

Quality management

Quality management history, gurus, TQM theories, process improvement, and organizational 'excellence'

The history of quality management, from mere 'inspection' to Total Quality Management, and its modern 'branded interpretations such as [Six Sigma](#)', has led to the development of essential processes, ideas, theories and tools that are central to organizational development, change management, and the performance improvements that are generally desired for individuals, teams and organizations.

These free resources, materials and tools are an excellent guide to the quality management area, for practical application in organizations, for study and learning, and for teaching and training others.

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Please note that since the replacement of the UK Department of Industry by the Department for Business, Enterprise and Regulatory Reform, the branding on the materials is now obsolete. Nevertheless, since the Quality Management technical and historical content is unaffected by the DTI branding the materials remain relevant for training, learning and reference.

It is appropriate to note the passing a little while back now, of Joseph Juran, a seminal figure in the history of quality management, who died 28 February 2008, age 103. Juran did more than teach the Japanese about quality management. He was also arguably the first quality expert to emphasise that no quality management system works unless people are empowered and committed to take responsibility for quality - as an ongoing process - effectively for quality to become part of part of people's behaviour and attitudes - an ethos. The section below on [Kaizen](#) explains the connections between the true ethos of quality management, and the positive ethical management of people.

Further total quality management information and quality management terminology explanations are on the [Six Sigma](#) page.

history of quality management

The roots of Total Quality Management can be traced to early 1920's production quality control ideas, and notably the concepts developed in Japan beginning in the late 1940's and 1950's, pioneered there by Americans Feigenbum, Juran and Deming... More about [Quality Management and TQM history](#).

quality management gurus and theories

Quality Management resulted mainly from the work of the quality gurus and their theories: the American gurus featured in the 1950's Japan: Joseph Juran, W Edwards Deming, and Armand Feigenbum; the Japanese quality gurus who developed and extended the early American quality ideas and models: Kaoru Ishikawa, Genichi Taguchi, and Shigeo Shingo; and the 1970-80's American Western gurus, notably Philip Crosby and Tom Peters, who further extended the Quality Management concepts after the Japanese successes... More about the [Quality Management gurus and their theories](#), including the development and/or use of the Plan, Do, Check, Act (PDCA) cycle, Pareto analysis, cause and effect diagrams, stratification, check-sheets, histograms, scatter-charts, process control charts, system design, parameter design, tolerance design ('Taguchi methodology'), Quality Improvement Teams (QIT), Just In Time (JIT), Management By Walking About (MBWA), McKinsey 7-S Framework, etc.

total quality management (TQM)

Total Quality Management features centrally the customer-supplier interfaces, (external and internal customers and suppliers). A number of processes sit at each interface. Central also is an organizational commitment to quality, and the importance of communicating this quality commitment, together with the acknowledgement that the right organizational culture is essential for effective Total Quality Management.... More about the [fundamentals and structures of the TQM model](#), including the people, processes and systems in the organization.

processes - understanding processes and methods for process improvement

Understanding processes is essential before attempt is made to improve them. This is a central aspect to Total Quality Management, and also to more modern quality and process improvement interpretations and models such as [Six Sigma](#).... More about [Total Quality Management process and process improvement methods](#).

quality process improvement tools and techniques

A wide range of tools and techniques is used for identifying, measuring, prioritising and improving processes which are critical to quality. Again these ideas and methods feature prominently in modern interpretations of Total Quality Management methodology, such as Six Sigma. These process improvement tools and techniques include: DRIVE (Define, Review, Identify, Verify, Execute), process mapping, flow-charting, force field analysis, cause and effect, brainstorming, Pareto analysis, Statistical Process Control (SPC), Control charts, bar charts, 'dot plot' and tally charts, check-sheets, scatter diagrams, matrix analysis, histograms..... More about [tools and techniques for process evaluation and improvement](#).

A [summary of quality tools](#) is below.

The [Kaizen methodology](#) is also described below in some detail.

developing people and teams

People are a fundamental component within any successfully developing organization. Take away the people and the organization is nothing. Take away the people's motivation, commitment and ability to work together in well-organised teams, and again, the organization is nothing. Conversely, inspire the people to work well, creatively, productively, and the organization can fly. Logically therefore, the development and proper utilization of people are vital to the success of all quality management initiatives. There are a wide range of models that are used in [selecting](#), [assessing](#), [training and developing](#) and [motivating people](#), among which are classical models such as Belbin, Myers Briggs Type Indicator (see the [personality models](#) section), [Bruce Tuckman's 'Forming, Storming, Norming, Performing' model](#), [John Adair's Action Centred Leadership model](#).... More about [people and culture within quality management](#).

quality management systems

A 'Total Quality organization' generally benefits from having an effective Quality Management System (QMS). A Quality Management System is typically defined as: "A set of co-ordinated activities to direct and control an organization in order to continually improve the effectiveness and efficiency of its performance." Customer expectations inevitably drive and define 'performance' criteria and standards. Therefore Quality Management Systems focus on customer expectations and ongoing review and improvement.... More about [Quality Management Systems](#), what they are, and how to set up a good QMS.

performance measurement and management

There are many ways to measure organizational performance other than financial output or profit. Modern measurement focuses on the essential activities, resources and other factors - many less intangible than traditional indicators - that impact on final outputs. These include modern methods such as [Balanced Scorecard](#)... More about [performance measurement](#), and cost of quality.

excellence and the European Quality Management Model

The European Foundation for Quality Management (EFQM) Excellence Model® is a useful framework for developing quality and excellence within an organization... [More](#).

