

MANAGING TRANSFORMATION *actually means* TRANSFORMING MANAGEMENT



Management has traditionally been about establishing hierarchies, setting targets, offering bonuses, measuring performance, cutting costs and running projects, all whilst trying to maintain customer satisfaction.

However, there is a powerful new perspective that is transforming management and what it achieves ~

The Deming System of Management for Industry, Government & Education



Who was Dr Deming? Dr W Edwards Deming (1900-93) was certainly one of the greatest management thinkers of the 20th century. He developed over the course of 50 years a powerful and comprehensive approach to management. His work has enabled radical transformations in thousands of organisations in many countries, and increasingly in the UK. The Japanese credit him with providing the management approach that has enabled the dramatic and unprecedented success of their industry since the Second World War.

In the western world managers tend to trust hierarchical organisations, numerical targets and competition between departments and suppliers to keep costs down. However, Deming showed that it is impossible for a leader to optimise the whole organisation when each manager is fighting their own corner. The improvements we do introduce are all too often won by sheer hard work rather than by working smarter. Deming showed what working smarter actually looked like. He outlined how to remove the constraints to superior performance – taking the foot off the brake rather than just pressing harder on the accelerator. He was passionate about people, quality, innovation and of course the end customer. The humanity of his approach allowed everyone in an organisation to contribute to its success and to take pride in its achievements.



Dr W Edwards Deming

Deming's approach encompasses all areas of management, but quality is a key starting point. He maintained that poor quality was caused by poor management practices that frustrated people's desire to do better work. He taught the Japanese managers how to empower production workers to investigate problems and systematically improve business processes, emphasising teamwork and long-term partnerships with suppliers. His vision emphasised a culture of determined continuous improvement of process, service and product. It also incorporated a practical strategy to foster and deliver innovative ideas.

Deming himself carefully maintained the consistency of his approach, but many other management thinkers both influenced and built upon his work. However, over the years, parts of Deming's approach have been separated out and turned into management fads. These, although powerful in their own right, are only part of the management picture and can only bring sustainable benefits when combined with the other key management disciplines. The framework Deming developed enables managers to quickly assess how effective and sustainable new ideas may be and to weigh up their pros and cons. Deming himself was a prolific thinker who continued incorporating new ideas and developing his work throughout his life.

His approach will test your pre-conceptions and may well change the way you manage. It offers an opportunity for personal success as much as organisational success.

What is Deming's Approach? Deming challenged the shortfalls of contemporary management with a clear alternative. He saw many deep rooted problems in organisations and summarised his alternative in a series of bullet points - his 14 Points for Management published in his seminal book *Out Of The Crisis*. When reviewing the prevailing management approach, he particularly criticised:

- Poor leadership (a command and control approach is not effective in times of rapid change and innovation)
- Short term thinking (at the expense of long term improvement and consistent growth)
- The management focus on individual business functions or teams (instead of end to end customer processes)
- The use of local arbitrary targets (instead of working to optimise the way the whole organisation works together)
- The buying of the cheapest components and services (as opposed to optimising quality and total cost)
- The reliance on quality checks at the end of a process (as a substitute for eliminating the root causes of errors and waste)

In the 1990s, Deming distilled the essence of his approach into four inter-dependent components that he called a system of profound knowledge. Together these represent the key disciplines that describe how organisations actually work and how to manage them more successfully. A deep understanding can help an organisation achieve a breakthrough in all aspects of its business. The four components are:

- **Systems Thinking** - optimising how business processes operate from end to end, working together with suppliers and for the benefit of the customers, and ultimately for the benefit of their customers
- **Understanding Variation** - using statistics to gain new insights into business performance and to drive improvements in a sustainable way
- **Psychology** - understanding what makes people tick, how to empower them and how to remove the constraints of their ideas and enthusiasm
- **Knowledge** - the importance of learning, operational definitions and how rational predictions can be made by managers about future performance

No single area is more important than the others and the interactions between them are just as important. The implications still challenge managers as much now as they did ten years ago - this approach may appear to be common sense but it is still far from common practice.

