

QUALITY GURUS (part 1)



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Lecture Outline

I. Introduction to Quality Experts

II. Quality Philosophies

□ Americans

- PHILIP CROSBY
- EDWARD DEMING
- ARMOND FEIGENBAUN
- JOSEPH JURAN

□ Japanese

- KAORU ISHIKAWA
- SHIGEO SHINGO
- TAGUCHI GENICHI

□ Mexicans

- MANUEL ABURTO JIMÉNEZ



Introduction to Quality Experts

- There are a number of writers whose work dominates the quality movement. Their ideas and approaches have stood the test of time and have come to form a body of accepted knowledge, to lead and advise their own movement in quality.
- They have become known as 'gurus'.



Introduction to Quality Experts

- Many of the 'gurus' appear to present different theories of quality management. In reality they are all talking the same 'language' but they use different dialects.
- Quality has to be managed - it does not just happen.



Introduction to Quality Experts

- 👉 **Crosby Philip**: American, engineer, quality control in manufacturing.
- 👉 **Deming W. Edwards**: American, considered a founding father, PhD in Physics, keen statistician trained by Shewhart, major contributor to Japan.
- 👉 **Feigenbaum Armand**: originated Total Quality Concepts, works discovered by Japan early 1950's, PhD at MIT.
- 👉 **Ishikawa Kaoru**: Japanese chemist, PhD in Engineering, father of QCs, started in 1949.

Introduction to Quality Experts

- 👉 **Juran Joseph**: naturalised American, engineering (1924) and statistical background, worked with Japan 1950's, honored by Japan.
- 👉 **Shingo Shigeo**: Mechanical Engineer, Japanese, started in 1945.
- 👉 **Taguchi Genichi**: Textile Engineer, Japanese, studied experimental design techniques, his 1980's work adopted in USA.



- Quality is defined as conformance to requirements, not as 'goodness' nor 'elegance' - *i.e. quality is an essentially measurable aspect of a product or service and that quality is achieved when expectations or requirements are met*



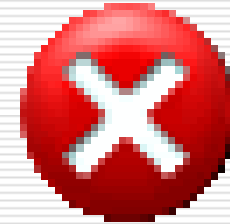
- There is no such thing as a quality problem - *i.e. poor management creates the quality problem*
- It is always cheaper to do it right first time - *i.e. quality needs to be designed into a product, not that flaws should be inspected out.*



- The only performance measurement is the cost of quality - *i.e price of non conformance, cost of quality is always a measurable item, quantitative approach*
- The only performance standard is zero defects - *i.e. perfection is the target, quantitative approach to quality*



- Three Essential stands:
 - a belief in quantification
 - management leadership
 - prevention rather than cure



□ Assumptions:

- management process as the key driver of quality conformance to requirements are defined and communicated amongst all stakeholders
- zero defects is an achievable objective
- it is possible to establish a company that does not start out expecting mistakes - is this realistic? Customer's Product volume or quality requirements?

❑ **Step 1: Establish management commitment**

It is seen as vital that the whole management team participates in the programme, a half hearted effort will fail.



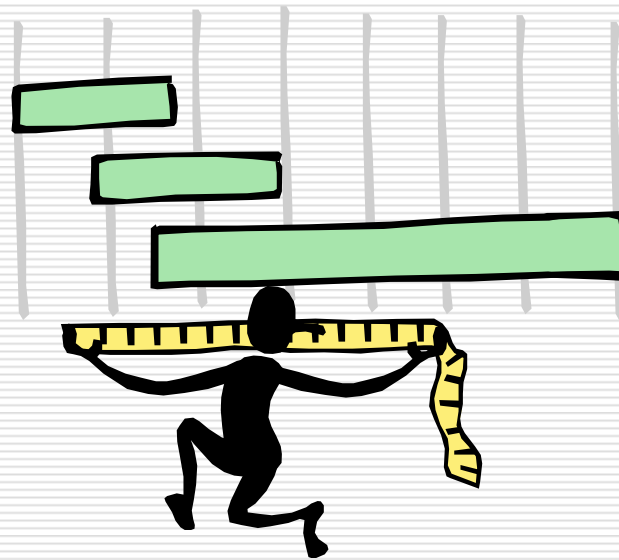
□ **Step 2: Form quality improvement teams**

The emphasis here is on multi-disciplinary team effort. An initiative from the quality department will not be successful. It is considered essential to build team working across arbitrary and often artificial organisational boundaries.