TQM self-assessment and awards using the EFQM® model

Any organization can assess itself provided it has the commitment to so so, and a framework for the self-assessment... Here are some ideas, and a [process for quality and excellence self-assessment](#).

TQM benchmarking and questionnaire (readiness for benchmarking)

Benchmarking is a widely used term within the field of organizational measurement and management Here is an [explanation of benchmarking, and a questionnaire](#) by which an organization (or a department or process team) can assess its readiness for benchmarking.

TQM implementation framework and blueprint

Here is a [framework and 'blueprint' for the implementation of a quality improvement or 'excellence' initiative](#). It includes the following elements:

- TQM Processes
- Tools and techniques
- People and teamwork
- Quality management system
- Performance measurement
- EFQM Excellence Model®
- Self-assessment

This blueprint for achieving organizational excellence is based on many years of research, education and advisory work in the European Centre for Business Excellence (ECforBE), and the research and education division of Oakland Consulting plc. It is, along with the other resources in this section, information and advice initially from the UK Department of Industry, now replaced by the Department for Business, Enterprise and Regulatory Reform.

TQM case studies

Here are a number of case studies featuring organizations that have implemented quality management and process improvement initiatives. These case studies illustrate the effectiveness and feasibility of the various methodologies, tools, techniques and concepts included within quality management and quality process improvement theory.

- [Airedale Springs Limited case study](#) (people, team work, skills recognition)
- [Appor Limited case study](#) (continuous improvement, culture change)
- [BAE Systems/Waer Systems Limited case study](#) (supply chain process improvement, project champions, supplier partnerships)
- [British Telecom Plc case study](#) (quality framework, strategy, systems, self-assessment, balanced scorecard)
- [GSM Group case study](#) (mission statement, strategic planning, Kaizen, partnerships)
- [Hydrapower Dynamics Ltd case study](#) (teamwork, quality bubbles, systems, common sense quality)
- [Lakeside Engineered Systems Division, Aeroquip Group case study](#) (quality, excellence, Kaizen, process improvement)
- [Mortgage Express case study](#) (business excellence, stakeholders, teamwork, quality awards, measurement)
- [Spembly Medical Limited case study](#) (design for manufacture, projects, concurrent engineering, innovation, millennium products)
- [Springfarm Architectural Mouldings Limited case study](#) (values, surveys, recognition, communication system)
- [Vista Optics Limited case study](#) (business excellence, self-assessment, benchmarking, quality awards, statistical process control [SPC])

kaizen

Kaizen is a very significant concept within quality management and deserves specific explanation:

Kaizen (usually pronounced 'kyzan' or 'kyzen' in the western world) is a Japanese word, commonly translated to mean 'continuous improvement'.

Kaizen is a core principle of quality management generally, and specifically within the methods of Total Quality Management and 'Lean Manufacturing'.

Originally developed and applied by Japanese industry and manufacturing in the 1950s and 60s, Kaizen continues to be a successful philosophical and practical aspect of some of the best known Japanese corporations, and has for many years since been interpreted and adopted by 'western' organizations all over the world.

Kaizen is a way of thinking, working and behaving, embedded in the philosophy and values of the organization. Kaizen should be 'lived' rather than imposed or tolerated, at all levels.

The aims of a Kaizen organization are typically defined as:

- To be profitable, stable, sustainable and innovative.
- To eliminate waste of time, money, materials, resources and effort and increase productivity.
- To make incremental improvements to systems, processes and activities before problems arise rather than correcting them after the event.
- To create a harmonious and dynamic organization where every employee participates and is valued.

Key concepts of Kaizen:

- **Every** is a key word in Kaizen: improving everything that everyone does in every aspect of the organization in every department, every minute of every day.
- Evolution rather than revolution: continually making small, 1%

improvements to 100 things is more effective, less disruptive and more sustainable than improving one thing by 100% when the need becomes unavoidable.

- Everyone involved in a process or activity, however apparently insignificant, has valuable knowledge and participates in a working team or Kaizen group (see also Quality Circles below).
- Everyone is expected to participate, analysing, providing feedback and suggesting improvements to their area of work.
- Every employee is empowered to participate fully in the improvement process: taking responsibility, checking and co-ordinating their own activities. Management practice enables and facilitates this.
- Every employee is involved in the running of the company, and is trained and informed about the company. This encourages commitment and interest, leading to fulfilment and job satisfaction.

Kaizen teams use analytical tools and techniques to review systems and look for ways to improve (see Quality Tools below).

At its best, Kaizen is a carefully nurtured philosophy that works smoothly and steadily, and which helps to align 'hard' organizational inputs and aims (especially in process-driven environments), with 'soft' management issues such as motivation and empowerment.