Deming's system of management. In the same way that the elements of an engine are totally inter-dependent, so are the elements of management itself. Hence the equal focus on the four areas of Systems Thinking, Variation, Psychology and Knowledge. At first glance the connections may be unclear, but together they represent a coherent view of management's job. It is an approach that can be applied to any organisation and is designed to be of use to every manager.

Most managers state a desire to serve their customers well, improve their business and create a good place to work. So why do these desires appear to be achieved so inconsistently? Why is management such hard work? The fact is that many of the issues we face as managers are exacerbated by the way we manage ~ but until we are presented with an alternative perspective, it is not easy or possible to manage differently.

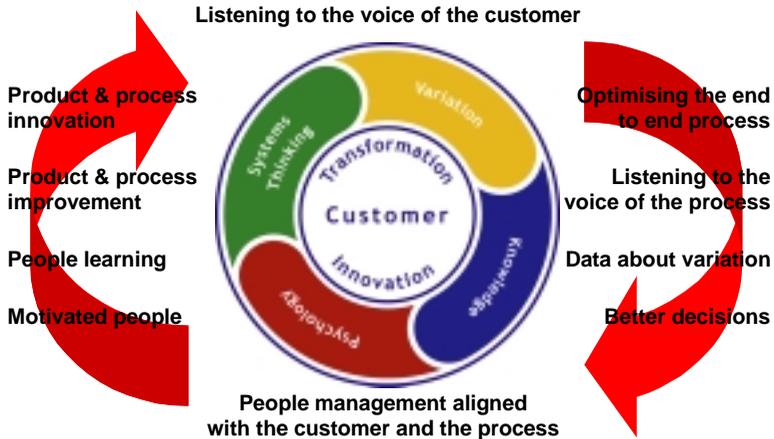
An extreme example, but one which illustrates common practice, is the British rail industry. The government took BR, an integrated organisation and split it up along functional lines (Train Operating Companies, Railtrack (now Network Rail), Leasing companies etc). Competition was assumed to bring improvements and cost reductions as each new company fought for market share and higher margins so each new company was given clear service level targets. However, numerous organisations were fighting to meet their own particular targets. Their people were generally passionate about the railways but were prevented from working as a team by the new structures. Customers wanted easy journeys across the network and for the service to be consistent, or even to improve, but this proved impossible. The problems were compounded by managers being paid bonuses to hit their local objectives - teamwork across the industry therefore took second place. In short there was a fundamental mismatch between the needs of the customer and the way the industry was structured.

This approach is widespread - we divide our organisations into functional hierarchies and move the work from one team to another before delivering what the customer wants. At each point there is a delay, an overhead and the potential for error. Streamlining and improving the end to end process rarely happens to any great extent as the organisational barriers all too often make it too hard.

Contrast that with Deming's view. At its heart is a desire to delight the customer. All of the staff in an organisation should have a clear view of how their work benefits their customer and also have the responsibility to monitor and improve the service or product, as well as the process that delivers it. Staff should be encouraged to contribute ideas and to implement improvements on a daily basis with their colleagues. The increased pride in their workmanship will reinforce co-operation, communication and teamwork still further. This also stimulates creativity and finds opportunities in innovation.

The understanding of the variation in a process, and its causes, will enable managers and their staff to deliver consistent quality with less cost and waste. This will lead, over time, to a high degree of satisfaction from both customers and staff.

The organisation will continue round this virtuous circle and will find productivity rising, quality improving and market share increasing. Only this combination of outcomes will enable an organisation to grow and improve in a sustainable way - without the peaks and troughs of performance that are the norm.



As the Deming approach is applied to the particular challenges facing an organisation, it will become apparent that existing practices often prevent cross-functional teamwork and even frustrate the good intention to change and improve. Managers who take the time to understand the Deming approach can lever the lessons and successes of a generation and apply it to their own business.

