high-level personnel, in order to lead the organization to comprehensive quality.

Politics and strategy

Existence purpose, value system, example and strategic adjustment of the organization as well as the way of the implementation of these aspects.

Nine elements of the EFQM - model

Coworker orientation

Handling of the organization with their coworkers.

Resources

Management, use and preservation of resources.

Processes

The management of all worth-drawing activities in the organization.

Nine elements of the EFQM - model

Customer satisfaction

Which carries the organization out regarding the satisfaction of its external customers



Coworker satisfaction

Which carries the organization out regarding the satisfaction of its coworkers.

Nine elements of the EFQM - model

Social responsibility

which the organization carries out regarding the fulfilment of the desires and expectations of the public altogether.

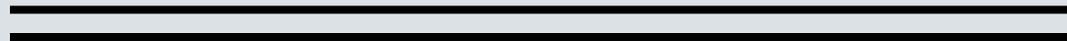
In addition the following belongs to it

- the evaluation of the public concerning the attitude of its organization
 - to the quality of life,
 - environment
 - and preservation of global resources
 - as well as the organization-internal measures in this connection.

Nine elements of the EFQM - model

Business results

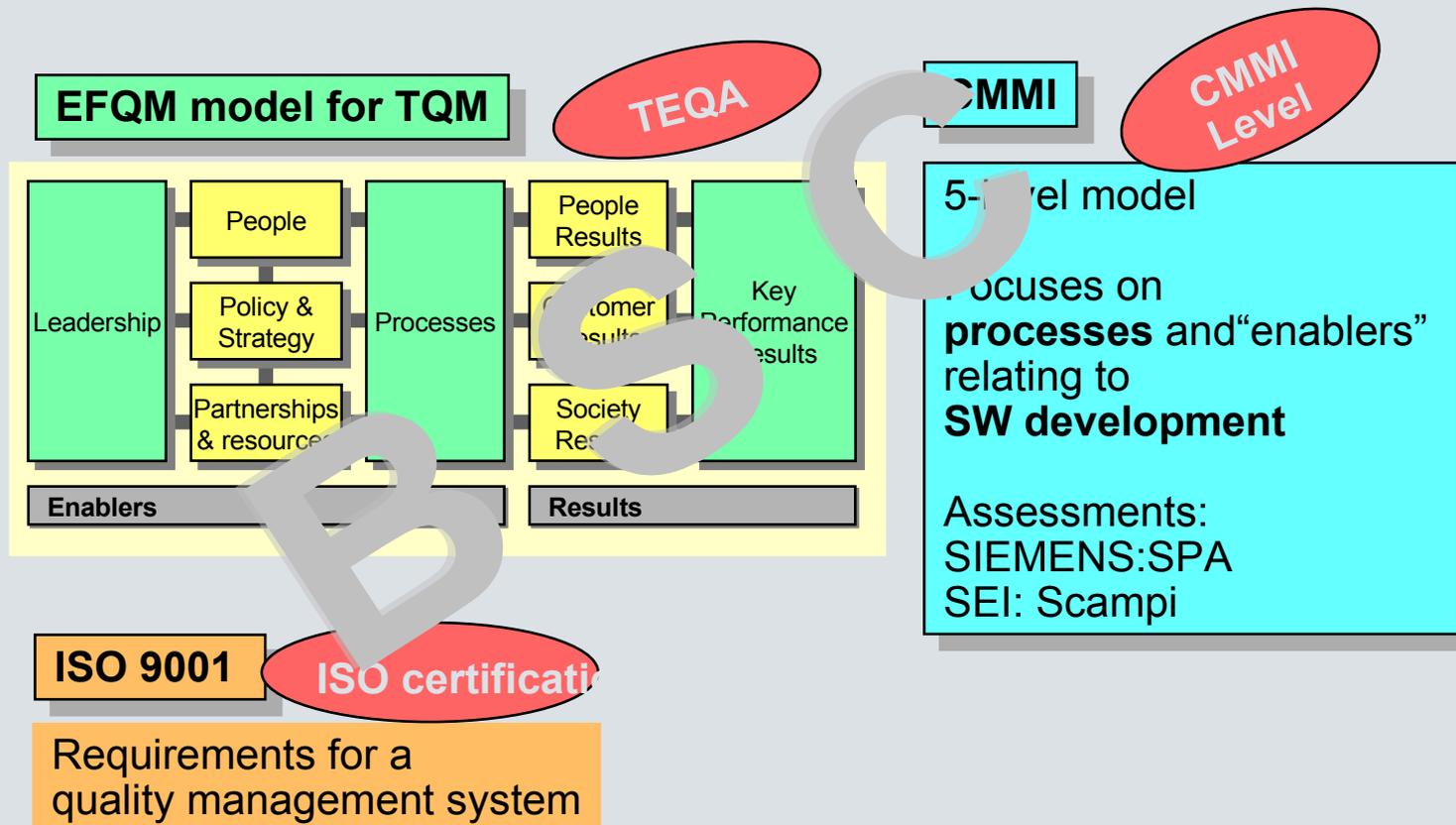
Which the organization carries out regarding the planned business targets and the fulfillment of the needs and expectations of all financial stakeholders within the organization.



The described elements contain additional detail questions.