□ Step 3: Establish quality measurements

These must apply to every activity throughout the company. A way must be found to capture every aspects, design, manufacturing, delivery and so on. These measurements provide a platform for the next step.



□ Step 4: Evaluate the cost of quality

This evaluation must highlight, using the measures established in the previous step, where quality improvement will be profitable.



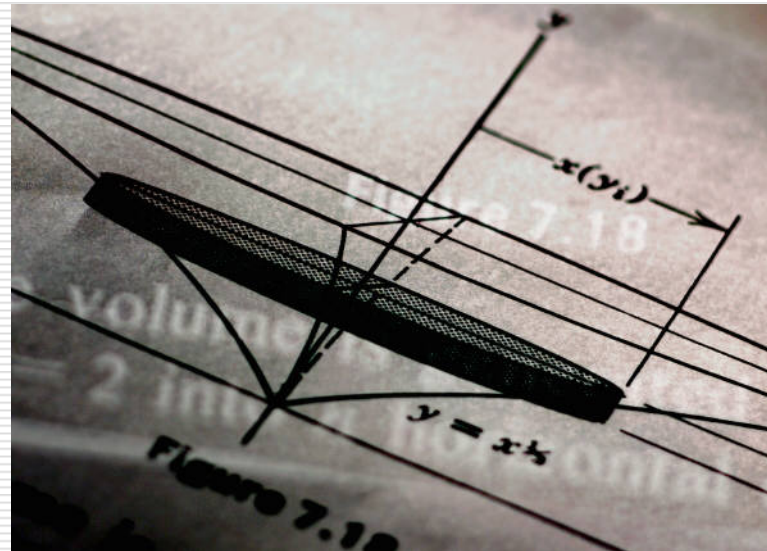
□ Step 5: Raise quality awareness

This is normally undertaken through the training of managers and supervisors, through communications such as videos and books and by displays of posters, etc.



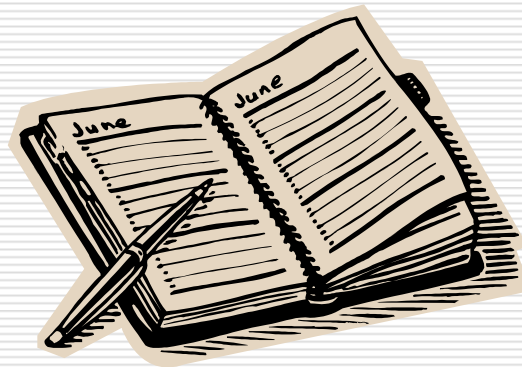
□ Step 6: Take action to correct problems

This involves encouraging staff to identify and rectify defects or pass them on to higher supervisory levels where they can be addressed.



□ Step 7: Zero defects planning

Establish a committee or working group to develop ways to initiate and implement a zero defects programme.



□ Step 8: Train supervisors and managers

This step is focussed on achieving understanding by all managers and supervisors of the steps in the quality improvement programme in order that they can explain it in turn.



- ❑ **Step 9: Hold a zero defects day to establish the attitude and expectation within the company**

Crosby sees this as being achieved in a celebratory atmosphere accompanied by badges buttons and balloons.



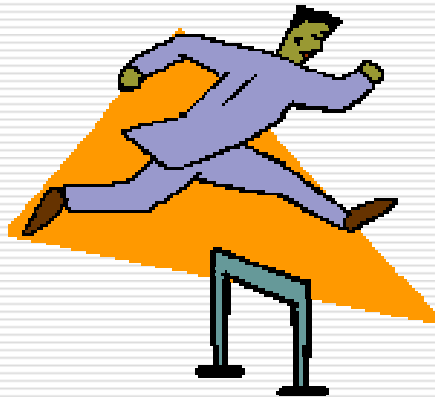
□ **Step 10: Encourage the setting of goals for improvement**

Goals are of course of no value unless they are related to appropriate timescales for their achievement.