An organisation that embarks on this journey will see the design of its processes inevitably change to reflect the way value is delivered to the customer. Many also find that their management structure needs to change. This is not the flavour of the month or a ready made menu for success - it is rather a way of thinking about purpose, objectives, people, processes, customers, suppliers, information, innovation, quality, performance and about leadership itself. It is a journey of learning that adapts to all circumstances - a way of thinking that is applicable to all management situations.

The following pages illustrate some of the differences between traditional management practice and the way Deming advocated. The table overleaf provides a snapshot view of how organisations tend to be managed at the start of the 21st century compared to what Deming already considered best practice in the 20th century. You may find it easiest to read from top to bottom down the columns.

Read down the columns	Approach to organisation and process design	Approach to managing people and teams
How we typically manage	Divide the organisation up into similar functional groupings to maximise economies of scale. Define tight contracts with suppliers.	Define objectives and provide incentives and pressures to make each functional manager and member of staff hit pre-defined targets (a "results focus")
What happens next	The end to end process (ie. how we do the work) is broken up between different functions. There is little visibility as to how it is running and no single team is responsible. Suppliers deliver to a legal contract instead of working to improve their service.	Managers do all they can to meet their objectives. Where this proves difficult, short term decisions are made, work is passed off to other teams and numbers are re-calculated in creative ways. This can give the illusion of progress, but problems often re-surface later.
Lessons to learn	Managing individual functions separately is not the most effective approach to managing the whole process. The batching of work causes backlogs and the passing off between teams causes quality problems. Everyone must work together on mutual end to end improvements.	Individual targets often encourage the wrong behaviours and prevent the players working as a team. People are inherently motivated to do a good job and it is usually variances in the process that affect performance rather than individual laziness or incompetence.
A brief interpretation of Deming's approach to management:		
How we should manage	Define a clear aim for everyone based on customer needs and ensure that all activity is consistent with it. Design the end to end process in the optimum way and align people and teams with the way the work needs to be done. Include suppliers and even customers in this approach so as to optimise total cost.	Allow teams to take responsibility for whole tasks so that they work more effectively together. The quality improves for the customer and the whole process cost is optimised (an "enabler focus"). Focus on the constant improvement of all aspects of the business (quality, time, cost, risk, satisfaction) rather than simply hitting pre-defined numerical targets.
What would happen if we did it	The work would be done in the most cost-effective way without waste, delay, error or central management overhead. Productivity and quality would improve and suppliers would be more responsive.	The teams are inherently motivated through having more control & more visibility of how their work directly benefits the customer. A consistent focus on improvement, with the right method, eliminates errors and waste.
Advantages	The organisation design can optimise the way work is done by ensuring communication of problems and ideas up and down the supply chain. The probability of incremental and sustained improvement increases dramatically.	People should be allowed to take pride in working as a team and doing what is best for the whole organisation. This empowerment must include the right knowledge and skills – it is not just a matter of delegation.

