

Total Quality Management Philosophies

“Theories and Philosophies of Famous Management Gurus”

Dr. W. Edwards Deming



"It is not enough to just do your best or work hard.
You must know what to work on."

Dr. Edwards Deming

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- American engineer, physicist, multi-awarded statistician and management consultant.
- Introduced Statistical Quality Control into industrial operations
- Through his ideas, product quality improved resulting to popular customer satisfaction
- Contributed directly to Japan's phenomenal growth and its current technological leadership in automobiles, shipbuilding and electronics.

Dr. Deming's Teachings

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1. The problems facing manufacturers can be solved through cooperation, despite differences.
2. Marketing is not "sales," but the science of knowing what people who buy your product repeatedly think of that product and whether they will buy it again, and why.
3. That In the initial stages of design, you must conduct market research, applying statistical techniques for experimental and planning and inspection of samples.
4. And you must perfect the manufacturing process.

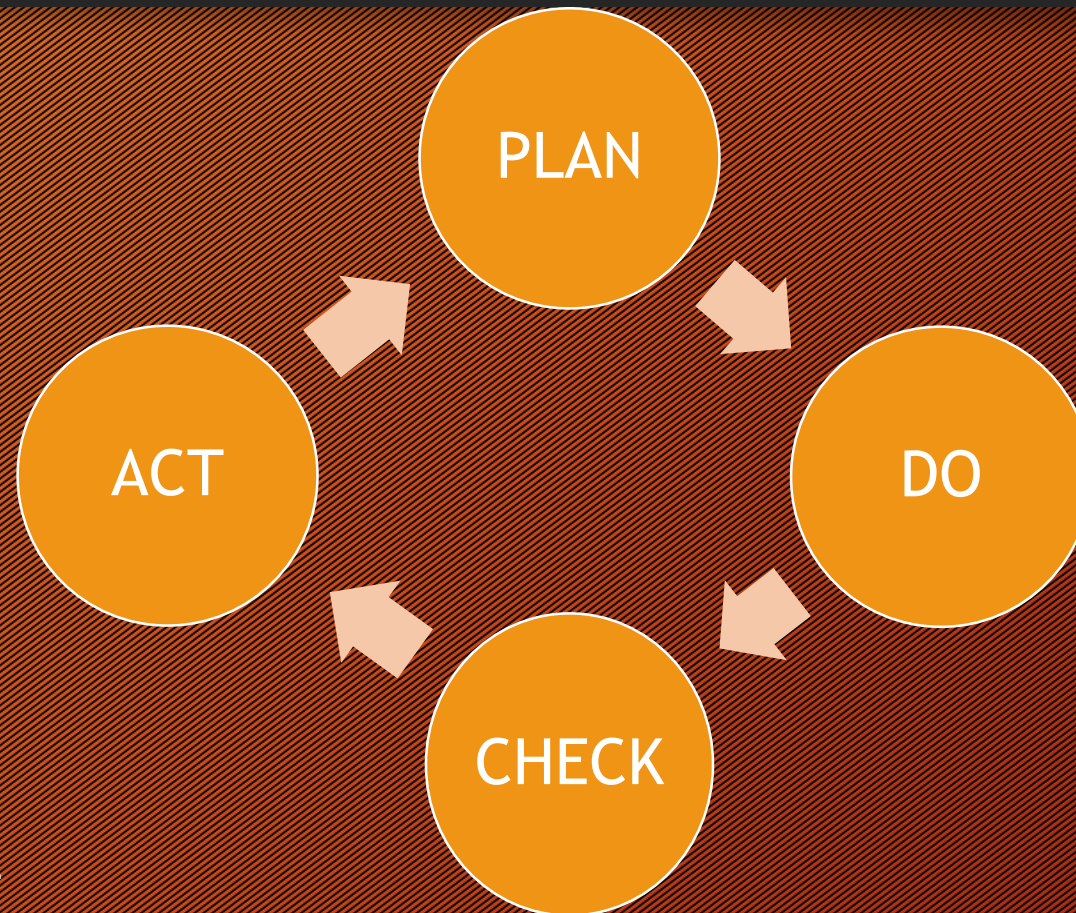
Deming: On Achieving Quality

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- Companies should direct efforts towards:
 - Innovation of products
 - Innovation of processes
 - Improvement of existing products
 - Improvement of existing processes

