

QUALITY GURUS (part 2)



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- A commitment to a systemic 'total' approach and an emphasis on designing for quality rather than failure be inspected out and involving all departments.
- Suggests that many quality problems can be eradicated from both the products and the manufacturing process by paying attention to the quality issue from the conception of the idea, right through to delivery of the first and subsequent items.

Armand Feigenbaum



- Defines quality as 'best for the customer use and selling price.'
- A recognition of and reliance on the human aspects of the organization with statistical methods being used as necessary.

Assumptions:

- explicit assumption of a world composed of systems
- human relationships are a basic issue in quality achievement
- continuous improvement is both desirable and achievable - but has potential for conflict and contradiction - if customer expectations on performance and price are met then quality by definition has been achieved - end of process

Total Quality System

- The agreed company-wide and plant-wide operating work structure, documented in effective, integrated technical and managerial procedures, for guiding the co-ordinated actions of the people, the machines and the information of the company and plant in the best and most practical ways to assure customer quality satisfaction and economical costs of quality.



QUALITY STANDARDS

□ Four Steps to quality:

Step 1: Set quality standards.

Step 2: Appraise conformance to standards.

Step 3: Act when standards are not met.

Step 4: Plan to make improvements.

□ Principal strengths:

- ⚙ a total or whole approach to quality control
- ⚙ emphasis on the importance of management
- ⚙ socio-technical systems thinking is taken into account
- ⚙ participation is promoted
- ⚙ reliance on statistics 'where appropriate' is a useful guide encouraging managers to use discretion in their choice of measurements

□ **Principal weaknesses:**

- ✘ the work is systemic but not complementary
- ✘ the breadth of management theory is recognised but not unified
- ✘ the political or coercive context is not addressed
- ✘ approach provides little value for service based organisations
- ✘ as with Deming “what” but not “how”

- Systemic or holistic approach advocated by '*Company-Wide Quality*' - everyone involved in or affected by the company and its operations should be involved in the quality programme



- Participation, active and creative co-operation between those affected - an atmosphere where employees are continuously looking to resolve problems; greater commercial awareness; a change of shop floor attitude in aiming for ever increasing goals - all qualitative - cultural requirements



- Emphasis on communication through simplicity of analysis and method and commonality of language... *“language of the shop floor”...*



Assumptions:

- ❑ interrelatedness, a total or systems view.
- ❑ a fully participative approach can be adopted (without reward).
- ❑ the quality activity takes place in an organisational environment which is free from politics and power relations between participants.
- ❑ effective communication.
- ❑ simplicity in techniques and method is useful (arrogant?).

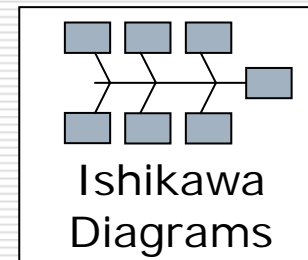
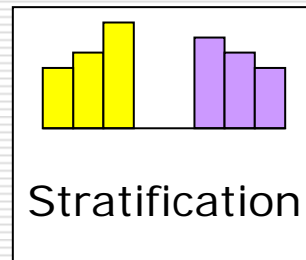
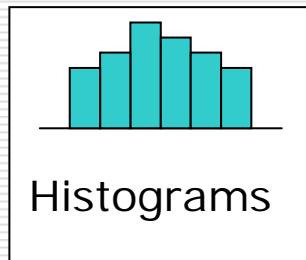
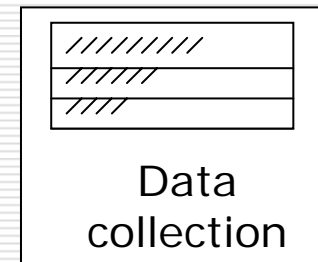
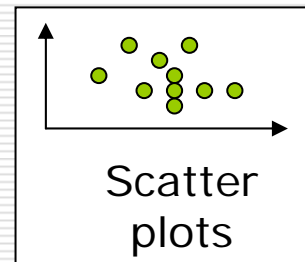
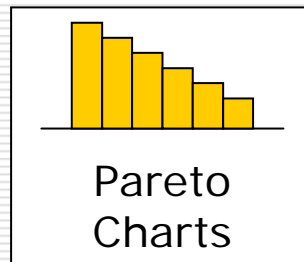
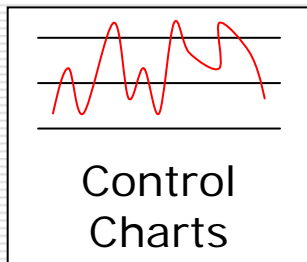
Fifteen effects of company-wide quality control:

1. Product quality is improved and becomes uniform
2. Reliability of goods is improved
3. Cost is reduced
4. Quantity of production is increased and it becomes possible to make rational production schedules
5. Wasteful work and rework are reduced
6. Technique is established and improved
7. Expenses for inspection and testing are reduced

Fifteen effects of company-wide quality control:

8. Contracts between vendor and vendee are rationalised
9. The sales market is enlarged
10. Better relationships are established between departments
11. False data and reports are reduced
12. Discussions are carried out more freely and democratically
13. Meetings are operated more smoothly
14. Repairs and installations of equipment and facilities are done more rationally
15. Human relations are improved

- **Seven tools of quality control:** taken together they are a set of pictures of quality, representing in diagrammatic, or chart form, the quality status of the operation or process being reviewed.



Strengths:

- ☒ emphasis on participation
- ☒ variety of quantitative and qualitative methods
- ☒ a whole system view
- ☒ QCC's are relevant to all sectors of the economy

Weaknesses:

- ❌ fishbone diagrams are systematic but most systemic problems are often interacting and far more complex than the fishbone approach will reveal
- ❌ Quality Control Concepts depend upon management support - failure to listen to ideas
- ❌ there is a failure to address coercive contexts blame culture of the west rather than opportunity to learn

Joseph Juran



- 'Quality does not happen by accident, it has to be planned.'
- 'Management controllable defects account for over 80% of the total quality problems' - quality cannot be consistently improved unless the improvement is planned.

Joseph Juran



- The emphasis of his work is on 'planning, organisational issues, managements responsibility for quality and the need to set goals and targets for improvement.'
- Avoidance of slogans and exhortations 'the recipe for action should consists of 90% substance and 10% exhortation, not the reverse.'

Joseph Juran



- 'Quality has become too tricky, full of platitudes and supposed good intentions, but short on real substance' - clear reliance on quantitative methods.
- Quality is 'fitness for use or purpose.'

Joseph Juran



- Management is largely responsible for quality.
- Quality can only be improved through planning.

The Quality Trilogy:

Quality planning: determine quality goals; implementation planning; resource planning; express goals in quality terms: create the quality plan.

Quality control: monitor performance; compare objectives with achievements; act to reduce the gap.

Quality improvement: reduce waste; enhance logistics; improve employee morale; improve profitability; satisfy customers.

Assumptions:

Is there a quality crisis?

- Have the quality gurus created the crisis by driving up consumer expectations.
- Awareness of costs of poor quality focused attention on improving quality.
- Consumers have driven the quality movement through increasing expectations.

Assumptions:

Juran's work focuses very clearly on measurement and specific objectives:

- tendency to measure those aspects which are easily accessible rather than those which are most important;
- how to measure individual customer expectations, expectations which may vary each time the service is purchased.

The Quality Planning Road Map:

1. Identify who are the customers (internal as well as external - identify all possible customers in the chain)
2. Determine the needs of those customers
3. Translate those needs into our language
4. Develop a product that can respond to those needs - building quality in rather than inspecting defects out



The Quality planning road map (continued):

5. Optimise the product features so as to meet our i.e. company needs as well as customers needs - ease of manufacture is becoming accepted as a design constraint
6. Develop a process which is able to produce the product
7. Optimise the process
8. Prove that the process can produce the product under operating conditions
9. Transfer the process to operations



Strengths:

- ☒ Concentration on genuine issues of management practice
- ☒ A new understanding of the customer, referring to both internal and external customers
- ☒ Management involvement and commitment

Weaknesses:

- ❌ The literature on motivation and leadership is not addressed
- ❌ Workers' contributions are rated too low
- ❌ Methods are traditional, failing to address culture and politics
- ❌ Most suitable for industrial and manufacturing sectors, limited application in service organisations

Shigeo Shingo

- ❑ Started with the 'scientific management' ideas of Frederick Taylor in the early 19th Century.
- ❑ In the 1970's he came to believe in defect prevention. Shingo believed that 'statistical methods detect errors too late in the manufacturing process'.
- ❑ He became focused on prevention.