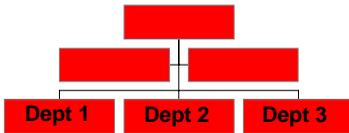
Read down the columns	Approach to management information and data	Approach to making improvements
How we typically manage	Fix service levels to describe an acceptable target. Measure each function to compare its average to the agreed target. Take action if results slip.	If the measures deteriorate, exhort the manager to improve. If that fails, get someone in to run an improvement project.
What happens next	Customers experience the service on an item by item basis but a yes-or-no SLA threshold masks this level of variation. Many of the messages which would direct teams to the potential improvements are lost.	Improvement projects usually deliver some benefit. But when the project disbands, the benefits often decay until the next project. Line staff are rarely empowered to constantly improve the whole end to end process on a daily basis.
Lessons to learn	A richer presentation of data is required which both simplifies the reports we get whilst giving insights into what's happening on an item by item basis. Averaging masks the detail needed to improve the process	There are too many barriers which prevent improvement (hierarchies, finances, communications etc). True constant improvement is a deliberate and measured approach to delivering key changes consistently.
A brief interpretation of Deming's approach to management:		
How we should manage	Data should be collected by the staff performing each activity and the level of detail should be commensurate with the way the work gets done. Present data using control charts which graphically display the variance & trends and give insights into customer & process improvements.	Empower the process-based teams to take immediate action in response to problems and ideas. Analytical and improvement techniques need to be in every team. Teams must be allowed to take risks and try things out to learn what works – <i>PDSA</i> * to quickly trial and learn, while minimising risk. *see later
What would happen if we did it	The volume of numerical data would reduce but there would be more insights to illustrate how the whole process is working and to direct improvement action.	Problems will be resolved day by day. Less time and energy will be spent fire-fighting. Assumptions will be challenged and better ways of serving the customer will emerge.
Advantages	Placing better data into the hands of all staff results in quicker & more effective action. The ability to distinguish between random data fluctuations & real issues saves time and energy.	Constant improvement is a key facet of every business process. Only by removing all barriers can innovative ideas be shared, discussed and implemented easily.

These next pages look briefly at the four core disciplines of management—Systems Thinking, Psychology, Variation and Knowledge, and how they interact.

Systems thinking. Every management action has direct consequences but also indirect reactions. Systems thinking is the science behind this. Its application is about optimising performance throughout an organisation in line with its aim (which should of course be in line with the customers' aims). The word 'systems' is not used in an IT sense here.

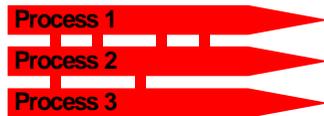
All too often the different parties in a process have different aims. Functional teams may have their own budgets, headcount, targets and objectives which are not aligned with the teams upstream or downstream, or with the customer. If a business improvement requires a redistribution of resources, or for one team to miss its target for the greater good, the barriers go up and the improvement never gets off the ground.

Systems thinking requires a process focus rather than a functional focus and the involvement of customers and suppliers with a shared agenda. It challenges the manager to optimise the process as a whole to ensure that the end customer receives exactly what they want, when they want it, and at the optimal cost to all parties.



Hierarchy/silo thinking

"The whole is the sum of the parts".
Give all parties strict numerical and quality criteria to meet and make sure each party hits its target.



Systems thinking

"The whole is the sum of the parts plus the product of the inter-actions."
Bring all parties together to work on customer & process improvements.

Traditional thinking suggests that there is a trade off between the cost and quality of a service or product, and that an appropriate compromise must be struck. Deming showed that the two go hand in hand. Any rework, reject or complaint costs time, money and management attention. By eliminating these from the entire supply chain, an organisation will become much more efficient and able to dedicate its whole focus to getting better and better at what it does, as judged by its customers.

This requires the collaboration of all parties to the concept of constant improvement. It propels everyone round the virtuous circle of improving quality, improving productivity, reducing cycle times and costs, delighting customers *and* increasing market share. All parties must therefore have a consistent aim. Without one they are more likely to work in isolation to meet their own targets and thus cause what Deming called 'sub-optimisation'.

Psychology. A key part of a manager's job is to lead people. Deming recognised that a basic understanding of psychology is therefore a fundamental part of every Manager's tool bag.

He believed that people are intrinsically motivated to learn, contribute and perform - we are not all idle and resistant to change, needing only a good kick or the offer of a bonus to work hard! Managers often try to motivate and manage their staff by using appraisals, rewards and blame. These 'extrinsic' motivators do work but not always in the way intended - when the chips are down rewards motivate people to get those rewards (whatever it takes), and blame motivates people to avoid blame in future (whoever they have to pass it on to).