Deming's Advocacy

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Deming's System of Profound Knowledge

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1. *Appreciation of a system*: understanding the overall processes involving suppliers, producers, and customers (or recipients) of goods and services;
 - Interactions and feedback
 - avoiding internal restrictions
 - Company structure and systems

Deming's System of Profound Knowledge

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2. Knowledge of variation: the range and causes of variation in quality, and use of statistical sampling in measurements;

- Normal, flexibility of the system
- Determination of special causes that create defects and eliminating them

Deming's System of Profound Knowledge

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- 3. *Theory of knowledge*: the concepts explaining knowledge and the limits of what can be known.
- 4. *Knowledge of psychology*: concepts of human nature.

"The various segments of the system of profound knowledge proposed here cannot be separated. They interact with each other. Thus, knowledge of psychology is incomplete without knowledge of variation."

Deming's 14-point Management Philosophy

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1. Create constancy of purpose for continual improvement of systems, products and services
 - To become excellent, satisfy customers, and provide jobs.
 - To reduce **defects** and **cost** of development.

Deming's 14-point Management Philosophy

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2. Adopt a commitment to seek continual improvements
 - Constantly and forever improve the system development processes,
 - To improve quality and productivity
 - To constantly decrease the time and cost of systems.

“Improving quality is not a one time effort”

Deming's 14-point Management Philosophy

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3. Switch from defect detection to defect prevention

- Cease dependence on unending oversight of everything your employees do.
- Reduce the need for inspection on a mass basis by building quality into the system in the first place.
- Inspection is not the answer. It is too late and unreliable – it does not produce quality.

Deming's 14-point Management Philosophy

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4. End the practice of assuming the cheapest way is the best way.
 - End the practice of awarding business on price.
 - Move towards quality of product, reliability of delivery and willingness to cooperate and improve. Build partnerships.
 - Establish loyal ties with **suppliers of quality equipment**.
 - Be warned **against** this scenario: - the purchasing department consistently patronizes those vendors who offer the lowest prices.

Deming's 14-point Management Philosophy

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5. Continuously improve the system of production and service.
 - Product should be monitored by the workers, **throughout the assembly process**, to meet a series of quality standards.
 - Companies must develop a consistent, active plan that involves **its entire labor force** in the drive toward total quality.

Deming's 14-point Management Philosophy

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6. Institute training on the job.

- Everyone must be trained, as knowledge is essential for improvement.

7. Institute leadership to improve all job functions

- Supervision must change from chasing, to coaching and support.
- It is a manager's job to help their people and their systems do a better job.

Deming's 14-point Management Philosophy

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8. Drive out fear and encourage two-way communication.
 - Drive out fear, so that everyone may work effectively.
 - Management should be held responsible for the faults of the organization and environment.

Deming's 14-point Management Philosophy

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9. Remove barriers between departments
 - Break down barriers between areas. People must work as a team. They must foresee and prevent problems during systems development and use.

Deming's 14-point Management Philosophy

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10. Eliminate slogans, exhortation, and targets for the work force; instead, focus on the system and morale.

- Slogans from executives never helped anybody do a good job. Let people put up their own slogans if they want to.
- The responsibility of project managers must change from schedules to quality.
- Alternatively, learn the capabilities of processes, and how to improve them.

Deming's 14-point Management Philosophy

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11. Strive to eliminate *unnecessary* numerical quotas.

- Eliminate work standards (quotas) on the factory floor. Substitute with leadership.
- Set realistic targets.
- Eliminate MBO. Avoid numerical goals.
- **Instead substitute with leadership.**

Deming's 14-point Management Philosophy

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12. Remove barriers of pride to workmanship

- Remove barriers that rob people in management and in engineering of their right to pride of workmanship.
- People are eager to do a good job and are distressed when they can't.
- Remove defective equipment, misguided supervisors, and indifferent workers interfere with the quality work

Deming's 14-point Management Philosophy

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13. Institute a vigorous program of education and self-improvement for everyone

- There must be a continuing commitment to training and educating managers and professional staff.

"Massive training is required to instill the courage to break with tradition. Every activity and every job is a part of the process."

