Model of Sustainable Organization (MoSO)

Sustainable organizations are enduringly successful,
yet not all successful organizations will endure or are sustainable

The MoSO Cooperative

Developed and published by The MoSO Co-operative
a group of like-minded individuals with widely different backgrounds who voluntarily contribute their knowledge and experience.

The Essential Elements of a Sustainable Organization

Customers

Operations

People, culture, leadership and management

Societal influences and learning

Environment

Continual improvement and innovation

The Three voices (VoC, VoS, VoP)

Essential interactions/communications and collaboration

These elements are underpinned by a set of sustaining principles and values

1st Revision, September 2011

Collated and edited by Alan Clark, Terry Peterson and Terry Rose as part of their contribution to The MoSO Co-operative.

Suggestions for how to use this book

This book is set out in what might be called a 'bite', 'snack', 'meal' arrangement. That is to say:

Section 1 (the bite) can easily be swallowed in one gulp, giving a taste of MoSO.

Sections 2, 3 and 4 (the snack) give more detail or flavour to MoSO, taking more time to digest.

Section 5 (the meal) gives a greater depth of information about particular subject areas in the form of a set of easy to read stand-alone articles.

This particular structure was chosen because a detailed understanding of every aspect of MoSO is not required to get started. Users typically get a general understanding then build knowledge and understanding over time, and in a sequence, that is unique to them and their organization's needs. The bite, snack, meal arrangement allows users to 'dip-in' to the information as and when required.

Another reason for using the bite, snack, meal structure is that it mirrors the layout of the MoSO website at: www.thecqi.org/moso.

A word about Section 6:

An important aspect of MoSO is the development and use of powerful self-examing questions as a means to better understand an organization. Section 6 compiles questions from throughout the book and website into one place for ease of access.

Special Note

When reading the various sections of this book you'll notice that the same, or similar, topics are discussed from different perspectives and in some cases by different authors who have put forward their understanding or interpretation. We think this is a real strength of MoSO – in most cases there being no 'right' or 'wrong' way. However, care has been taken (by means of peer review) to ensure that information given is not contradictory. In other words, whilst there may be differing viewpoints, there is general agreement that the information given is, in the view of the MoSO Cooperative, valid and worthy of consideration.

Section 1
ABOUT MOSO

The aim of this section is to give a general outline of MoSO including background and context.

What is MoSO?

MoSO is a new way to look at organizations; a way which addresses the needs and aspirations of our time. At its heart is a model, yet it is so much more than that.

MoSO is a holistic or systems thinking approach that sets out to show that all organizations, of whatever type or size, exist within a context bounded by the environment, the society in which they live and work, their culture and their leadership style. All of which influence the operational performance of the organization and its effect on the environment.

The Genesis of MoSO

MoSO was started in 2008 by members of the Deming Special Interest group (DemSig) of the Chartered Quality Institute. The group wanted to make Dr. Deming's work, which was so instrumental in the second half of the 20th century in the transformation of Japanese and American industry, more accessible to today's world. After all, Deming himself was a lifelong learner and would undoubtedly have continued to enhance and update his work had he been living today. In so doing, the group embraced the work of other significant thinkers on such subjects as organizational development and leadership. We call this approach Deming $^{++}$.

The group penned the term **The Sustainable Organization** as a focus for their work having decided that societal and environmental concerns were a logical extension to Deming's latter day thinking.

MoSO Today

MoSO currently has three areas of activity:

1. **The MoSO website** which is an open source, free to use, resource hosted by our sponsors The Chartered Quality Institute at: www.thecqi.org/moso.

   On the website there are videos, presentations and over 25 easy to read articles including Case Studies and suggestions for how MoSO may be used.
2. **The MoSO Community** offers a shared learning experience for those who wish to work co-operatively to continue to develop and enhance MoSO.
3. **MoSO Support Services** offer tailored advice and support for individuals and organizations. Support may include consultations, facilitation, master classes and workshops.

The Sustainable Organization

A Sustainable Organization meets the needs and aspirations of our times; putting emphasis not only on the financial, but on the social and environmental management of its operations as a coherent strategy for long term success.

> **A *Sustainable Organization* is an organization, of any type or size, which strives to build a sustainable long term future by making a positive impact on the society and the environment in which it lives and works.**

It should be understood that the management of societal and environmental impacts is not in any sense altruistic (as useful as that may be) - they are seen as essential elements of organizational learning and therefore of long term success.

The words ***society*** and ***environment*** are used in their widest sense – the precise meaning being determined by individual organizations.

Two important thoughts at the heart of a sustainable organization are ***long-term*** and ***collaboration***.

- ***Long- term*** (success)**:** When people believe that an organization has a long term future they are more likely to want to contribute their resources – be it their skills, their enthusiasm and energy, their financial support, etc. – and want to play a part in that future.
- ***Collaboration*****:** Rarely can anything substantive be achieved in isolation – whether it is as individuals, departments, functions, even organizations. Some degree of collaboration (toward a common aim) is essential. A sustainable organization extends collaboration into the society in which it lives and works and into the environment – perhaps collaborating with a network of other organizations (private, public and voluntary) to achieve substantive benefits – all the time learning from the experience and bringing new ideas and skills to play in its own success.

Why do we need Sustainable Organizations?

There are three compelling reasons,

1. Today's business environment is becoming ever more complex.
2. Existing 'models' with their focus on short term 'financials' and shareholder value at any cost are failing to meet the aspirations and needs of society and individuals.
3. We are living through an era of harsh economic realities epitomized by 'cuts-cuts-cuts' and 'do more with less' – not to mention big questions about the Big Society and its impact on organizations.

In the face of these compelling reasons, leaders and individuals in organizations that aspire to do more than just survive are saying, **"There must be a better way"** as they look to build a sustainable long term future.

We believe that **MoSO** can play an important role in setting out this 'better way'.

Organizational Sustainability - a challenge and a journey not a prize

Organizational sustainability cannot be 'won', like a prize or a certificate on the wall. It's a journey, a direction of travel.

We like to think of it as a challenge and a provocation – it's certainly not a prescription. It requires 'joined-up' thinking, engaged people and sustained committed leadership.

What are the benefits of accepting the MoSO challenge?

1. It promotes a fresh and innovative way to lead and manage an organization.
2. It provides new insights into the way that organizations work.
3. All stakeholders; employees, suppliers, customers, community and the environment, benefit over the long term.
4. It stimulates improved motivation by giving everyone a stake in the future success of the organization.

The Model of a Sustainable Organization (MoSO)

At the heart of the thinking that underpins MoSO and organizational sustainability is a generic model (some use the word framework) that gives a visual image of the essential elements of a sustainable organization and how they fit together to form a cohesive whole.

But be warned, this is not a 'conventional' or linear input-output process type model. Today's organizations don't work like that – they are more complex and unique. This does not mean that MoSO is in itself complex – it isn't, it's just that at first sight it looks different.

The generic MoSO is used as the starting point for organizations to develop their own unique model – letting them see the big picture and join the dots. It's the act of mapping strategies and relationships onto your own MoSO that identifies your organization's path towards sustainability.

MoSO challenges you to ask powerful questions

For example,

- To what extent is our organization sustainable?
- What would our MoSO look like?
- What strategies do we have in place for each of the elements?
- Do they work together as a whole, focused on a common aim?
- Are there gaps and inconsistencies?

Individuals and organizations will arrive at their own unique answers. This is why MoSO **is not a prescription**. Nor is the model perfect. We want people to use it, to join in the thinking and to contribute.

Join the challenge today

Take a look at the MoSO website at: www.thecqi.org/moso

Section 2

UNDERSTANDING THE MODEL AND ITS ESSENTIAL ELEMENTS

The aim of this section is to give a flavour of what MoSO is about through an understanding of the Model and the essential elements from which it is built.

THE MODEL

At the heart of the thinking that underpins MoSO and organizational sustainability is a generic model (some use the word framework) that gives a visual image of the essential elements of a sustainable organization and how they fit together to form a cohesive whole. The model highlights the importance of relationships between all the elements in any situation.

MoSO is a holistic (or systems thinking) approach that sets out to show that all organizations, of whatever type or size, exist within a context bounded by the environment, the society in which they live and work, their culture and their leadership style. All of which influence the operational performance of the organization and its effect on the environment.

But be warned, this is not a 'conventional' or linear input-output process type model. Today's organizations don't work like that – they are more complex and unique. This does not mean that MoSO is in itself complex – it isn't, it's just that at first sight it looks different, which is why in this section and on the presentations and videos on the website the model is built element by element.

Note that our working definition of a model is,

'a simplification of reality intended to promote understanding and learning'.

Therefore the model is not intended to be prescriptive, nor is it perfect. As George Box said, all models are wrong but some are more useful than others - so mind the gap!

The intention is that the generic MoSO is used as the starting point for organizations to develop their own unique model – letting them see the big picture and join the dots. It's the act of mapping strategies and relationships onto your own MoSO that identifies your organization's path towards sustainability.

MoSO can be used at any level in an organization - at an overall organization level, at a department/functional entity level and even at an individual level.

There are two versions of the model

- The BASIC model
- The ENHANCED model which builds upon the basic model

The Essential Elements of the model and of your unique journey to sustainability are:

Customers
Your Operations
People, Culture, Leadership and Management
Societal Influences / Learning
Environment
Continual Improvement and Innovation
Essential interactions/communication and collaboration

The Enhanced Model incorporates The Three Voices:

Voice of the Customer
Voice of the People
Voice of the System

BUILDING THE BASIC MODEL – ELEMENT BY ELEMENT

CUSTOMERS

Customers are the fundamental element of every business or public sector organization. They are the reason it exists. Meeting or exceeding the needs and expectations of customers is essential for sustained success and consequently for jobs, profits or dividends.

The Customers element is split into two parts recognising that all work, whether daily work or improvement work, starts and finishes with the customer.

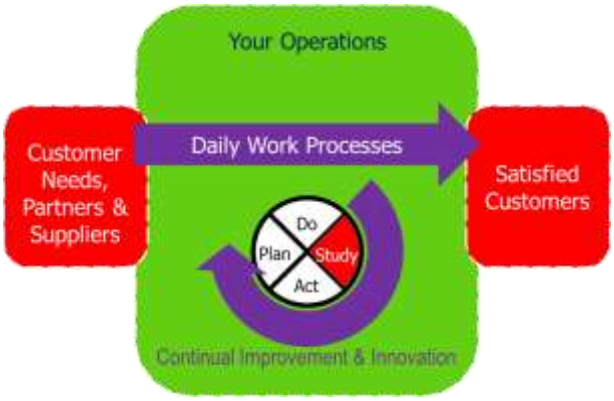
Customers are the only ones with a vote on quality – which is whatever they think it is. Their expectations inevitably rise over time, with the 'exciting feature' becoming the norm and the norm taken for granted. This therefore gives rise to the need to continually improve and innovate, especially in today's dynamic environments.

Customers are a distinct element in MoSO since they provide ***the*** unique focus for the organization. They provide alignment for everyone within all organizations. Customers are a special sub-set of society (one of the other essential elements of MoSO) and, in turn, of the external environment in which businesses or public sector organizations operate.

In recent times, the needs and expectations of other stakeholders have rightly become more fully recognized, yet this in no way diminishes the pre-eminence of the customer.

YOUR OPERATIONS

The two parts of the Customers element are joined together by the Your Operations.



MoSO uses the term 'operations' to describe all work performed by an organization - ***your*** organization - to provide products and services that satisfy and exceed customer expectations. Continually evolving customer needs and expectations must be satisfied for any organization to continue to exist and prosper.

Every organization's operations (ways of working) are unique - and it is this uniqueness that differentiates one organization from another.

MoSO has two key features related to ***your*** operations:

1. Work processes are viewed as an **end-to-end** flow or system, from customer needs to satisfied customers - thus creating a seamless, rapid flow of work and information through the organization
2. An embedded method for **systematically** driving continual improvement and innovation keeping pace with ever evolving demands of current and future customers.

Compare this approach to the often inefficient, wasteful, and torturous path of work through departmental / functional silos – each working in isolation, without any clear view of customer expectations and needs. How often do customer issues (raised by both internal and external customers) simply fall through the organizational gaps between departments or corporate functions?

In addition, organizations often fail to put in place effective and systematic ways to continually improve and learn from mistakes and customer feedback.

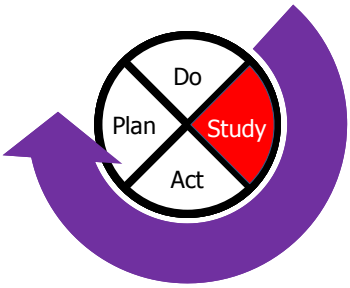
MoSO shows that operations do not work in a vacuum. People, culture, leadership and management all have a profound, if not fully appreciated, influence on the structure and effectiveness of an organization. The converse is also true.

In the bigger MoSO picture, societal and environmental influences impact customer expectations of products and services and also how an organization is expected to operate.

CONTINUAL IMPROVEMENT AND INNOVATION (PDSA)

A Plan, Do, Study, Act (PDSA) 'learning' cycle is shown at the very heart of the model because it is the means by which organizations systematically and continually improve and innovate towards a single aim – that of customer satisfaction.

PDSA is a generic cyclical four stage improvement process, based on the scientific methodology that uses feedback to enable systemic changes to be measured and improved over time. Experience has shown that applying a methodical sequence of stages to any problem solving, experimentation or design activity contributes to the achievement of best results.



There are many versions and interpretations of what is known as Deming's PDSA cycle. The intent is not to be prescriptive as to which interpretation to use, but to show that having a systematic way, or ways, of improving is an essential element of a sustainable organization.

You will have noticed that the PDSA cycle is shown at the very heart of MoSO because PDSA, or improvement activity, applies equally to all activities and all elements of the model.

Innovation

For a sustainable organization, proper engagement with innovation is inescapable, but what is innovation? Innovation is not invention, neither is it just improvement or novelty. Effective innovation creates value, both social and/or economic.

For our purposes we say that:

Improvement is doing existing things better.

Invention is finding or creating a new thing.

Innovation is doing or using new things to change for the better.

Every organization today is under pressure to be efficient in pursuing its aims and to do more with less. Without innovation in an organization, its customers or stakeholders will drift away.

When addressing the role of management's responsibility in securing its organization's future by pursuing innovation, Deming used to say:

'Improvement is essential, but relatively unimportant'.

Deming gave Four Prongs of Quality, starting with the most important:

Innovation in product and service.

Innovation in process.

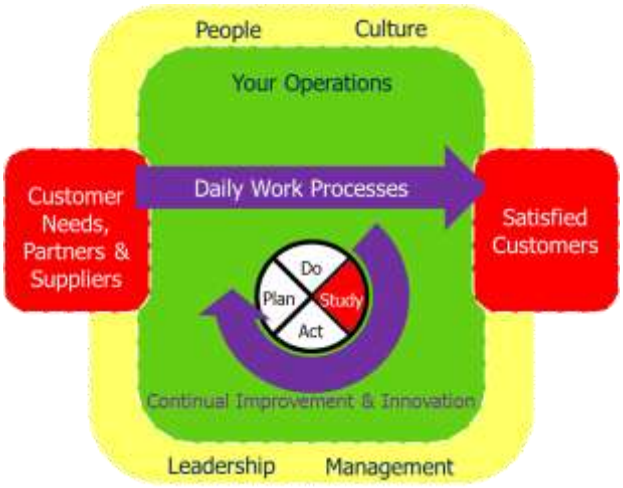
Improvement of existing product and service.

Improvement of existing process.

However, the importance of starting with improvement activities, or at least working on improvement activities in parallel with innovations cannot be understated. From a customer or market perspective, there will be little appetite for new products and services if existing offerings are (say) unreliable or the organization is unresponsive or unable to get to the root cause of problems. From an organizational standpoint, problem solving skills associated with putting effective improvements in place is an essential platform from which to launch new products and services.

PEOPLE, CULTURE, LEADERSHIP AND MANAGEMENT

People, culture, leadership and management make up the next main element of MoSO.



These powerful interacting constituents of any organization are brought together because they have a profound effect on the way an organization works and the results it sets out to achieve. Take a look at the expanded model and visualize all the permeations of interactions that can take place. There are no 'hard' barriers between the elements. Each element has the potential to influence each other and the system as a whole (as indicated on the model by dotted-line boundaries between each element). As the model builds, you'll see that all the elements shown so far may be impacted by societal influences and the environment at large.

People

In any organization:-

- The customers for products or services are people.
- The vision is provided by people.
- People do the work and improve things.
- People need to be engaged - they have needs, as does the organization.

Understanding what goes on in any organization, or outside it, requires knowledge of every aspect of the way people do, and don't work together.

Culture: 'The way we do things round here' is a simple description of culture, yet we need to look below the surface if we are to work with it, rather than being frustrated by culture's seeming intransigence.

The culture in an organization has been described as the emergent result of the continuing negotiations about values, meanings and proprieties between the members of that organization and with its environment.

Hofstede describes Culture as 'the collective programming of the mind which distinguishes one human group from another'.

Culture is about paradigms – assumptions of thinking that create advantageous short cuts in static situations, but which need questioning and changing for dynamic environments.

Leadership: Leadership has been described as the capacity to release the collective intelligence and insight of groups and organizations. It is helping people to find their own answers. There are things that leaders need to know if they are to be credible but there are moments when you need to say 'I don't know' if others are to confront difficult issues and learn how to overcome them.'

Leadership by each individual or as a group has responsibility for creating the vision to see beyond today's difficulties and a culture which will sustain the organization for the longer term (*Living Leadership a practical guide for ordinary heroes*, Binney, Wilke & Williams 2005 Prentice Hall).

Management is responsible for ensuring efficient implementation not only of the daily work of an organization but the work to continually improve the outcomes of daily work to meet and exceed customer expectations. Management therefore has the job of ensuring that the organization gets better at getting better. Of course, this cannot be achieved without a thorough and up-to-date understanding of customer expectations – hence the need for a Voice of the Customer process (see The Enhanced model).

Top management has responsibility for quality. It cannot be delegated. Improved quality leads to increased productivity and reduced waste (human, material and environmental). The need is to both improve quality (as determined by customers) and reduce costs.

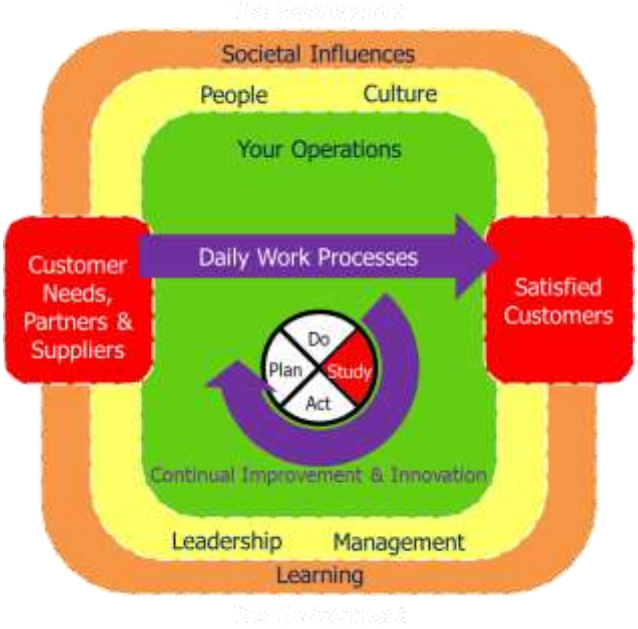
Management systems should ensure pride in achievement for everyone and give people joy in their work. If you look after your people, your people will look after your customers.

Managers need to develop a correct understanding of data/information in a scientific context. Ask, What do the things that I measure tell me about how the organization is performing? *Understand the wisdom of numbers* by using the Voice of the System (see the Enhanced model

Having an on-going commitment to continual improvement and innovation in design, product and process, i.e. having a planned approach to improvement, innovation and learning is essential.

SOCIETAL INFLUENCES/LEARNING

The next element represents the broad society in which an organization operates and from which it learns.



The precise interpretation of each organization's 'society' needs to be defined as part of their interpretation of MoSO, but it will most likely include, for example, market sector, societal and business interactions, and corporate social responsibility (CSR).

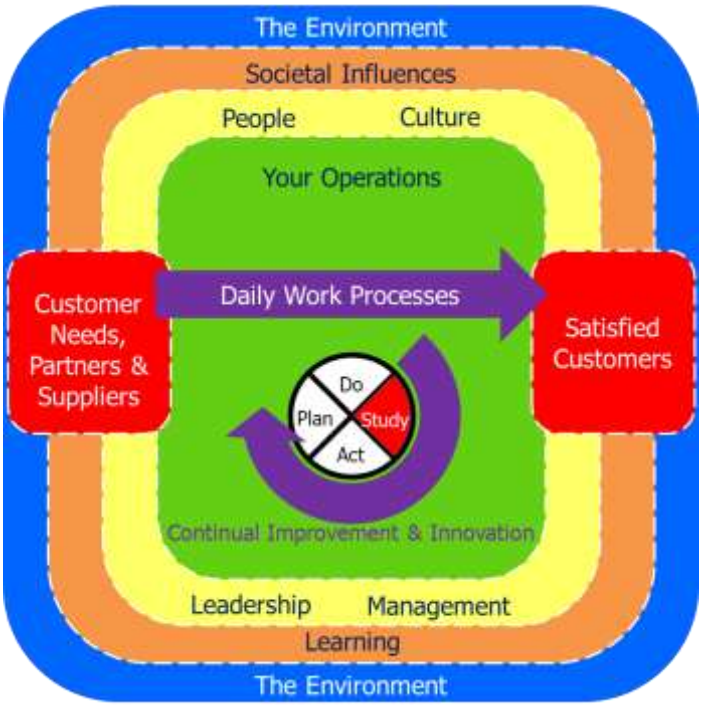
In totality this element represents the learning environment in which an organization lives and works.

The broad society in which we live and work has a profound and ever-changing effect on us as consumers and workers. It affects our lifestyles and therefore our expectations of the products and services we buy and on the types of opportunities available to us as 'workers'.

This element is intended to highlight some of the ways in which the sustainable enterprise influences is influenced by the societies in which it exists and ask questions about the ways in which the enterprise can use or meet these influences to ensure that it is truly sustainable.

THE ENVIRONMENT

The Environment forms the outermost element and completes the basic MoSO model.



The MoSO Basic Model

The environment bounds us all together expressing the need for everyone, and all organizations, to proactively play whatever role they can in environmental sustainability. The environment sets the agenda for market and/or consumer requirements both in terms of product and service offerings and how organizations are expected to operate.

Deming said, "Any defects within a process contribute to poor environmental performance for a company."

And Albert Einstein said, 'The environment is everything that isn't me.'

Managing environmental sustainability provides profound insights into both the external environment and the internal environment of an organization, emphasizing system optimization, stability, logic and understanding processes.

The environment includes the internal and external environment of an organization, both of which are shaped by the interaction of the organization with its surroundings. Deming stated that he viewed good stewardship as leaving a better world behind for our children than the one we inherited and in his intellectual approach he subscribed to Einstein's view that "Problems cannot be solved by the same level of thinking that created them". Bad stewardship is simply transferring costs to future generations.

MoSO is about creating enduring, sustainable, balanced systems that develop in an organic way to naturally eliminate waste. In order to do this we must strive to do everything better, continually, through a holistic understanding of organic systems and a constancy of purpose.

ESSENTIAL INTERACTIONS/COMMUNICATIONS AND COLLABORATION

Communication and interactions, both social and through processes, are the life blood that pumps through the veins of any organization – no matter what type or size.

In MoSO, all elements have the potential to influence each other. This is symbolized by the dashed lines that bound each element. For example, thoughts and actions pertaining to, say, minimizing the effect on the environment, permeate through to the design and operation of daily work processes.

Collaboration

The aims of an organization are best achieved through collaboration – both internal to the organization and externally to the society and the environment in which it lives and works. Rarely

can anything substantive be achieved in isolation – whether it is as individuals, departments, functions, even organizations. Some degree of collaboration (toward a common aim) is essential.

A sustainable organization extends collaboration into the society in which it lives and works and into the environment – perhaps collaborating with a network of other organizations (private, public and voluntary) to achieve substantive benefits – all the time learning from the experience and bringing new ideas and skills to play in its own success. So for a sustainable organization, collaboration is an essential means to achieving long-term success – it is part of a coherent long-term strategy.

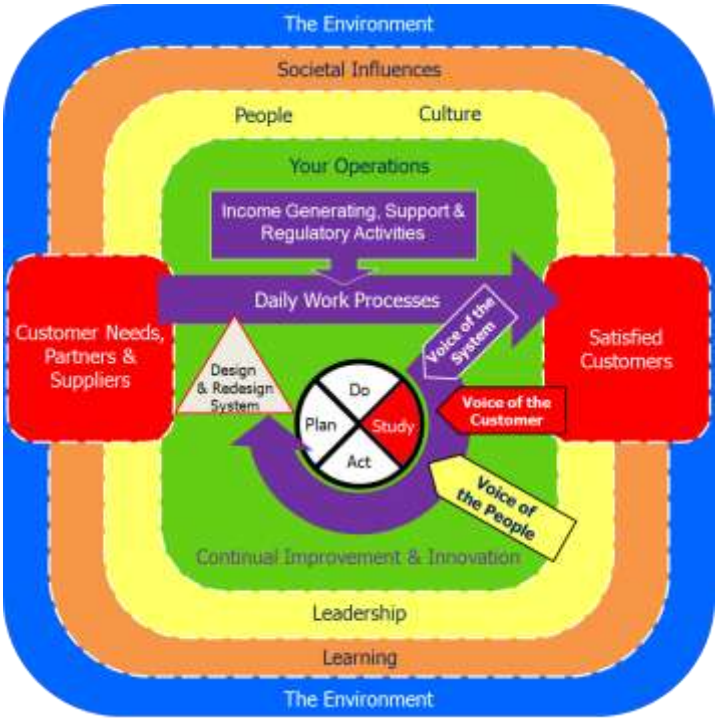
When looking outside of the organization, decisions about what should be achieved, who to collaborate with, how best to collaborate and when, are very important. The ***collaboration strategy*** has two aims:

1. To make a positive impact on the society in which the organization lives and works – typically in some specific area of interest, and
2. Having a positive impact on the future success of the organization. Examples could be:
    - obtaining additional skills brought about by the collaboration
    - having a positive impact on the culture of the organization
    - bringing new ways of doing things into the organization

THE ENHANCED MODEL

The Enhanced Model adds more understanding of how an organization operates as a self-sustaining system.

Sustainable organizations can be said to have three Primary Activities: Income generation, Support and Regulatory activities, and Continual Improvement and Innovation – being driven by the Three voices: Voice of the Customer, Voice of the People, and Voice of the System. This additional level of detail is shown on the MoSO Enhance model.



The Enhanced MoSO Model

1. **Income Generation** - the things the organization does to provide products and services which customers are willing to pay for (or someone will fund in the case of not-for-profit organizations)
2. **Support & Regulatory Activies** – The things the organization does to keep itself in being and legal

3. **Continual Improvement & Innovation** (renewal) - The unyielding and continually improving effort by everyone in the organization to understand, meet, and exceed the expectations of their customers.

THE THREE VOICES

The Culture of an organization (influenced by Societal and Environmental trends / issues) expects and supports its People and Leadership to continually drive innovative improvements using The Three Voices:

Voice of the Customer (VoC)

Voice of the People (VoP) and

Voice of the System (VoS)

The voices feed into the Plan Do Study Act (PDSA) learning cycle at the heart of the model and represent the self-renewing and self-sustaining element of MoSO.

The three voices must be heard in a systematic way for any organization to continue to prosper.

Voice of the customer

The expression 'voice of the customer' (VoC) is typically used in two ways:

1. We refer to VoC as the data that defines or describes customer needs and expectations. This data can either be in the form of numbers or language or both. In other words, VoC defines what is wanted.
2. An organization may also have VoC processes used to systematically capture and analyse VoC data and drive improvements in products, services and processes.

Voice of the people

Voice of the people is a key approach for assessing the health and capability of any organization. Leaders need to recognize the differences between what people can do and will do. However, too many organizations allow their people to be transient and uncommitted or treat them as 'all the same', simply a collective resource of 'manpower'.

Yet the contribution of people to organizational performance is vital as it generates aspects of products and services that are often of critical value to customers. People are commonly the main way that customers experience an organization, so failing to listen to the voice of people can lead to leaders misunderstanding the nature of how their staff interact with customers at critical moments of truth.

So you might ask, how well does your organization:

Structure an approach to capturing feedback from its people?

Actively deploy that approach, seeking out and acting upon feedback?

Capture data and knowledge about the morale, attitude and capability of its people?

Communicate key issues, progress, success and learning from failures?

Voice of the system

Voice of the system (VoS) is terminology used to describe the use of a simple process behaviour chart (a form of control chart) to characterize the performance of a process or system over time.

By interpreting the process behaviour chart, it is possible to define, with a high degree of certainty, what level of performance the process or system is capable of achieving and to determine what type of action can best be taken to improve its performance.

But do not be deceived, VoS is much more than a simple yet powerful technique. It is a way of thinking that can drive continual performance improvement, as opposed to only taking what is often inappropriate action when a target or expectation has not been met: so called fire-fighting.

It is necessary to use the voice of the system to provide relevant information on how the operational processes are functioning and whether changes are required as a result of internal, or external (environmental or social) changes – in short the VoS is about measurement and relating this measurement to a dynamic environment.

When used effectively, VoS helps to prevent and pre-empt fire fighting and other short term measures through its ability to define system performance, especially in dynamic environments.

Section 3

FUNDAMENTAL THINKING THAT SUPPORTS MOSO

The aim of this section is to explore some of the background or fundamental thinking that has informed the work of MoSO and the development of the model.

MOSO PRINCIPLES

We suggest that a sustainable organization will operate on a foundation of the following set of eight guiding principles:

Principle #1: Customer focus put into practice through quality - an understanding of customer needs and expectations.

