

Deming's 14 points

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W Edwards Deming was an American statistician who was credited with the rise of Japan as a manufacturing nation, and with the invention of Total Quality Management (TQM). Deming went to Japan just after the War to help set up a census of the Japanese population. While he was there, he taught 'statistical process control' to Japanese engineers - a set of techniques which allowed them to manufacture high-quality goods without expensive machinery. In 1960 he was awarded a medal by the Japanese Emperor for his services to that country's industry.

Deming returned to the US and spent some years in obscurity before the publication of his book "Out of the crisis" in 1982. In this book, Deming set out 14 points which, if applied to US manufacturing industry, would he believed, save the US from industrial doom at the hands of the Japanese.

Although Deming does not use the term Total Quality Management in his book, it is credited with launching the movement. Most of the central ideas of TQM are contained in "Out of the crisis".

The 14 points seem at first sight to be a rag-bag of radical ideas, but the key to understanding a number of them lies in Deming's thoughts about variation. Variation was seen by Deming as the disease that threatened US manufacturing. The more variation - in the length of parts supposed to be uniform, in delivery times, in prices, in work practices - the more waste, he reasoned.

From this premise, he set out his 14 points for management, which we have paraphrased here:

1."Create constancy of purpose towards improvement". Replace short-term reaction with long-term planning.

2."Adopt the new philosophy". The implication is that management should actually adopt his philosophy, rather than merely expect the workforce to do so.

3."Cease dependence on inspection". If variation is reduced, there is no need to inspect manufactured items for defects, because there won't be any.

4."Move towards a single supplier for any one item." Multiple suppliers mean variation between feedstocks.

5."Improve constantly and forever". Constantly strive to reduce variation.

6."Institute training on the job". If people are inadequately trained, they will not all work the same way, and this will introduce variation.

7."Institute leadership". Deming makes a distinction between leadership and mere supervision. The latter is quota- and target-based.

8."Drive out fear". Deming sees management by fear as counter-productive in the long term, because it prevents workers from acting in the organisation's best interests.

9."Break down barriers between departments". Another idea central to TQM is the concept of the 'internal customer', that each department serves not the management, but the other departments that use its outputs.

10."Eliminate slogans". Another central TQM idea is that it's not people who make most mistakes - it's the process they are working within. Harassing the workforce without improving the processes they use is counter-productive.

11."Eliminate management by objectives". Deming saw production targets as encouraging the delivery of poor-quality goods.

12."Remove barriers to pride of workmanship". Many of the other problems outlined reduce worker satisfaction.

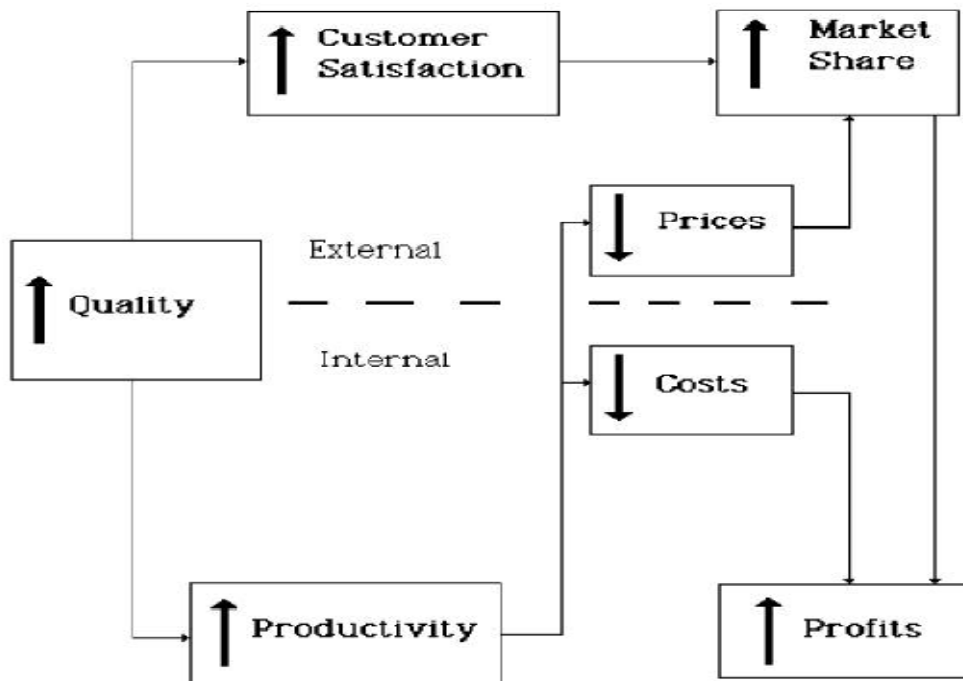
13. "Institute education and self-improvement".