Deming's 14-point Management Philosophy

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14. Take action to affect the transformation

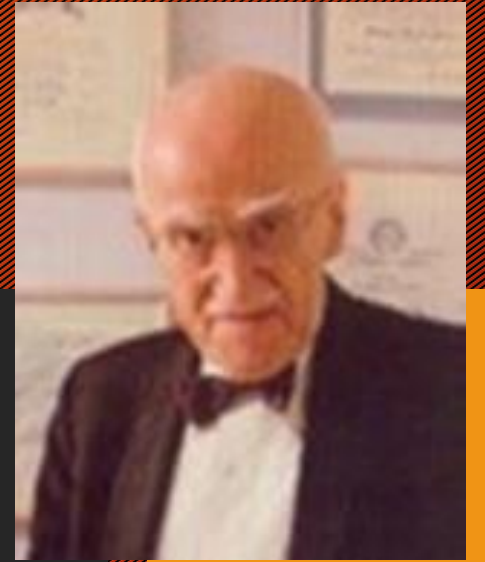
- Publish top management's permanent commitment to continuous improvement of quality and productivity
- Put everybody in the company to work to accomplish the transformation.
- The transformation is everybody's job.

Deming's Seven Deadly Diseases

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1. Lack of constancy of purpose
2. Emphasis on short-term profits
3. Evaluation by performance, merit rating, or annual review of performance
4. Mobility of management
5. Running a company on visible figures alone
6. Excessive medical costs
7. Excessive costs of warranty, fueled by lawyers who work for contingency fees

Dr. Joseph Juran



“Architect of Quality”

Concept: Managing Business Process Quality

Dr. Joseph Juran

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- Introduced the management dimensions of **planning, organizing, and controlling** and focused on the responsibility of management to achieve quality and the need for setting goals.
- Defines quality as fitness for use in terms of design, conformance, availability, safety, and field use
 - **customer-oriented**
- Relies on systems and problem-solving techniques.
- Unlike Deming, he focuses on top-down management and technical methods rather than worker pride and satisfaction.

Dr. Joseph Juran's Trilogy

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An approach to cross-functional management, which is composed of three managerial processes:

1. Quality Planning,
 2. Quality Control, and
 3. Quality Improvement.
- Without change, there will be a constant waste
 - During change, there will be increased costs, but
 - After the improvement, margins will be higher and the increased costs get recouped.

Juran's 10-point Program

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1. Build awareness of opportunity to improve; identify customers
2. Set-goals for improvement;
3. Organize to reach goals.
4. Provide training
5. Carryout projects to solve problems.

Juran's 10-point Program

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6. Report progress.
7. Give recognition.
8. Communicate results.
9. Keep score.
10. Maintain momentum by making annual improvement as part of the regular systems and processes of the company.

Philip Crosby

“Do it Right the First Time”



Crosby's Four Absolutes of Quality Management

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1. **Quality** is conformance to requirements
2. **Quality prevention** is preferable to quality inspection
3. **Zero defects** is the quality performance standard
4. **Quality** is measured in monetary terms – the price of non-conformance

Crosby's 14-step program on Quality Improvement

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1. Management commitment
 - Management is committed to quality – and **this is clear to all**
2. Formulate the Quality improvement team
 - Create quality improvement teams – with representatives from all workgroups and functions
3. Measure for Quality in Current Practices
 - Measure processes to determine current and potential quality issues

Crosby's 14-step program

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4. Cost of quality evaluation
 - Calculate the cost of poor quality
5. Quality Awareness is Central to Success
 - Raise quality awareness of all employees
6. Quality Problems? Take Corrective action
 - Provide a systematic method of permanently resolving the problems that are identified through previous action steps.
 - Problems that are identified during the acceptance operation must be documented and then resolved formally.

Crosby's 14-step program

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7. Plan for Zero Defects

- Define all the individual action steps that build-up to Zero Defects day
- These steps, placed on a schedule and assigned to members of the Zero defects team for execution, will provide a clean energy flow into an organization-wide **Zero Defects** commitment.

Crosby's 14-step program

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8. Practice effective training for supervisors

- Define supervisor's training needs
- Establish effective communication systems for planning and laying out quality improvement programs
- Make sure everybody understood and can implement the program

Crosby's 14-step program

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9. Hold Zero defects day

- Zero Defects is a revelation to all involved that they are embarking on a new way of corporate life.
- Working under this discipline requires personal commitments and understanding.