> Customer focus is **the** primary principle, for without customers the organization has no purpose. Quality is what the customer says it is and provides a constant reference point for the whole organization.

Principle #2: Systems Thinking, taking the approach to understand the whole situation in perspective – the woods and the trees.

> The essence of systems thinking is that everything is connected and therefore it is worth understanding the most important connections for any given situation.

Principle #3: Everyone's daily work viewed as a seamless flow through the organization to produce outcomes valued by customers with the minimum of waste.

> The daily work of the organization is to transform the inputs of customer needs and resources into outcomes valued by customers. Daily work needs to timely, efficient and productive so as to minimise waste (human, materiel and environmental)

Principle #4: Wisdom from data (both numbers and language) - guided by actions.

> Knowing when and how to act requires wisdom from data, of all types, to deal with complexity and balance human nature. This requires measurement and methods to deal with the variation present in messy real-world data.

Principle #5: Leadership that is Inspiring, visionary and guides change.

> Leadership is required to synthesize and communicate a vision of a better future that inspires organizations to respond in a changing world. This long-term philosophy is at the core of a sustainable organization.

Principle #6: An openness to learning that drives continual improvement and innovation.

> Learning, continual improvement and innovation are essential parts of everyone's daily work to achieve the vision of better future.

Principle #7: Protection of the natural environment.

> The resources of the natural environment are finite and held in trust for future generations. Consideration should also be given to other external environments that are part of the operating context and have been created by global society. Examples are the finance and built environments.

Principle #8: Respect for people.

> Organizations consist of people who are part of a global society. Respect for people is therefore the value that underpins MoSO.

The intent is that users take these principles and build on them to make them their own – perhaps by using different wording that have a better meaning within the organization or sector.

BENEFITS OF SUSTAINABLE ORGANIZATIONS

If you look at organizations you can see that changes happen when obstacles are removed and enablers are put in place. The removal of waste in these organizations, or in their processes, allows them to survive and prosper.

This was first spelled out for manufacturing processes from the 1950s through to the 1980s by Dr Deming. Since then, the removal of waste in service operations has been similarly studied showing that the benefits of a sustainable organization can reach more widespread areas than is conventionally imagined.

Taking a sustainable approach such as MoSO can:

1. Promote a fresh and innovative way to lead and manage an organization.
2. Provide new insights into the way that organizations work.
3. Allow all stakeholders; employees, suppliers, customers, community and the environment, to benefit over the long term.
4. Stimulate improved motivation by giving everyone a stake in the future success of the organization.

SUSTAINABILITY

Sustainability results from activities that:

- Develop and maintain enterprises that maximize people's capability in an effective and efficient way.
- Enhance the planet's ability to maintain and renew the viability of sustained life on earth.
- Enhance society's ability to maintain itself and to solve its major problems.
- Enhance the useful life of organizations by innovation, maximizing resources and focusing on all stakeholders.
- Recycling all aspects of an enterprises life cycle activities, from design through to recycling the product in the field.

Never before in human history has the rate of change in our society led to the demise of so many enterprises. Whether in financial management, banks, automotive or other industries, the rate of decline, job loss and industrial infrastructure loss has accelerated with the current recession.

The rate of technological progress continues to speed up. Globalization has seen the government helpless to prevent the flight of capital, industries and outsourcing to low cost countries in the east. The prospects for the future look grim.

Survival is management's number one task. Sustainability has to be the number one item on every CEO's agenda. Dr Deming's track record with companies that have stood the test of time is convincing. His legacy, philosophy, System of Profound Knowledge (SoPK), and other teachings provide a platform for survival and bedrock for building a sustainable enterprise.

TRANSFORMATION

For the purposes of MoSO, transformation is seen as a journey that an existing organization may take to become ever more sustainable. Transformation is the journey of change to an organization's:

- Systems
- Policies
- Values
- Processes

In other words, it is changing anything that can help an organization perform better and be more sustainable.

The gap between where we are today (the current state) and our vision of us as a sustainable organization (the destination) represents the length of this journey and its degree of difficulty. While every organization's journey will be different, there are likely to be some generic steps or milestones that can help signpost the way forward.

Experience shows that although the journey will include dead-ends and wrong turnings, it is typically an iterative, challenging and yet hugely enjoyable process. There is great value to be had in the journey itself

SYSTEMS THINKING

Systems thinking seeks to understand the whole situation, enabling effective action to be based upon the widest practicable understanding of the possible influences, while minimizing undesirable unintended consequences. It is truly joined-up thinking - guided by a long term unifying aim.

ST is based on the principle that everything is connected and it is from the multiple interactions of this connectedness that outcomes emerge. It provides a perspective so that both 'the forest and the trees' can be seen, i.e. the whole situation and the related detail.

Organizations are defined by their purpose and their boundaries, the latter serving only to define an area of interest. Just as shown in the MoSO model, boundaries are porous. Connections and two-way interactions occur within the organization and externally, which includes individuals, organizations, communities and the environment.

Effective action in organizations applies to daily work, continual improvement, innovation and problem solving. Effective action will most often mean working on, facilitating, and improving the real world of cooperative relationships and associated processes.

Systems thinking is fundamental to MoSO in which customers, the organization, its people, management, leadership and culture are related to external society and the environment. A sustainable organization lasts while minimizing its environmental impact through taking a systems thinking perspective. Systems thinking, and therefore MoSO, enables people who are aiming to make their organization more sustainable to identify the likely connections and interactions in order to ask better questions in their search for an understanding of the whole situation, leading to more effective decision-making and action.

DEMING APPROACH

Dr. Deming's approach to management in private, public and not-for-profit sectors of society continues to be relevant to today's leaders and managers and has been central to the thinking that underpins MoSO.

The Deming approach is a wide-ranging, reasoned system of management that delivers consistent high performance over the long-term. It views an organization as a complete system focused on meeting the needs of the customer and other stakeholders, which means quality is the central value. Improving quality reduces wastes, costs, and hence improves productivity.

Deming was possibly one of the most influential 20th century figures in the world, as we know it economically and organizationally. His contribution continues long after his death in 1993 through his thinking about management.

SYSTEM OF PROFOUND KNOWLEDGE

Dr Deming's System of Profound Knowledge is basically the thought processes we use to help us understand:

- The world in which we live.
- The family to which we belong.
- The organization in which we work.
- The team in which we work.

Fundamentally it is about viewing any organization from the outside through four lenses which often interact with one another:

1. Appreciation of a system.
2. Knowledge of variation.
3. Theory of knowledge.
4. Psychology.

VALUES

The subject of values (some would include ethics) applies to all aspects of organizational conduct and is relevant to both individuals and organizations as a whole. Values remain consistent over the long term, even as markets, strategies and goals change. Values might be thought of as representing what the people in the organization stand for.

Values that support MoSO

There are a number of values which could be listed by most, if not all, organizations, such as honesty, integrity, trustworthiness and respect. However, our focus here is to ask what specific values support MoSO. Some possible examples are listed below as a basis for discussion. What do you think?

- Customers can count on us.
- Openness to learning
- Transparency.
- Sharing success equally.
- Respect for the environment in which we live and work.

And the list can go on. However, what's really important is for organizations, and particularly its people, to develop *there own sustainable values.*

Section 4
USING MOSO

The aim of this section is to set out an approach to using MoSO. It will not be the only way to use MoSO, as can be seen from the Case Studies given in this section. The intent is to enhance and expand ways of using MoSO based on practical experience.

USING MOSO IN YOUR ORGANIZATION

Now you have an understanding of MoSO it's time to consider how you might use it in your own organization.

Your organization is unique. Recognizing and valuing this may mean that you want to both retain and build on your uniqueness. MoSO can help by providing new perspectives from which to study your organization plus new knowledge and information.

YOUR LEARNING JOURNEY

Using MoSO is a learning journey - one that will almost certainly lead to organizational change or even radical change referred to as transformation. This takes time. Sometimes there will be quick wins, occasionally it will be tough, and rarely there will be brilliant flashes of insight.

When we speak of transformation we mean a radical change in the way individuals and an organization perceive themselves and the way in which they go about leading, managing and working with each other. It is the people who will enable an organization to become truly sustainable, achieving lasting success whilst engaging positively with the society in which you live and work and minimizing impact on the natural environment.

The following steps form a possible outline plan that can be used or adapted to your own situation.

Step 1. What is your vital need or imperative?

Since everyone's learning journey will be different, start anywhere that works for you. One thing is essential and that is some business imperative, a pain or burning platform that makes you say, 'we really must do something!' It may also be a passion within the organization to move forward. Otherwise it will just become something nice to do and will not actually happen or be sustained. Be honest: will this really carry you through when the going inevitably gets tough?

Step 2. Understand how MoSO looks at organizations differently

Get a clear and common understanding of the basic and enhanced models. At this early stage it is important to have a good overview of the model, know how the elements fit together, the likely interactions, and the importance of the MoSO principles. Practice using the self-examination questions.

Step 3. Make MoSO your own

Put yourself and your team at the centre of the model. Ask 'to what extent does the generic MoSO work for my/our organization?' What are the new questions that arise from this different way of looking at your organization?

Consider the level at which you want to use MoSO, either the whole organization, your part of it or for yourself.

While maintaining the MoSO structure consider whether using different words to describe the main elements would better represent your organization and increase understanding within it.

How do the elements of your MoSO work together as a continually improving or self-sustaining system? What are the areas for improvement?

Step 4. Consider the MoSO principles

It is important for any organization to have some clearly understood principles which inform people's actions and behaviours.

Compare your organization's current principles, which may be unspoken, with those of MoSO and develop a set of principles which fit your current situation and organizational aims. If you cannot achieve a consensus at the moment on some, leave them out. However, you should make a point of returning to them at a later date to see whether you are ready to adopt them.

Step 5. Identify benefits and gaps

Ask yourself 'what are the likely benefits of making changes to the way we work consistent with adopting our version of MoSO?'.

It may help to better understand your current operating system in the context of MoSO by coming down to a level of detail which can be readily understood.

Ask 'to what extent do our operational processes work together as a continually improving end-to-end system?'

Overlay current processes onto the MoSO elements and look for areas which are not currently covered or are not performing to the required standard.

Step 6. Decide to take action and make a plan – remember PDSA

You need to start working with these ideas and new insights and this will need a plan. It is here that one of the central ideas behind MoSO will be useful: PDSA. It should help you to take a methodical approach to learning and building knowledge about your organization, your customers and the whole situation.

The intent is to strengthen these steps over time based on real life practical examples.

CASE STUDIES

The following case studies have been selected to illustrate the successful application of one or more of the MoSO principles or, conversely, the consequences of not applying them.

We have provided some long case studies and some short ones. The longer studies include a case where a MoSO system was set-up within the culture of an organization, with its own values, aims and vocabulary. The short ones, briefcases, are structured with narrative, learning points and references to resources should you want to pursue the example further.

Examples without theory teach nothing. They invite mindless copying. Check the learning points against the MoSO principles and see whether you agree with our analysis, or you have found different insights.

USING MoSO WITH A SENIOR LEADERSHIP TEAM

Sector: Global customer support and medical devices manufacturer

Author: Terry Rose

Introduction

The Senior Leadership Team (SLT) of the Global Customer Services group of a major world-wide Medical Devices company wanted my help to develop a Management Framework to map out a future direction and to help them improve as a management team. A framework based on MoSO seemed to fit the bill perfectly – and so it proved.

Background

Early in 2009 there had been yet another round of organizational changes plus pressure from 'corporate' to implement additional processes and initiatives, including Six Sigma – but the group had been there, done it, got the T shirt.

The SLT felt uncomfortable. They were doing a lot of good things – but as the Senior VP said,

> "Not everything we are doing fits together and we no longer have a map to guide us and set a direction – our True North."

The SLT were looking to develop a Management Framework that would help them lift their eyes from the daily work and see the big picture. It would 'join the dots' of their present management processes and at the same time identify gaps in their thinking and in their implementation. An off-the-shelf solution did not fit the bill - and there was certainly no interest in certification, plaques on walls and award schemes. The SLT were determined to improve as a leadership team and saw a framework that could evolve with the needs of the business as critical to achieving this.

How MoSO was used

Having introduced the model to the Senior VP, and gained his confidence, the next step was to get the buy-in of the rest of the SLT. They were very hands-on, wanting to understand and further develop the principles on which MoSO is based and to make the model their own. This was achieved through facilitation and frank, open discussion in working sessions. The following paragraphs give a brief outline of *their* MoSO.

Operating System: It was decided to embrace all thoughts about the group's Operations into a single aim – **Operational Excellence** – which was defined as 'predictably and consistently exceeding customer expectations with optimal organizational efficiency'. Operational Excellence (OE) was bounded on the input side by 'Customer Expectations' and by 'Loyal Customers' as the output. This interpretation captured many important principles agreed by the SLT.

OE put added emphasis on some existing processes (e.g. a customer loyalty programme) plus highlighting areas of concern which the SLT were determined to tackle, e.g. the need to organise processes as a continually improving end-to-end system without departmental 'silos of self interest' driven by sub-optimal operational and financial goals.

People, Culture, Leadership, Management: The emphasis here was placed on Leadership, specifically setting strategic direction and how to organise and encourage individuals and teams to take leadership roles within the organization. Also, 'Talent Management' emerged as a priority.

Societal Influences & Learning: This element was re-defined as 'The Market Place & External Influences'. Focus was placed on Service Marketing & Communications, Third Party Performance Management and an Online Self Service project (a response to customer feedback). External Influences included the 'imposition' of potentially unwelcomed corporate initiatives. How best to influence rather than being the victims?

The Environment: Re-defined as The Environment and Blue Sky (as in blue sky thinking). Environmental (green) issues were not initially on the SLT's agenda. This began to change as a greater awareness of its influence on market / customer requirements emerged, both in terms of product and service offerings and how organizations are expected to operate. Areas under discussion included: Remote service, Energy consumption of equipment, Installation, disposal and recycling of gas and waste material, and Equipment scrappage policy. **Blue Sky** thinking would be required to develop completely new products and ways of working.

What Happened Next?

An interactive presentation was developed which allowed the SLT to personally cascade the resulting set of values, principles, and the model (shown below) throughout the organization with the aim of communicating the way forward and capturing suggestions for improvement. To date this is an on-going process.

Lessons Learned: ***From the client perspective:***

1. It was stated in **Background** that the SLT were initially uncomfortable (because they no longer felt fully in control). This was explored during one of the facilitated team discussions. The Senior VP expressed the thought that it was important for the SLT to be 'comfortable with being uncomfortable', to which there was an immediate retort, "We also need to be 'uncomfortable with being comfortable'."
2. The methods used to manage 'daily work' are not the same as those required to manage 'improvement work'. For employees to be fully involved there needs to be an infrastructure in place to make it happen and to sustain it over time. The SLT decided to explore using the 7 Infrastructures described in the Transformation article (see MoSO Supporting Information).

Lessons Learned: ***From my perspective:***

1. MoSO can be confusing at first sight if presented in one go. By design, there are no obvious start and end points, and no flow. Building the model one element at a time worked in this case – it let the users soak in the significance of each element and begin to relate the model to their situation.
2. When working with a client, your own interpretation of the model is only a starting point. What matters is how MoSO is interpreted by the user. It's like a composer with a piece of music. Once it has been written, there is no way of controlling how it will be interpreted and arranged by others.
3. Self-Examining Questions played an important role in helping the SLT embrace and internalise the model. A few 'starter' questions helped, but it was important for the team to formulate, and begin to answer, their own open ended questions.

Conclusion

In this case, a very experienced Senior Leadership Team successfully used MoSO as a starting point to develop a management framework as a roadmap to improving the business. Initially, the term 'MoSO' was not used because the 's' word (sustainability) was not part of the SLT's common language. Discussions about the principles which underpin the framework (MoSO Principles) convinced this operations focused team (notice the importance placed on Operational Excellence) to move from a 'show and tell' style of management to an 'involve' style summed up in the following quotation:

> "Tell me and I will forget, Show me and I may remember, Involve me and I will understand." Confucius, BC452

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BRIEF CASES

1. FORD MOTOR COMPANY

The transformation and decline of the Ford Motor Company at the end of the 20th century was reviewed by the Deming Special Interest Group in 2006. This inspired the MoSO project.

By 1980 Ford Motor Company was turning in a $1.5 billion loss. In 1981 it called in the renowned Dr W Edwards Deming for help. Deming worked directly with Ford CEO Donald E Peterson facilitating a turnaround in the company's fortunes that saw it delivering a $5.4 billion profit before the end of the decade.

Management took time to develop their 'Mission Statement', but by the early/mid 1990s, Ford was back in a loss-making situation, having moved away from the principles that had transformed it. This shows that it was these principles (which align with MoSO) that were behind the transformation.

Ford went back to basics, reducing the emphasis on financial-led management.

Learning points:

- The consultant (Deming) worked with the CEO who led the transformation
- The company developed a clear set of principles, which included:
- Quality is job one
- Employee involvement
- SPC, including the appointment of Dr Bill Scherkenbach as Director of Quality
- When they stopped doing it poor results followed:
- Return to finance-led management/growth
- Succession planning/failed to embed the principles after Peterson left

Resources:

1. W E Deming, The New Economics, 1994
2. W E Deming, *Out of the Crisis*, 1986
3. W W Scherkenbach, *The Deming Route to Quality and Productivity*, 1986
4. W W Scherkenbach, *Deming's Road to Continual Improvement*, 1991
5. www.scherkenbach.com

2. TOYOTA MOTOR CORPORATION

Toyota Motor Corporation has long been held up as a pioneer and world leader in manufacturing excellence, quality and financial performance.

It had grown to become the largest vehicle manufacturer in the world. Its principles and methods have been studied and many have attempted to emulate it by applying so-called lean thinking and manufacturing.

The Principles

Soichiro Toyoda

However, towards the end of the first decade of 21st century, problems began to appear. In 2006, product quality and safety problems began surfacing. By the end of the decade, it had turned in two successive annual losses; the first for sixty years.

Learning points:

Finance and growth-led goals do not work.

Resources:

1. H T Johnson & A Broms, Profit beyond Measure, 2000
2. J K Liker, The Toyota Way, 2004

3. DEPARTMENT 13

Don Wheeler has been for many years a consultant applying statistical methods to many different types of organizations in order to promote innovation and improvement. This is an example from his practice.

An organization that made articles by a succession of manufacturing processes was seeking to set up an improvement culture by encouraging each department to initiate and carry out improvement projects and ideas. Each department made a monthly report of management data used by the organization at its top level. The key performance indicators were production volume, material costs, man-hours, energy and fixed costs and total production. The organization sponsored a company-wide improvement programme, based on its departments. Department 13 concentrated on material costs, which initially made up three-quarters of its costs. In three years, Department 13 made four changes to material selection and handling. This resulted in lower material costs. The other indicators were up and down; some months were better than others.

Detailed examination of material costs on process behaviour charts showed reductions after each project initiative. So much so that in one year Department 13 was awarded the company's improvement prize!

However the success of Department 13 came at a price. Their output fed into the next department, Department 14, for further processing. From the start of the improvements in Department 13, Department 14 experienced progressively higher levels of difficulty, and scrap, in using their precursor's output. In fact, during the time of the improvement project initiative, the activities of Department 13 caused greater losses throughout the company than their own local gains. They had provided an example of sub-optimization.

Learning Points:

- Looking at data is good, but look at the useful data
- Sub-optimization had occurred because local departments were using the KPIs appropriate to the organization as a whole, but not appropriate to its constituent departments
- It is dangerous to run a company on visible figures alone.

Resources:

1. DJ Wheeler, *Understanding Variation – The key to managing chaos*, 1993
2. DJ Wheeler, *Twenty things you need to know*, 2008
3. www.spcpress.com

4. INTERFACE CARPETS

In 1994 Ray C Anderson, Founder, Chairman and CEO of Interface Carpets, realized how environmentally unsustainable his successful business was. All his products were destined for the incinerator or landfill. In other words they were to be waste.

From 1994 to 1998, Interface made many changes in its structure to develop and realize the new sustainable thinking. One of the elements was the adoption of The Natural Step framework. This is a systematic approach to business, which has four system conditions:

- There should not be systematically increasing concentrations in nature of substances extracted from the Earth's crust
- There should not be systematically increasing concentrations of substances produced by society
- There should not be systematically increasing degradation of nature by physical means
- Development should not be made at the expense of human needs worldwide.

Interface has worked in areas that it calls its Seven Fronts

- Elimination of waste
- Benign emissions
- Renewable energy
- Closure of the loop (ie cyclical flows)
- Resource efficient transportation
- Sensitivity hookup (ie work with the supply chain etc)
- Redesign of commerce (ie the delivery of service, not just product)

Today, Interface is still a successful company and a leader in sustainable business. Its activities are reported on the Interface website, as are its detailed past and present performance.

Learning points:

- It is possible to show leadership in environmental, financial and social sustainability together
- A logical framework for a multifaceted change to a business is essential; it must recognize the systemic nature of the business and its environments
- Active leadership is necessary to get the change throughout a company. Innovation must be encouraged, or people will easily revert to old practices
- An organization's people are essential to its development of sustainable conduct.

Resources:

1. www.interfaceglobal.com
2. B Nattrass & M Altomare, *The Natural Step for Business*, 1999

5. PEOPLE MANAGEMENT IN HEALTHCARE

There was a medical records supervisor, whose job included the ordering of stationery. Clearly the use of essential forms had to continue if the organization was to function continuously, even in the absence of administrative staff.

The supervisor's line manager discovered that on one occasion when they were absent from the site, the supervisor had written their manager's signature in the approval box of an order for a set of forms. The manager did not see this as keeping essential supplies available, but as a breach of trust.

The personnel department advised the manager to conduct an investigatory hearing. At this and another hearing, the supervisor admitted that they had written their manager's name, in the manager's absence, on order sets on more than ten other occasions, so as to keep the flow of forms and other items maintained. More hearings followed into what was becoming regarded as fraudulent behaviour, although no motives of personal gain seemed apparent. If anything, the supervisor had a reputation among colleagues of doing extra work to keep the department running smoothly; they were reported to have received a written warning for not keeping to contractual hours by starting work at 6.00am rather than the formal 8.30am.

The manager's own manager considered that because it had taken so long for the facts to emerge the supervisor had shown some serious misconduct.

A few months later, the supervisor was ordered to attend another hearing, in a letter which raised the possibility of dismissal.

The supervisor did not attend the hearing; they had committed suicide in the grounds of the facility on the day appointed.

At the subsequent enquiry it emerged that the organization would have accepted the supervisor's own signature, or a 'pp' with the line manager's name on the order form. The organization did not have a written procedure covering the ordering of stationery when the line manager was away. The organization had not taken legal advice on whether the supervisor's actions were fraudulent.

Learning points

- Conscientious people should not be wasted
- The opportunity to build a team that could cover absences and unforeseen circumstances was not realized
- Parts of the organization had lost sight of its aim, namely, the welfare of patients.

Resources

1. PR Scholtes, The Team Handbook, 1997
2. PR Scholtes, The Leaders Handbook, 1997

6. HERALD OF FREE ENTERPRISE

MV Herald of Free Enterprise was a cross-Channel car ferry which left the port of Zebrugge on 6 March 1987. On a calm day it heeled over and sank, killing 186 people. The vessel was a roll on-roll off ferry and had been sailing with its bow doors open. In a slight swell it started to take on water. With the rolling of the ship, it took in water faster and sank within four minutes.

The vessel had been designed for the Dover-Calais run, but the Zebrugge docks were different. The vessel had to increase its forward ballast in order to lower its front so that the dock and main vehicle deck were in line. There was an absence of bulkheads, so that loading and unloading of vehicles could be hastened. There was easy access for passengers to get up from the vehicle decks to the (profitable) refreshment facilities.

Previous vessels had visor doors. It was obvious from the bridge whether they were open, ie up, or not. The new design of clamshell doors, vertically mounted, were invisible from the bridge. In addition, the vessel had to be backed away from the Zeebrugge dock before the door closure could start. There had been previous occasions when other ferries in the fleet had got underway without the doors being closed. Requests from captains for an indicator light to be installed on the bridge were refused on three occasions.

It was the responsibility of the assistant bosun to close the doors. His trigger to act was an announcement over the ship's loudspeaker system. After closure he did not have to report that the doors were shut. On this occasion he was in his cabin, asleep, and did not hear the announcement of departure.

The ship's boson took a literal view of his duties, so this did not include supervision of the assistant boson's duties.

The officer loading the main vehicle deck was supposed to ensure the doors were 'secure when leaving port'. This was generally ignored. Here the officer believed he saw the assistant bosun moving forward to close the doors (this is now thought to have been a lorry driver in overalls returning to his vehicle). The officers and crew worked different shifts and did not know each other.

Learning points

- The management did not understand the business they were in - the maritime transport of people, not the floating cafe business
- The daily work of the organization paid insufficient attention to safety. Written instructions were unclear and contradictory
- There was a lack of leadership; responsibilities for safety at Board level were unclear. Advice of men on the job was ignored.

Resources

1. T Kletz, Learning from Accident.

Section 5
SUPPORTING ARTICLES

The aim of this section is to give more in-depth information about the fundamental thinking that underpins MoSO. This is achieved by way of a series of easy to read, stand-alone articles written by a number of different authors.

The information given is by its very nature the author's own interpretation or understanding of what can be complex subject areas. To ensure a good degree of cohesion in thinking and about the various subjects, a system of peer reviews was used. In many cases, peer reviews added to individual and group understanding – a very worthwhile process.

Whilst a good deal of leeway was given to authors as to how each article was written, in general and where appropriate, a Bite, Snack, Meal structure has been used (see page iii, Instructions for how to use this book):

Bite:	Introduction or Overview.
Snack:	Main Content – split into appropriate headings or sections.
Meal:	References to further reading / recommended books for those who wish to get a deeper understanding or perhaps a different perspective of the subject area.
Self-examining Questions:	Some 'powerful' questions which individuals and organizations may ask of themselves in order to get a better understanding of either 'Your MoSO' or your unique journey towards being a sustainable organization.

LIST OF ARTICLES

MoSO PRINCIPLES

Author: Terry Peterson Reviewers: Alan Clark, Terry Rose, Tony Brown, Malcolm Gall

HOW DO YOU ENSURE THE ORGANIZATION IS SUSTAINABLE?

By supporting the people in their daily work and when managing change in a way that ensures the organization continues to provide a valuable and sustainable service and hence has a valuable and sustainable place in the world.

This provides a means to understand the sustainable organization as a system; an organization in context that makes what it does meaningful. This is core, consisting of eight principles which underpin MoSO.

EIGHT CORE MoSO PRINCIPLES

1. **Customer focus** put into practice through quality - an understanding of customer needs and expectations.

   Customer focus is **the** primary principle, for without customers the organization has no purpose. Quality is what the customer says it is and provides a constant, yet ever changing, reference point for the whole organization.

   Taking care of customers will serve the organization's financial goals, but the reverse is not true. If you look after your customers, your customers will look after your profits.

2. **Systems Thinking**, taking the approach to understand the whole situation in perspective – the woods and the trees.

   The essence of systems thinking is that everything is connected and therefore it is worth understanding the most important connections for any given situation.

3. **Everyone's daily work viewed as a seamless flow through the organization** to produce outcomes valued by customers with the minimum of waste.

   The daily work of the organization is to transform the inputs of customer needs and resources into outcomes valued by customers. Daily work needs to timely, efficient and productive so as to minimise cost waste (human, materiel and environmental) and therefore costs.

   An organization is a network of interdependent components (processes) which work together to achieve the aim of the system. Without an aim there is no system. Co-operation, not competition, is required between the parts of the system.

   Managers must understand, take responsibility for, and ensure implementation of the work of the organization. Quality is determined by top management. It cannot be delegated.

4. **Wisdom from data** (both numbers and language) - guided by actions.

   Knowing when and how to act requires wisdom from data, of all types, to deal with complexity and balance human nature. This requires measurement and methods to deal with the variation present in messy real-world data.

   Everyone, and especially managers, needs to develop a correct understanding of data / information in a scientific context so as to understand what the things that they measure tell them about how they are performing against their purpose.

5. **Leadership** that is Inspiring, visionary and guides change.

   Leadership is required to synthesize and communicate a vision of a better future that inspires organizations to respond in a changing world. This long-term philosophy is at the core of a sustainable organization.

6. **An openness to learning** that drives continual improvement and innovation.

   Learning, continual improvement and innovation are essential parts of everyone's daily work to achieve the vision of better future.

7. **Protection of the natural environment.**

   The resources of the natural environment are finite and held in trust for future generations. Consideration should also be given to other external environments that are part of the operating context and have been created by global society. Examples are the finance and built environments.

8. **Respect for people.**

   Organizations consist of people who are part of a global society. Respect for people is therefore the value that underpins MoSO.

   Leaders and managers must develop a system of management that will ensure pride in achievement for everyone. Give people joy in work. If you look after your people, your people will look after your customers.

The intent is that users take these core principles and build on them to make them their own – perhaps by using different wording that have a better meaning within the organization or sector.

ORGANIZATIONAL PURPOSE

Purpose is best defined from a customer's point of view. Your purpose is related to these benefits and capabilities that acquired by your customers as a result of their interaction with you. A purpose based on customer capability can provide a beacon of stable focus and direction during times of turbulent change in technology or the market.

Profits or return on investments are necessary means to an end. When they become an end in themselves, however, a business is likely to begin hurting its customers, its employees, the quality of its goods and services, the community, the environment, and its own long-term survival.

When a business is committed to serving customers and society, such a purpose can create and sustain excitement and commitment among leaders, managers, employees, stockholders, and — most importantly — customers. The purpose of the organization must describe, "work worth doing." Such a business, if it is well-led, is also likely to prosper.

Collins and Poras studied the characteristics of the world's most enduring and successful organizations. They did not find that maximising shareholder wealth or profit maximisation were the dominant force or primary objective through the history of the visionary companies.