□ **Step 11: Obstacle reporting**

This is encouragement to employees to advise management of the factors which prevent them achieving error free work. This might cover defective or inadequate equipment poor quality components etc.



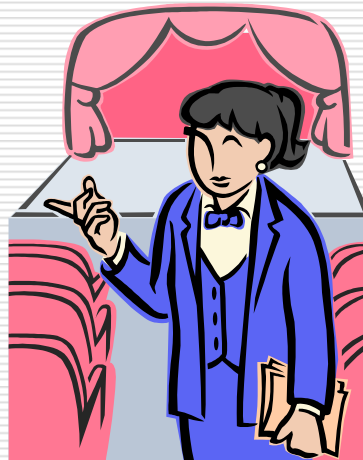
□ **Step 12: Recognition for contributors**

Crosby considers that those who contribute to the programme should be rewarded through a formal although non-monetary reward scheme.



❑ **Step 13: Establish Quality councils**

These are essentially forums composed of quality professionals and team leaders allowing them to communicate and determine action plans for further quality improvement.



□ Step 14: Do it all over again

Achievement of quality is an ongoing process.



□ Perceived Weaknesses:

- danger of misdirected effort from blaming workers (in question)
- emphasis on marketing more than recognition of barriers
- the management and goal orientation of the 14 step programme as failing to free workers from externally generated goals
- potential for zero defects to be interpreted as zero risk
- ineffectiveness in coercive power structures
- charismatic/evangelical style - lack of substantial underpinning?

□ Possible Strengths:

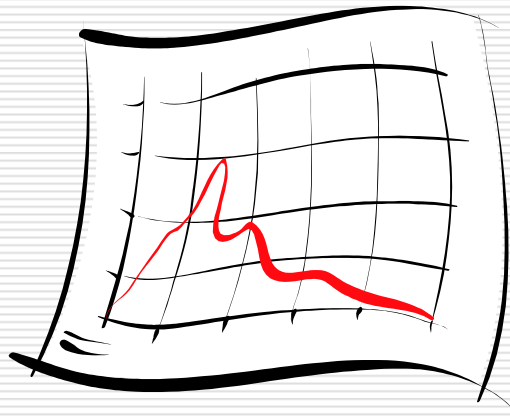
- clarity
- recognition of worker participation
- rejection of a tangible quality problem, acceptance of the idea of solutions
- Crosby's metaphors - vaccine (integrity; dedication to communication and customer satisfaction; company wide policies and operation which support the quality thrust) and maturity
- Crosby's motivational style

Edward Deming



- Approach can be seen as founded in scientific method - urged management to focus on the causes of variability in manufacturing processes.

- **First belief** in causes. Common causes are those which arise from the operation of the system itself and are a management responsibility. Use of Statistical Process Control charts as key method for identifying special and common causes and assisting diagnosis of quality problems.



- ❑ **Second belief** is the quantitative approach to identifying problems.
- ❑ **Third belief** was Deming, Shewhart cycle: Plan, Do, Check, Action.

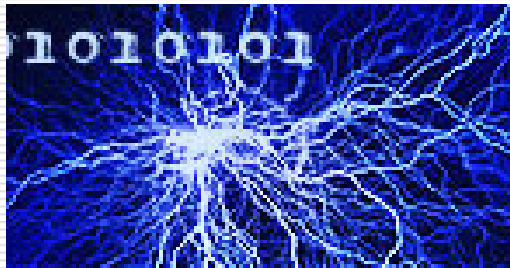


- **Two further beliefs:** systematic and methodical approaches; needed for continuous quality improvement action.
- *<http://www.deming.org>*



□ Seven Deadly Sins of Western Management

1. Lack of constancy: 'flavour of the month'
2. Short term profit focus: manipulate the books for a quarter
3. Performance appraisals: nourish short-term performance
4. Job-hopping: destroys teamwork, short term orientation of organisation
5. Use of visible figures only: a lot of hidden benefits, spin-offs
6. Excessive medical costs
7. Excessive costs of liability