10. Involve everyone in Goal setting

- Encourage employees to create their own quality improvement goals

Crosby's 14-step program

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11. Eliminate Causes of Errors

- Eliminate barriers to enable the staff to communicate problems to management

Error-cause removal (ECR) is set up on the basis that the worker need only recognize the problem.

When the worker has stated the problem, the proper department in the plant can look into it.

Crosby's 14-step program

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- 12. Implement Recognition for Participants
- 13. Create quality councils
- 14. Do it all over again – quality improvement does not end; LATHER...RINSE... REPEAT!!!

Crosby's Maturity Grid

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- **Uncertainty** (adhoc)
- **Awakening** (recognition begins but management unwilling to spend on quality)
- **Enlightenment** (management begins to support quality improvement program, culture of openness)
- **Wisdom** (management fully participates, defect prevention is now part of the culture)
- **Certainty** (the whole organization is involved in continuous improvement)

Crosby's 5 characteristics of a Highly Successful Organization

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1. People routinely do things right first time
2. Change is anticipated and used to advantage
3. Growth is consistent and profitable
4. New products and services appear when needed
5. Everyone is happy to work there

Kauro Ishikawa



“One Step Further”
Developed the “fishbone” diagram

Ishikawa's Philosophy

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- Quality Control Circles (QCC)
 - A quality control circle consists of a small group of employees who do similar work and arrange to meet regularly to identify and analyze work-related problems, to brainstorm and to recommend and implement solutions.

Quality Control Circles

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- Select problem
- State and re-state problems
- Collect facts
- Brainstorm
- Build on each other ideas
- Choose course of action
- Presentation

Ischikawa's Philosophy

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1. Quality begins with education and ends with education
2. The first step to quality is to know the requirements of the customers
3. The ideal state of quality control occurs when inspection is no longer necessary
4. Remove the root cause, not the symptoms

Ischikawa's Philosophy

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5. Quality control is the responsibility of all workers and all divisions
6. Do not confuse the means with the objectives
7. Put quality first and set your sights on long term profits
8. Marketing is the entrance and exit of quality