This did not mean that the successful organizations did not pursue profits but that they also were pursued more meaningful ideals. For them, profitability is a necessary condition for existence and the means to more important ends, but not the end itself.

THE VOICE OF THE CUSTOMER

In sustainable organizations, strategy is aligned with their values and their core purpose, and they achieve consistent execution in the way they carry out their business to ensure the met their strategic goals.

They design their structures and procedures to efficiently meet customer requirements. Management, marketing, sales, customer service, R&D, production, shipping, training, purchasing, and the customer all become a part of the same smooth continuous system. This ensures that the customer is getting the value he is looking for in every transaction,

Customer-in mentality is outward-focused and is characterised by customer focus and responsiveness. If you understand the day-to-day experiences of your customers, you can imagine products and services that they might not even think of. Customer-in thinking increases the likelihood that customers get what they need and need what they get.

In a customer-in organization, marketing becomes focused on real customer research: research not just on sales strategies, but research on customers and their needs and experiences.

DAILY WORK; MANAGERS MUST UNDERSTAND, TAKE RESPONSIBILITY FOR, AND ENSURE IMPLEMENTATION OF THE OF THE WORK OF THE ORGANIZATION

This means taking responsibility for maintaining and improving the way every day work is done. Poor quality results from management failing to carry out this responsibility; not from poor workmanship or laziness. **Quality is determined by top management**. It cannot be delegated. All activities that directly relate to making a product or providing a service should be the key focus of management attention. \make the work work.

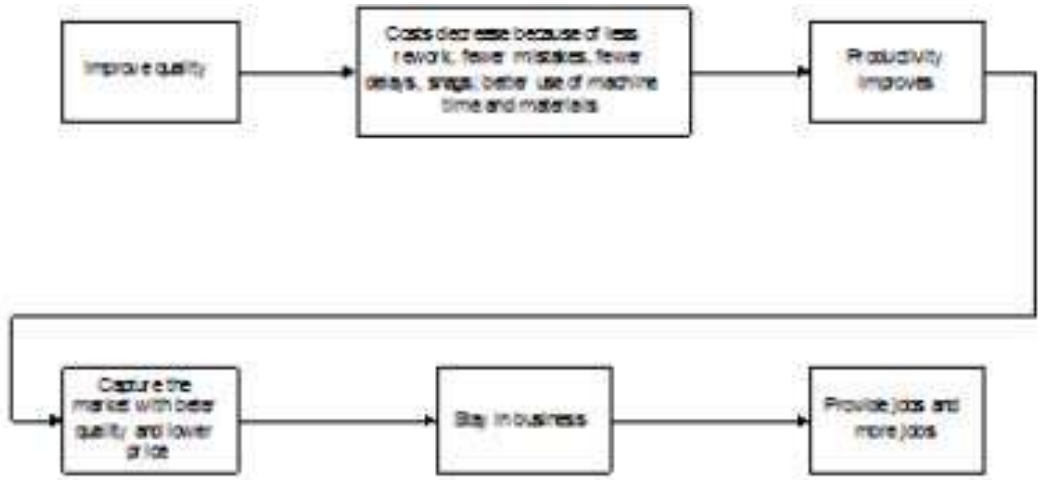
Management exist to provide the necessary support to the daily work. Therefore, management must maintain close contact with the realities of work in order to solve whatever problems arise there. To put it differently, whatever assistance management provides should start from the specific needs of the worksite.

Management is responsible for the system. This is the basis of providing quality to the customer.

Make the work work.

Improved quality reduces waste which translates into making improved product and providing better service. The result is a chain reaction — lower costs, better competitive position, happier people on the job, jobs, and more jobs. This is a management responsibility.

This following diagram of this chain reaction was on the blackboard of every meeting that Deming had with top management in Japan from July 1950 onward;



Improving quality and reducing cost are compatible objectives. In fact, quality is the foundation upon which both cost and delivery can be built. Without creating a firm system to assure quality, there can be no hope of building effective cost management and delivery systems.

Not only is it possible to both improve quality and reduce cost, we must do both in order to meet today's customer requirements.

WISDOM FROM NUMBERS; MANAGERS NEED TO DEVELOP A CORRECT UNDERSTANDING OF DATA / INFORMATION IN A SCIENTIFIC CONTEXT

Managers need to understand what the things that they measure tell them about how they are performing against their purpose. We must have an **operational definition** of the context in which data/information were obtained.

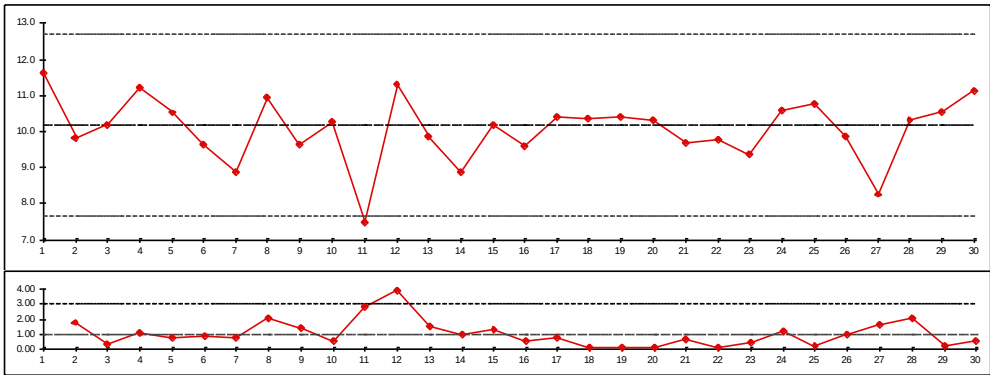
What reliance can we put on the data? All data varies, we need to know what this **variation** is telling us about the system; by distinguishing between common and special causes of variation.

We need an **operational definition** of the context in which data/information were obtained, including how they were obtained, to what accuracy and using which standards. What reliance can we put on the data?

Measurement is a critical component of any system. It is important to collect the right data about how the system is achieving its customer focused goals.

Managers need to understand what the things that they measure tell them about how they are performing against their purpose. Data collection needs careful thought and planning. Once gathered there are ways to present it in a way that makes it easier to use well to support the achievement of the organization's purpose.

All data varies, we need to know what this **variation** is telling us about the system; by distinguishing between common and special causes of variation.



a process behaviour chart

This can help managers and staff reducing variation, improve the stability and predictability of their processes and thereby improve quality. Knowing a process is stable enables managers systematically to assess the effects of changes.

Not all data contains information that leads to change and improvement. Many elements of the organization cannot be defined in strict numerical terms — for example, customer loyalty or the benefits of training are impossible to quantify — yet they can still be managed *and* improved.

We can use this predict the stability of their processes, to improve the efficiency of the system and to improve quality by reducing variation.

We need to understand the dangers of tampering with the system in the absence of knowledge of its stability.

We need to understand the wisdom of numbers.

CONTINUAL IMPROVEMENT AND INNOVATION; MANAGERS SHOULD HAVE A COMMITMENT TO ONGOING IMPROVEMENT IN DESIGN, PRODUCT AND PROCESS.

Continually improve products and services, as well as improvements in all business processes, systems and procedures.

There should be a **planned approach** to improvement, innovation and learning. Customers and competition impose constant pressures to change. There needs to be a culture of learning that accepts change, fosters exploitation of new ideas from all sources and encourages a strong team approach to managing change.

Managers understand that customers and competition impose constant pressures to change. They have a continual commitment to ongoing improvements to all business processes, systems and procedures, and have adopted a planned approach to continual improvement and learning - involving teamwork and well-tried process improvement methods.

Improvement and learning are directed not only toward better products and but also toward being more responsive, adaptive, and efficient — giving the company additional market place and performance advantages. There is a focus on how learning in one process or company unit are replicated and added to the knowledge base of other projects or company units. Processes are in place that encourages all staff to make creative and innovative suggestions for improvement.

THE PDSA PROCESS

INNOVATION

PEOPLE; DEVELOP A SYSTEM OF MANAGEMENT THAT WILL ENSURE PRIDE IN ACHIEVEMENT FOR EVERYONE

In an efficient workplace people accept control of their own processes, they are **intrinsically motivated** to do the best they can and they get true satisfaction from their contribution. Give people **joy** in work. If you look after your people, your people will look after your customers

Managers understand that in an efficient workplace **people** accept control of their own processes, they are intrinsically motivated to do the best they can and they get true satisfaction from their contribution. If managers adopt Deming's way, they will understand that they need the workers - not just as arms and legs to do what they are bid, but as intelligent human beings who can provide insights into how to improve the output and efficiency of the place.

Sustainable organizations define their purpose in a way that inspires whole-hearted commitment by all those who are important to the company's success, in particular, they support employees in their efforts to satisfy customers. If an organization wants to keep its customers; then it needs committed staff. Staff are crucial to customer satisfaction; they are the organizations' main point of contact with the outside world. Innovative companies invest in the development of the work force through education, training, and opportunities for continuing growth.. Training and development of all staff should be integrated with the development of the business.

It is now a commonplace that *People are our most important asset* and it has been suggested that in many organizations this is honoured more in the breach. Managers understand the effect of the system on behaviour and performance of people. They recognise that intrinsic motivation is the only sort worth having, and create situations that allow staff to realise true satisfaction from their contribution. They understand that they need the workers - not just as arms and legs to do what they are bid, but as intelligent human beings who can provide insights into how to improve the output and efficiency of the place.

These organizations inspire whole-hearted commitment; their systems support employees in their efforts to satisfy customers. They invest in the development of the work force through education, training, and opportunities for continuing growth. Training and development of all staff are integrated and aligned with the development of the business.

A small example might be in order. You are looking at some management data which is showing unexpected or undesirable behaviour, possibly it is inconsistent. Invoking the Compound Lens, you would be wondering what system it was that was generating these data. At which point your mind would speculate upon the behaviour and motivations of the people who asked for the data, the people who collected the data and the people whose work is represented in the data. Finally you would be trying to surface/recognise your own assumptions, theories as to what is causing the phenomenon characterised by the data.

You might very well be doing this with frontline people, or good heavens, listening to the frontline people themselves go through this analysis. The focus would be on the work and the impact on the customer.

A radically different set of behaviours to management behaviours ranging from shooting from the hip to endless politically charged management meetings.

LEADERSHIP; ORGANIZATIONS ARE HUMAN ACHIEVEMENTS BASED ON CO-OPERATION

LEADERSHIP

The job of a leaded is to accomplish transformation of the organization. By understanding what transformation is needed and how it will affect the organization and the people involved. By leading the transformation. And by having a step by step plan.

For our purposes, **transformation** is seen as a journey that an existing organization may take to becoming ever more sustainable. The 'gap' between "Where we are today" and "Our vision of us as a sustainable organization" (the destination) represents the length of the journey and its degree of difficulty.

Organizations, regardless of type or size, need a strategy and a structure for introducing and managing change initiatives. Strategies typically have three integral parts:

1. **Leader as driving force for change**. This involves high visibility involvement - hands-on participation; making decisions; evaluating change process as well as results; leading from the front - not delegating to 'experts'. Becomes the expert.

2. Strategies for introduction. Chosen to suit the style and culture of the organization. Many different models are available, but typically phases include:

- **Initiating:** Goal setting; telling people what is coming and why; initial training

• **Empowering or Mobilising:** Giving people the ability to act – setting to work; further training as required (e.g. action learning); organising teams

• **Aligning:** Ensuring all the work is aligned to required results.

3. Organizational infrastructure. Put in place to manage (govern) the transformation and beyond. Typically (management) team structure, possibly teams to manage Training programs, Promotion of success stories, etc.

ORGANIZATIONAL CAPABILITIES / SYSTEM THINKING

The first step in the transformation is to define a clear purpose for the organization. A purpose is essential as it defines the system. Once explicit it is possible to build consensus around it and a vision of the organization's direction and character. Organizations that have sustained profitable businesses over a long period generally have a well-defined core purpose. The aim of the organization is generally outside-in, reflecting a deep understanding of the value that customers look for in every transaction with the organization

In a sustainable organization, strategy is aligned with values and core purpose. And actions are aligned with all three. Structures and procedures are designed to align actions to deliver customer requirements. This helps the customers realise the value they look for in every transaction.

This purposeful alignment of the elements of the system inspires whole-hearted commitment by those who are important to the company's success, balancing the needs of owners, employees, customers, community and other stakeholders.

Viewing the organization as a **system** — a network of sub-groups, departments, activities, processes, procedures, sub-processes and components *and* the connections between them *that work together* to meet the **aim** or **purpose** of the organization.

Any organization — a department, a division, a multinational — is a complete system, in which every part is dependent on, and affected by, every other part. Thus performance of any part of an organization is best judged in terms of its contribution to the aim of the total system. Optimisation of one component in isolation can cause sub-optimisation of the whole — and everyone loses in the long term.

Co-operation, (not competition), is required between the parts of the system.

SOCIETY

ENVIRONMENT

BENEFITS OF MoSO – A CHAIN REACTION

Lead Author: Malcolm Gall Peer Reviewers: Terry Rose, Alan Clark

SUMMARY

If you look at organizations you can see that changes happen when obstacles are removed and enablers are put in place. The removal of waste in these organizations, or in their processes, allows them to survive and prosper.

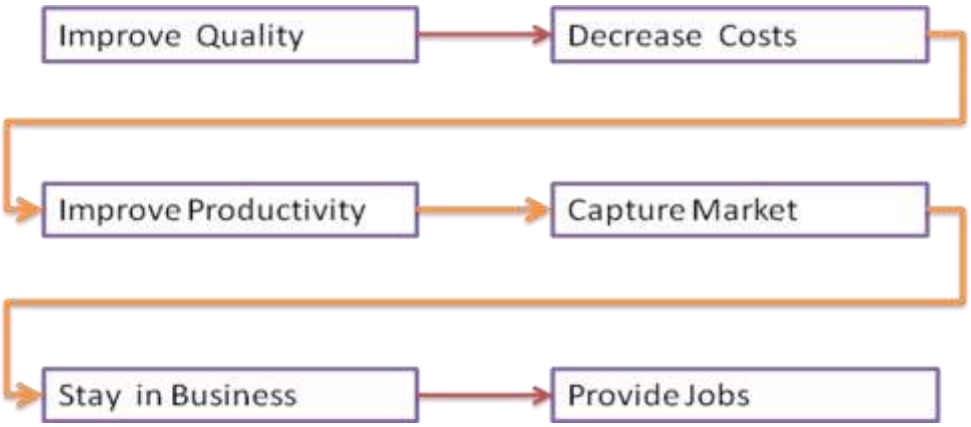
This was first spelled out for manufacturing processes from the 1950s through to the 1980s by Deming. Since then, the removal of waste in service operations has been similarly studied. This section examines how the benefits of a sustainable organization can reach more widespread areas than is conventionally imagined.

A CHAIN REACTION OF BENEFITS FOR MANUFACTURING ORGANIZATIONS

There used to be a received wisdom that Quality and Productivity existed in a trade-off relationship. If you wanted high quality you could not have the high output rates. You had to manufacture more slowly and inspect the output more thoroughly. Any dubious material had to be reworked. Clearly this added to costs. So, higher quality goods had to be more expensive.

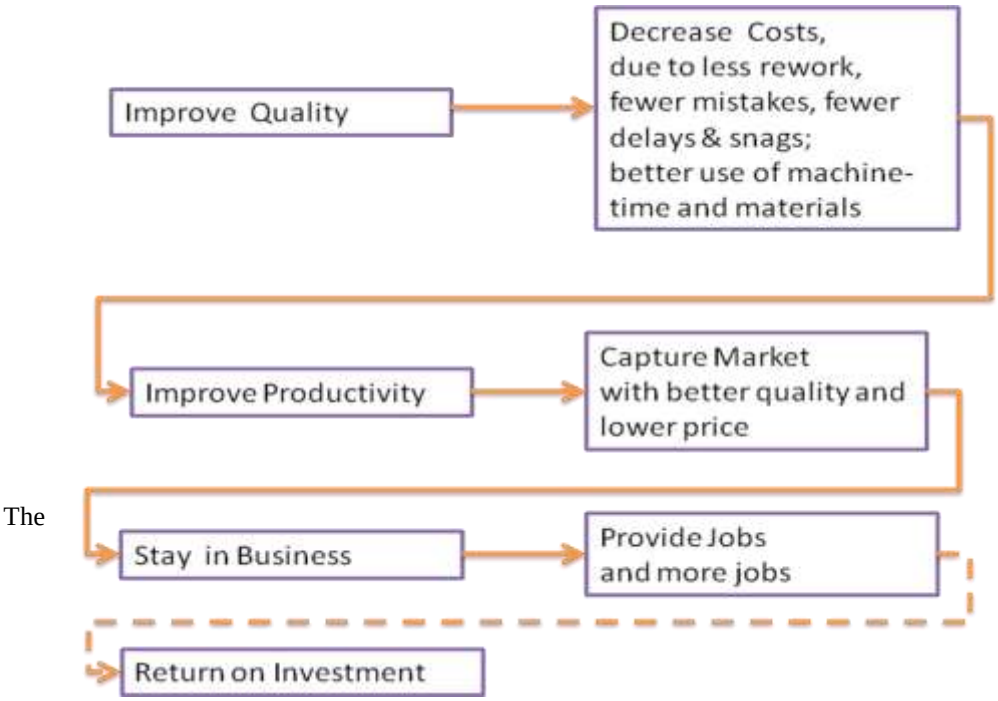
This view was first made invalid by those who were able to bring their production into 'statistical control'. In practical terms this meant the measures of the output showed no signals on process behaviour charts. In conventional terms this meant less scrap and less rework. It also resulted in less failure in the customers' hands, so claims and complaints were reduced. This enhanced reputation enabled the producer to keep business in bad times and to grow the business in good times.

Deming summed this up in his "Chain Reaction". A simplified version is given below.



Some companies took changes further by actively seeking changes which reduced waste and so increased their efficiency. The next generation of improvement of process and product was achieved by consideration of customer needs. If part of the process did not produce value for the customer then it presence was questioned and it was removed, or minimised. This was the start of 'Lean' production.

Deming's full chain reaction, with a final box added by Brian Joiner, is shown below.



The provision of meaningful jobs aids social cohesion; lack of jobs promotes social breakdown. If the time of an organization is less taken up with corrective actions and repair then it has time to innovate.

This is a chain. It is essential to start at the beginning. Not starting at Quality Improvement means the organization will not deliver Return on Investment on a sustainable basis. Starting with Cutting Costs will seldom bear continuing benefit because complexity and waste are not systematically removed and will reappear in the future.

There are advantages to People in the organization.

Taking the wider view people in an improving organization can acquire new skills, not least learning how to learn. This generates confidence and self-regard. They are more widely employable if the economic climate turns very bleak. Finally, while not loudly acknowledged, all this contributes to the education of management.

There are advantages to Society.

At the very least a surviving organization pays taxes to its community. The members of the organization participate, at the very least financially, in their community. The organization can support the community in many ways, such as sponsorship to culture or learning.

There are advantages to the Environment

The physical environment needs nurture, not waste. Not all forms of environmental damage carry clearly associated costs , though some, such as toxic discharge cleanup or fuel costs, do. Sustainable Development can only be pursued by organizations that can understand its requirements. The organizations have got to find the resources, of time, facilities and people, in order to do so. This is possible if the organization has started upon the chain reaction in order to make itself sustainable, in all senses, namely economic, social and environmental.

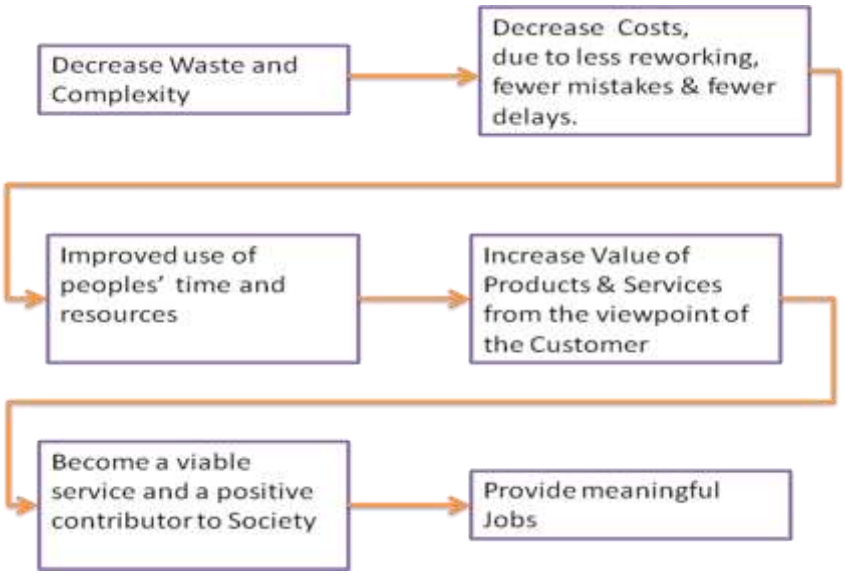
Thus the Chain Reaction provides an Organization and its Customer with a **WIN-WIN** situation. However it can go further; it provides the Organization, its Customer, its People, its Society and its Environment with advantages. It creates a **WIN-WIN-WIN** situation.

A CHAIN REACTION OF BENEFITS FOR SERVICE ORGANIZATIONS

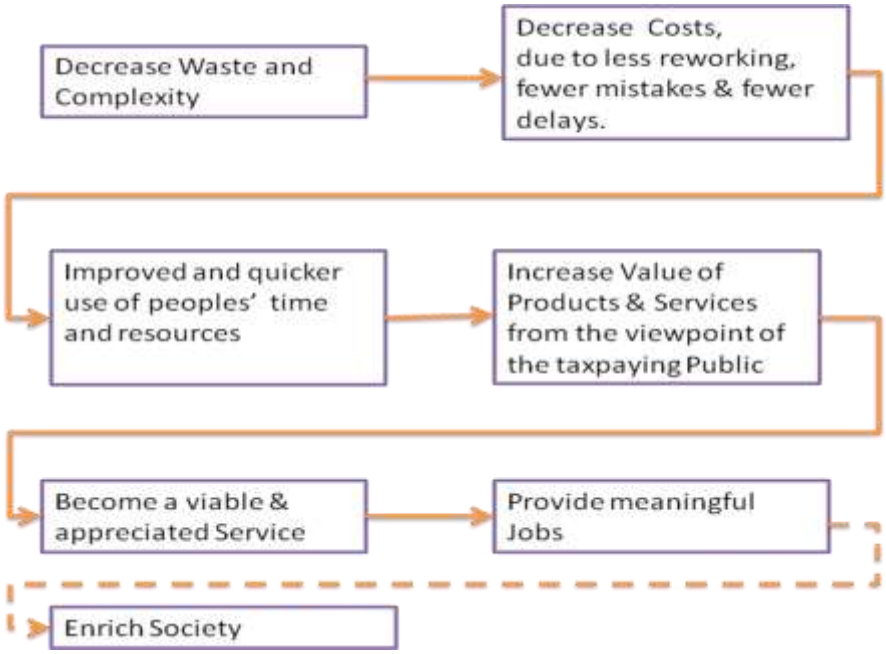
With a service operation an even larger number of challenges can be present than in the manufacturing cases.

A greater number of stakeholders can be involved. Those impacted can provide feedback at different times, and in different ways. Complexity can be easily generated. Often no-one has the authority to remove complexity. This all can lead to chaos and a focus on different parts of the operation by people with different aims; it can lead to sub-optimisation within the organization.

Clarity of Purpose and Constancy of Purpose are essential if progress is to be made with identifying and taking the first vital step in the chain.



In public service operations political and financial influences can be institutionalised, resulting in higher complexity. The need for clarity of purpose and constancy of purpose is paramount if the organization is to achieve more than a muddled existence providing mediocre results. On the other hand, a sustainable organization provides a **WIN-WIN-WIN** society, where large numbers of people gain.



START IN THE RIGHT PLACE

Starting with the first box is what setting up a Sustainable Organization using this MoSO approach is about. The leadership of an organization should show clarity and constancy of purpose, aided by an understanding of the system of profound knowledge. (Refer to SoPK Article).

Without this an organization will:

Be misled by numbers, not know whether they are looking at an average or extreme value, not knowing whether they can predict the future.

It will not get the huge leverage in beneficial effects achieved by removing complexity. Sub-optimisation will prevent the organization from achieving its aims efficiently. It will find that good people are beaten by bad systems.

It will generate unnecessary work, such as referrals of dubious output, overproduction of information, and delay or avoid decisions at the appropriate time; it will demotivate its people.

Its people will not have the time or the knowledge to improve the organization. They may not even be able to keep it viable.

For details and examples of how to become a sustainable organization go to the other elements of the model. Voice of the Customer and Transformation give good starting points.

The Operating System gives a useful outline. The other elements give specific detail.

The wider setting is given in the Management and Environment sections

Self Examination Questions

1. Does your organization understand the difference between "Cutting Costs" and "Removing the Causes of Costs" and does it know where the causes of costs are to be found within it?
2. What is the result of your constructing the Chain Reaction for your organization ?
3. How will you tackle the essential first step of the chain reaction?

   Without it, the remainder is just a wish list.
4. How does **WIN-WIN** help your organization ?
5. In what way can **WIN-WIN-WIN** emerge from your organization's activities ?

References

Out of the Crisis, W Edwards Deming, 1984. Page 3	*The early position of the chain reaction in this book shows what we would now call a 'sustainable organization' can achieve in society.*
Fourth Generation Management, Brain L Joiner, 1994, Chapter 2.	*This account highlights the improvements to both the physical and human parts of the organization.*
The Improvement Guide, Second Edition, Gerald J Langley, Ronald D Moen, Kevin M Nolan, Thomas W Nolan, Clifford L Norman, Lloyd P Provost, 2009, Chapter 13.	*The chain reaction is a key part of making improvement in value a business strategy.*

CUSTOMERS

Lead Author: Alan Clark Peer Reviewers: Terry Peterson, Alan Hodges

1.0 OVERVIEW

Customers are the fundamental element of every business or public sector organization. They are the reason it exists. Meeting or exceeding the needs and expectations of customers is essential for sustained success and consequently for jobs, profits or dividends.

Customers are the only ones with a vote on quality and it is whatever they think it is. Their expectations are always rising over time, with the exciting becoming the norm and the norm becoming taken for granted. This, therefore, gives rise to the need to continually improve and innovate.

Customers are a distinct element in MoSO since they provide the unique focus for the Operating System. They provide alignment for everyone within all organizations. Customers are a special subset of society and in turn of the external environment in which businesses or public sector organizations operate.

Rightly, in recent times the needs and expectations of other stakeholders have become more fully recognised. This in no way diminishes the pre-eminence of the customer.

2.0 EXECUTIVE SUMMARY

- Customers define quality, since it is whatever they think it is. They decide whether to buy.
- Customer primacy in sustaining business success should be beyond doubt. The leaders of any organization must not merely pay lip-service to the importance of the customer, their behaviour should set a consistent example. Customers are the focus of the organizational system, aligning everybody's activity.
- There are both internal and external customers for organizations. Internal customers do not usually have a choice of supplier.
- The aim should be customer satisfaction at the very least. The ongoing aim should be to achieve customer delight, excitement even insistence. Thus the outmoded practice of making to specification must be left far behind when seeking sustainable success.
- The spoken needs of the customer on quality only partly represent the situation, which was named by Professor Noriaki Kano as Normal, One-Dimensional or 'More is Better' quality. He proposed that there are two further types of quality, 'Must-be' and Exciting. The latter is sometimes called Attractive quality. Both of these meet the unspoken needs of the customer. To satisfy customers, normal and must-be needs should be met. Going beyond to delight, excitement or insistence requires exciting quality. Rising customer expectations drive perceptions down from excitement to normal and eventually to must-be. Failing to meet must-be needs is tantamount to giving business away.
- Innovations or breakthroughs are the responsibility of the supplier or provider. This is exciting quality that meets the unspoken or latent needs of the customer. The customer cannot say in advance how their needs can be met, explicitly describing a product or service. However, they are the primary source for information about their needs. They may have difficulty articulating their needs.
- Customer relationship management (CRM) should be firstly about building trusting relationships and only secondly about using IT. The primary activity of any sales person is building these trusting relationships. Too often companies destroy trust by their actions, such as delivery failures or an unreasonable price rise, destroying the credibility and motivation of sales people. Although CRM is primarily relates to sales activities, it also covers marketing, customer service, and technical support.
- Listen to the 'Voice of the Customer', see separate article. As mentioned above, customers' needs can be both spoken about and unspoken. Many methods exist for capturing it. One important principle is that it should be recorded/taken down verbatim in their own words at the point of use.
- Design capable delivery systems and processes. The technique of Quality Function Deployment (QFD) provides a method for translating the verbatim voice of the customer into customer requirements prioritises these and derives critical quality characteristics required of delivery processes. These critical quality characteristics provide the standards against which process capability can be measured.

- 'Moments of Truth' occur when the customer interacts with the organization. Management's job is to support staff in all those moments of truth. Perhaps more important in service industries than in manufacturing or the automotive industry. Jan Carlson's classic book of the same title estimated the moment of truth is as short as fifteen seconds, which was the average time customers were in contact with an employee of his airline, SAS.
- After sales service is as critical to the overall customer perception of quality. In some service industries or industries where there is an ongoing purchase of consumable products it can be more financially significant than the original purchase. Handling complaints effectively is an important part of after sales service. The challenge always is to receive feedback without denial.
- Markets are where groups of customers can allegedly choose from a range of suppliers. Unfortunately they do not work as perfectly as economists would like to think. Perfect information is not available to all. It is tempting to be distracted by the activities of competitors. Ultimately it is what the customers perceive and whether they buy or not that is acid test.

3.0 MAIN ARTICLE

Four of the main elements of MoSO 'from the outside in' are Environment; Society and Learning; People, Culture, Management and Leadership; and the Operating System (Your Operations). The fifth major element is the Customer or consumer of the outcomes from Your Operations. How the operating system serves the customer is critical to the sustainable success of the business or public sector organization. The following comments are illustrative of views supporting the idea of the primacy of the customer.