Quality Awards/23

Quality management models



Quality Awards/23

National Awards in Europe

Nation	On basis of	Since	categories
Belgium	EQA	1990	SME, large companies
Denmark	EQA	1993	National. winner
Germany	EQA	Ca 1999	SME, large companies
Finland	MBNQA	1991	SME, Service, producing
France	MBNQA, EQA	1992	National prices < 500 Em
Island	Deming, MBNQA, EQA	1993	National. winner (3 public., 3 private)
Ireland	Deming, MBNQA, EQA	1982	8 producing, 2 Service
Nederland	EQA	1992	A main distinction
Norway	MBNQA, EQA	1974	National distinction
Austria	EQA	1996	AQA and public distinction by BmfWA
Slovakia	EQA	1994	< 50, <500, >500
Spain	ISO9000, EQA	1992	<250, >250
Sweden	MBNQA	1992	National distinction
United Kingdom	EQA	1994	commercial Organizations

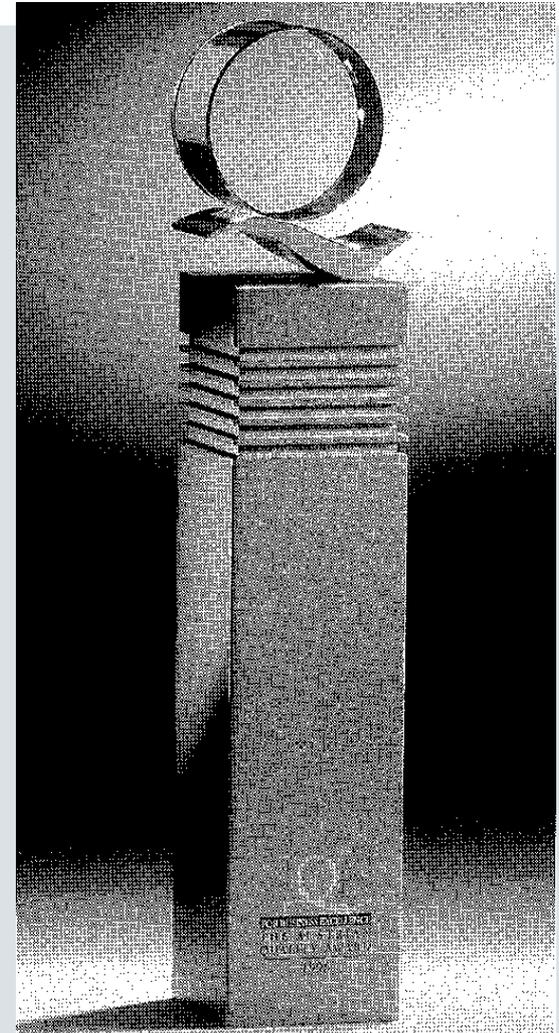
Foundation 1995

Foundation members:

- Alcatel Austri AG
- CA Bankverein
- Ericsson Schrack AG
- Neusiedler AG
- Österr. Philips Industrie GmbH
- Österr.Vereinigung für Qualitätssicherung
- TU-Wien, Institut für Betriebswissenschaften,
Arbeitswissenschaften und Betriebswirtschaftslehre.

Goals:

- Spreading of the european Model for business excellence
- Promotion of the exchange of ideas over management models
- National information turntable
- Organization of meetings
- Adapting the EQA on austrian needs
- Completion of the austrian Quality price



Quality Awards/26

Austrian Foundation for Quality Management/3



Leadership	Leadership
Expectations of customers	Politics und Strategies
Quality politics	Social responsibility/ Image
Targets and planning of quality	Business results
Q-Management system	
Management Review	
Resource Management	Coworker orientation
Personal resources	Resources
Information, Infrastructure, employees, finance	Coworker satisfaction
Process Management	Processes
Customer relations	
Design and development	
Procurement	
Production and service processes	
Management of nonconformity	
Customer service	
Measurement, Analysis, Improvement	Customer satisfaction
Measurement	Coworker satisfaction
Analysis of data	Social responsibility / Image
	Business results

Quality Awards/26

Shaping of the core elements of a management system according ISO/CD1 9001/9004:2000					
Phase	Test	Opposite different development steps			Attitudes at customer satisfaction
		Improving	Prevention	Customer satisfaction	
Core elements					
Leadership					
Expectations of customers				X	Systematic
Quality politics		X	X	X	Strong statements
Targets and planning of quality		X	X	X	Policy deployment together with employees
Q-Management system			X	X	Dynamic
Management Review			X	X	Real management
Resource Management					
Personal resources			X	X	mobilizing
Information, Infrastructure, employees, finance				X	Active planned
Process Management					
Customer relations				X	enthusiasm
Design and development		X	X	X	creative
Procurement			X	X	partnership
Production and service processes			X	X	General Knowledge of system
Management of nonconformity	X	X	X	X	By all employees
Customer service			X	X	Additive benefit
Measurement, Analysis, Improvement					
Measurement					Self management
Analysis of data	X	X	X	X	All data
		X	X	X	

**Thank you
for your attention!**



Primäre Flächenfarbe:

R 255
G 255
B 255

Sekundäre Flächenfarben:

R 215 G 225 B 225	R 170 G 190 B 195	R 130 G 160 B 165
R 220 G 225 B 230	R 185 G 195 B 205	R 145 G 155 B 165

Akzentfarben:

R 255 G 210 B 078	R 245 G 128 B 039	R 229 G 025 B 055	R 000 G 133 B 062	R 000 G 084 B 159	R 000 G 000 B 000
R 255 G 221 B 122	R 248 G 160 B 093	R 236 G 083 B 105	R 064 G 164 B 110	R 064 G 127 B 183	R 064 G 064 B 064
R 255 G 232 B 166	R 250 G 191 B 147	R 242 G 140 B 155	R 127 G 194 B 158	R 127 G 169 B 207	R 127 G 127 B 127
R 255 G 244 B 211	R 252 G 223 B 201	R 248 G 197 B 205	R 191 G 224 B 207	R 191 G 212 B 231	R 191 G 191 B 191
R 255 G 250 B 237	R 254 G 242 B 233	R 252 G 232 B 235	R 229 G 243 B 235	R 229 G 238 B 245	R 229 G 229 B 229