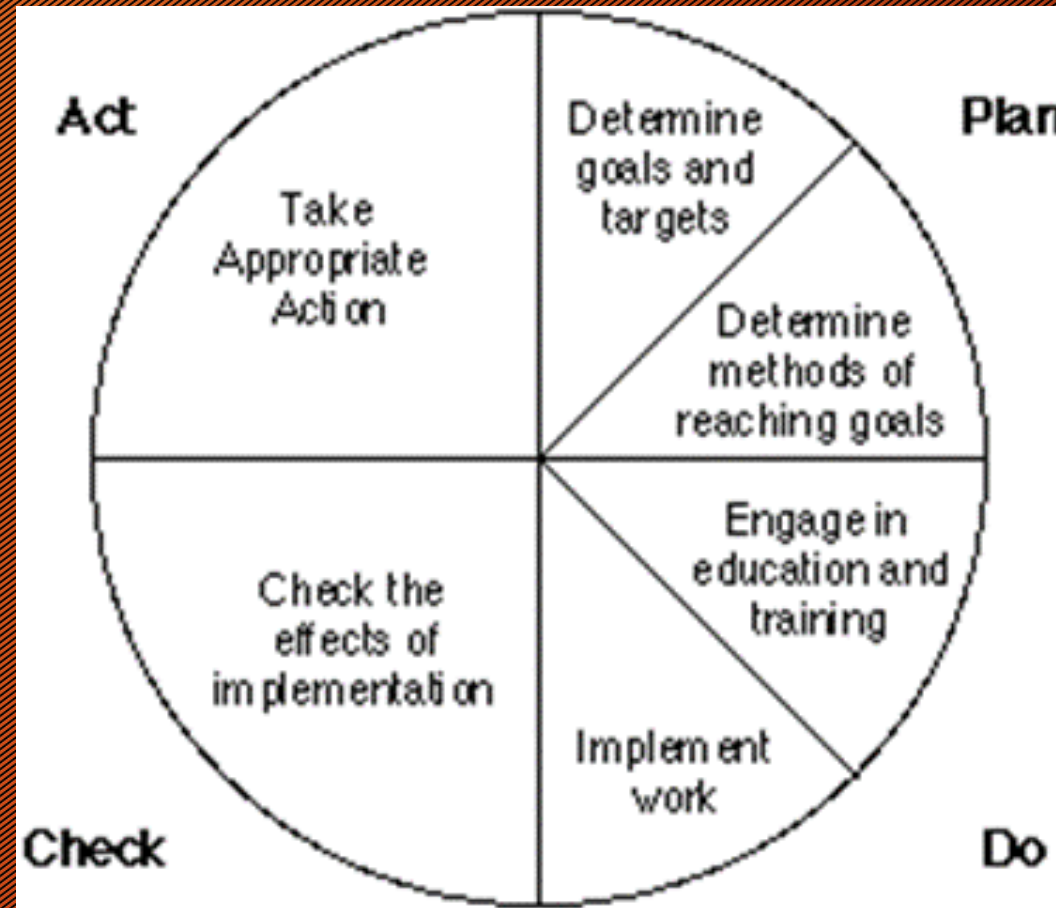
Ischikawa's Philosophy

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9. Management must not show anger when facts are presented by the subordinates
10. Ninety-five percent of problems in the company can be solved with simple tools for analysis and problem –solving
11. Data without dispersion information (i.e.,variability) are false data

Ischikawa's Expanded Plan-Do-Check-Act Model

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Genichi Taguchi

Taguchi Methods - Practical, Rapid Quality



Genichi Taguchi

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- Revolutionized the manufacturing process in Japan through cost savings.
- Realized that methods of identifying outside influences or noise sources have the greatest effects on product variability.
- His ideas have been adopted by successful manufacturers around the globe because of their results in creating superior production processes at much lower costs

Taguchi's Major Contributions

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- The Loss Function
 - Taguchi devised an equation to quantify the decline of a customer's perceived value of a product as its quality declines.
 - It tells managers how much revenue they are losing because of variability in their production process.
 - A powerful tool for projecting the benefits of a quality improvement program.
 - The first person to equate quality with cost.

Taguchi's Major Contributions

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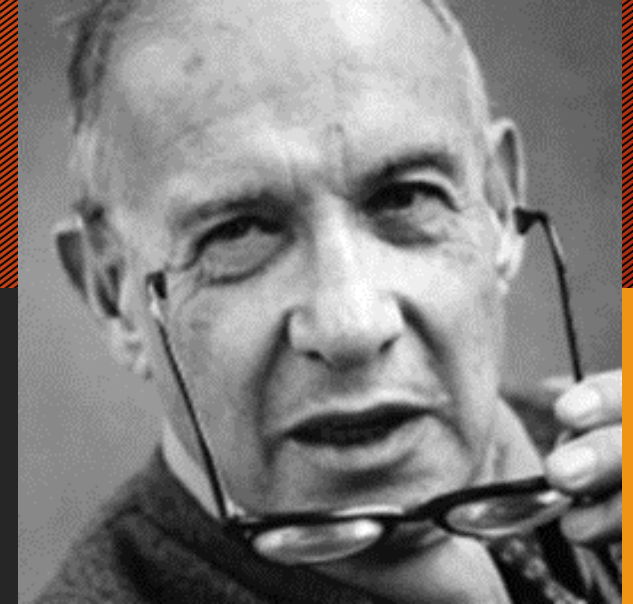
- Robustness
 - the ability of a process or product to work as intended regardless of uncontrollable outside influences (*i.e., it is too difficult to predict and prepare for any possible weather condition*).
 - He was pivotal in many companies' development of products and processes which perform uniformly regardless of **uncontrollable forces**; an obviously beneficial service.

Taguchi's Major Contributions

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- Orthogonal Arrays and Linear Graphs
 - Used in identifying outside factors or noise which cause deviations from the mean. Isolating these factors to determine their individual effects can be a very costly and time consuming process.
 - Taguchi devised a way to use orthogonal arrays to isolate these noise factors from all others in a cost effective manner.

Peter Drucker



“ The Business Thinker”
Coined the term “knowledge worker”

Peter Drucker

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- One of the best-known influential thinkers and writers on management theory and practice
- His writings have predicted many of the major developments of the late twentieth century:
 - privatization and decentralization;
 - the rise of Japan to economic world power;
 - the decisive importance of marketing; and
 - the emergence of the information society with its necessity of lifelong learning.