> "The consumer is the most important part of the production line. Quality should be aimed at the needs of the consumer, present and future."

Deming 1986, p. 5

> "The consumer is more important than raw material. It is usually easier to replace the supplier of raw material with another one than it is to find a new consumer. And a non-consumer, one who has not yet tried your product, is still more important to you, because he represents a possible additional user for your product."

Transcript of Deming's lectures in Japan 1950

> "It will not suffice to have customers that are merely satisfied. An unhappy customer will switch. Unfortunately, a satisfied customer may also switch, on the theory that he could not lose much, and might gain. Profit in business comes from repeat customers that boast about your product and service, and that bring friends with them."

Deming 1986, p. 141

> "Deming also speaks frequently on the need for *staying ahead* of the customer. The customer does not know what he will need in one, three, five years from now. If you, as just one of his potential suppliers, wait until then to find out, you will hardly be ready to serve him."

Henry Neave 1990, p. 31

> "Deming then spoke at length on consumer research, which he took care to illustrate in terms of two-way communication between manufacturer and both actual and potential customers. And this was still in the *Introduction* to his series of lectures!"

Henry Neave 1990, pp. 135-136

Deming was unambiguous about the overriding importance of the customer:

> "Who determines quality? The customer does: he can decide what he buys."

Deming further talks in terms of quality being that which "entices" and "appetises" the customer. And the same sentiments hold in our extended notion of what we mean by "customer." The situation is, of course, somewhat different internally: our internal customer may not have the choice as to whether or not he deals with what we supply, but if the quality of what we supply is enticing and appetising to him, he will surely have a greater pride in what he can in turn supply to his internal customer, while the whole quality of our own work is similarly affected by what is supplied to us:

> "People on a job are often handicapped by inherited defects and mistakes."
>
> "Quality Guideline 1: Quality Begins with Delighting the Customer

> Customers must get what they want, when they want it, and how they want it. An organization must strive not only to satisfy the customers' expectations. This is the least one should do. A company should also strive to delight their customers, giving them even more than they imagined possible. Your bosses may be ecstatic, the Board of Directors blissful, and your company may be considered a legend on Wall Street. But if your customers are not delighted, you have not begun to achieve quality."

Peter Scholtes, Heero Hacquebord, Joiner Associates Inc., 1987, pp. 202-222

When talking about trust Steven Covey first introduced the author of this article to the concept of "customer insistence". He gave the example of a clam chowder restaurant in Boston. The clam chowder was outstanding, customer insistence being clear for all to see in the form a queue that would form from about 11 am and grow around the block by lunchtime. The restaurant was sold and the new management thought that they saw the opportunity the cut costs by thinning down the clam chowder. Customer insistence declined through delight, preference, to satisfaction and the queue disappeared. The new owners realised what they had done and went back to the old recipe, but it was too late, trust had been destroyed.

> "Customer delight is what you should aim for – they are paying to be satisfied."

Hal Mather heard by the author at an IMechE seminar on Manufacturing Logistics 1990

The consensus is clear; the aim is to exceed customer expectations. Loyal customers defect. Strategy guru Michael E Porter says that strategy should be directed towards ensuring the offering is distinctive. What better indicator of being distinctive and success than customer delight or even insistence.

3.1 KANO DIAGRAM – THREE TYPES OF QUALITY

Professor Noriaki Kano and colleagues laid the foundation for a new approach to studying customer satisfaction in the late 1970s and early 1980s.

Seeking to go deeper into customer motivation Kano augmented the 'normal' quality that customers spoke about by drawing on the earlier work of Frederick Herzberg on staff motivation. Herzberg developed his Motivation-Hygiene Theory or Two-Factor Theory based on his research into staff satisfaction. The theory states that some factors in the workplace cause job satisfaction, while different factors cause job dissatisfaction. Kano proposed that certain factors in products or customer service caused satisfaction, while different factors cause dissatisfaction. These are summarised in the diagram of the **Kano Model** below:

Adapted from Noriaki Kano

As can be seen the spoken needs of the customer on quality only partly represent the situation, which Kano called Normal, One-Dimensional or 'More-is-better' quality. Adapting Herzberg's hygiene factors, the dissatisfiers, he proposed that there are factors that if they are not present customers would be dissatisfied. These he names 'Must-be' or Expected quality. The satisfiers, Herzberg's motivation factors, Kano labelled Attractive or Exciting quality. Must-be and Exciting quality meet the unspoken needs of the customer. The former because they expect or assume these requirements, such as safely functioning brakes on a car, will be there. The latter because they do not know what solution will meet their, often unspoken or latent, needs. Nobody could ask for electric light, pneumatic tyres or Walkman miniature tape cassette players before they had been invented. The three types of quality can also be compared as follows:

Dissatisfier	Must be's (Expected)	Cost of Entry
Satisfier	More is better (Performance)	Competitive
Delighter	Exciting (Attractive)	Differentiator

To satisfy customers, normal and must-be needs should be met. Going beyond to delight, excitement or insistence necessitates exciting quality. This means innovation, which Deming states is the responsibility of the supplier. Rising customer expectations drive perceptions down from excitement to normal and eventually to must-be. The implication of this is that to achieve a sustainable organization, innovation needs to be deeply embedded. Failing to meet must-be needs is equivalent to giving business away.

Losing customers is more expensive than you might think. Frederick Reichheld, in his book *The Loyalty Effect*, shows that loyal customers are more profitable. A range of industry sectors as varied as credits cards, car servicing and industrial laundries confirmed the same picture. In the credit card industry it might cost a net $80 to acquire each new customer against annual profits of $40, $66, $72, $79 and $87 if they were retained for the following a five-year period.

Kano and his associates developed a unique paired-question format for customer surveys in order to categorise customer requirements into Exciting, More-is-better or Must-be quality. This question format can also yield ratings of Indifferent, Reverse and Questionable to a particular requirement, which should lead to a review that requirement or the wording of the questions.

Customer or service user research for maximum effect is best carried out through point of use observation and recording verbatim what the customers' says. Other sources of information are as follows:

- **Must Be's** – Focus Groups, Lawsuits and Regulations, Buzz on Internet
- **More is Better** – Competitive Analysis, Interviews, Surveys, Search Logs, Usability Testing, Customer Forums
- **Exciting** – Marketing/Branding Vision, Industrial Design, Packaging, Call Center Data, Site Logs

The Voice of the Customer article provides further information on customer research. Customer comments, compliments and complaints would of course form part of this. And remember also that 'Mistakes are treasures' *providing that you learn from them and do something about them!*

The Kano model can be used in Quality Function Deployment (QFD) in the creation of the matrices that ultimately lead to the critical quality characteristics required of the delivery processes.

Professor Noriaki Kano is a professor emeritus of the Tokyo University of Science and formerly achieved the position of full professor and head of the Department of Management Science.

3.2 MOMENTS OF TRUTH

The emphasis in any organization must be on the customer. Each customer contact with a member of the organization is a Moment Of Truth. The business purpose should be defined in terms of the customer; it is 'outside in'. In other words, it reflects a deep understanding of the value that a customer is looking to get in every transaction with the organization.

It is expressed in terms of providing ever-improving value to customers. This is not just about perfectly meeting today's customer needs. In a dynamic market, organizations must innovate - in products, services and processes - to meet the future needs of customers, in an ever-enlarging market.

The system, processes and procedures should be organised to reflect this.

Management's job is to support staff in all those moments of truth. Perhaps these are more important in service industries than in manufacturing or the automotive industry. Jan Carlzon's classic book *Moments of Truth* highlighted how brief these moments of truth can be:

> "Last year each of our ten million customers came in contact with approximately five SAS employees, and this contact lasted an average of 15 seconds each time. The SAS is 'created' 50 million times a year, 15 seconds at a time. These 50 million 'moments of truth' are the moments that ultimately determine whether SAS will succeed or fail as a company. They are the moments when we must prove to our customers that SAS is their best alternative."

Jan Carlzon 1987, p. 3

Jan Carlzon became President and CEO of SAS Group, better known as Scandinavian Airlines System, in 1981. At the time it was losing $17 million per annum and had a terrible reputation for punctuality. By means of a radical decentralization, moving decision making to the front line, both the airline's punctuality and profitability were dramatically improved. In 1982 it turned in a profit of $54 million. All this in the face of a global airline recession.

A central part of Carlzon's strategy was an on-going training program called *Putting People First*. It focused on delegating responsibility to the front line, allowing customer-facing staff to make decisions to resolve any issues on the spot. He said, "*Problems are solved on the spot, as soon as they arise. No front-line employee has to wait for a supervisor's permission."* In other words, they are able to decide take action themselves during those moments of truth. Disney is an example of another company where customer-facing staff are allowed to make decisions to resolve issues on the spot.

Responsibilities in such highly customer-focused organizations appear radically different. The organization is top down and bottom up. In many ways this has much in common with autonomous working. Typically they might have the following characteristics:

Associates are empowered to respond to customer's requirements on the spot

Middle Management is there to support the moments of truth. A manager's role includes:

- supporting, mentoring, facilitating
- coaching and counselling, not judging
- creating trust
- creating an environment that encourages freedom and innovation

- listening and learning without passing judgement on those that they listen to
- understanding that people are different from each other
- trying to create for everybody interest and challenge, and joy in work
- trying to optimise experience, education, skills, hopes, and abilities of everyone. This is not ranking people. It is, instead, recognition of differences between people, and an attempt to put everybody in position for development.

Top Management provides leadership, strategy, vision, clarity, showmanship, emphasis and designs the overall system.

3.3 CUSTOMER RELATIONSHIP MANAGEMENT

Customer relationship management (CRM) should be firstly about building trusting relationships and only secondly about using IT. The primary activity of any sales person is building these trusting relationships. Too often companies destroy trust by their actions, such as delivery failures or an unreasonable price rise, destroying the credibility and motivation of sales people. Although CRM is primarily related to sales activities, it also covers marketing, customer service, and technical support.

3.4 THE MARKET

Markets are where groups of customers can allegedly choose from a range of suppliers. Unfortunately they do not work as perfectly as economists would like to think. Perfect information is not available to all. It is tempting to be distracted by the activities of competitors. Ultimately it is what the customers perceive and whether they buy or not that is acid test. Markets don't buy products/services, customers do. Customers don't buy from organizations, they buy from people.

4.0 SUMMARY

Customers provide the unique focus when viewing any business or public sector organization as a system within its social and environmental context. Customers define quality and demonstrate this by deciding whether to buy.

To sustain success a business or organization requires loyal customers who return time and again and bring their friends! This means that customer satisfaction must be at least maintained, which means providing Normal or More-is-better quality that meets needs. The unspoken, expected aspects of customer requirement have to be met too, because failing to deliver on Must-be quality will cause customers to leave.

They can leave even when they are satisfied, which makes it essential for the sustainable organization make working towards customer delight or even customer insistence an essential part of overall strategy. This means that unspoken, latent customer needs must be divined, understood and turned into offerings that customers view as Exciting or Attractive quality. Whether thought of as familiarity or its counterpart rising expectations, it is inevitable that initial customer perceptions will decline in time down to a level of taken for granted. The implication here is one of ongoing innovation in the offerings or the way it is supplied to the customer.

The interface with customer is a critical point. Management must take action to support staff during those 'moments of truth' equipping them to take immediate action to resolve customer issues. People buy from people and so the relationship with the customer must generate high levels of trust. Destroying trust will destroy loyalty increasing costs through having to find new customers just like failing on Must-be quality.

There was a time, after World war 2, when demand exceeded supply, that product could be "pushed" out of the door without regard to customers or quality. Those that still hold that view will not achieve sustained success. Savvy customers and global competition mean that customers are in the driving seat and "customer pull" of products and services is the only sustainable strategy.

5.0 SELF EXAMINATION QUESTIONS

1. To what extent is the primacy of the customer recognised within our organization?
2. What evidence do you have that you use your customers to align both people and policy?
3. What evidence is there that your really are striving to achieve customer delight?
4. Where are customer perceptions of your products or services relative to the three types of quality: Attractive, More-is-better and Must-be? Be honest!

5. How much support do management provide to front line staff in moments of truth?
6. Give examples of ways customer-facing staff can resolve issues on the spot.
7. What active steps are you taking to build trust within your organization and with your customers?

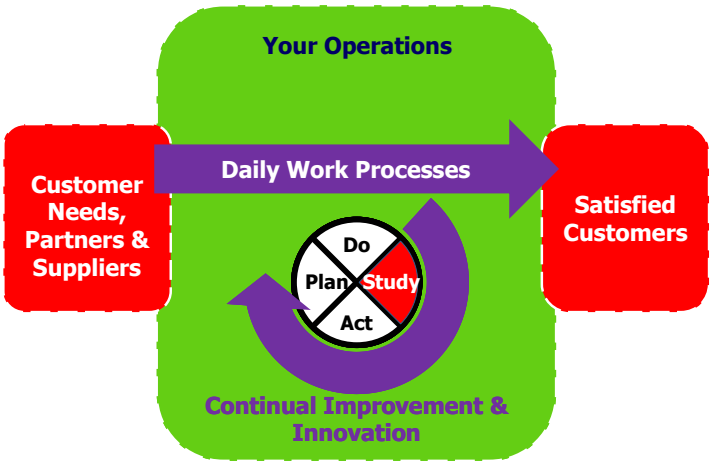
YOUR OPERATIONS

Lead Author: Derek Richings Peer Reviewers: Tony Brown, Terry Rose, Tony Korychi

1. OVERVIEW

The **Your Operations** element of MoSO is used to map the end-to-end flow of work done by an organization to ***transform*** Customer Needs into Customer Satisfaction, delight even.

This transformation needs to be performed with optimal efficiency and speed of response - creating a seamless uninterrupted flow of work and information through the organization.



The **Your Operations** element reminds us that all work starts and finishes with the customer. Customers need to be *satisfied* in order for the organization to continue to exist and prosper. *Customer Needs* expressed overtly through orders, specifications and contracts or less tangibly through verbal feedback and even body language is actually what drives you in supplying your product, service or both. There will always be *Suppliers* on whom you have varying levels of dependency and sometimes *Partners* without whom you could not function successfully.

MoSO shows that to be sustainable, ***Your Operations*** comprises two distinct interlinked jobs:

- **Daily Work Processes:** viewed as an end-to-end flow of work from customer needs through to customer satisfaction, plus
- **Continual Improvement & Innovation:** the work done by everyone involved with the organization to systematically move the business forward – keeping pace with ever changing customer / market needs and expectations. The Plan, Do, Study, Act (PDSA) wheel represents the generic processes used by everyone to bring about improvements.

2. DAILY WORK PROCESSES

Daily Work Processes vary enormously depending on the type and size of organization, the nature of 'business' performed, and the processes by which they have evolved. Each organization's Daily Work Processes are unique, helping to differentiate themselves in their 'marketplace'.

Organizations arrange or design their operations to achieve what they believe to be the best possible outcomes – or that's what you'd expect. In reality, many operational work processes (systems) are built in a topsy-turvy fashion over time with many changes of direction along the way. Different departments or functions do their own thing – sometimes at the expense of other departments – irrespective or oblivious to the needs and expectations of customers.

To be sustainable, *Your Operations* need to be performed with the minimum of waste (in terms of materials, people's efforts, and environmental considerations), optimal efficiency, and speed of response - creating a seamless uninterrupted flow of work and information through the organization. Some might use the term 'Lean' or perhaps 'Lean & Green'.

In MoSO, the Daily Work Processes arrow is used to represent this thought about rapid seamless flow – as oppose to getting bogged down in departmental or functional silos.

3. CONTINUAL IMPROVEMENT & INNOVATION (PDSA)

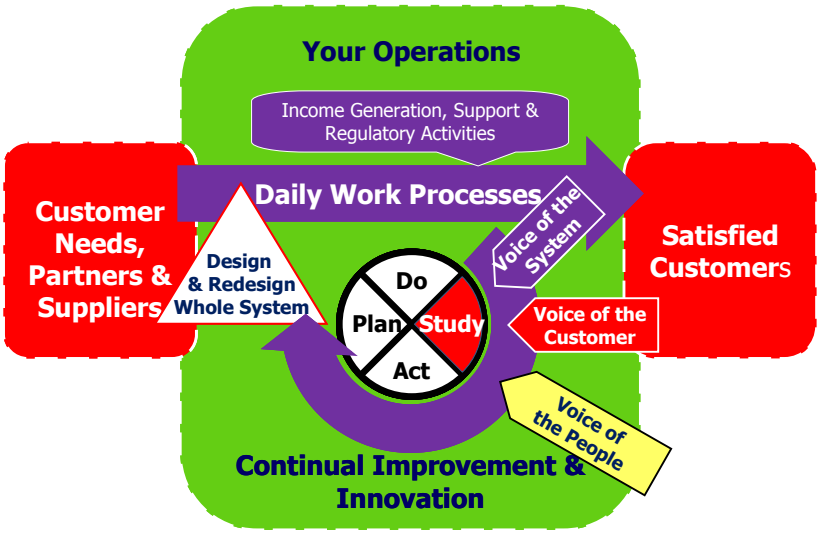
The PDSA cycle is a fundamental means of systematically driving renewal and improvement. In this cycle, data / information is reviewed, improvements planned and changes tested and analysed. The process is repeated until required improvements are obtained. Many organizations have processes of this type but often their use is limited to perceived major problems and is not rigorous

or systematically applied. Sometimes this process is only initiated when problems start to emerge and individuals are tasked to make changes or 'find solutions' but have no structured process to follow. Embedding a PDSA cycle into your operations (the way you work) will significantly enhance the organization. It does not have to be defined precisely in this way, the culture of driving improvement and innovation by thinking and acting in line with these principles is what's important. Everybody can and should want to do it.

Are you comfortable with this picture? Why is *Study* coloured differently? Let's develop this basic model further.

4. THE ENHANCED MOSO OPERATING SYSTEM

Daily Work Processes contain processes which construct a product or service and therefore earn money (or funding or financial support) directly or indirectly! The more value they add the better because that's where making a difference comes into play. Sometimes non value adding processes must be conducted without which the organization cannot function. They can be termed *Support activities* and would typically be Finance, Human Resources, staff positions, etc. Depending upon the sector, varying amounts of resources are consumed in meeting sector specific requirements imposed by governments or international bodies. This is particularly the case where public health and safety can be impacted. The model refers to these as *Regulatory Activities.*



The importance of the *Study* element of the PDSA cycle is that it is fed from inputs from at least three areas – we can call them voices or sensors.

Voice of the Customer (Voc) is the most obvious input into what has to be captured and studied. This can be gained by classic collection techniques such as Market Surveys and Customer Satisfaction Studies. Sometimes there is no numeric data but its how your customer talks about you whether in print or spoken that you have to analyse. This known as Language data. Whatever techniques are used good quality data (both numeric and language) which reflects customer expectations is essential and should never be ignored.

Voice of the System (VoS) is key to understanding whether your value adding processes are properly developed, robust and tuned to minimise variation i.e. they are capable. Without high levels of system capability your customer's expectations will not be met and your costs will rise. Process Behaviour Charts are typically used to determine capability. You may know them as Control Charts. The manufacturing sector and automotive manufacturing in particular has pioneered use of Control Charts to understand and control variation in their products. Process Behaviour Charts can be used for all products **and** services and by everyone in the organization – from boardroom to backroom. A culture that uses them to drive continual improvement and innovation will generate significant benefits to your organization. Choosing what to measure and monitor is key. Getting performance data in this way is hearing the Voice of the System (sometimes called Voice of the Process)

Voice of the People (VoP) may not be a familiar term but is the means by which an organization should understand the health (mental and physical) and capability of its workforce. Organizations have evolved their preferred ways of talking to and more importantly listening to their people. One-on-one discussions are very common and represent a 'private, structured voice.' In contrast large

staff meetings will act as a conduit for unstructured and very public feedback. Any type of event which seeks to understand the workforce's feelings and issues is useful.

Design and Redesign of the System is effectively what happens during the Planning Stage of PDSA. Data from the experimentation of the 'Do' stage is reviewed and acted upon leading to either standardisation of the changes or another cycle of experimentation. Hence it's at this stage of the cycle that the organization works on and improves pieces of its structure like; processes, controls, measures, resourcing, and organizational structures. It's worth noting, however, that individual changes to any of these may emerge and modify the way an organization works at any time using a wide variety of deployment methods.

5. WHAT DO YOUR OPERATIONS LOOK LIKE?

The MoSO graphic for both the Basic and Enhanced models does not show 'operations' in any detail. This is for three reasons:

1. The operating processes / systems for your organization are unique. No matter how generic or detailed the model, it cannot possibly map how your system has been set up. There may be suitable models you can use as a basis for of your operating model, or that act as mandated high-level frameworks, e.g., TOM for the communications industry, but no organization will ever be simply a clone of a standard model.
2. When mapping any operations, the tendency is to start at a high level then systematically come down through levels of abstraction until the required level of detail has been reached.
3. The intent is for you / your team to do the work to map Your Operations then ask questions about its suitability for the purposes defined, compatibility with the organization's culture/identity, and its viability.

To help you along the way, a generic example – at the next level down – has been developed.

This model may look more familiar in that it has a well-defined Product/Service flow from Design through Customer Use and Support.

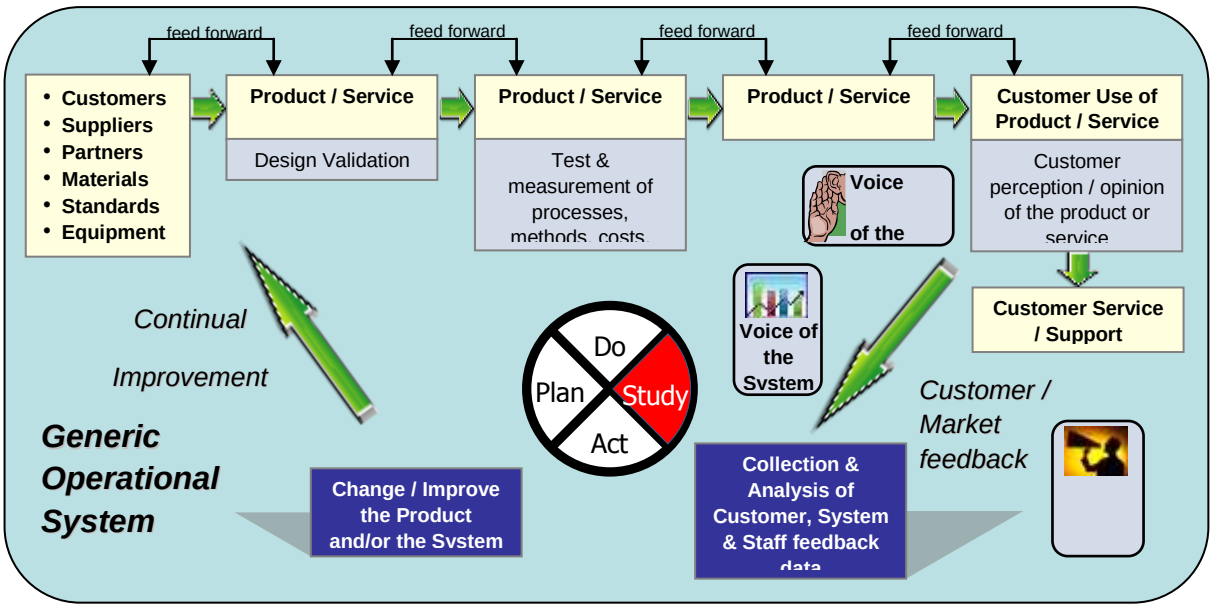
Customer Feedback driving improvement (or would it have been change?) is not new but PDSA, VoS and VoP are now embedded.

Many organizations have invested considerable time and effort in improving departments / functions through development of skills in individuals and teams. Lean and Six Sigma techniques will have typically been launched in Design and Manufacturing and then as their benefits have been proven will have cascaded through support activities. The complete Value Chain is often well understood through Value Stream Mapping.

The value of a model of this kind whether at a high or lower level is that it shows the big picture and asks big questions e.g.

Can you view your organization in this way? Is helpful to do so?

Are the feed forward and feedback loops institutionalised and robust? Do organizational chimneys



still exist?

6. SOME SELF EXAMINING QUESTIONS

1. To what extent are you ready for this journey? What help or support do you need?
2. To what extent is your organization ready for change – who will be the change champions who will work you? What constraints have to be overcome to gain initial momentum versus continued momentum?
3. How does the big picture of your organization align with the MoSO model? Are the differences significant in terms of sustainable performance?
4. If the differences are real what can be done to introduce the missing elements or improve ineffective areas?
5. To what extent are the three voices to renew and sustain the organization (VoC, VoS, VoP) used systematically and continually improved?
6. Looking at the MoSO model, what important influences are affecting, or likely to affect, your operations and how are you recognising and managing these influences?

PLAN DO STUDY ACT (PDSA)

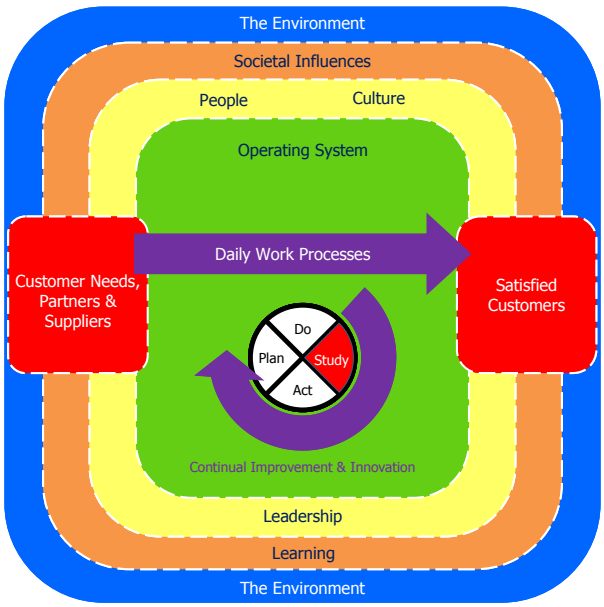
Lead Author: Terry Peterson Peer Reviewers: Tony Brown, Alan Clark

1. OVERVIEW

You'll notice that PDSA is shown at the very heart of MoSO. It applies equally to all elements of the model.

PDSA ("Plan-Do-Study-Act") is a cyclical, four stage improvement process.

Experience has shown that applying a methodical sequence of stages to any problem solving, experimenting or design activity contributes to the achievement of the best result. People naturally rush in to action which leads to frustrating and costly solutions. Careful planning is essential.



A number of methods have been developed to aid this process, including the scientific method and engineering thinking. PDSA is simply a version of this process which has been found to be beneficial.

Plan Recognize an opportunity and plan a change.

Do Test the change. Carry out a small-scale study.

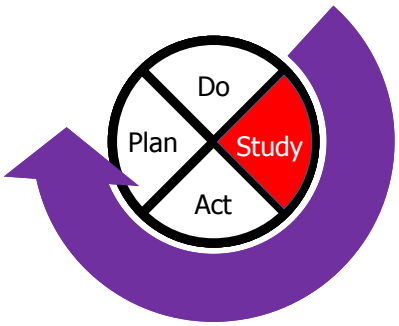
Study Review the test, analyse the results and identify what you've learned.

Act Take action based on what you learned in the study stage:

If the change did not work, go through the cycle again with a different plan.

If you were successful, incorporate what you learned from the test into wider changes.

Use what you learned to plan new improvements, beginning the cycle again.



PDSA is typically used in organizations for continual improvement. It is also known as the Deming Cycle, Shewhart cycle, and / or the Deming Wheel.

You may also find value in reading about PDSA in some of the other MoSO Supporting Information articles – for example in:

- Operating System,
- People, Culture, Leadership (specifically, 'Some Roles – for Leaders & Managers),
- Dr. Deming (specifically, para 3.4 and the Conclusion),
- System of Profound Knowledge (specifically, Theory of Knowledge).

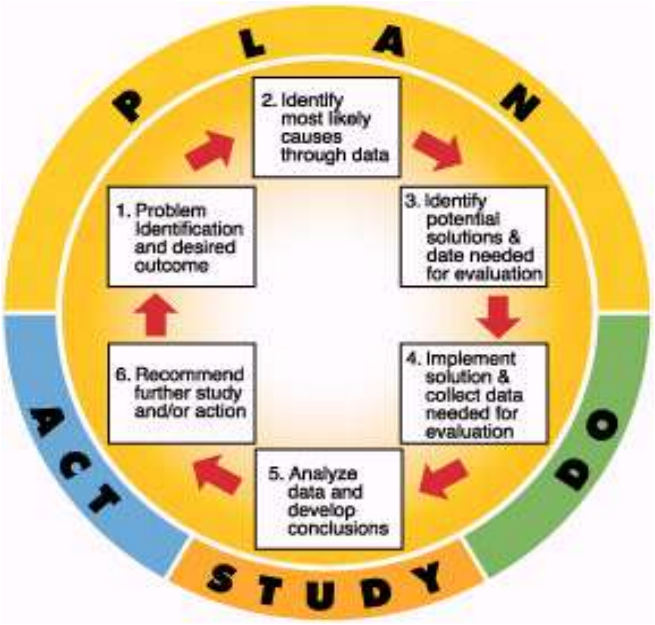
2. MAIN CONTENT

The concept of the PDSA Learning and Improvement Cycle was originally developed by Walter Shewhart, the pioneering statistician who developed statistical process control in the Bell Laboratories in the US during the 1930's. It is often referred to as `the Shewhart Cycle'. It was taken up and promoted very effectively from the 1950s on by Dr. W. Edwards Deming, and is consequently known by many as `the Deming Wheel'.

The PDSA Cycle is used to coordinate continuous improvement efforts. It both emphasises and demonstrates that improvement programs which start with careful planning, usually result in effective action, and move on again to careful planning in a continuous cycle.