- He believed in zero defects but through good engineering, process investigation, and rectification.



Assumptions:

- ❑ Scientific management to statistical quality control to error prevention through good engineering.
- ❑ Error free may be possible in an engineering context, in the service sector there are many variables which can not be controlled to the extent that Shingo's approach requires.



- ❑ Principal contribution to quality is the mistake proofing concept, Poke-Yoke, 'Defect=0'. This approach stops the production process whenever a defect occurs, defines the cause and generates action designed to prevent a recurrence.
- ❑ Poke-Yoke relies on a process of continuously monitoring potential sources of error.
- ❑ People are used to trace and resolve the error causes.
- ❑ Installation of the system is expected to lead over time to a position where all likely recurring errors have been eradicated. Concept adopted to some extent in food processing.



Strengths:

- ☑ on-line real-time control
- ☑ Poke-Yoke emphasis effective control systems

Weaknesses:

- ☒ source inspection only works effectively in manufacturing processes - not so for the service sector
- ☒ Shingo says little about people other than that they are fallible

The two founding ideas of his quality work are essentially quantitative:

- First is a belief in statistical methods to identify and eradicate quality problems.
- The second rests on designing products and processes to build quality in, right from the outset.

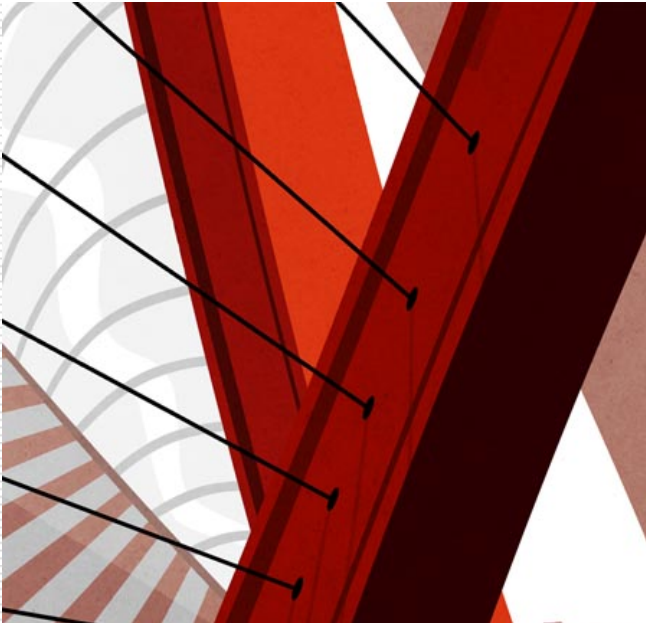


Genichi Taguchi

- Could be seen as the cost of non-quality... 'the loss imparted to society from the time the product is shipped'.
- His prime concern is with customer satisfaction and with the potential for 'loss of reputation and goodwill' associated with failure to meet customer expectations.



□ Three stage prototyping method:

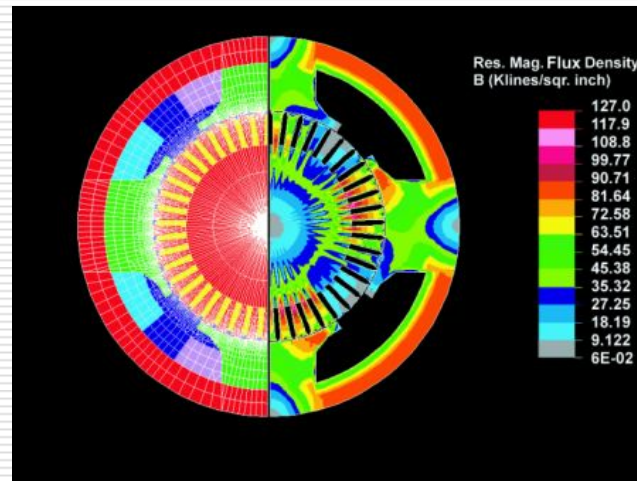


System Design:

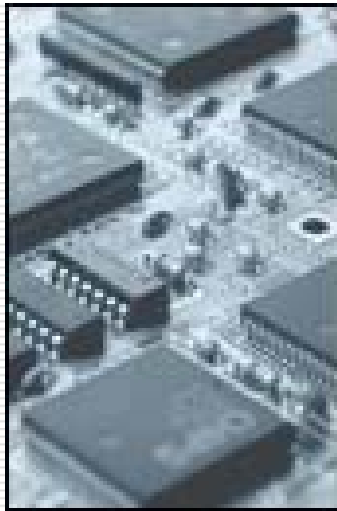
involving both product and process attempt to develop a basic analytical, materials, process and production framework - functional design - product design and process design.