Drucker's Philosophy

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- Success is threefold
 - Know your business
 - Know your competencies
 - Know how to keep focused on goals
- Effective management and employee participation
- Link between the bottom line and satisfying the customer

Drucker's Philosophy

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- “Purpose of business lies outside itself – that is in creating and satisfying a customer. The decision process is central, and structure has to follow strategy. Management has to be management by objectives (MBO) and self-control.”

Drucker's 5 Principles of Management

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1. Setting objectives
2. Organizing
3. Motivating and communicating
4. Establishing measures of performance
5. Developing people

Drucker's ideas thru his writings

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- Decentralization and simplification
- The concept of "Knowledge Worker"
- The prediction of the death of the "Blue Collar" worker"
- The concept of "outsourcing"; the use of "front room" and "back room" in a business
- The importance of the non-profit sector and its role in the economies of the world

Peter Drucker's ideas

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- A profound skepticism of macroeconomic theory.
- A lament that the sole focus of micro-economics is price.
- Respect for the worker.
 - employees are assets not liabilities
- A belief in what he called "the sickness of government."

Peter Drucker's Ideas

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- The need for "planned abandonment."
- A belief that taking action without thinking is the cause of every failure.
- The need for community
- The need to manage business by balancing a variety of needs and goals, rather than subordinating an institution to a single value.

Peter Drucker's Ideas

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- A company's primary responsibility is to serve its customers.
 - Profit is not the primary goal, but rather an essential condition for the company's continued existence and sustainability.
- A belief in the notion that great companies could stand among humankind's noblest inventions.

Tom Peters



Developed the McKinsey 7-S model
Author of “In Search of Excellence”

Tom Peters

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- “Invented” management as a discipline, worthy of study
- Gave management of large firms the essential tools to deal with their post-World War II enormity, complexity, and growing global reach.
- Led the way in preparing management for the current era of staggering change, starting in the mid-1970s.

Tom Peters

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- Peters and Robert Waterman were both consultants of McKinsey and worked on the Organisation project and ended up with the now called “McKinsey 7S Management Model”
- 7-S: A result of the study of 43 out of the top 62 best performing McKinsey clients.

McKinsey 7-S Model

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- structure
- strategy
- systems
- style of management
- skills - corporate strengths
- staff
- shared values

Peter's Philosophy

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- Excellent firms believe in constant improvement and constant change
- Need to move from hierarchical management to horizontal, fast, cross-functional co-operative organization

In Search of Excellence - the eight themes

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1. **A bias for action**, active decision making - 'getting on with it'.
2. **Close to the customer**
 - learning from the people served by the business.
3. **Autonomy and entrepreneurship**
 - Fostering innovation and nurturing 'champions'.

In Search of Excellence - the eight themes

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4. Productivity through people

- treating rank and file employees as a source of quality.

5. Hands-on, value-driven - management philosophy that guides everyday practice

- management showing its commitment.

6. Stick to the knitting

- stay with the business that you know.

In Search of Excellence - the eight themes

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7. Simple form, lean staff

- some of the best companies have minimal HQ staff.

8. Simultaneous loose-tight properties

- autonomy in shop-floor activities plus centralised values.

Peter's Management Guidelines

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- Actively create a quality revolution
- Put the customer first in everything you do
- Listen actively to all stakeholders
- Invest in people, training, education and recruitment
- Openly reward, recognize and support productivity innovation
- Openly support failures where people have tried to improve
- Involve everyone in everything at all times

Peter's Management Guidelines

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- Setup simple and understandable measures
- Fight against bureaucracy and inflexibility
- Look through a different mirror: step outside the company and look at it from a different perspective
- Teamwork and trust: develop strong interpersonal and team skills
- Work on attitudes and attention to detail: get things done
- Be consistent and strive for improvements in all areas
- Management by walking around (MBWA) Management Style was extensively mentioned in his book, "In Search of Excellence"

References

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- A Practical Approach to Software Quality, Ch. 1
- Total Quality Management: A Total Quality Approach, Ch. 1
- Understanding Total Quality Management, Ch3
- “Out of the Crisis” by Dr. Edwards Deming
- “In Search of Excellence” by Tom Peters
- Wikipedia, the free encyclopedia



Thank You!!!