The PDSA Cycle diagram can be used in team meetings to take stock of what stage the improvement initiatives are at, and to choose the appropriate tools to see each stage through to successful completion.

2.1 Guideline stages / steps for using PDSA as a continual improvement problem solving methodology



PLAN

Stage 1:

- Identify The Problem
- Select the problem to be analysed
- Clearly define the problem and establish a precise problem statement
- Set a measurable goal for the problem solving effort
- Establish a process for coordinating with and gaining approval of leadership

Stage 2:

- Analyse The Problem
- Identify the processes that impact the problem and select one
- List the stages in the process as it currently exists
- Map the Process
- Validate the map of the process
- Identify potential cause of the problem
- Collect and analyse data related to the problem
- Verify or revise the original problem statement

- Identify root causes of the problem
- Collect additional data if needed to verify root causes
    1. **WHO** does this plan impact (specifically, with what presumed or required characteristics or qualifications)?
    2. **WHAT** is the purpose of the interface/relationship? WHAT are we trying to accomplish? WHAT change can we make that will result in improvement? (Whichever question is appropriate).
    3. **WHY** does this support the end purpose of the system (i.e. 'vision')?
    4. **WHERE** will this take place (addressing all characteristics of the intended location from parking to power to how many inches from the wall, etc.)?
    5. **WHEN** is it to occur (i.e. earliest start/end, latest start/end, sequence/timing of stages/sub-processes)?
    6. **HOW** - a stage by stage procedure to convert any and all system/process inputs to all system outputs. HOW will we know that the change is an improvement?'

Stage 3:

- Develop Solutions
- Establish criteria for selecting a solution
- Generate potential solutions that will address the root causes of the problem
- Select a solution
- Gain approval and supporter the chosen solution
- Plan the solution

DO

Stage 4:

- Implement the Solution
- Implement the chosen solution on a trial or pilot basis
- If the Problem Solving Process is being used in conjunction with the Continuous Improvement Process, return to stage 6 of the Continuous Improvement Process
- If the Problem Solving Process is being used as a standalone, continue to stage 5

STUDY

Stage 5:

- Evaluate The Results
- Gather data on the solution Analyse the data on the solution
- Achieved the Desired Goal?
- If YES, go to stage 6.
- If NO, go back to Stage 1.

ACT

Stage 6:

- Standardize The Solution (and Capitalize on New Opportunities)
- Identify systemic changes and training needs for full implementation
- Adopt the solution
- Plan ongoing monitoring of the solution
- Continue to look for incremental improvements to refine the solution
- Look for another improvement opportunity

Reflection; at the conclusion of each cycle (spin), capture the lessons learned in relation to how the PDSA process was used and consequently what improvements can be made for the next cycle.

The PDSA Cycle is repeated continually - there is no ending point - and thus is the basis of true 'Continual Improvement.' This repetition can be applied in both the basic cycle as well as the nested, or "wheel-within-a-wheel" cycle.

WHEN TO USE PLAN-DO-STUDY-ACT:

- As a model for continuous improvement.
- When starting a new improvement project.
- When developing a new or improved design of a process, product or service.
- When defining a repetitive work process.
- When planning data collection and analysis in order to verify and prioritize problems or root causes.
- When implementing any change.

The starting point of PDSA depends on where you are in the improvement process.

If a process already exists then you would probably start incremental improvement at the STUDY stage where you observe the need for further change (SAPD).

Breakthrough improvement might start at the ACT stage where some unexpected event acts on the process and causes us to plan for either eliminating the event if undesirable or institutionalizing the event if desirable.

In fact, where you start in the cycle is not as important as the cycle itself. Nevertheless, the Planning stage is undoubtedly the most important stage.

Standardisation: Study current practices
Adopt best known method
Plan for implementation of standard
Do = implement standardised practices
Study, then A,P,D,s, and back to Study, etc.

Problem solving: Study known data
Analyse for root cause(s)
Plan tests to verify theory of cause
Do = experiment or run tests
Study results, then A,P,D,S, etc.

Process improvement: Study current state (IS map)
Analyse opportunities and benchmarks
Plan changes (TO BE map)
Do = implement changes
Study results, then A,P,D,S,etc.

Strategic planning: Study prior performance and environment
Analyse strengths & opportunities
Plan actions and deployment
Do = deploy and implement
Study to monitor progress, then A,P,D,S,etc.

Before beginning any of these SAP-Do cycles, there is usually a Focusing stage in which a decision is made to improve something, boundaries are established, a team is formed, etc. One can even think of this as a SAP-Do cycle that precedes all the others.

Focusing cycle: Study opportunities & priorities
Act = decide upon one, establish boundaries, form team
Plan the improvement project

Do = execute one of the cycles above
Study results of this and other projects
A,P,D,S,etc.

2.2 STRENGTHS OF THE PDSA APPROACH

#1. It Tests Changes on a Small Scale

To see if the change strategies in your action plan will achieve their specified objectives, it is important to test them on a small scale - in effect, implementing a change on a temporary basis. Testing on a small scale has several advantages.

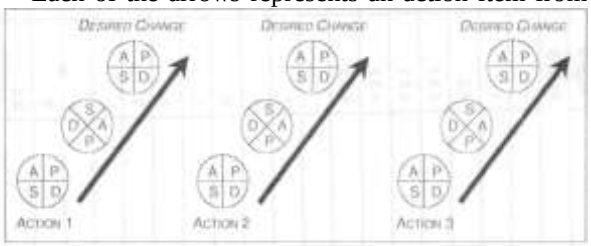
- **Big learning pay-off at small expense:** Testing changes on a small scale can be accomplished quickly with a minimal expenditure of resources. At the same time, small scale tests provide a good indication of problems and/or successes to expect from full-scale implementation.
- **Allows for early and effective changes to the action plan:** The experience and feedback gained from small scale tests can be used to modify and improve the original Implementation Action Plan.
- **Improves staff buy-in:** Staff are more likely to buy-in to guideline implementation if change strategies are tested on a small scale. Staff members resistant to large-scale changes will be more receptive if they can provide input during a small trial run of the change strategy. Tailoring the strategy to the needs and concerns of the implementing staff will increase staff acceptance of guideline implementation.

#2. It Focuses on Process Improvement

Since the PDSA cycle is specifically designed as a tool for improving organizational processes, using this approach encourages your team to conceptualize the action items in the implementation plan as changes in processes. This orientation will increase the likelihood of effective process change.

#3. It Allows for Testing of Multiple Changes through Multiple Cycles

Another advantage of the PDSA cycle is that it allows you to take multiple change strategies through multiple improve merit cycles, as illustrated. Each of the arrows represents an action item from your Action Plan. Each item is tested on a small scale and moves through successive cycles until the desired change is achieved. Not all action items will require more than one PDSA cycle, but it is advisable to test every item with at least one PDSA cycle.



#4. Tried and Proven Changes can be Extended and Adapted

With evidence from the small-scale tests that your planned actions have the potential to create the desired improvements, it is time to move forward with broader implementation of those actions. Responsibilities for implementing the actions should be clearly defined and compatible with each individual's skills and functions in the organization. Similar to the approach for the small-scale tests, work incrementally in cooperation with staff that are involved or affected by the changes. Be alert to both positive and negative feedback, both of which can improve your strategies. To extend and adapt small-scale changes, consider the following actions:

- Extend the change to other areas in the organization
- Adapt the change to each area
- Make the change routine in each area
- Share the adaptations among all areas

#5. PDSA links with other areas of MoSO

Involving everyone in improvement harnesses the intrinsic motivation of people.

It is necessary to drive out fear so that the negative consequences of proposed changes can be freely explored.

3. SELF EXAMINING QUESTIONS

1. To what extent is the PDSA Learning and Improvement Cycle understood in your organization?
2. To what extent do you use a PDSA cycle in strategy and plan deployment?
3. Do you have a consistent process to improve your core operating processes to achieve better performance, to reduce variability, and to keep the processes current with business needs and directions?
4. Do improvement teams have a consistent method based on PDSA?
5. Do you have a consistent process to improve your support processes?
6. How do you translate data from organizational performance review into priorities for continuous and breakthrough improvement and into opportunities for innovation?
7. How are these priorities and opportunities deployed to work group and functional-level operations throughout your organization?
8. How are improvements shared with other organizational units and processes?
9. When appropriate, how are the priorities and opportunities deployed to your suppliers, partners, and collaborators to ensure organizational alignment?

APPENDIX - HISTORY & PHILOSOPHY

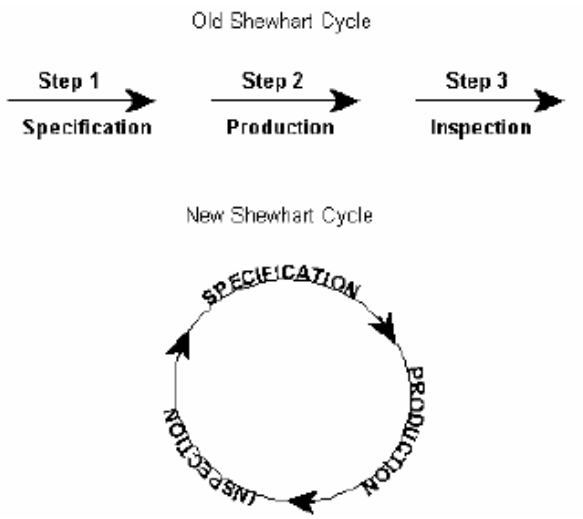
The concept of PDSA comes out of the Scientific Method, as developed from the work of Francis Bacon (Novum Organum, 1620). The scientific method can be written as "hypothesis" - "experiment" - "evaluation" or Plan, Do, and Study.

Some of the first thinking on Plan-Do-Study may have originated with Dewey at the turn of the century in America. Baron & Sternberg (1986) describe a process of scientific inquiry that bridges everyday problem solving and the scientific method and they credit this thought process to Dewey (1933). The stages of the process . . . are: feeling difficulty, doubting what one has taken for granted, defining the problem, forming a hypothesis, inferring possible consequences, discovering a counter instance, revising and broadening the hypothesis to explain the counter stance, and applying the revised hypothesis to a life situation.

In Mind and the World Order, C I Lewis writes,

> The application of concept must be verifiable over time. We develop an hypothesis based on momentarily presented experience, which involves a prediction that can be proved / disproved by further experience, … Empirical truth, (knowledge of objects), comes from conceptual interpretation of the given. To ascribe objective qualities to a thing means that I can make predictions about further activity; *"if I do this . . . , then that . . . ."* this is the whole content of our knowledge of reality. The truth of such propositions is independent of the observer. The *"if"* depends on the active mind; the *"then"* is totally determined by outside reality. However I start with *"if"*, the *"then"* is independent of my attitude / purposes.

Dr. Walter A. Shewhart expanded "if….then…" hypotheticals to a three stage process; "make an hypothesis, carry out an experiment, test the hypothesis", (with a parallel in the 'state of control' as a cycle of specification, production, inspection)1. In Statistical Method from the Viewpoint of Quality Control Shewhart described the old view of Specification, Production, and Inspection. These three stages must go in a circle instead of in a straight line, as shown . . . It may be helpful to think of the three stages in the mass production process as stages in the scientific method. In this sense, specification, production, and inspection correspond respectively to making a hypothesis, carrying out an experiment, and testing the hypothesis. The three stages constitute a dynamic scientific process of acquiring knowledge.



Shewhart described manufacture under "control" - under statistical control - as a three stage process of specification, production, and inspection.[1] He also specifically related this to the Scientific Method of hypothesis, experiment and evaluation. Shewhart[2] says that the statistician "must help to change the demand [for goods] by showing...how to close up the tolerance range and to improve the quality of goods." Clearly, Shewhart intended the analyst to take action based on the conclusions of the evaluation.

This was further refined by Deming. In his work with the Japanese in 1950, he proposed a cycle of;

1. plan a change,

2. carry out the change, preferable on a small scale,
3. Observe the effects of the change,
4. Study the results - what did we learn?, what can we predict?
5. Repeat 1. with accumulated knowledge,
6. Repeat 2.2

Initially he termed this the Shewhart Cycle. In later work3, he further modified this cycle to;

P. Plan a change
D. Carry out the change, preferable on a small scale
S. Study the results - what did we learn?, what went wrong?
A. Adopt the change, or abandon it, or run through the cycle again

This he termed 'the Shewhart Cycle for Learning and Improvement - the P-D-S-A Cycle'.

Deming said that knowledge is built on 'theory', without 'theory' there is no way to use all this data, information. He makes the point that knowledge is built through systematic proposing, testing and extending / revising 'theories'.

Deming always gave credit to Shewhart for the idea of the cycle, but Deming fostered the expansion of the idea to all areas of learning and improvement. The Shewhart Cycle was introduced to the Japanese in 1950. It was taught along with Dr. Deming's "Production Viewed as a System" model.

Design the product (with appropriate tests).

Make it; test it in the production line and in the laboratory.

Put it on the market.

Test it in service, through market research, find out what the user thinks of it, and why the non-user has not bought it.

Re-design the product, in the light of consumer reactions to quality and price.

Continue around and around the cycle.

Deming (1984) advised, the job of any manager is to put everybody on a team for improvement of some activity. Each team will go through the Shewhart Cycle, over and over. A team will be reconstituted for another task when one is brought to a satisfactory conclusion, ready for action.

Here Deming is clearly advocating the use of the cycle for everyone in the organization. During 1988, the cycle had evolved into what we know today as the "Plan - Do - Study -Act cycle. Dr. Deming documented this version of the "Shewhart Cycle for Learning and Improvement" in 1992 in New Economics. In this version, the letters, P-D-S-A, are now part of the cycle. The cycle is now clearly aimed at all types of learning and improvement and can be utilized at any level, for an entire organization or for small improvements or changes.

A fundamental principle of the scientific method and PDSA, is iteration - once an hypothesis is confirmed (or negated), executing the cycle again will extend the knowledge further. Repeating the PDSA cycle can bring us closer to the goal, usually a perfect operation and output.

Improvement is a key competitive factor in today's world. PDSA allows for major 'jumps' in performance ('breakthroughs' often desired in a Western approach), as well as Kaizen (frequent small improvements associated with an Eastern approach). In the United States a PDSA approach is usually associated with a sizable project involving numerous people's time, and thus managers want to see large 'breakthrough' improvements to justify the effort expended. However, the Scientific Method and PDSA apply to all sorts of projects and improvement activities.

The power of Deming's concept lies in its apparent simplicity. However, Deming warned that the effect of this view of how knowledge is increased means that empirical evidence is never complete5. We are always at the mercy of newly discovered facts. He also advised us to be sure that our hypothesis is clearly based on linked cause and effect, and not on co-incidence6. He makes specific reference to p.195 of Mind and the World Order, where Lewis writes, *"There is no knowledge of external reality without anticipation of future experience, ...there is no knowledge without interpretation, the fact that it reflects the character of past experience will not save its validity"*.

This is the basis of Deming's - often misunderstood - sayings that experience and/or examples alone teach nothing without 'theory'. Experience can only be put to rational use by the application of analysis, mathematical / statistical techniques leading to understanding / knowledge7.

In other words, management requires prediction which must be based on a hypothesis, 'theory', about the way the organization - as a system - works. Rational management planning involves a simple thought pattern; "If our organization, as a system in a known environment, works in the following way……., then if we do……., the following results will accrue". This prediction can be tested with appropriate metrics and statistical techniques. Analysis of the results should lead to action to improve the system.

The fact that another organization achieved a given set of results in a similar situation will not help you unless you understand how they did it and how that might be of help in your procedures. Deming warns that "to copy an example of success, without understanding it with the aid of a 'theory', may lead to disaster", (benchmarking)8.

Nolan, Provost, et al of API4, have extended this even further to demonstrate that PDSA brings the power of the scientific method into all our work activities.

1 Economic Control of Quality of Manufactured Product, Shewhart, pp. 55, 121,

Statistical Method from the Viewpoint of Quality Control, Shewhart, pages 44 - 45

2 Out of the Crisis, Deming, p. 88

3 The New Economics, Deming, pp. 134 - 136

4 The Foundation of Improvement, Langley, Nolan & Nolan – API,

Bringing the PDSA Cycle to Life, Provost – API,

Understanding Variation, Nolan & Provost, Quality Progress, May 1990

5 Out of the Crisis, Deming, pp 133, 317

6 The New Economics, Deming, p. 105

7 Out of the Crisis, Deming, pp 19, 128, 317, 404

8 The New Economics, Deming, p. 37

PEOPLE, CULTURE, LEADERSHIP & MANAGEMENT

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Overview of the four elements

These four important elements of the MoSO - **People, Culture, Leadership & Management** are explored in this article.

1. PEOPLE - and change

In any organization:-

The customers for products or services are people

The vision is provided by people

People do the work – and improve things

People need to be engaged – they have a need, as does the organization!

Understanding what goes on in any organization – or outside it – requires an understanding of every aspect of the way people do, and don't, work together.

2. CULTURE

'The way we do things round here' is a simple description of culture – yet we need to look below the surface if we are to work with culture – as opposed to being frustrated by its seeming intransigence!

Organization culture has been described as the emergent result of the continuing negotiations about values, meanings and proprieties between the members of that organization and with its environment.

> *Culture and Complexity: New Insights on Organizational Change, Richard Seel - Organizations & People vol. 7, no. 2, pp. 2-9*

Hofstede describes Culture as "the collective programming of the mind which distinguishes one human group from another" Hofstede 1980 p25.

3. LEADERSHIP

"Leadership is the capacity to release the collective intelligence and insight of groups and organizations. It is helping people to find their own answers. There are things that you as a leader need to know if you are to be credible but there are moments when you need to say 'I don't know' if others are to confront difficult issues and learn how to overcome them."

Living Leadership – a practical guide for ordinary heroes, Binney, Wilke & Williams 2005 Prentice Hall

Leadership – by each individual or as a group – has responsibility for creating the vision to see beyond today's difficulties – and a culture which will sustain the organization for the longer term.

4. MANAGEMENT

Managers must understand, take responsibility for, and ensure implementation of the daily work of the organization. Quality is determined by top management. It cannot be delegated. *Make the work work.*

Improved quality leads to increased productivity, rather than quality comes at the expense of productivity. The need is to both *improve quality and reduce costs* in order to meet today's customer requirements.

Develop a system of management that will ensure pride in achievement for everyone. Give people joy in work.

If you look after your people, your people will look after your customers

Managers need to develop a correct understanding of data / information in a scientific context. Managers need to understand what the things that they measure tell them about how the organization is performing against its purpose. *Understand the wisdom of numbers.*

Managers should have a commitment to ongoing continual improvement and innovation in design, product and process.

There should be *a planned approach to improvement, innovation and learning.*

Each of these four elements of the MoSO will now be covered in a little more detail, with more ideas for you, on which you might reflect and act – or join us in the development of the MoSO model by engaging in the process with your comments and experience.

PEOPLE and change – MORE IDEAS

Organizations change in response to their environment; if they don't, they die. The subject of **Organizational Development (O/D)** has been built over the last 40 years as leaders, managers, practitioners and academics struggled with the theories and practicalities of helping 'organizations' to respond to changing demands – for that read 'helping people' to develop and change in response to changing demands.

And all this in place of judgement of people, ranking them, putting them into slots (outstanding, excellent, on down to unsatisfactory) - the aim should be to help people to optimize the system so that everybody will gain.

Dick Beckard of M.I.T. defines Organization Development (OD) as "an effort, planned, organization-wide, and managed from the top, to increase organization effectiveness and health through planned interventions in the organization's processes, using behavioral-science knowledge." In essence, OD is a planned system of change.

He also highlights the need to be aware of the changes in society, as we think about changes within an organization.

Today's changing values

1. Man should and is more independent and autonomous
2. People have choices in work and leisure
3. There is a need to meet higher order needs
4. People will choose to meet their needs rather the organization's if they are in conflict
5. Organizations should arrange things so work is meaningful and stimulating
6. The power of bosses is reduced.

What is OD?

- A planned change effort
- Involves the whole system
- Is managed from the top - the top is involved
- Is designed to increase organizational effectiveness and health
- Achieves its goals through planned interventions using Behavioural science knowledge.

Other definitions:-

OD is a system wide process of planned change aimed at improving overall effectiveness. [Bradford & Burke]

OD is a long range effort to improve an organization's problem solving and renewal processes. [French & Bell]

"OD is poorly understood because it is a mixture of disciplines and transcends functional boundaries. OD is more of a scavenger discipline. It borrows from many areas e.g. systems thinking, behavioural science, psychology, sociology, anthropology, systems theory, organizational behaviour, etc.

"OD is crucial in today's fast moving and changing environment. And yet even HR practitioners do not understand what is meant by OD, even the basic principles and practices that could make such a difference to organizational effectiveness.

"OD recognises that organizations are part of an open system. Environmental factors [inputs] influence what the organization exists to create [outputs]. OD looks at the total systems and the linkages between the parts and how change in one part will affect another part."

Linda Holbeche in CIPD quarterly review

What is involved in OD

Theory in action

Action Research

The OD practitioner is one of helper/enabler using

- diagnostic data and
- then intervening within the system
- using structured interventions

Some operational goals of OD

- To create a viable self-renewing organization
- To optimise effectiveness - continuous improvement
- To achieve high collaboration and low competition between interdependent units within the system
- To create conditions where conflict is brought out and managed
- To reach a point where decisions are made on the basis of information rather than power

Some characteristics of an OD effort

- Planned programme involving the whole system
- Top of the organization is aware of, committed to and involved in the effort
- It is long term
- Activities are action oriented
- It focuses on changing attitudes and behaviours
- Usually relies on some form of experience based training
- OD efforts work primarily in groups

Kinds of organizational conditions that call for an OD effort

- A change to managerial strategy
- Making the climate more consistent with individual needs and the changing needs of the environment
- A change the cultural norms
- A change to structure and roles
- A need to improve intergroup collaboration
- The need to open up communication systems
- The need for better planning
- The need to cope with the problems of a merger
- The need for a change of motivation in the organization
- The need for adaptation to a new environment

The skills and abilities that individuals need to successfully achieve and OD change

- Interpersonal competence
- Problem solving knowledge and skills
- Goal setting skills
- Planning skills
- Understanding the process of change and changing
- Skills in System diagnosis

How to... develop your OD skills

(From the How to…. on OD in People Management)

Organization development (OD) is used to deal with issues such as managing dynamic and complex change, putting people at the heart of their organization, determining mission, values and strategy, introducing new systems and processes, restructuring and enhancing leadership.

OD is difficult to define, yet sits at the heart of any planned, holistic approach to improving organizational performance – one which aligns strategy, people and processes. OD balances the need for organizational effectiveness and well-being with adapting to the external environment in which it operates. While the boundaries between OD expertise and other related fields are not clear-cut, it is the way in which the expertise is used that makes OD what it is. More and more HR practitioners now have an OD function in their job, but many don't understand what it is or what it requires.

1. **Start with process**

   The OD practitioner is key to the success or failure of an organizational development intervention. To be successful, OD practitioners need to help organizations define their agenda rather than be reactive to needs. OD practitioners do what they do by working at a process level. They make a difference by enabling organizations to understand their own processes.

2. Gathering and assessing data

Any OD intervention begins with gathering and assessing data to decide how to intervene, and crucially to ensure that the intervention will have an impact on the root cause of the problem, not just the symptoms. One of the ways of doing this is using an action research process, whereby issues and problems are highlighted through reflective practice and addressed. The diagnostics of this need to be done with the client and the OD practitioner – watch for deeper issues as the data is gathered, recognise what is relevant and understand how data from different parts of the system affect each other.

3 Feedback and decision

OD practitioners need to be confident in their ability to communicate the outcomes in a comprehensible format. The key to this is to create a non-threatening atmosphere and involve participants early so they feel some ownership in the whole process. Process consultation is one way of dealing with feedback that enables the individual to take an active role rather than relying solely on the OD practitioner's expert opinion.

4 Form your plan

OD works better when it isn't a knee-jerk reaction to a crisis but a considered approach. Work with colleagues or departments in need to distil recommendations from the data. Focus on action that has high impact with minimum costs and implement a plan that is at the heart of the organization.

5 Intervene

Make sure that your intervention is pitched at the right emotional depth. Be clear where the focus is – the individual, group or whole organization – and choose the right type of intervention for your scenario. There are many examples of different interventions that range from restructuring through to coaching, transformational change journeys and learning and development.

6 Evaluate

Make sure you choose the right evaluation method. One thing to consider would be using an action research approach: this is ideal for continually assessing the impact and results so that changes can be made as you go along, rather than after the event. Remember to take into account the cultural fit, why the information is required, how it will be used and budget constraints.

Key points

- Build OD into processes from the start.
- Data gathering, and feedback on that data, is essential before beginning any intervention.
- Work closely with other functions, focusing on actions that will have the widest benefit.
- Evaluate any process from start to finish, and don't be afraid to make changes as you go along.

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OD - what's in a name Linda Holbeche CIPD Director of Research and Policy and Mee-Yan Cheung- Judgein CIPD Impact no 26, February 2009

How to…in OD Sylvia Baumgartner principal consultant for organizational development, Roffey Park, People Management February 2009

CULTURE – MORE IDEAS

We need to understand what the culture is, where it came from, who has interests in retaining it - or in change:-

A further distinction Hofstede suggests (1991) is useful in thinking about the culture of an organization – and of the surrounding society:-

Individualism/Collectivism - a range, from societies in which the ties between individuals are loose to societies in which people from birth onwards are integrated into strong, cohesive in-groups

Power distance - the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally

Uncertainty avoidance - the extent to which the members of a culture feel threatened by uncertain or unknown situations

Masculinity/Femininity - a range, from societies and organizations in which social gender roles are clearly distinct to societies in which social gender roles overlap

Confusion dynamism - a range, from long-term orientation to short-term orientation

And also

- process-orientated versus results-orientated
- job-orientated versus employee-orientated
- professional versus parochial
- open systems versus closed systems
- tightly versus loosely controlled
- pragmatic versus normative

Yet more questions for each of us to consider about our work environment - on the journey to understanding how we do things round here - and what we might do about it....

- Do we connect culture with organization structure or with something else? Like the beliefs and values of the founders or of the current leaders?
- Do leaders create culture - or are they products of it? Do they know which condition applies to them? Do they recognise their own assumptions and preconditions, which can limit acceptable thought (of their own or others!) - and if so, do they limit outcomes? Are they actively doing anything about it?
- What is the purpose of the organization – and on what does it rely? And does the current culture help or hinder that purpose?
- If the responsibility of leaders and managers is to create an environment in which people can perform to the best of their ability and ingenuity, what responsibilities do those leaders and managers take for the culture? Are you one of those leaders or managers?
-

What are we trying to do? Through what lens do we see the world?

And some more questions for you to consider:

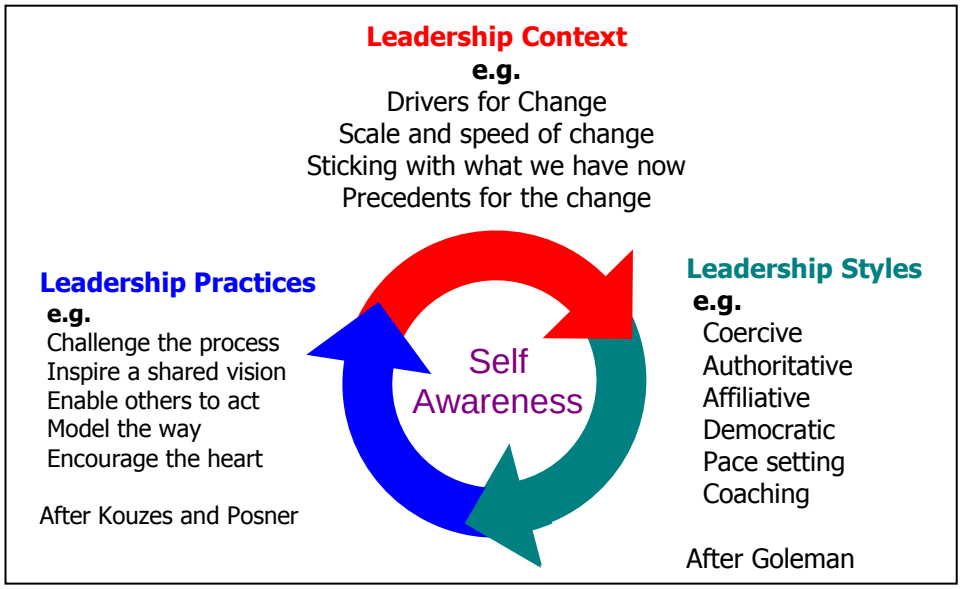
- What is it like around here?
- What would you like to be different…?

- For what are you responsible?
- What influence do you have?
- How might you begin to change that?
- How does this all start with you?

And all in the context of a Framework for Leadership

Here we propose a framework that links essential ingredients of leadership - context, practices, styles - and self-awareness - in useful ways. We encourage people in organizations, especially those with greater responsibility, to find ways to understand the complexity that is effective leadership and to recognise that there are no prescriptions. So if there is no simple answer, then leadership is about continually reflecting on today's actions and consequences, so as to improve tomorrow's performance.

This demand for Self Awareness is then crucial to assess the competing needs of all the people in the organization - and the contributions that they can make, providing the leader can provide the appropriate environment to release their skills.



So, as a leader, how can I best balance the following? And how will I know how I'm doing?