Like any methodology however, poor interpretation and implementation can limit the usefulness of Kaizen practices, or worse cause them to be counter-productive.

Kaizen is unsuccessful typically where:

- Kaizen methods are added to an existing failing structure, without fixing the basic structure and philosophy.

- Kaizen is poorly integrated with processes and people's thinking.
- Training is inadequate.
- Executive/leadership doesn't understand or support Kaizen.
- Employees and managers regard Kaizen as some form of imposed procedure, lacking meaningful purpose.

Kaizen works best when it is 'owned' by people, who see the concept as both empowering of individuals and teams, and a truly practical way to improve quality and performance, and thereby job satisfaction and reward. As ever, such initiatives depend heavily on commitment from above, critically:

- to encourage and support Kaizen, and
- to ensure improvements produce not only better productivity and profit for the organization, but also better recognition and reward and other positive benefits for employees, whose involvement drives the change and improvement in the first place.

Interestingly, the spirit of Kaizen, which is distinctly Japanese in origin - notably its significant emphasis upon individual and worker empowerment in organizations - is reflected in many 'western' concepts of management and motivation, for example the Y-Theory principles described by [Douglas McGregor](#); [Herzberg's Motivational Theory](#), [Maslow's Needs Hierarchy](#) and related thinking; [Adams' Equity Theory](#); and [Charles Handy's motivational theories](#).

Fascinatingly, we can now see that actually very close connections exist between:

- **the fundamental principles of Quality Management** - which might be regarded as cold and detached and focused on 'things' not people, and
- **progressive 'humanist' ideas about motivating and managing people** - which might be regarded as too compassionate and caring to have a significant place in the optimization of organizational productivity and profit.

The point is that in all effective organizations a very strong mutual dependence exists between:

- systems, processes, tools, productivity, profit - the 'hard' inputs and outputs (some say 'left-side brain'), and
- people, motivation, teamwork, communication, recognition and reward - the 'soft' inputs and outputs ('right-side brain')

Kaizen helps to align these factors, and keep them aligned.

quality tools

'Quality Tools' refers to tools and techniques used in support of Kaizen and other quality improvement or quality management programmes and philosophies.

Based mainly on statistical and manufacturing process tools, Quality Tools are used at all levels of an organization - typically in 'quality circles' or Kaizen work teams to analyse and review activities and uncover inefficiencies.

The main Quality Tools are:

- **The '5 Whys'** - asking 'Why?' at least five times to uncover root cause of a problem.
- **Flowcharts** - boxes and arrows method of examining activities, potentially used in [brainstorming](#), also found in [business process modelling](#).
- **Fishbone/Ishikawa Diagrams** - fishbone-structured diagram for identifying cause/effect patterns, in which primary categories are generally pre-determined according to context. See [fishbone diagram and usage examples for project management](#).
- **Run Charts** - a graph which plots data/change along a timeline.
- **Pareto Charts** - a line and bar graph displaying cause/effect ratios, especially

biggest relative cause, based on [Pareto theory](#).

- **Histograms** - a bar graph displaying data in simple categories which together account for a total.
- **Checklists/Checksheets** - pre-formatted lists for noting incidence, frequency, etc., according to known useful criteria
- **Control/Shewhart Charts** - a standard pattern of performance/time for a given process, often in Run Chart format, which acts as a template to check conformance and deviation.
- **Scatter Diagram/Scatterplot** - a graph which plots points (typically very many individual instances) according to two variables, which produces a useful visual indication of the relationship between the two variables.

Some quality tools, like flowcharts and checklists, have become part of mainstream management.

Others tools such as the Fishbone diagram have stayed quite specific to the engineering and manufacturing disciplines, which traditionally have a strong focus and expertise in Kaizen, 'Lean' management and other quality management methodologies.

quality circles

Quality circles, similar to Kaizen teams, are a key part of any continuous improvement programme.

In this context the word 'circle' refers to a team of people.

Teams or small groups (the circles) meet to analyse, and review working practices with a view to making suggestions for improvement in their work and the systems.

As with many Quality Tools, the specific use of Quality Circles is chiefly concentrated among manufacturing and engineering organizations or in technical departments of this sort.

The term Quality Circles may be found in more general use outside of these traditional areas, in which case the name tends to imply or symbolise that teams

are working in an empowered, cooperative way, especially focused on problem-solving and improvements, rather than a strict adherence to technical Total Quality Management or related processes.

(With acknowledgements to Melanie Allen.)

see also

- [Maslow's Hierarchy of Needs](#)
- [McGregor's X-Y Theory](#)
- [Herzberg's Motivators and Hygiene Factors](#)
- [Six Sigma](#)
- [Tuckman's Forming, Storming, Norming, Performing model](#)
- [Albert Humphrey's TAM model](#)
- [Balanced Scorecard](#)
- [Workshops - how to run](#)
- [Brainstorming process](#)
- [Team-Building](#)
- [Motivational theory](#)
- [Leadership](#)
- [Sharon Drew Morgen's Facilitation model](#)