Although targets are often greeted with a desire to improve the system, when the going gets tough it is often easier to fiddle the system ("that's now part of someone else's job") or fiddle the figures ("we don't calculate it like that any more"). The targets are therefore met, but the organisation as a whole is not better off. Notable casualties are trust in management and pride in work - so hitting the target may actually be missing the point. In fact Deming estimated that over 90% of the performance of a system is down to its design and not the individuals working in it. The big improvements are therefore to be made by transforming that process to ensure output closer to the customer requirements, with the help of everyone in the organisation.

Pride in work is one of the most powerful motivators, but it comes from within (an 'intrinsic' motivator). People feel frustrated when their ideas and energies are wasted or when they are forced to hit targets that they know are at odds with what makes sense or what the customer really values.



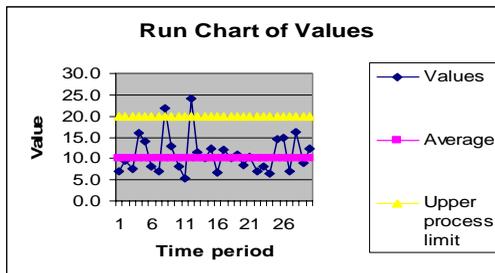
The way in which people are managed must allow their natural energy and creativity to flourish, and also take into account the way in which they respond to change. How many organisational change projects start or end with redundancies? The intention may be to create a more streamlined and dynamic organisation, but it often simply succeeds in producing a demoralised and insecure workforce whose primary goal is to retain their jobs, rather than to ensure the new changes are a success. Staff should be free to take controlled risks, to table new ideas, try them out and keep the ones that worked. Managers must lead with a consistent example and ensure that their staff have everything they need to improve their own jobs, in partnership with all the other people who work in that process.

Wherever arbitrary targets, organisational barriers or short term thinking affect staff's ability to work effectively together, customers and quality suffer. Conversely staff who know that they are consistently getting better and better at what they do create satisfied and loyal customers.

Understanding variation. It is sometimes said, “If you can't measure it you can't manage it”. Conversely, you can only measure the past but you can manage only the future. Therefore your ability to *predict* the performance of a system is critical. One complication is that all things vary - the time it takes to get to work, the monthly sales tally, school results, customer satisfaction measures, and virtually every metric in use. Managers tend to use averages to simplify data but the spread of these measures is as important as the average. The lower the level of variation in what you are measuring, the more stable and predictable your system will be. That in turn will allow you to manage it more effectively and take focused action to improve it.

All stable process measures will have a typical range of values with some random variation ('common causes'), but also occasional specific exceptions ('special causes') which take them outside this range. Knowing which is which, and being able to identify why, is key to prediction and therefore key to successful management. Control Charts are the simplest but most robust and powerful way of distinguishing between common causes and special causes. Measured data is taken and the average and 'control limits' are calculated using a method developed by US. Statistician, Walter Shewhart.

When data points occur outside the control limits (or correspond to several other defined patterns), they indicate the occurrence of a 'special cause' originating outside the system which should be identified and addressed. However, much management



A Control Chart showing the average & natural process limits.

action is typically in response to common causes and essentially amounts to chasing random shadows. The only way in which common cause variation can be reduced is to fundamentally improve the system itself, with the help of everyone working in it. It is not possible to predict where in the range the next measure will be, but a control chart does tell management how consistent the process is, allows them to compare this against customer expectations and then to direct and prioritise improvements.

Deming built on the work of Shewhart and others to apply the theory of Variation to the issues facing management. A culture of constant improvement based on an understanding of the root causes of variation really will bring dramatic results. This is the basis of the Six Sigma approach to process measurement and improvement, which may, with knowledge, be used as one part of a holistic strategy which incorporates all the elements of the System of Profound Knowledge. As always it is important to understand the theory behind an approach, but equally important to apply it appropriately to each individual situation.