- r Change
- Scale and speed of change
- Sticking with what we have now

See "Leadership Matters – the power of self-awareness" Occasional Paper No 7 – Resources – www.transitionpartnerships.com

Q. How would you describe the Leadership Style of the people within your organization?

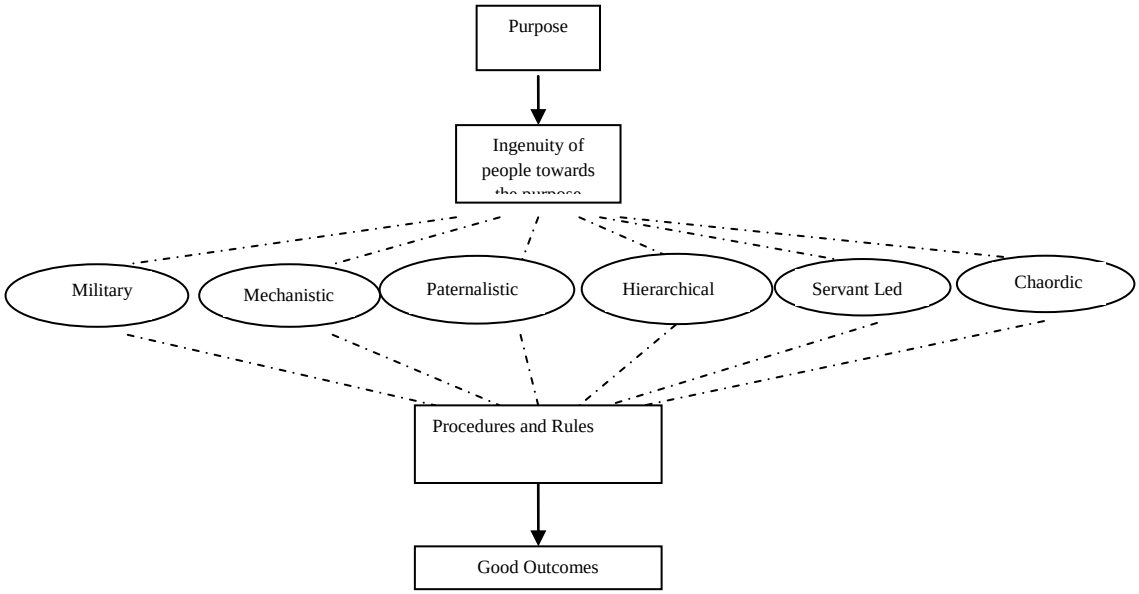
Q. How do you help them to provide the conditions for effective work?

Q. How do you help them to communicate the vision and purpose of the organization?

And finally

Q. Would you recognise any of these styles?

Leadership Models

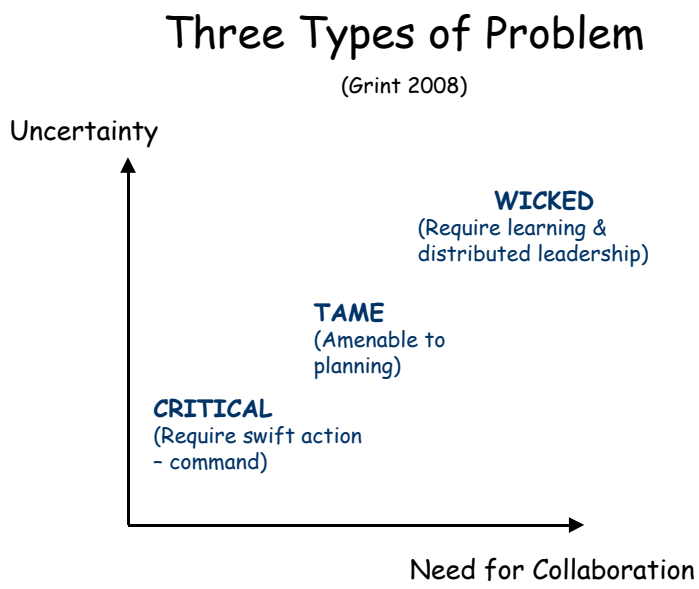


(And the presumption here is that the Outcomes will be Good! They may equally be Bad! What impact does the culture have? And how effective is the System?)

And even now we need to add another possibility – the Network – an animal connected for some to social networking groups, to anarchists – even to crime – yet increasingly it is seen as a creative structure for 'wicked problems' which materialise in our complex, integrated, global world. Yet where does Leadership reside in such a model?

Mike Pedler – using the Critical – Tame – Wicked problems model from Grint (2008) argues that leaders will need to understand and conform to different needs within a Network which is challenged by a wicked problem.

> In Grint's threefold model, the progression from 'critical' to 'tame' to 'wicked problems is marked by an increase both in uncertainty about solutions and the need for collaboration. 'Critical' problems are the domain of *command*: crisis situations such as heart attacks, train crashes or natural disasters demand swift action, leaving little time for procedure or uncertainty. ' Tame' problems, though they be very complex, such as timetabling a school, planning heart surgery or building a new hospital, are essentially amenable to rational tools and constitute the natural domain of *management*. "Wicked" problems defy rational analysis and are the domain of *leadership* (2008: 11-18).



Where past business issues, though complicated, could often be solved within hierarchies, Network Leadership is needed for real, system pervading 'wicked' problems:-

> ***"A network is a grouping of individuals, organization and agencies organised on a non-hierarchical basis around common issues or concerns, which are pursued proactively and systematically, based on commitment and trust." (WHO 1998)***

The idea is plastic and polymorphic: the highly controlled, commercial supply chain, proven so effective with some complex "tame" problems, is very different from the professional network, and the informal networks are different again. It is also a powerful idea: claims that "networked companies" already outperform conventional ones (Häcki & Lighton 2001), whilst others warn that the success of (unaccountable) informal networks may be undermining (accountable) bureaucracies (Bradwell & Reeves 2008: 63-67). This last is a reminder that the network is the organization of choice for terrorists and criminals. Crime syndicates for example now permeate many national cultures and governance systems and make up perhaps 20% of world GDP (Castells: 169-211; Glenny: 8).

However, the potential of the network in resolving the legitimate problems of organizations and societies is yet to be realised. Currently there are those who seem to believe that the collaborative possibilities of the new technologies make unnecessary all other organizational forms: everyone can harness "the power of organising without organizations" (Leadbeater 2008; Shirky 2008). In the neo-anarchist world of social networking, "you are what you share" and power accrues to the "connectors" (Gladwell 2005). However naive these visions, they attest to the power of idea. The realisation of this power is another matter.

... and Managed Networks

The attractiveness of networks is in their flat and loosely coupled natures, their flexible working and the local freedom to act, with members pursuing their own purposes in a common field. But in the context of formal organizations, this looseness and freedom creates interesting problems: How is strategic direction to be determined? How is leadership possible? How are resources allocated? And critically, how are the actions of network members governed and made accountable?

Ideal type networks are rarely found in formal organizations, where to a greater or lesser degree, they are "managed" or "structured". Where the needs for control, predictability and external accountability are high, networks are likely to complement and exist alongside hierarchies. In the NHS for example, the ability to work with both hierarchies and networks is seen as a hallmark of the "innovating organization"(Pettigrew & Fenton 2000: 296). Design primers can be found to

create "loosely coupled clusters of interacting units" contributing to and being guided by a "strategic core" (Campbell & Goold 2002).

Distributed leadership

However, networks are enacted and co-created by their members' activities and cannot be over-prescribed. Network organising works through local initiatives, via personal ties, links and relationships and too much ordering will repress these energies and reproduce a limited engagement. To enact the network in anything like its "ideal type" requires distributed rather than focussed leadership. Described as "the collective capacity to create value" (Senge 1990), this implies more rather than less people being engaged in decision and direction. Researchers also stress the critical importance of context and situational factors: **"**School leadership is best understood as a distributed practice *stretched over* the school's social and situational context" (Spillane et al 2001: 23).

Building and sustaining the network relies on this distribution of effort. The principle of voluntary engagement means that if the network does not generate enough energy or deliver enough benefits, then members will soon drop away. Developing the processes of network leadership, governance and accountability also require collective attention. The problematics of leadership, governance and accountability make for good action learning questions:

Who is eligible to join the network and what are their rights and obligations? What are the rules of engagement? How is behaviour regulated in the network and conflicts resolved? How will we hold ourselves accountable? Can we develop a user-centred accountability? And so on. These questions cannot be resolved in advance by skilful designers, but must be enacted through experiment and lived experience.

Making a useful contribution as a manager to the "managed network" may also require a good deal of new learning for those reared in hierarchical institutions. There are many tensions to manage in reconciling free association for mutual interest with the accomplishment of collective tasks. This requires sensitivity and creativity around the sorts of systems that can encourage this way of working, together with the skills of animation that generate participation and engagement.

From **All in a Knot of One Another's Labours: Learning, Self-determination and Organising** Mike Pedler (2009) Inaugural Lecture – Henley Management College

Some more definitions – and you will have your own

Military	Structured around a clear chain of command, with well proved processes and training, so that individuals know how they will be expected to act in most situations – and when they do not, they have sound models of behaviour and action on which to fall back.
Mechanistic	Following the product, where people are tools in the process.
Paternalistic	The organization will look after you in all respects – and expects undying loyalty in return.
Hierarchical	The people at the top know best – and can and do give instructions to those lower down, by the authority of their position. People lower down are not expected to use their initiative – they are instruments of someone else's power and agendas. Behaviour is compelled – it rarely emerges out of shared community.
Servant Led	Leaders and managers respect the skills of their people, and expect them to deal with the situations which they know and understand best, within a strategic vision and framework to which they feel engaged. Can be described as 'upside down' when compared to Hierarchical – where the leaders support the led with what they need to do their job, having the humility to know that they, the leaders, cannot do the work, that interference can stifle ingenuity and that it takes determination to stick to the plan!
Chaordic	Created or emerging, where individuals, parts or groups reflect a natural survival process within their local environment – where chaos and order meet.
Purpose	is the unambiguous expression of what people wish to become. Principles, People and Concept then define Structure and Practice in an iterative, living process. (See Dee Hock reference below)

Some quotes and references

"Organizational learning, development, and planned change cannot be understood without considering culture as the primary source of resistance to change."

"This ability to perceive the limitations of one's own culture and to develop the culture adaptively is the essence and ultimate challenge of leadership."

"The bottom line for leaders is that if they do not become conscious of the cultures in which they are embedded, those cultures will manage them. Cultural understanding is desirable for all of us, but it is essential to leaders if they are to lead."

So what is the culture in your patch?

What language might we use to describe it? And does it help or hinder? And can we change it – if only in our bit of the organization

What 'control beliefs' do we hold? What route might we take to self-efficacy? (see Albert Bandura http://des.emory.edu/mfp/Bandura/)

- Primary control – I can change my world
- Secondary control – I can change my needs to conform to my world

"So…. when might I start?"

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THE ROLE OF MANAGEMENT – AND OTHERS

It has been said that:

Leadership is doing the right things ….. *whereas*

Management is doing things right.

Also,

- *The proper role of management is to lead people to understand the business as a system that links everyone's efforts to best serve* ***customer*** *needs.*
- *The goal of a business is to nurture continually employees creative talents (including suppliers and partners) to understand, meet, and exceed customer expectations (both present and future).*
- *By focusing on* ***what*** *people do, and* ***how*** *they do it, the manager will improve the system's capability to serve customers.*
- *To help each employee realise his or her potential, management's main job is to learn exactly what people do in their jobs and how what they do serves customers.*
- *Such learning is difficult, if not impossible, in organizations that manage solely by results (i.e. without any regard for or knowledge of system capability.*

(Adapted from Johnson & Broms, 2000, p2)

"Leadership is of the spirit, compounded of personality and vision: its practice is an art. Management is of the mind, more a matter of accurate calculation, of statistics, of methods, timetables and routine; its practice is a science. Managers are necessary; leaders are essential"

Address to the Australian Institute of Management 1957 by Field Marshall Sir William Slim

While people may believe that they are all acting purposefully, they need to be aware that accommodations will be necessary between conflicting points of view, which enable action to be taken. Individuals see the same concept from multiple perspectives – hence the complexity of perceived reality. System/model is not the world – it is a device to structure debate/dialogue between individuals. (Checkland)

Change comes through conversation (Streatfield and Patricia Shaw) – a model can be 'oppressive' (Mead) and participation comes to mean the willing submission of the 'good self' …to the wisdom of a collective tuned to a transcendent wisdom! (Scharmer) – and in the free flow of dialogue, people find themselves speaking what they did not realise they thought (Issacs)

Fixed (things) – Management. **Variables** (people) – Leadership

Major General Julian Thompson, Commanding 3 Brigade, Falklands, 1982 – after Rear Admiral Grace Hopper

Leadership – 1/3 sensing the outside world and the whole business environment

1/3 understanding how the organization is performing to deliver its purpose

1/3 developing more good leaders

How I spend my time - A senior leader of a global defence business 2007

"Management by results creates 'needs', goals that we feel we must achieve for our survival or for personal gain. Management by means nurtures aspirations, aims that we pursue because they matter to us. The difference is subtle yet profound……it is a tragedy when we lose the ability to distinguish needs from aspirations."

Peter Senge in the Foreword to "Profit Beyond Measure" by H Thomas Johnson and Anders Broms

Management:

1. Manage self
2. Manage the bosses
3. Manage peers and all others around you
4. Hire good people, to do the same!"

Dee Hock, Founder and CEO Emeritus, VISA

Level 5 Leadership – from Jim Collins

Anyone can be a leader – first they need to lead themselves…

"How much better can we do?"

"If you have a stable system, then there is no use to specify a goal. You will get whatever the system will deliver. A goal beyond the capability of the system will not be reached. If you have not a stable system, then there is…no point in setting a goal. There is no way to know what the system will produce: it has no capability." **W Edwards Deming**

Management	**Leadership**
Dealing with the 'known'	Creating the culture
Recognising the risks	Accepting the 'unknown'
Having the courage to act	Respecting the skills of others

The Role of a Manager of People

This is the new role of a manager of people after transformation.

1. A manager understands and conveys to his people the meaning of a system. He explains the aims of the system. He teaches his people to understand how the work of the group supports these aims.

2. He helps his people to see themselves as components in a system, to work in cooperation with preceding stages and with following stages toward optimization of the efforts of all stages toward achievement of the aim.

3. A manager of people understands that people are different from each other. He tries to create for everybody interest and challenge, and joy in work. He tries to optimize the family background, education, skills, hopes, and abilities of everyone.

This is not ranking people. It is, instead, recognition of differences between people, and an attempt to put everybody in position for development.

4 He is an unceasing learner. He encourages his people lo study. He provides, when possible and feasible, seminars, courses for advancement of learning. He encourages continued education in college or university for people that are so inclined.

5. He is coach and counsel, not a judge.

6. He understands a stable system. He understands the interaction between people and the circumstances that they work in. He understands that the performance of anyone that can learn a skill will come to a stable state—upon which further lessons will not bring improvement of performance. A manager of people knows that in this stable state it is distracting to tell the worker about a mistake.

7. He has three sources of power:
    1. Authority of office

2. Knowledge
3. Personality and persuasive power; tact

A successful manager of people develops Nos. 2 and 3; he does not rely on No. 1. He has nevertheless obligation to use No. 1, as this source of power enables him to change the process - equipment, materials, methods - to bring improvement, such as to reduce variation in output. (Dr. Robert Klekamp.)

He who is in authority, but lacking knowledge or personality (Nos. 2 or 3), must depend on his formal power (No. 1). He unconsciously fills a void in his qualifications by making it clear to everybody that he is in position of authority. His will be done.

8. He will study results with the aim to improve his performance as a manager of people.

9. He will try to discover who if anybody is outside the system, in need of special help. This can be accomplished with simple calculations, if there be individual figures on production or on failures. Special help may be only simple rearrangement of work. It might be more complicated. He in need of special help is not in the bottom 5 per cent of the distribution of others: he is clean outside that distribution.

10. He creates trust. He creates an environment that encourages freedom and innovation.

11. He does not expect perfection.

12. He listens and learns without passing judgement on the person he listens to.

13. He will hold an informal, unhurried conversation with every one of his people at least once a year, not for judgement, merely to listen. The purpose would be development of understanding of his people, their aims, hopes, and fears. The meeting will be spontaneous, not planned ahead.

14. He understands the benefits of cooperation and the losses from competition between people and between groups.

See also The Deming Supporting Information article. Management is a process which requires a set of competencies;

- Articulating and implementing a consistent purpose for the organization
- Managing the organization as a system,
- Managing data and information; and understanding variation
- Providing a culture of learning,
- Helping people to contribute and achieve their potential.

The opposite of Deming's philosophy is the currently accepted market economy model

This model of the organization rests on so-called theoretical foundations. At its heart are a set of premises:

- The objective of the firm is to maximize shareholder wealth
- Individuals are self- interested, rational decision makers driven primarily by economic goals
- The economic relationships between individuals are governed by contracts, which may be complete and short term as in the case of market contracts, or incomplete and long term as in the case of employment contracts and the "relational contracts" that govern intra-firm relationships, and,
- Cost efficiency determines contractual form and institutional structures, whether directly through managerial decision making or indirectly through the forces of competition (i.e., competition is a "selection mechanism" through which inefficient institutional forms are eliminated).

And look where this has got us!!

A year after 9/11 – in the middle of the period of reflection on ethics following Enron and 7 years before the recent financial crisis – Mintzberg, Simons and Basu described a ‘Syndrome of Selfishness’ – with “five mutually reinforcing misconceptions in economic thinking which have driven a series of disruptive wedges into our socio-economic fabric, distorting our views of corporate and social responsibility.”

Their article refers to 5 'Fabrications' – 5 theories of economics and social life which they believe are seriously flawed and which they challenge below.

1. We are all, in essence, Economic Man - yet beyond calculation of economic trade-offs lies judgement of short-term gains versus long-term gains to society.

2. Corporations exist to Maximise Shareholder Value - yet economic decisions have social consequences.

3. Corporations require Heroic Leaders - yet will they be around to pick up the pieces?

4. The Effective Organization is Lean and Mean - yet where is the covenant between loyalty and security?

5. A Rising Tide of Prosperity Lifts all Boats - yet increasing wage disparity and strongly growing asset inequalities over the last 20 years suggest otherwise.

Which side of the balance persuades you?

Mintzberg et al claim "The calculus of glorified self-interest and the fabrications on which it is based must be challenged". Their article promotes engagement with a more values-driven view of an organization and its impact on society.

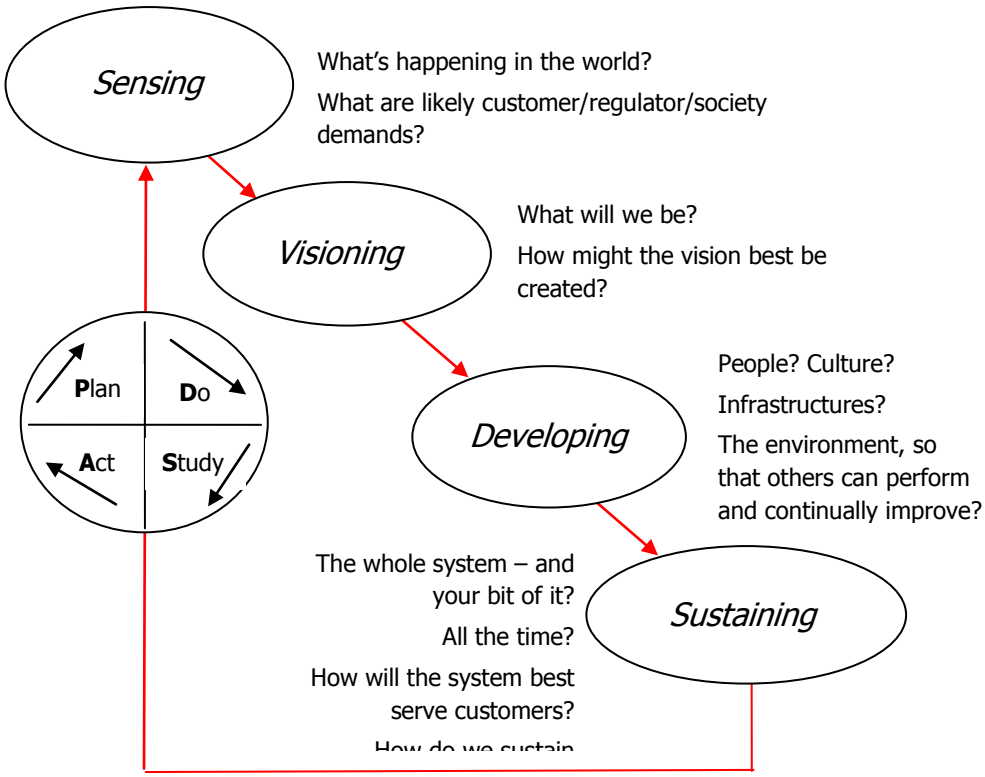
"We can live our lives and manage our enterprises obsessed with getting even more, with keeping score, with constantly calculating and scheming. Or we can open ourselves to another way, by engaging ourselves to engage others so as to restore our sense of balance."

References

Beyond Selfishness Mintzberg, H., Simons, R, & Basu, K. (2002.) MIT Sloan Management Review Fall

"Servant Leadership - asking questions and delivering good outcomes" – Occasional Paper No 13 – Resources – www.transitionpartnerships.com

Some Roles – for Leaders and Managers



Noise -> Data -> Information -> Knowledge -> Understanding -> Wisdom
What informs the sequence above?
Trust ---- Logic ---- Emotion (all in proper measure – see Aristotle)

Some Self Examining Questions

- **Q.** What else would you add?
- **Q.** On reflection, what more might you do?
- **Q.** How could you engage and encourage others to do likewise?
- **Q**. What responsibility can you take for designing the system?
- **Q**. How capable are the processes?
- **Q**. How will you avoid 'tampering'?
- **Q**. Where does PDSA apply?
- **Q**. How do you lead by example?

SOCIETAL INFLUENCES & LEARNING

Lead Author: Fabian Hiscock Peer Review: Tony Korychi & Terry Rose

OVERVIEW

The society in which we live and work has a profound and ever changing effect on our life styles, and therefore on our expectations of the products and services we purchase and on the types of jobs that are available to us.

In this technological age, change comes in waves that hit hard and fast – and at an ever increasing frequency.

No company or organization exists in a vacuum – at least, not for very long. Product life-cycles are often measured in months rather than years (or even decades as was the case for previous generations). Skills, both individual and organizational, that have been acquired over many years can become redundant over night. Methods of working, including management methods, need to adapt to new realities.

Rapid societal learning requires a revolution in management thinking – from 'Secrets' to 'Sharing' – from 'We don't do it that way' to 'Openness to learn and change'; including learning from outside the present business sector.

Societal learning can be thought of as network learning or learning from the network of companies, customers, suppliers, and others who are trying to improve the ways their companies function. Such mutual learning is necessary because the methods of organizational change and improvement are not a theory a company can simply learn and follow. Companies develop their own practices through trial and error.

POSSIBLE OTHER TOPICS

Societal Infrastructure Elements that Support a Vibrant Business Community

- Venture capital firms / investors
- Business networks (formal and informal)
- A well developed IPO market
- Use of tax system to support business activities
- Government backed 'infrastructure' schemes (e.g. Skills development)
- Education (schools and Higher education)
- Professional Bodies (e.g. CQI)

Infrastructure for Networking

- National Promotion
- Training schemes
- Sector Knowledge Dissemination
- Societal promotion
- National Standards
- Development of new methods (sponsored by CQI?)

BACKGROUND

Enterprises seeking to sustain their businesses interact routinely and naturally with the society in which they operate. For large enterprises, this interaction is often expressed through their Corporate Social Responsibility activity; but much smaller undertakings still need to consider their societal influences.

The CQI's Body of Quality Knowledge points to several key features in considering Societal Influences on the sustainable organization:

- The need for organizational values and for codes of conduct, professional principles and business ethics.
- The influence of global cultural differences.

- The effects of technology on people and the environment
- The impact of different legal frameworks, including consumer protection, enforcement agencies, employment directives, product liability and business governance.
- The importance of maintaining compliance with appropriate standards for societal interactions.
- The role of corporate governance: arrangements and accountability, ethics, audits, management reviews, communication and reporting structures, corporate citizenship.

These are expanded below.

PURPOSE OF THIS ARTICLE

This short essay is intended to highlight some of ways in which the sustainable enterprise influences, and is influenced by, the societ(ies) in which it exists, and suggest ways in which the enterprise can use or meet them to ensure that it is truly "sustainable". This may or may not require "transformation": it will certainly require constant and well-managed change in order to keep abreast of developments which its very existence will be generating.

The Influenced Society – and its Influence

In many societies there are strong Regulatory frameworks. Even where, in rare cases, there are none, the sustainable organization nonetheless lays down and adheres to a framework within which it will work. As a minimum, this will consider financial dealings and the requirement to avoid killing or injuring its stakeholders. Failure to do this is fatal to sustainability. The more mature organization does more, and goes on to consider also its impact on the physical and environment and on the community within which it works.

The management frameworks which result from compliance with these regulatory constraints are considered in the sections 'Company/Organization Culture' and the 'Operational System'.

Societal influences on the sustainable organization will also include:-

- The educational history and framework of the society. An enterprise depending on high-quality engineering skills will find it difficult to maintain itself in an agrarian society, or indeed in an more advanced one in which the value placed on science and engineering is decreasing
- The religious and cultural features and history, including the openness to change. An enterprise which expects to change, as is likely for long-term sustainability, will not find it easy in a deeply conservative society.
- The ethical framework, which may or may not reward behaviours crucial to long-term sustainability.
- The nature and history of the labour market, which will affect the availability and flexibility of human resources.

It is also necessary to consider, and commonly to adjust where necessary, the impact on society of the enterprise's own operations. Even very small companies purchasing goods overseas can have a significant local impact where cottage industry is the model. On the other hand, even large undertakings can be relatively insignificant in a heavily industrialised area. Factors to be considered by a sustainable enterprise will include:

- The effect of economic dominance, if achieved, and the social responsibilities this might bring. A decision to ignore these is a conscious one.
- The impact of a large industrial operation in a rural area.
- The availability of transportation, and the consequences of providing it. The social history of the inter-relationship of the canals of England and the industrial revolution is a large-scale example. For well regulated societies, 'development planning' frameworks often offer societal control, but this is not always present.
- The impact of day to day activities which may not be illegal but may affect people living close by – for example noise pollution.

Having considered the macro-societal influences, the sustainable enterprise will consider its own operations.

These will include:

- The fitness of the working environment for the workers.

- The fitness of the industrial process for the surrounding environment and society.
- How the output of the enterprise meets the needs of the society in which the customer lives and works.

It will also seek to make sure that the society, including the workers, observes that what is promised does in fact occur. The building and maintenance of trust is vital to the sustainable organization.

The modern or developed 'customer society' is interested in the whole lifecycle of its consumption. Those supplying the UK Ministry of Defence will be familiar with the CADMID cycle, which runs from Concept through Assessment [of the options] and Development, to Manufacture and the In-service phase which is usually the longest. But it finishes with the Disposal phase, and the supply chain is invited to consider at the start how the product is to be dealt with (and indeed replaced) at the end of its useful life.

By extension, a well considered 'Through life' approach for any project would recognise the possibility of innovation or investment in solutions, and allow problems later in the cycle to be anticipated (at the moment cost tends to be a key driver, which may discourage this). But when equipment lifetimes become extended (for example for airliners) this will be increasingly important as the regulatory framework and the issues associated with climate change alter the agenda during the life of the equipment.

While this may appear to apply to large enterprises, the principles are relevant to all 'sustainment' considerations. The modern trend towards 'planned obsolescence' is highly prejudicial to the sustained environment unless properly managed. Economic modelling is also being developed to show its effect on financial sustainability.

Assurance

The developing principle of Accountability seeks to ensure that high standards of stewardship, sustainability and transparency are maintained by organizations which seek to be sustainable, and the Accountability Assurance Standard AA1000 offers assurance of this. In the UK, BS8900 (Managing Sustainable Development) addresses many of these issues, and ISO 26000 (Social Responsibility), due for issue in 2009, will develop the theme further. IN the USA, the application of the Sarbanes Oxley Act has imposed many of these principles on business, and this trend is likely to increase across the world.

SUMMARY

Sustainable commercial and industrial enterprises are required in many countries to consider a much wider range of their interactions with the society in which they operate than has been traditional. If they fail to do so, their true long-term sustainability is under threat.

These considerations include not only the physical environment, which should not be damaged, but also the economic, cultural and educational components of the hosting society, all of which should be enhanced.

An enterprise that works with all of its stakeholders (from staff and customers to environmental groups and the wider society) to take positive initiatives for the environment, workforce, community and market place, will ensure that it is a sustainable organization.

THE ENVIRONMENT – A DEMING CENTRIC VIEW

Lead Author: Mike Upstone Peer Reviewers: Alan Clark, Tony Korycki

1. OVERVIEW

Albert Einstein: "The environment is everything that isn't me."

Dr Deming's philosophy uses very different approaches to those of many prevailing business paradigms but, as a philosophy geared to optimising complex systems, it is entirely consistent with managing environmental sustainability. Deming principles provide profound insights into both the external environment and the internal environment of an organization, emphasising system optimisation, stability, logic, understanding of the process (particularly the factors involved in process variation), psychology and measurement.

2. SUMMARY

Variation on an old joke: "How do I get to ecological sustainability?"

"**If I was you I wouldn't be starting from here."**

Einstein: "insanity is doing the same thing over and over and expecting different results."

Dr Deming grew up on a smallholding in Wyoming where the survival of the settlers depended on climate and management of the soil. Environment and climate change has now become the top priority for modern society and therefore a critical issue for every enterprise. A key implication of Deming regarding environmental policy is that decisions based on the premise that, a) nothing changes, or b) on political self interest, come back and bite us – because the environment, including society, is a dynamic system that constantly changes and will eventually hold us to account for our actions (or inactions), based on invalid or outmoded assumptions.

Deming's background gave him direct experience of the interdependence of the environment and humanity within a philosophical yet profoundly practical approach of understanding 'a system'. Systemic approaches cater to reality and not to artificial constructs; they produce deeper understanding of processes which enable practical outcomes to be created and subsequently measured. This is therefore an approach that treats strategic change in a deeper, wider and longer term context than a strictly departmental or short term exercise.