Summarising:

- quantitative, statistically valid, control systems
- clear definition of those aspects under the direct control of staff
- a systematic, methodological approach
- continuous improvement
- constancy and determination
- quality should be designed in to both the product and the process



□ Assumptions:

- ❖ Management are seen to be responsible and capable of eliminating the common causes
- ❖ Statistical methods properly used will provide quantitative evidence to support changes
- ❖ Continuous improvement is both possible and desirable
- ❖ Prime role of the service sector rests in enabling manufacturing to do its job



Edward Deming – 14 Points of Management

1. **Create constancy of purpose** toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.
2. **Adopt a new philosophy.** We are in a new economic age. Western management must awaken to their challenge, must learn their responsibilities, and take on leadership for change.



Edward Deming – 14 Points of Management



- 3. *Cease dependence on inspection to achieve quality.*** Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
- 4. *End the practice of awarding business on the basis of price tag.*** Instead, minimise total cost. Move towards a single supplier for any one item, on a long-term relationship of loyalty and trust.

Edward Deming – 14 Points of Management



5. *Improve constantly and forever the system of production and service*, to improve quality and productivity, and thus constantly decrease costs.
6. *Institute training* on the job.

7. *Institute leadership* (see point 12). The aim of leadership should be to help people and machines and gadgets to do a better job. Leadership of management is in need of overhaul, as well as leadership of production workers.

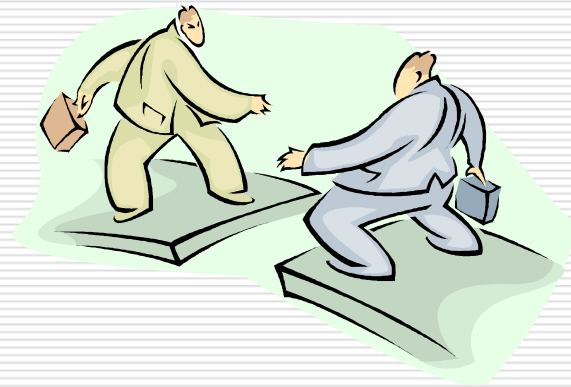


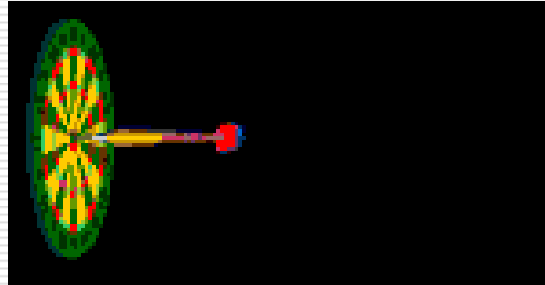
Edward Deming – 14 Points of Management

8. *Drive out fear*, so that everyone may work effectively for the company.

9. *Break down barriers between departments.*

People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.





10. *Eliminate slogans, exhortations, and targets*

for the work force asking for zero defects and new levels of productivity.

11. a) *Eliminate work standards* (quotas) on the factory floor. Substitute leadership.

b) *Eliminate management by objectives.*

Eliminate management by numbers, numerical goals. Substitute leadership.

12. a) Remove barriers that rob the hourly workers of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.

b) Remove barriers that rob people in management and in engineering of their right to pride of workmanship.

This means abolishment of the annual or merit rating and of management by objective, management by the numbers.



Edward Deming – 14 Points of Management

13. *Institute a vigorous programme of education and self improvement.*

14. *Put everybody in the company to work to accomplish the transformation.*

The transformation is everybody's job.



Principal strengths :

- ❖ the systematic logic, particularly the idea of internal customer-supplier relationship
- ❖ management before technology
- ❖ emphasis on management leadership
- ❖ the sound statistical approach
- ❖ awareness of different socio-cultural contexts

Edward Deming – 14 Points of Management

Weaknesses:

- ❖ lack of a well defined methodology - suggests what to do without indicating very precisely how to do it
- ❖ the work is not adequately grounded in human relations theory
- ❖ as with Crosby the approach will not help in an organisation with a biased power structure

QUESTIONSA

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