14. "The transformation is everyone's job".

Deming has been criticised for putting forward a set of goals without providing any tools for managers to use to reach those goals (just the problem he identified in point 10). His inevitable response to this question was: "You're the manager, you figure it out."

"Out of the crisis" is over 500 pages long, and it is not possible to do full justice to it in a 600 word article. If the above points into

Quality Chain Reaction



Deming's Fourteen Points for Management:

1 Create constancy of purpose for improvement of product

and services

2 Adopt the new philosophy

3 Cease dependence on mass inspection

4 End the practice of awarding business on price tag alone

5 Constantly and forever improve the systems of production and services

6 Institute modern methods of training on the job

7 Institute modern methods of supervision and leadership

8 Drive out fear

9 Break down barriers between departments

10 Eliminate numerical goals for the work force

11 Eliminate work standards and numerical quotas

12 Remove barriers to pride of workmanship

13 Institute a vigorous programme of education and training for everyone

14 Create a structure in top management that will push every day on the above 13 points.

SAGE Notes

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Deming's Fourteen Points for Management

1: Create Constancy of purpose toward--improvement of product and service, with the aim to become competitive, stay in business, and provide jobs. The essence of constancy of purpose is customer orientation. - the answer to the question WHY? Operational definition of customer needs is essential if we are to meet those needs and expectations at a price customers are willing to pay. Essentials that top management must address:

- **Establish policy**
- **Establish core values**
- **Set the long-term strategic course**

Companies usually do have long-term vision, but have short-term systems, that focus on short-term results.

The problem of management is maintaining consistency of purpose: even when the aim is focused on the centre of the target, if the rest of the company is off doing their best without knowing what to do, results will not live up to expectations. Consistency of purpose: Striving to reduce the “spread” around the course.

2 Adopt the new philosophy. We are in a new economic age, created by Japan. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.

Why? What’s wrong with the old philosophy? “Back to basics”? The Japanese attention to TQM principles has created a new economic age: the age of continuous improvement and systems thinking. The new age centres on the statement: “Higher quality costs less, not more.” Folklore:

Quality and productivity have an inverse relationship.

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. Recall our view of business systems as consisting of a large number of interconnecting processes.

INPUTS

**Suppliers machines material methods environment measurement Activity Quality Cost
Responsiveness**

4 End the practice of awarding business on the basis of price tag. Instead, minimise total cost. Move toward a single supplier for any one item on a long-term relationship of loyalty and trust. Instead, require meaningful measures of quality along with price. Reduce the number of suppliers for the same item by eliminating those that do not qualify with statistical evidence of quality. Move towards a single supplier for any one item, on a longterm relationship of loyalty and trust. The aim is to minimise total cost, not merely initial cost. The real world, of course, is that often there is not a single supplier who is able

to provide the required quality, it may be that there is not a single supplier who is good enough to be trusted with the responsibility and privilege of becoming your single supplier.

5 Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.

"Improve constantly and forever every process for planning, production and service. Search continually for problems in order to improve every activity in the company, to improve quality and productivity and thus to constantly decrease costs. It is management's job to work continually on the system (design, incoming materials, maintenance, improvements of machines, training, supervision, retraining)."

6 Institute more thorough, better job-related training. Institute modern methods of training on the job for all, including management, to make better use of every employee. "Statistical thinking will one day be as necessary for efficient citizenship as the H G Wells New skills are required to keep up with changes in materials, methods, product design, machinery, techniques and service. Note that training is for *skills*, unlike education, which is for *knowledge* (Point 13).