Deming philosophy is therefore the polar opposite of some practices used by successful organizations, which would be far more successful over the longer term if they followed Deming principles. The core of this philosophy is not about a focus on fads, financial management or costs, but about creating enduring, sustainable, balanced systems that develop in an organic way to naturally eliminate waste. In order to do this we must do things differently: in fact the key is that we must strive to do everything better, continually, through a holistic understanding of organic systems and working with a constancy of purpose.

Most of us are socially programmed to focus on maxima (sales, profits) and minima (costs, manpower); in doing so we can entirely miss the point of understanding the system / process itself and optimising it in an organic and sustainable way – the weakness in our thinking can be ascribed to our level of understanding and the assumptions we use to interpret our data.

It is therefore essential to remove any idea that organizations and the environment, both internal and external, are dissociated... such thinking explains why some organizations fail to reach anything like optimal performance and are riven by politics, fads and short-termism. To see the whole picture we need to look at the entire system and to understand interrelationships in an entirely new way. This drive to innovative thinking is underpinnned by a constancy of purpose - the primary purpose of any company being to not just satisfy but delight its customers, because without them there are no sales, profits or shareholder values, we need to keep our priorities in order.

Deming principles therefore provide a platform for action that accurately reflects the internal environment of an organization and recognises the interdependency of the organization with its external environment. Whilst this may sound complex, the practical application of Deming principles shows that it helps to simplify how we deal with the complexity of life, business, public service and government, making it balanced, manageable and sustainable.

3. MAIN CONTENT

Deming: "Any defects within a process contribute to poor environmental performance for a company."

Richly fertile American farmlands turned into dust bowls in the early part of the twentieth century, through farming mismanagement and short-termist policies. Deming, who witnessed these events as a young man, appreciated the importance of the environment with regard to any system.

It is an academic convenience to view an organization, even an artificial, man-made construct such as a corporation, as being unaffected by, or detached from its environment. Yet such is the accepted thinking of some prominent corporations and political leaders, who rationalise it as being practical or pragmatic, especially in the face of complexity. Such thinking provides convenient assumptions for an increasingly complex world, but it is artificial - assumptions are often incorrect in the first place and those that do work can rapidly become outmoded.

This kind of assumption (or paradigm) means even useful ideas become defunct, often causing damaging decisions to be made in a world where change is increasingly dynamic. An assumption that an organization is detached from its environment is particularly alien to any farmer, who deals with the worlds most complex and unpredictable environment; the natural world. It is also alien to a psychological definition of a Rational; one who recognises patterns and pictures (therefore causes and effects) and is therefore less concerned with details than outputs, and who makes decisions based on principles based on those patterns. Deming was both a Rational and a farmer's son...

Deming's contribution to management thinking is much deeper than a prescribed set of tactical tools for implementing quality. The principles he created form a holistic philosophy, which has often been misunderstood and sometimes misapplied, especially in the West: these principles encompass psychology, economics and social well being and fundamentally contradict some prevailing corporate and political paradigms. Deming's principles form a practical, powerful and sustainable philosophy which covers much more than ISO exercises, or fads such as Total Quality Management (TQM).

In his book The New Economics, Deming put forward the Theory of Profound Knowledge. He described this theory as a lens, or a way of seeing, that can be used as a practical mechanism for understanding systems and thus for implementing systemic improvement, and for creating balance, thus making an organization sustainable in the longer term. This is a more practical way of viewing systems than for example simply picking groups of successful companies and analysing common factors: such things have been done in the past and many of the shining examples of corporate success ended up in companies that rapidly declined and fell. The lesson is that companies can and do encompass damaging behaviours within strategies that can be successful over the short term, but failing to understand how and why things really work within a system is liable to cause damaging behaviours to become the norm and consequently get entrenched and copied, but that does not make them any less damaging.

The system Deming explained in the Theory of Profound Knowledge covers four elements and their interactions:

- **Appreciation for a system**
- **Psychology**
- **Knowledge of variation**
- **Theory of knowledge**

This methodology offers distinctly practical ways of understanding complex systems, enabling us to improve the 'quality of management, quality of life and quality of interactions with one another and our environment'.

Appreciation for a system

Attempts to optimise the sub units of a system without appreciation for the system as a whole typically transfer costs, destabilise and ultimately create a sub optimal output. Such exercises often manifest themselves as maxima and minima projects - sales pushes or cost reduction exercises - which ultimately increase costs, reduce margins and increase waste. The root of this problem is lack of understanding about how the components, processes and sub processes of a system work together and are interdependent. In man-made systems it is therefore imperative that the aim of the system is considered, defined and clearly explained. This is crucial in order to optimise the system: absence of a clear logical goals and values, based on collaboration and co-operation, means you are very unlikely to achieve them. A focus on system elements without catering to the system whole therefore leads to decreased efficiency and effectiveness.

Deming advocated 'constancy of purpose' as a counterpoint to short term, confusing and contradictory management fads, which waste resources, undermine workers morale and shake faith in the direction, quality and effectiveness of leadership. In the case of the climate and the

environment, the goals of our economic system are clearly in contradiction if they are focused on a profit maximisation, cost minimisation mentality: while this makes superficial sense, it falls apart as a useful theory as soon as systemic complexity is introduced...

As John Ruskin stated in the Common law of Business Balance:

> "It is unwise to pay too much, but it is unwise to pay too little.
>
> When you pay too much, you lose a little money; that is all.
>
> When you pay too little you sometimes lose everything.
>
> Because the thing you bought was incapable of doing the thing you bought it to do.
>
> The common law of business balance prohibits paying a little and getting a lot.
>
> It cannot be done.
>
> If you deal with the lowest bidder, it is well to add something for the risk you run and if you do that, you will have enough to pay for something better."

Deming said:

> "Co-operate on common problems, then compete."
>
> And
>
> "Every example of co-operation is to the benefit of them that choose to co-operate".

We all understand the kind of problems that politics introduces, especially when it comes to tackling climate change. Recognition of a common problem does not always lead to common solutions and the debate is widely seen to be politicised, nevertheless what has been termed 'co-opetition' can and does work – it enables companies to share costs in developing solutions for common problems for example, but it relies on companies recognising that short-termist and divisive approaches are by their nature unsustainable.

Regulation is being put forward as a solution to the worlds climate problems, but the danger is that this will enforce short-term, politically driven solutions and exacerbate the issues. While the regulation of light bulb standards aimed at improving energy efficiency has lead to increased investment and technological developments will carbon caps marry with the short term or strategic interests of a nation intent on low fuel prices or generating short term competitive advantage? What will carbon 'offset' deals do, if anything, to address the root cause of excessive CO2 production from major industries..?

The main problem with regulatory approaches is that they are by their nature, political, divisive, based on assumptions about the world and our place within it – and they are hierarchical. On this basis they fundamentally contradict a Deming approach. Deming stated that he viewed good stewardship as leaving a better world behind for our children than the one we inherited and in his intellectual approach he subscribed to Einstein's view that "Problems cannot be solved by the same level of thinking that created them".

Instead, can carbon gases be used to promote faster crop growth within contained environments; can animal or vegetable 'filter feeders' be used to help remove pollution from the environment in a sustainable manner? Thinking within the existing system of power production for example, is unlikely to yield such solutions and a corporate entity is systematically a difficult one for ideas people and inventors to engage with, due the a commercial propensity for self protection ("what if we had the idea first?") and for thinking within corporate paradigms ("we have the best brains in the business, how could anyone else come up with a better solution?").

The danger of hierarchical, politically driven solutions is that they can make all the right noises (which they are certainly designed to) but ultimately fail to deal directly with root causes. By adding bureaucracy and waste they consume even more resources and lead to even more entrenched paradigms, and by compromising on goals due to political imperatives, the objective can be muddied or misplaced entirely. So, instead of empowering, they can disempower, undermine grass roots support and lead to individuals and organizations finding ways of getting round the system instead of contributing to sustainable solutions, because they don't 'own' those solutions. (In the USA support for global warming hypotheses fell by 20% between 2006 and 2008.) If you don't ask the right question you are unlikely to arrive at the right solution...

> "**The greater the interdependence within a system, the more important is the need for clarity of and alignment with system aim, and the more critical is the role of management".**

Thus if the key issue is reduction of carbon emissions, why not use the price mechanism? Why not fine or tax polluters relative not just regarding the cost, but to the amount of clean up associated with the waste of their production process? And why not provide tax breaks for those that can demonstrably prove they leave a zero cost to the environment with their 'carbon footprint'? Isn't one of the dangers of a regulatory approach that only large companies can comply, in which case what is the predictable outcome for millions of small businesses that employ over half the American workforce for example?

Representing organizations through charts showing systems and/or process flows rather than organizational charts makes sense when describing how an organization functions and where each individual as well as each department or subsidiary fits within it – they provide a description of the system, its relationships, its functions and the interdependency of its constituents. Such tools can obviously provide more profound understanding of the system than an organization chart in explaining how a system actually works, this is particularly important when causes and effects are separated by delayed reactions.

The current economic situation was widely predicted and by many leading economists including the chief economist of the World Bank... the unsustainability of the situation was not only predictable, it was an inevitable consequence of policy given understanding of the monetary system. The fact that causes do not necessarily beget outcomes immediately does not mean that the outcomes are unrelated... and the problem of appointing specialists instead of making environmental responsibility a concern of all management means that policy is less likely to be effective. So we need to account for tomorrow's costs today and to do it realistically: in order to do it effectively the entire organization needs to think systemically, and to get involved directly.

Such engagement needs leadership from the very top but unless a systems approach is built in to decision making at all levels of an organization as a philosophical / core value, it is likely to be treated as simply more theory and PR by 'initiative fatigued' employees and management. If such leadership and organizational thinking can be developed, it has been proven that employees engage deeply with concerns that are not immediately associated with self-interest, or the most commonly perceived corporate goals, such as profit. Deming had a distinctly different view of work and the psychology of labour from the prevailing paradigms of control, hierarchy, competition and bonuses – he believed that most individuals want to do a good job, to be recognised for it, to take responsibility for it, to be fulfilled and take joy in their work.

Information is the key to applying Deming philosophy and it is via appropriate and timely information that efficiency is optimised and costs can be reduced to an optimal level. Review and reward systems and using numbers as targets are contributory factors in systemic inefficiency according to Deming – they replace co-operative activity aimed at a joint goal, with competition. So instead of focusing on finding better methods the organization gets stuck on the old method but simply turning the screw harder.

In the banking sector the argument has been made that bonuses are essential in recruiting and retaining the best staff; this is hypothesis based on a premise that the best staff are already in place and are always driven by gambling linked to enormous personal reward. Isn't this part of the reason why the banking system was not viable in the long term? Did such people need to earn millions a year when they pursued other careers, before or after banking? Were they any less capable individuals before or after they worked for banks? Are such individuals necessarily the best ones for this kind of work in any case? Even if we accept a hypothesis that the biggest and greediest gamblers are essential for ensuring bank competitiveness, how do we account for the fact that in 2008 the banking sector lost more money than they made in profits in the previous 25 years combined? And can we justify assertions that banks are 'too big to fail' when the cost to the rest of the economy of their gambling is ruinous?

What about the cost of this failure to the rest of the system? The other 95% or more of economic activity?

Psychology

Mankind tends to think in paradigms, these are self limiting boxes of assumptions, usually given credence in the language of 'Us and Them' or 'everyone thinks / does that'. They don't and such assumption is dangerous: it is an excuse for non thinking, as is any tendency to put something into a box, such as 'conspiracy theory', or 'terrorism'. Usually the connotations are deeply emotive; a key indicator that there is more than just rationality at play.

Theory is the key to all our most important scientific achievements, ideas become hypotheses and these develop into theory on the basis of inductive or deductive logic underpinned by facts, measurement and experimentation. It is only when theories are tested and evaluated against

expected outcomes that we can prove their validity and practicality, so they become useful in accurate forward prediction, not just in explaining the past. Failure to question our assumptions is common, but in an organizational context where assumptions are leveraged into policy it can lead to massive waste and inefficiency.

Those who do tend to question assumptions are often put into boxes themselves, usually pejoratively, which is an excuse to disregard them. Often such independent thinkers are investigators, researchers, social watchdogs, emerging leaders, scientists and our most creative members of society. Ways to improve the system are often reframed as criticism within an organization that views itself as the best, or as the leader... thus the majority of opportunities to change are often lost, because those questions either come with natural solutions attached, or they lead to a train of enquiry that can produce a breakthrough, technical or otherwise.

> **Arthur Schopenauer: "The discovery of truth is prevented more effectively not by the false appearance of things present and which mislead into error, not directly by weakness of the reasoning powers, but by preconceived opinion, by prejudice.'**

In present times social views are even more narrowly defined than ever, largely due to the impact of mass media, which initially we could expect to lead to a diversity of views and information. Neuro Linguistic Programming is used to slip messages laden with assumptions 'under our radar' on a continuous basis. The news is framed in simplistic paradigms and these are reinforced by the relatively narrow spread of resources most of us use for gathering information and forming our views of the world - which means they get repeated and repetition itself will frame the debate, reinforce views and close minds. This explains why some individuals may consider people from another country to be 'strange', or vice versa – but are all foreigners 'the same' in any case, if not how does such thinking account for the variation involved in any population... ?

Organizational culture works in a similar way; within a framework of social conditioning we tend to quickly disregard our assumptions once we have accepted them and at this stage they become dangerous through dropping off our radar. This is when we thoughtlessly use those assumptions to make policy and strategic decisions.

> **Francis Bacon: "He that will not apply new remedies must expect new evils, for time is the greatest innovator."**

Thus many organizations systemically and unconsciously discourage innovation and new ideas, they are often framed first and foremost as a problem, i.e. negative and counterproductive, instead of golden opportunities for improvement. Such environments sap the energy and the talent of those who are driven to learning and improvement, wasting their most important resource, creativity and new thinking.

> **Frank Zappa: "A mind is like a parachute. It doesn't work if it's not open."**

Theory X vs. Theory Y

Most organizations use Theory X management, as defined by Professor Douglas McGregor, which he called the "traditional view of direction and control". This model is predicated on the assumption that the average human being dislikes work and responsibility and will therefore avoid it if they can. Professor McGregor also put forward Theory Y however, which was fully supported by Deming, who also had a positive view of people.

Interestingly most of us would prefer to see ourselves in an organization run along Theory Y lines; Deming stated that the most productive managers: "create an environment that encourages freedom and innovation" and they do this by understanding "that people are different from each other" and "the interaction between people and the circumstances they work in". But it is surprising how many managers still use Theory X as a preferred method of handling others, when they simultaneously assert that they would respond more positively to more positive treatment in the workplace.

Fair treatment is one of the most important points covered in this theory and it relates directly to Deming's assertion that target-based planning and use of reviews and bonuses to underpin performance does have a definite effect: division and destruction. Theory X underpins many management policies: the rules used to govern an organization speak for themselves in communicating secrecy, lack of trust, lack of respect and lack of fairness. In this respect as in all others, policies beget outcomes, but not necessarily the ones expected when they were formulated. Driving out fear is essential if trust is to be built and this is a cornerstone of Deming's philosophy. For this to happen the organization has to change and for that to happen there needs to be full commitment from the leadership, who often appreciate that change always comes at a cost – but if the change is from that of a static set of outmoded assumptions to a dynamic system-based organic

growth, optimisation will be the outcome. For this to happen we also need knowledge of the process variation...

Knowledge of variation

It is inherent within Deming philosophy that waste, in all its forms, is eliminated from the production process as far as possible as an ongoing effort. Underlying this principle is the notion that all waste represents cost and that residual waste driven outside a company and discharged into the environment is still a cost, which has to be accounted for, directly or indirectly, now or in the future. So how do we locate this waste? Deming used the theories of Walter Shewhart relating to process variation in order to show how and where the system can be optimised.

Every system or process generates fluctuations over time and these can be plotted as a graph. Most process fluctuations come under the category of 'noise', which relates to what Deming called 'common causes' and was defined by Shewhart as 'chance causes'. These causes are not statistically significant as they are apparently random although they occur within defined limits, however fluctuations that operate outside the normal process range are not a product of chance and are attributable to what Deming called 'special causes' (Shewhart called them 'assignable causes').

The principle underlying this concept is that over time, if no other changes are made to the system, the level of variation associated will remain stable. A Process Behaviour Chart can be used to identify when process variation is outside the normal range of fluctuation and is therefore attributable to special causes. This information can therefore be used to interpret process data, enabling management to identify these causes and take appropriate action. The result is that management information can be better used to improve processes and reduce waste and inefficiency, so the messages in variation provide a guide for action, policy and planning.

According to McKeon and Ramney, one of the implications of this is that:

> "**Setting numerical goals or targets outside the boundaries of the system's capabilities and expecting people who work in the system to reach those targets without any changes to the system will generally not produce sustainable improvement."**

Another potential problem is what Deming called 'tampering' – this is when normal fluctuations in process are incorrectly ascribed to special causes; something we see all the time in the media and which politicians tend to react to, by translating specific circumstances into general responses, which are usually counterproductive, often taken against the firm views of their own specialist advisors.

Management decisions taken in reaction to events can therefore be erroneous if the context is not taken into account – it can mean that the policy introduced actually produces the opposite effect of the one desired. If this occurs it can lead to escalating costs, administrative burden, errors and reduced production and profitability.

Theory of knowledge

Deming: "management is prediction"

A factory that discharges toxic waste into waterways and onto the land, devalues that land for the future, creates a requirement for clean-up, or in a worst case scenario, if left unchecked it may lead to irrevocable damage, poisoning, ill health, or even death. Historically the real cost involved may or may not come back to damage the entity at the root cause, but in a world increasingly well connected, better informed and alarmed about the impact of pollution and extinction events, the trend is for such damage to have impact more directly, more quickly and more expensively than ever before. Even esoteric damage such as that to the image of a company can and does have a direct impact in terms of consumer preferences (sales boycotts), investor decision making, share value, or even fines and imprisonment, such a legacy is increasingly costly and more directly connected in terms of cause and effect than ever.

Thus the cost of waste or systemic damage never disappears, but like many other cost considerations driven by short-term self-interested thinking, it can be shifted within a system, which represents a rising cost – not one that tends to fall. So, it is better to do things properly, the first time around. Such thinking underpins the entire Deming philosophy, which inherently emphasises that we all live within interconnected systems and that sweeping things under the carpet merely makes a clean-up harder at a later date. Deming represents the opposite of Us and Them thinking and the scientific methodology he outlined as a vehicle for systemic change was the 'Shewhart Cycle' – the PDSA (Plan, Do, Study, Act) cycle. Underpinning this is a series of questions, aimed at dispelling assumption and focusing on the basics. "Is what we are doing having the effect we

desired and intended?", and underpinning this is a requirement for observation, measurement and prediction.

Internal environment

An environmental and systemic focus within Deming's work also reflects the logic that strategy, leadership and organization combines to create an internal environment, one that shapes attitudes and creates predictable outcomes - a liberation of creativity and co-operation (or of division and fear, which inhibits change and progress). Critical thinking is necessary in order to improve. A politicised environment usually leads to such striving being categorised as trouble-making, instead of an opportunity to identify problems that have solutions, leading to better process efficiency. Politics is created by systems that a nation, government or organization creates and sustains; not the other way around, hence changing the system will change the politics.

Political environments replace discussion and negotiation with discord and conflict and there is nothing more damaging to an organization than the self-perception of perfection, or simply being 'the best' to discourage an active culture of continual improvement. More damagingly the debate will simply never take place at all. This is not creating a policy for continual improvement, it is much deeper than that as it defines a culture that lies at the very heart of the organization, which makes a top to bottom environment of organic development.

This organic, environmental, systemic approach of Deming has often been greatly misunderstood, especially within the world of Quality and reduced to a series of tactical short-term policies based upon box ticking, losing the bigger strategic picture. Unfortunately the true power of Deming's philosophical approach can only be unleashed by abandoning a narrowly defined focus: hence without a holistic, long term and stable set of objectives, short term initiatives will only create a short term impetus.

The inherent power of such a rational and measurement-based approach is that it is focused on long term optimisation and stable systems that develop organically. It is important to emphasise that Deming is about taking a broad view over the longer term and although application of his principles to any organization can have a strongly positive short term impact, such tactical approaches often wither unless the underlying strategic philosophy focuses on the system itself and relates all factors in a drive for waste reduction and the achievement of optimal efficiency.

So, Deming is not about picking a process, reducing it to a procedure and then sticking to it, nor is it about collecting quality badges, it is about creating an organic, self-sustaining mechanism focused on continually improving the process, one which incorporates feedback mechanisms as outlined by the Shewhart Cycle, one which devolves responsibilities, which empowers, and which removes bureaucracy. This is why Deming referred to 'rational prediction': prediction based on theory and systemic modelling, as is all scientific knowledge. This is relevant when dealing with any system; whether social, political, economic, technological or environmental, and has implications whether one is dealing with banking, manufacturing, or selling groceries.

As many industries have demonstrated, the cost of environmental clean up regarding toxic waste is far higher than that associated with instituting proper processes from the outset. The price of radioactive pollution for example manifests itself increasing rates of illness, death and disability – which represents a real cost on almost an endless basis, which is massively expensive to remove afterwards. We have not yet faced the true costs due to the political nature of the organizations involved and according to the EU, some 60 million people died up to 1990 alone from environmental radiation poisoning...

Nuclear considerations may well have influenced Deming after he visited Japan, where he could not fail to notice the profound and extended effect of the bombs at Hiroshima and Nagasaki. Equally his environmental concerns would have resonated with his Japanese audience, who recognise the vital truth of a philosophy to leave the world in a better condition than we find it. This sustainable approach to nature is reflected by virtually all ancient civilisations, from those of the American Indians to the Buddhists, yet seems curiously neglected in modern, western philosophy.

Deming philosophy can provide a powerful and incisive insight into climate change. The debate is highly contentious, especially in the USA where policy has been mauled on the grounds of biased data, political agendas and stealth taxation. And also by environmentalists on the grounds that carbon taxing simply introduces a global tax, offsets the problem from the first to the developing world, and worst of all avoids tackling root causes directly. Deming philosophy encourages such dialogue and listening, to incorporate alternative views and open up new outcomes.

It is inescapable to conclude that Deming's long term outlook would have avoided environmental problems altogether - his goal of leaving the world in a better state than the one we inherited would have completely nullified divisions in policy, by removing the emphasis on short term, narrowly defined self-interest, by basing it on test and measurement: most of all upon improving the system and the process, supported by an understanding of the nature of variation.

So, Deming's environmental philosophy reflects a reality that is often overlooked: we are all products of our environment, our workers are shaped and constrained by their education, health and other factors that derive from our surroundings. It also caters to the universal truth that we reap as we sow, and that both actions and inactions leave a logical, predictable legacy. It is thus a serious counterpoint to self-interested thinking associated with prevailing political, social or corporate paradigms. It encourages us all to engage and to focus on measurement and on the long term, in the knowledge that policy of all kinds always begets outcomes.

The global climate debate is highly politicised and there is strong evidence, presented in 2009 in New Scientist, that the 'official line' (including the J-curve / hockey stick hypothesis) uses selective data, deliberately skewed, seems to be part of a wider agenda which focuses on producing outcomes of global governance, hierarchical control and taxation, which uses deceit and deception to pursue that agenda, but which fails to directly address the underlying causes. The media subtly pushes the official agenda and undermines the causes for concern raised by those who challenge it; it is cause for concern to any subscriber of Deming philosophy whenever debate, facts, figures or science are being suppressed. Deming represents a very human philosophy but nevertheless, being logically based, it is the opposite of self-interest or politics.

Some groups in the USA have picked up on climate data manipulation and further politicised it to challenge all environmental efforts, but a Deming approach based on the fundamental premise to leave the earth in a better condition for our future is juxtaposed to conclusions that 'carry on regardless' justifies deliberate waste, or negligent pollution. These groups especially point to cyclical fluctuations in climate linked to solar emissions and whether this is accepted or not within the context of a highly political debate, the conclusion seems to be unavoidable that genuine scientific climate data is being suppressed, manipulated and misrepresented - which suggests other things than the environment really underlie the political agenda.

While the cyclical solar emissions seem to be the key factor underpinning current climate change data, it is a different matter to use that information to justify greater pollution - the fact is that we do not know the true extent of our impact on our environment, nor what if any, destructive limits or tipping points exist, nor how capable our planetary system is at countering man made imbalances.

Are global extinction events linked purely to climate, or to environmental toxins, chemicals, radiation, pesticides, even to genetically modified crops? There is substantial information relating to data suppression and policy manipulation by some corporations, supporting a stated agenda to develop global dominance in specific economic and political areas.

The key point is that if we followed Deming principles we'd have a greatly improved environment and of this would all be a non-issue; in this respect Deming is essentially anti-political. In particular the carbon offset 'solution' is being used to establish an uneven economic playing field for the third world, taxation and, worst of all, it is being used to provide polluters with reasons not to address the underlying issues causing environmental damage... which seems to be what an 'offset' actually means in practice.

We in the UK sit in the very worst category: we routinely dump nuclear waste into our air, seas, rivers and even drains and landfill, making our radiation pollution equal to, or greater than, that of every other nuclear country in the world combined (Britain's Nuclear Nightmare, Cutler and Edwards). Recent wars in Iraq and Afghanistan have also left a devastating legacy of birth defects and deaths, which have been directly related to the use of depleted Uranium munitions, the irony being that such discharge was subsequently blown around the planet, trailing across North Africa and subsequently over Europe and the UK, as was the fallout from every nuclear test. Radiation in particular is a pollutant for which there is no safe minimum, as the tiniest speck of radiation within the body can lead to illness and death.

A key conclusion we can draw from Deming with reference to the natural environment is that, if our theory of how the planet is run does not appear to be supported by the evidence, perhaps we should be looking for a new theory and questioning our assumptions, no matter how dearly we hold on to them? One thing seems to be certain; climate data and the use of science itself appears to have been subsumed to political agenda in this case, which is fundamentally against the Deming philosophy.

Deming: "without theory, there is no way to use the information that comes to us in the instant."

Deming: "New knowledge comes from the innately curious individual, responsible to no-one."

Deming's profound knowledge summarises nine principles of systemic organization that juxtapose prevailing, politicised views. He advocated:

- Co-opetition over competition,
- Interdependence over compartmentalisation,
- Interdependence over disparate self-interest,
- Information intensity over energy intensity,
- Transformational opportunity over the cost of change,
- Human adjustment to the environment over attempts to engineer the climate,
- Value based change over the appointment of an individual to push sustainability (or quality),
- To manage the unquantifiable over managing what you measure and,
- That profit is a consequence of good management, not a goal in itself.

Within the working environment, perhaps we should consider that the many of these principles apply first and foremost to the environmental limits that exist within our own minds; that we need to recognise the limits of our belief systems and seek to question our own fundamental and cherished assumptions if we are to optimise outputs and implement a regime of continual and organic improvement.

Deming principles have a great deal to contribute to the current debates on our environments – both internal and external - in terms of identifying problems, offering solutions and in explaining the intricacies of complex systems that have no artificial boundaries. The principles are eminently practical, they offer genuine options for dealing with current and future problems in a scientific manner. While some principles may seem counter intuitive there are many examples to prove they have endured over the long term to nurture excellence: the British Army uses a philosophy of servant leadership enshrined in the Sandhurst motto, 'Serve to Lead' and the UK Special Forces regularly use 'Chinese Parliaments' to discuss and plan missions in advance with all members participating equally. Above all Deming's powerful principles provide a structure and framework for identifying and challenging the theories and assumptions we all carry within our heads, enabling them to be replaced by ones that are measurable, capable of modification and proven to work...

Albert Einstein: "Insanity: doing the same thing over and over again and expecting different results."

"**Self appraisal questions:**

1. Does our management structure empower all levels of our organization to eliminate waste? Does our theory / self-image fit the facts?
2. What are we doing to introduce 'co-opetition', in order to share approaches and reduce costs with competitors, to address common environmental concerns?
3. What are we doing to change from a focus on maxima or minima to one where we continually improve the system / process in order to eliminate waste?
4. Does our system encourage or discourage innovation and the adoption of new ideas?
5. Are we driving out fear to encourage the flow of heartfelt feedback from every level of our organization? What is the quality and frequency of this feedback and how do we measure it?
6. Are our targets self interested and short termist, or are they sustainable and stable over time, outside of management initiatives and fads? What exactly are we measuring, and why?
7. Do we genuinely encourage our creative thinkers and recognise that their new ideas may solve the problems of tomorrow? How, and how can this be improved?
8. Do we have a co-operative relationship with our community, or do we view them as an obstruction and a nuisance we'd rather ignore - if so, how do we change this relationship for the common good and mutual benefit?

9. Do we have a separate environmental function within our organization - or is our view of the environment and sustainability something every single member of our organization participates in and takes pride in, from the very top to the very bottom?
10. Are we running an organization that will leave the world a better place for our communities and our children? If not what should we be doing now and on an ongoing basis to address the issues?
11. Do politics and self-image obstruct our attainment of a truly sustainable, efficient and environmentally friendly organization? Are we being true to these goals? Does our aspiration in this area equal our self-image about other areas of organizational performance? (i.e. if we view ourselves as a world leader, are we also a world leader in our environmental policy?)
12. Are we really a zero waste organization? How do we continually move towards this goal by creating a sustainable, organic system - and what exactly are we measuring when we make our policy?"