□ Three stage prototyping method:

Parameter Design: search for the optimal mix of product variation levels and process operating levels aiming to reduce the sensitivity of the production system to external or internal disturbances - monetary loss arising from variation.



□ Three stage prototyping method:



Tolerance Design: enables the recognition of factors that may significantly affect the variability of the product. Additional investment, alternative equipment and materials are then considered as ways to further reduce variability.

- So there is a clear belief in identifying and as far as possible eradicating potential causes of 'non-quality' at the outset. This relies on a number of organizational principles:

- 1. Communication**

- 2. Control**

- 3. Efficiency**

- 4. Effectiveness**

- 5. Efficacy**

- 6. Emphasis on location and elimination of causes of error**

- 7. Emphasis on design control**

- 8. Emphasis on environmental analysis**

□ Assumptions:

- ❖ Quality can always be controlled through improvement in design - validity in service sector must be questioned.
- ❖ Little or nothing is said about people or the management process which implies that they are not considered a significant factor in the production of quality goods.

Genichi Taguchi

- The principal tools and techniques espoused by Taguchi centre around the concept of kaizen thinking... continuous improvement.



Eight stages of product development... design of experiments:

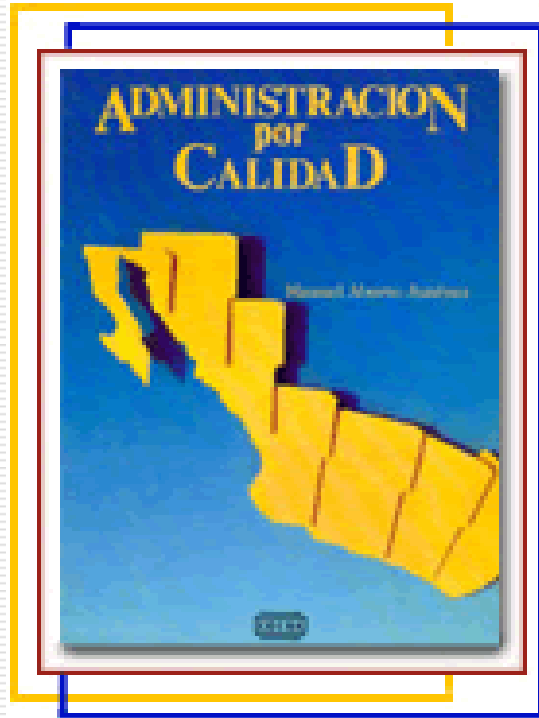
- 1. Define the problem.***
- 2. Determine the objective.***
- 3. Conduct a brainstorming session.***
- 4. Design the experiment.***
- 5. Conduct the experiment.***
- 6. Analyse the data.***
- 7. Interpret the results.***
- 8. Run a confirmatory experiment may have to revisit stages 3-8.***

Strengths:

- ✔ Quality is a design requirement
- ✔ The approach recognises the systemic impact of quality
- ✔ It is a practical method for engineers (rather than statisticians)
- ✔ It guides effective process control

Weaknesses:

- ✘ Usefulness is biased towards manufacturing
- ✘ Guidance is not given on management or organisational issues
- ✘ It places quality in the hands of the experts
- ✘ It says nothing about people as social animals



- This is one of the first books written in Mexico about quality topics. Manuel Aburto starts on a diagnosis of the Mexican Business Culture and he argues the need about adopting a quality philosophy as the unique focus-solution for Mexican Enterprises.
- He presents a résumé about Juran, Deming, Ishikawa, and Crosby development, this applicable to the Mexican domestic context.
- His proposal is an original scheme as a result of his quality processes implementation experience in Mexican companies.
- He discusses about principal quality management tools as well as the problem to involve organizations in such process.

QUESTIONSA

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