Theory of Knowledge. In ancient times, tribes used to perform elaborate rituals that were designed to ward off an eclipse. At the first sign of one, they sprang into action and lo and behold, the dragon devouring the sun or moon was seen off. This is a good example of 'management by what appeared to work last time'. The 'knowledge' was passed from generation to generation for generations until the alternative theory that we now understand was tabled by Italian astronomers.

In the same way, managers very often continue to oversee an operation in the way that they have learned during their career - "I've got 20 years of experience". Deming often referred to this as '*superstitious learning*'. However, the gap between the best managed companies and the average is still as large as ever - so how can we know whether we are managing according to best practice or just by tradition? Real knowledge needs to be continually learned and re-learned as customer expectations and circumstances change - in other words a systematic approach to improvement must be adopted. If it is not, organisations can only rely on management by trial-and-error or organisation-and-reorganisation. Both result in the typical peaks and troughs of performance we see - the boom and bust that we struggle to escape.

The vast majority of organisations do learn, change, develop and improve, but very few do so at the pace of the best or at the rate their customers expect. Deming laid a great deal of emphasis on rapid learning and basing action on proven methods. He advocated a lower risk way of getting more rapid results - the *PDSA* cycle, or *Plan Do Study Act*. First formulate an approach or theory and *Plan* a small-scale trial, *Do* the trial and then *Study* the results and finally *Act* accordingly. Documenting the outcomes in the form of operational definitions ensures accurate communication of requirements and foolproof sharing of knowledge. This is a deliberate approach to constant learning and improvement by all staff. Involving everyone in the improvements is vital, customers and suppliers included, as between them they have the knowledge to make changes successfully. Experimenting enhances managers' ability to predict the impact changes will have before committing too many resources.

An understanding of the theory of knowledge gives insights as to how managers can predict performance through understanding cause and effect and interpreting variation. The control charts outlined earlier are tailored to give a clear picture of how processes are expected to behave in the future by giving a range for stable performance.

With all this focus on learning and continuous improvement, it may be surprising that Deming once said, "Constant improvement is essential, but unimportant". Continuous improvements keep an organisation alive and responding to change, but the most significant changes are introduced by the innovative ideas that transform a product or a market. Of course, organisations that are constantly learning are more likely to be innovative and also will more quickly pick up ideas from competitors and challenges from customers.

Summary. So what might an organisation be like that followed the Deming approach consistently over a period of time?

- All staff would have a clear mission and aligned objectives, focused on real customer needs
- They would understand and optimise all end to end processes, working closely with all stakeholders to get closer and closer to the evolving balance of features, service and cost that customers want
- They would use balanced measurements and Control Charts to constantly reduce variation, improve performance, reduce waste and adapt in their changing environment
- Managers would value, empower and challenge all of their people to learn, to improve and to innovate
- and they would lead all this consistently, responding to changing customer expectations, and avoiding counter-productive short-term thinking

Deming offers a powerful perspective to understand organisations, as well as framework to design a future state and to constantly transform and optimise it. The challenge to organisations is profound – and the results can be dramatic.

If you would like to read more about Dr. Deming's work, there is plenty of material available. Deming himself wrote several books including *Out of the Crisis* and *The New Economics*. Another way to learn about his approach and its application is to read *The Deming Dimension* by Henry Neave or *4th Generation Management* by Brian Joiner. If you want to see the antithesis of this thinking, try any Dilbert cartoon book!

This information is published by The Deming Forum, a not for profit educational organisation which promotes the learning and application of the management philosophy developed by Dr W. Edwards Deming. The Deming Forum organises an annual conference in May, The Transformation Forum, at which speakers from all over the world give insights into Dr Deming's thinking and explain how his approach has helped their personal transformation as well as their organisation's.

For more information, please phone us on 01525 402323, or e-mail us at demingforum.uk@virgin.net

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The Court House, Woburn Street, Ampthill, UK. MK45 2Hx.
www.deming.org.uk