Anyone, when he has brought his work to a state of statistical control, whether he was trained well or badly, is in a rut. He has completed his learning of that particular job. It is not economical to try to provide further training of the same kind ... continuation of training by the same method will accomplish nothing.

Inhibitors to training:

- It's for my people, not for me.
- It's for manufacturing, not for me.
- Our problems are different here.
- We rely on our experience.
- Hope for instant pudding.
- People learn in different ways.

Management cannot intelligently change company systems without an understanding of statistical thinking.

7 Institute Leadership. The aim of leadership should be to help people, machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers. Adopt and institute leadership aimed at helping people to do a better job. The responsibility of managers and supervisors must be changed from sheer numbers to quality. Improvement of quality will automatically improve productivity. Management must ensure that immediate action is taken on reports of inherited defects, maintenance requirements, poor tools, fuzzy operational definitions, and other conditions detrimental to quality.

8 Drive out fear, so that everyone may work effectively for the company. Encourage effective two-way communication and other means to drive out fear throughout the organisation so that everybody may work effectively and more productively for the company. Fear is a barrier to improvement: wherever there is fear, we get the wrong figures. Fear in work is opposite to joy in work. Fear of change is a big barrier to be overcome: remember, people don't resist change, they resist being changed! The need is for everybody to be part of the change, and to own the change process.

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. Barriers breed suboptimization. This is the direct opposite to the Joiner Triangle's 'All One Team' and Deming's 'Win-Win' principle. Deming says quite bluntly that if the boss of every staff area perceives (or indeed is told) that his objective is to maximize his department's profits then the company will fail.

One of the most crucial differences between old-style and new-style management is seen in the way that shop-floor employees, supervisors, departments, middle-managers and senior managers regard their job: is it to suboptimize, or is it to work for the company?

It cannot be both. Incidentally, Deming points out that one clear symptom of the

suboptimization mode is proliferation of paperwork, resulting in considerable inefficiency, irritation and cost. He quotes studies showing that 14% of freight charges are spent on paperwork, the figure in motor freight, in particular, being more like 20%.

10 Eliminate slogans, exhortations and targets for the work force that ask for zero defects and new levels of productivity. Such exhortations only create adversarial relationships; the bulk of the causes of low quality and low productivity belong to the system, and thus lie beyond the power of the workforce. What can be wrong with slogans? a few posters? Indeed, surely posters can give useful and helpful information? Surely, slogans are useful to jog the memory on important matters, and thus aid greater commonality of thought and aims? The argument is directed at those who simply tell (exhort) others to do better without helping them in any way so to do. It demonstrates ignorance or disbelief of the fact that the large majority of problems lie in the system, the responsibility of management, rather than with the workers at whom the posters and slogans are aimed.

11 Eliminate work standards (quotas) on the factory floor.

Substitute leadership. Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership Eliminate work standards that prescribe numerical quotas for the workforce and numerical goals for people in management. Substitute aids and helpful leadership; statistical methods for continual improvement of quality and productivity. No, Deming is *not* telling us to manage without numbers! And, ofcourse, both companies and individuals need goals, intentions, and aims - but not in isolation; they need the education, training, systems and methods to make it reasonable for these to be attained. What they do not need is arbitrary numerical goals. Of course, a company needs budgets and forecasts for planning and allocation of resources— but they must also not be arbitrary numerical goals, nor must they become such.

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

Remove barriers that rob people (including those in management and engineering) of their right to pride of workmanship. This means, *inter alia*, abolishment of the annual merit

rating and of management by objective. Again, the responsibility of managers, supervisors, foremen must be changed from sheer numbers to quality

13 Institute a vigorous programme of education and selfimprovement. Institute a vigorous programme of education, and encourage self-improvement for everyone. What an organization needs is not just good people; it needs people that are improving with education. Advances in competitive position will have their roots in knowledge. Deming is, first and foremost, an educator.

14 Put everyone in the organisation to work to accomplish the transformation. The transformation is everybody's job. Clearly define top management's permanent commitment to ever-improving quality and productivity, and their obligations to implement all of these principles. Indeed, it is not enough that top management commit themselves for life to quality and productivity. They must know what it is that they are committed to: that is, what they must do. Create a structure in top management that will push every day on the preceding 13 Points, and take action in order to accomplish the transformation.