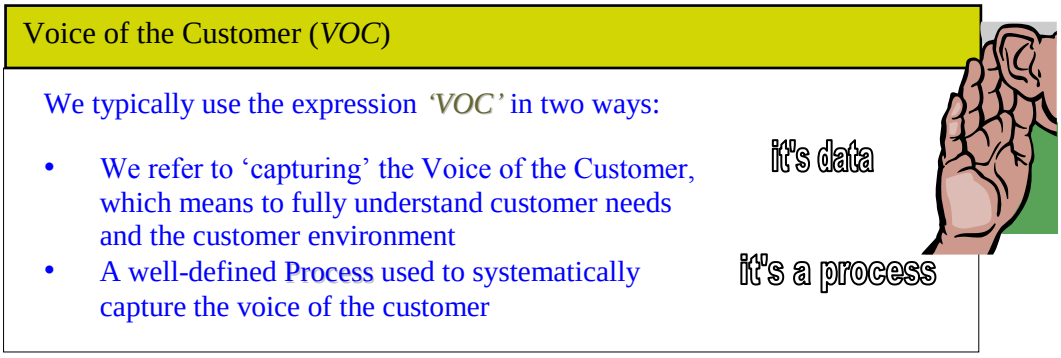
VOICE OF THE CUSTOMER

Lead Author: Terry Rose Peer Reviewers: Tony Brown, Tony Korychi

INTRODUCTION

The expression Voice of the Customer, or VoC, is typically used in two ways:

1. We refer to Voice of the Customer as the **data** that defines or describes customer needs and expectations. This data can either be in the form of numbers or language or both. In other words, VOC defines what is wanted.
2. An organization may also have Voice of the Customer **processes** – used to systematically capture and analyse voice of the customer data and drive improvements in products, services and processes.



VoC is shown on the Enhanced MoSO - as one of the three inputs or voices into the PDSA cycle at the very heart of the model.

Why is it Necessary to listen the Voice of the Customer?

Because all work starts and finishes with the customer. In other words, the customer defines and determines the quality of our work.

Ask someone, "what is your job?" and you'll hear, sales assistant, nurse, doctor, MD, PA, software engineer, etc. Ask the same question of someone who works in a truly customer focused organization and you'll hear the same answers, yet with the caveat, "My real job is to do whatever I can to satisfy the needs of my customers (clients, patients, etc.)".

These words express their determination not only to 'do their work', but also to achieve the best possible outcomes for their 'customers'.

Prof. Shoji Shiba in his book, Four Practical Revolutions in Management, makes the distinction between '**Product-Out**' (doing work according to the established process – an internal focus) and '**Market-In**' (a focus on customer satisfaction). He says that Product-Out is good, but not good enough – you also need Market-In.

To achieve this, you not only have to know who your customers are (both internal and external customers), but also their expectations – both now and in the future. How many of us can say, hand on heart, that we have this information to hand?

Listening to, and being able to interpret, the voice of the customer is essential to achieving **customer satisfaction** which is the best and only lasting means to organizational sustainability.

What are the Consequences of not listening to the Voice of the Customer?

It could be said that if an organization does not **systematically** listen to the Voice of the Customer it is guilty of being "unknowingly indifferent to customer needs and expectations."

This consequence is most likely brought about by a failure in **organizational capability** – both in terms of a lack of skills and of poor or non-existent VoC processes.

You often hear front-line customer facing staff (Sales, Customer Service, nurses, etc.) bemoaning that their first-hand knowledge of customers is not listened to or headed by 'management'. 'Management' is often frustrated because the inputs they receive are not in a form that are actionable or factual. Emotional language clouds the real issues. This is a consequence of an organization not having the capability to listen to the voice of the customer.

The Importance of the Internal Customer Concept

When discussing customers, we intuitively think of the 'external' or end customer, so it's worth considering 'internal' customers and the role they can play in continual improvement. Perhaps a simple example may help to show the importance of internal customers.

Phillip worked as a Financial Analyst. He prided himself on producing error-free financial reports – on time, every time. He had an efficient, well defined process to capture the data and format it into reports for department heads.

Phillip was therefore surprised that his manager thought there was scope for improvement in his work. His manager suggested that he discuss this with his 'customers' (users of his information).

A little put out, Phillip went to see one of the department heads. Susan confirmed that the reports she received every month were indeed accurate and timely. But it turned out that on receipt of Phillip's reports, Susan had to spend a substantial amount of time reformatting the data to produce the figures that she needed to manage her department. Other managers that Phillip subsequently interviewed were also having the same 'problem'.

*Phillip had inadvertently got into a **Product-Out** mentality – his process was working well, and he made sure that he met the requirements. Yet by fully understanding the needs of his internal customers, Phillip was able to rapidly change his process to produce a superior product, satisfy his customers, and play his part in improving the overall efficiency of the company.*

Language Skills

Voice of the Customer places a heavy emphasis on collecting, analysing, and understanding **data**. When we think of data we typically think of numbers. Yet when interacting with internal or external customers (and colleagues), we predominantly use **language data.**

Skilful collection and analysis of language data requires a basic knowledge of the tools & techniques of semantics - such as being able to distinguish between Language of Affection and Language of Report and skilful use of the Ladder of Abstraction. The book, Language in Thought and Action, by S.I. Hayakawa is the seminal work on this subject.

Listening and questioning skills (based for example on Jiro Kawakita's 5 Principles for collecting quantitative or language data) are also very important for VoC work. When coupled with semantic skills, we have the capability to exchange information & ideas and come to a common understanding of a situation – including customer expectations.

Our language skills impact our capability to manage by facts.

VOC PROCESSES

The aim of VoC processes is not just to capture the customer's written or explicitly stated requirements, but to gain a deeper understanding of the issues and problems that the customer has to deal with.

By having this deeper understanding, we may be in a position to help our customers be more successful in doing their job.

There are numerous processes or practices associated with VoC. Putting a process in place changes what is often thought of as an ad-hoc or by-chance activity into an agreed way of working that can be systematically repeated and improved – building essential skills and organizational capability.

Four generic processes are outlined here – covering the scale from relatively simple (able to be carried out by all employees if given the basic language skills), to the very complex (typically carried out by experts – either internal or external to the organization)

1. **Customer Discussion / Interview**: Typically internal to the organization. Discussions are held with staff from a 'customer' department. Basic language and listening skills are used to discover present and future needs – and possibly to get the facts associated with adverse performance (errors, defects, tardy response, etc.).
2. **Customer Visitation (VoC) Process**: A well-documented step-by-step process for carrying out customer visitations with a specific aim in mind – e.g. understanding the customer's current environment and challenges, discovering new product requirements, reviewing service level agreements and performance, and problem resolution. **This is definitely not a sales related process.** Typical steps could be:

- Describe the Purpose for the VOC Activity
- Prepare for the Customer Visit (select customers; develop interview script)
- Conduct the Customer Interview (ideally Face-to-Face, but alternatively by telephone/Internet where customer contacts are distant or geographically dispersed)
- Analyze the VOC Data (e.g. using a Language Processing diagram and numerically, where appropriate)
- Develop, Implement, and Monitor an Action Plan (check with the customer)
- Reflect on the Process (STUDY the process and ACT to improve it based on actual experience)

3. **Kano Method:** A method to investigate the characteristics of customer requirements developed by Professor Noriaki Kano of Tokyo Rika University. This method seeks to differentiate between Must-be, One-dimensional, and Attractive customer requirements. This type of differentiation, based on the responses to a questionnaire, is useful when defining what customers really need and are willing to pay for – as opposed to 'would be nice' but will not pay for.
4. **QFD**: Quality Function Deployment process. Often a complex process typically used for translating the voice of the customer into high quality products. Key customer product requirements are identified and operationally defined. Used extensively in the motor car industry.

A Word about Customer Surveys

Voice of the Customer data can be collected by means of a questionnaire (survey) or by interview – which has been the preferred process discussed in this article (excluding the specially formulated Kano Questionnaire). Whilst surveys can be a very valuable tool in search for the Voice of the Customer, in the view of the author, they do have significant limitations.

Some organizations use an initial survey to highlight possible areas of concern, and then use interviews – often in the customers' work environment - to get the underlying facts / data.

Breakthrough Management - When Not to Listen to Your Customers

Dr Ishikawa is quoted as saying, 'The customer is king but sometimes blind' (perhaps to other possibilities or future needs of ***your*** organization).

To survive, organizations may need to explore completely new products or even a completely different strategic direction or new ways of working. These 'breakthroughs' may be seen by current customers (both internal and external) as being contrary to their best interests and have been known to try to prevent breakthrough from taking place.

SELF EXAMINING QUESTIONS

It is hoped that the following open questions will stimulate and assist reflection on the use of Voice of the Customer:

1. Do I/we know who our customers are (both internal and external)?
2. Do I/we truly know the needs and expectations of our customers – both now and in the future
3. What is the predominant culture in my/our organization – Product-Out or Market-In?
4. Do I/we have the basic language skills to accurately capture the Voice of the Customer?
5. Do I/we have the appropriate Voice of the Customer processes in place?
6. Do I/we understand that to deliver excellent performance, it is necessary to bring the Voice of the System into alignment with the Voice of the Customer? (See Voice of the System)

Want to know more about Voice of the Customer?

The following books are recommended:

S.I. Hayakawa and Alan R. Hayakawa. Language in Thought and Action. Harcourt Brace & Company.

Shoji Sheba, David Walden. Four Practical Revolutions in Management – Systems for Creating Unique Organizational Capability. Productivity Press. Specifically:

Chapters 4 and 5 relating to Customer Focus and Proactive Improvement

Chapter 27 for more information about Breakthrough Management

Glossary of Terms:

- **Voice of the System** defines what you will get from a process / system
- **Voice of the Customer** defines what you want
- For our purposes, **Semantics** is the study of how people use language to communicate
- **An 'Internal' customer** refers to the people or processes that receive or use the result of our work – be it a product or service.
- **Breakthrough Management** refers to a systemic approach to the exploration of significantly new directions or horizons needed to sustain the organization. Breakthrough could be in processes, technologies, the way a business operates or a totally new business area.

VOICE OF THE PEOPLE

Lead Author: Tony Korycki

INTRODUCTION

Voice of the People is a key approach for assessing the health and capability of any organization. Leaders need to recognise the difference between what people can do and will do; however too many organizations allow their people to be transient and uncommitted.

Yet the contribution of people to organizational performance is vital as it generates aspects of products and services that are often of critical value to customers. People are commonly the main way that customers experience an organization; so failing to listen to the voice of people can lead to leaders misunderstanding the nature of how their people interact with customers at critical moments of truth.

QUESTIONS YOU MIGHT ASK YOURSELF OR YOUR ORGANIZATION

How well does your organization:

- *Structure an approach to capturing feedback from its people?*
- *Actively deploy that approach, seeking out and acting upon feedback?*
- *Capture data and knowledge about the morale, attitude and capability of its people?*
- *Communicate key issues, progress, success and learning from failures?*

Definition and place in the System of Profound Knowledge

Voice of the People is a critical element of the mechanisms for assessing the health and capability of any organization, alongside and complimentary to Voice of the Customer and voice of the Process.

Historical reference derives from Alcuin of York to Charlemagne in A.D.798 and, whilst originally interpreted to have a religious interpretation, is now taken commonly to mean the derivation of a variety of answers and opinions on any given subject.

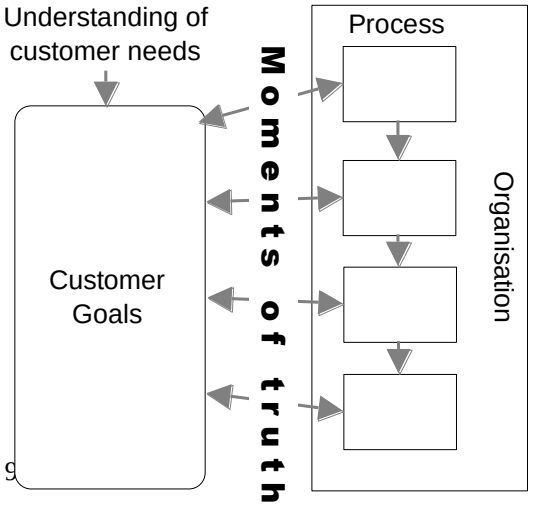
Why is the 'Voice of the People' important?

Structure is everything (Schwarz, 2005); nearly all organizations contain multiple structures, for example, physical spaces, processes, equipment, systems, market/societal stakeholders and, of course, how people are organised to meet the mission of the organization.

The contribution of people to organizational performance is vital as it produces key aspects of products and services that are of critical value to its customers. Almost every organization holds valuable knowledge is tacit; subtle, elusive and embedded in its peoples' talents, hence not easily transmitted or imitated, or 'owned' by organizations. There are no organizations that are 100% automated; giving service to customers relies on people, yet this dimension of health is neglected in many organization.

Pressures are placed upon an organization's people to prove value through capability to create, judge, imagine and build relationships; leveraging knowledge and collaboration requires the creation, articulation and sustained alignment of peoples' shared values, requiring a focus on building relationships, not structures that impede co-operation.

Leaders need to value the knowledge, education, experience and creativity of their people, although they need to recognise that accurate measurement of peoples' qualities and contribution is elusive. The real value is the difference between what people can do and what they will do; however too many organizations allow their people to be transient and uncommitted and people as employees are volunteers for a particular organization and only commit when they feel a mutual bond. Most particularly, people are commonly the key behind



how customers perceive an organization; failing to listen to the voice of people can lead to leaders misunderstanding the nature of how their people interact with customers at critical moment of truth.

Investing time in people as something to do after leaders have finished running their organization is wrong! People are at the heart of organizations and leaders who want organizations to survive encourage constant experimentation, hire people who think outside norms and protect them. All of these benefits to organizations can only be accrued if leaders have in place approaches for listening to the voice of their people.

Approaches to capturing 'Voice of the People'

Whilst all organizations, large or small, public or private, can and should understand how their people feel and perceive the organization, its environment and processes, there are many different ways that this can take place, some of which require administration and technology, but, unsurprisingly, many that do not.

There are structured and unstructured approaches, as well as public or private ways of capturing the views of people, which can be used in almost any combination, depending on the spread of an organization, how fragmented it is by nature, and the variety of people employed.

In addition, depending on the circumstances of the organization, there are rules and protocols for how an organization can listen to its people, all of which are built on the trust built up between the people within an organizational and its leaders.

	Structured	**Unstructured**
Public	**Focus Groups** **Root Learning** **Rich Pictures & Brown Paper fairs** **Back to the Floor** **Suggestion Scheme**	**Town Hall meetings** **Management & Team meetings** **Management by Walking About** **Discussion groups**
Private	**Survey** **Management One-to-Ones**	**Peer to Peer knowledge sharing** **Informal networks**

These mechanisms can be described as follows;

Public Structured voices –

- Focus Groups – this is a structured approach to gathering groups of people together to engage with either a narrow or wide range of people, normally on topic chosen by leadership, for which specific feedback is sought. This approach has the advantage in being good at the organization's spokespersons self-selecting into the group (choosing the group is not necessarily recommended), but can have a disadvantage in that does not necessarily provide an outlet from junior people, or those with a valid opinion, but who do not step forward first when volunteers are sought.
- Root Learning™ – this is very structured and potentially powerful approach to capturing peoples' views, with a tight focus on a particular operational or strategic situation, and can be very interactive and creative. The outputs from Root Learning are often pictorial, with surrounding context, and can be re-used with other groups to explore the situation with people in different locations or roles.
- Rich Pictures & Brown Paper fairs – whilst these approaches are primarily designed to explore aspects of processes and/or 'organizational systems', they constitute a valuable source of intelligence about current and emerging issues from the people within any organization. Since these methods specifically invite people to feedback concerns about what does or does not work about processes, as well as organizational and relationship issues, analysis from workshops and products of these exercises can be used to capture valuable insights.
- Back to the Floor (Point of Use) – this approach is similar to Management by Walking About, as it represents a public form of management engagement with the organization's people, but tends towards a formal, programme-driven and scheduled set of activities. Whilst it is possible to mandate involvement and 'hosting' by

operational teams, the best schemes integrate back to the floor within strategic, operational or quality/business improvement programmes, with both management and hosts volunteering to engage. Such engagements represent a valuable opportunity for management to engage with individuals and teams, with learning and listening being key skills, so that hosts feel that interactions are valuable in sharing key issues, as well as being non-judgmental.

- Suggestion (New Ideas) Scheme – this is an approach used very effectively in many organizations and, as such, there is a wealth of in-depth guidance and best practice available on new ideas capture. However, there are a number of fundamental principles for how new ideas schemes are managed:
    - Input should be open to anyone operating the organization's processes, including contractors and key suppliers
    - New Ideas may be periodically themed or a general free-for-all, all-comers, all-topics input, but no subject should be off-limits, i.e. the scheme should capture more than just technological ideas.
    - Timely assessment of new ideas is essential, with the mechanism for assessment involving relevant and openly declared subject matter experts, to give credibility to assessments.
    - The organization should measure engagement and value derived from its peoples' ideas, e.g. numbers captured, assessment timeliness, ideas implemented, financial and other benefits derived, recognition/reward to people/teams, so that people understand how their ideas are being used.
    - Whilst recognition and reward may be in some way proportional to the benefits derived from ideas, it should be wherever possible nominal, to avoid the risk of ideas/suggestion becoming a way for the organization's people to perceive the scheme as an informal 'bonus'.

Public Unstructured voices –

- Town Hall meetings – these tend to be large meetings, often used for communications at critical points of change for an organization, or where an organization chooses to consult about key developments in the life-cycle of change programmes or strategy formation. As such they can be used to garner feedback, either ad-hoc, or in the form of pre-submitted questions or issues for discussion. The possibilities for engagement to capture feedback depend on several factors: the culture of trust and openness, what the organization is seeking to understand and at what level of depth feedback is sought. There is risk that such meetings can raise expectations about follow-up action that managers may be unwilling to endorse, so it's important that attendees are clearly informed about the purpose of information captured via such meetings.
- Management & Team meetings – whilst management meetings are often an instrument for communications in operational environments, as well as for decision-making and planning, it is entirely possible to use such meetings to capture 'feedback'. Such voice of the people feedback sessions need to scheduled into meetings, so that attendees are aware of the opportunity to provide input, as well as an environment of trust and openness, to allow a dialogue of value to all parties to take place.
- Management by Walking About (MBWA) – this is a fundamental learning about how quality companies operate and can be reference in a variety of texts. This approach may be used in combination with Back to the Floor engagement, but represents a more informal engagement, and may simply consist of relevant managers taking time out every day or week to invest with their operational people. As with Back to the Floor, an open-learning, listening and non-judgmental mindset are critical, to foster trust and dialogue during MBWA time.
- Discussion groups – these are normally on-line and allow any participants to raise a discussion thread, and for anyone else to join in with their views. Whilst good groups can be moderated, they can be difficult to use, to provide data for analysis and action, and can degenerate into gripes and whinges. However, these are also valuable safety

valves and places for rapid knowledge sharing across locations, especially if there are fragmented teams.

Private Structured voices – exchanges here tend to be scheduled and periodic, planned and designed to fulfil particular management purposes, but the two examples are very different in nature:

- Management One-to-Ones – designed to create an environment for two-way exchange between leaders/managers and individuals within their teams, to allow performance assessment, coaching, development planning and review to take place. Any feedback obtained here should only ever be included in analysis and action with the consent of both parties in the One-to-One, otherwise the information gathered has the effect of destroying trust, rather than engendering a dialogue within the organization.
- Survey – in common use across many organizations, large or small, and public or private, globally. The features of organizations using this mechanism are (in no particular order of importance):
    - Scoring relevant factors – most organizations will have critical objectives they are pursuing and against which they need to gauge peoples' willingness, commitment and capability to achieving. Engaging with people to score their feelings and feedback about critical objectives requires that the factors are relevant to the survey audience and that they can visualise how leadership can take action on the basis of their feedback. If done well, survey scoring can act as a valuable 'weather-vane' for organizations; identifying areas where people are unhappy or lack confidence or capability to perform, helping to set priorities for organizational development, training or investment.
    - Determining importance – individuals or groups of people often make lists of things they need to do, buy, or are concerned about. However, it is rarely true that all items on a list are of equal importance. Hence it is important for voice of the people surveys to allow employees to rank in some way the importance to them of the relevant factors on surveys, since this can allow organizations to understand variations between perceptions relating to different locations, professional disciplines, process stages or functional structures (this list is not exhaustive).
    - Verbatim feedback – having a score against a critical factor is only of limited value if an organization is blind to the rationale behind feedback, so organizations may seek narrative in support of scoring, particularly at the extreme of scoring ranges, or to identify additional information, for example 'top three issues to resolve' or 'top five successes to celebrate'. Arguably this is the most valuable aspect, but can require considerable analysis to fully extract patterns and common issues, especially if an organization is large, so may need analysis within a structure, for example an operating division or location.
    - Confidentiality – people can provide feedback in the knowledge that they cannot be identified, neither will the organization seek to investigate originators of adverse feedback.

Private Unstructured voices – the exchanges here are essentially continuous and One-to-One or within small groups, occurring either face-to-face, on-line or by telephone. Because such exchanges are essential private and not part of structured activity, organizations do not have a right to information generated and can badly damage trust if they gather and/or act on them, for example listening in on Microsoft Communicator/Messenger. Whilst it is possible for an organization to ask an informal network for feedback, this effectively becomes a structured activity, and even then any Voice of the People information gathered here needs to be carefully treated and may be subject to peoples' cautiousness about opening up what may previously been a private discussion to scrutiny.

Acting on the Voice of the People

Successful organizations only derive real value from listening to their people, if they act on what they hear and communicate openly and honestly about the issues raised, and what they intend to do to address those issues.

- Avoiding the 'I hear what you say' trap – people in an organization will only honestly share their feelings, concerns, frustrations, knowledge and ideas, if they genuinely believe that the organization is willing and able to act on them in some way. If the same questions appear every month, quarter or year, but nothing changes in the policies, practices and behaviours within an organization, this not only tarnishes the subject being explored, but potentially the whole feedback mechanism itself.
- Communicate the Findings & Conclusions –
    - Analyse, Plan and assign Ownership – all data and information gathered from the organization's people should undergo some analysis, matching to previous data, to identify ongoing/new patterns, issues and priorities for action, since people volunteering their input will expect nothing less. Analysis should allow leadership to agree actions at relevant points, and to assign ownership for those actions, with clearly defined scope and time scales.
    - Communicate what will happen next – Voice of the People feedback is seriously devalued if there is no response, admission of issues, or commitment to action on identified priorities. Whilst this communication needs to be fit for purpose, for all roles and locations, it should avoid slogans and exhortation, focussing instead on what leadership has agreed to do, who'd driving improvement, and how people can become involved or support.
    - Be Candid about constraints – any and all mechanisms to capture feedback can set up expectations about what management and leadership will do as a result of the feedback. Organizations need to prepared, if the feedback generates a demand for some investment, facility or service simply not possible in economic circumstances, to say 'thank you, but sorry we can't', offering evidence and reasons, otherwise people may feel that subjects they feel are importance have been ignored or 'dumped' by leadership.
- Share Progress & Successes –
    - Celebrate positive shifts – study the organization as it goes through changes generated through analysis of peoples' feedback. Then communicate to people volunteering their views the good news about successes, ensuring of course that the successes are 'real' and can be experience for real every day in the workplace.
    - Be Honest about Failures – not every attempt to improve as a result of peoples' feedback will be successful and organizations that pretend otherwise risk discrediting their Voice of the People mechanisms. Leadership or management needs to admit when aspects of their improvement agenda to do not result in the benefits expected, plus what they've learned from the initiative attempted.

VOICE OF THE SYSTEM (VoS)

Lead Author: Terry Rose Peer Reviewers: Tony Brown, Tony Korychi

INTRODUCTION

Voice of the System, or VoS, is terminology used to describe the use of a simple Process Behaviour Chart (a form of Control Chart) to characterise the performance of a process or system over time.

You'll find VoS on the Enhanced MoSo – as one of the three inputs or voices into the PDSA cycle at the very heart of the model.

By interpreting the Process Behaviour Chart, it is possible to define, with a high degree of certainty, what level of performance the process or system is capable of achieving – and to determine what type of action can best be taken to improve its performance.

But do not be deceived, VoS is much more than a simple yet powerful technique – it is a way of thinking that can drive continual performance improvement, as opposed to only taking what is often inappropriate action when a target or expectation has not been met – so called fire-fighting.

WHERE DOES THE VOICE OF THE SYSTEM TERMINOLOGY COME FROM?

The term Voice of the Process (for MoSO, read Voice of the System) was in use in the Ford Motor Company during the early 1990's and popularised by Donald J. Wheeler in his excellent book, Understanding Variation – the Key to Managing Chaos, which is possibly the only book you'll need to understand the importance of listening to the Voice of the System.

The book title gives the clue to using the Voice of the System – a basic understanding of variation. Whilst all data contain noise (natural or routine variation), some data contain signals (exceptional variation), the cause of which should be investigated and removed as soon as possible. Deming said, "The distinction between signals and noise is the foundation for every meaningful analysis of data." A Process Behaviour Chart filters out noise to detect signals.

WHY IS IT NECESSARY TO USE THE VOICE OF THE SYSTEM?

Despite living in the 'Information Age', where in everyday life and at work we are bombarded with numbers for one thing or another, most of us find it difficult to digest numeric data and extract the knowledge that may be locked within the figures. Not because we are uneducated or not very bright, but because the majority of us have not been taught how to use the basic tools of arithmetic to understand data. Without a 'formal' way of analysing data we are forced to use 'informal' ways – such as eye-balling the data presented in a table or relying on Bill because he can spot a suspect number in a spread sheet from fifty paces.

WHAT ARE THE CONSEQUENCES OF NOT UNDERSTANDING DATA?

Consider a typical news or current affairs program. A set of figures relating to (say) the economy, hospitals, schools or business has just been announced. Politicians and experts are brought in to analyse the figures. Almost invariably, different conclusions are reached based on the same set of numbers.

If the numbers have gone down compared to last month or last quarter or the same quarter last year, then drastic action must be taken – it's obvious the government or management is incompetent. The system has to be changed. Heads must roll. Hold an inquiry! Write a report! The more corrective actions or recommendations for improvement generated the better.

If the figures have gone up, then we are on-track – a sure sign that the last set of actions taken are working. We can rest easy. Or can we?

What do the numbers really mean? Probably all we can say for sure is that come next week, month or quarter, the figures will have changed and the politicians and experts will yet again be telling us that the change is significant. Action must be taken!

Whilst we have come to expect politicians to take adversarial stances, we would want and expect the organizations for which we work to have the know-how to correctly interpret important data (often referred to as Key Performance Indicators or KPIs). The consequences for an organization or department could be dire. Inappropriate actions could be taken which only exacerbate the situation – or perhaps even worse, no action is taken when it would be important to correct a situation or prevent re-occurrence.

Failing to understand data and the natural variation in processes can have disruptive consequences for any organization. A board or senior management team that attempts solely to manage by instinct or a table of figures will often fail to recognise the natural variation in their performance. Actions will be issued for relevant managers, for them to investigate, quite often, small variations upwards or downwards within the normal behaviour of a process or system, resulting in a cascade of actions all the way to first line management or supervisory level. This disruption takes people away from the search for improvement, since the management behaviour generates fear, defence mechanisms and behaviours that encourage people to 'cover their anatomy', rather than working together. Imagine if this happens every month or week or day; how can an organization function effectively under such circumstances?

WHAT DOES A PROCESS BEHAVIOUR CHART LOOK LIKE?

A Process Behaviour Chart is simply a Run Chart (or Time Series Chart) generated from a data

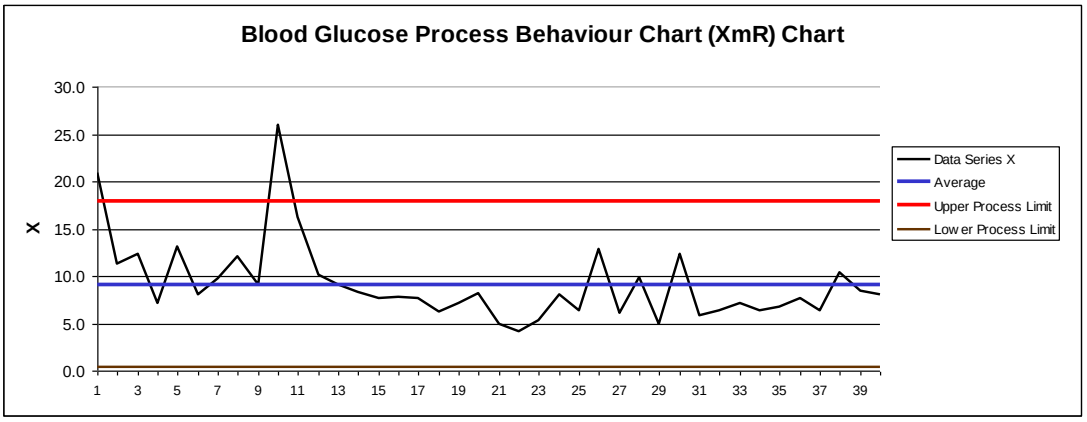


table or spread sheet - with three lines plotted on the chart:

- An Average line (known as X bar for the mathematically minded), plus
- Two lines equidistant of the Average line, known as the Upper & Lower Natural Process Limits (UNPL & LNPL). These lines are calculated from the data points themselves using a simple equation (not using Standard Deviation calculations as some folks believe – there is a difference).

Note: A common misunderstanding is that UNPLs & LNPLs are specification or target lines. Nothing could be further from the truth. Specifications / targets are often referred to as the Voice of the Customer (VoC).

COMPARING VOICE OF SYSTEM WITH VOICE OF THE CUSTOMER

By comparing the Voice of the System with the Voice of the Customer it is possible to determine whether an established process / system is capable of consistently meeting customer requirements or expectations – which is one definition of excellent performance.

If you now realise that "being in control is not the same as being on target", then you're on your way to understanding the importance of Voice of the System.

SELF EXAMINING QUESTIONS

It is hoped that the following open questions will stimulate and assist reflection on the use of Voice of the System:

1. When trying to make sense of numeric data, do I/we have a binary view of the world – always either "Doing OK", or "In trouble"?
2. Do our management reports simply compare two values (for example, where we are now compared with last week / month / quarter, or compared to an average value) and use that comparison to drive actions?
3. Are our management reports 'eye charts' of tabular data from which people are expected to extract vital trends and unexpected values?
4. To what extent do our current data reporting systems allow us to distinguish between normal behaviour of the process / system, and identify exceptional (special) events and causes for investigation and improvement action?
5. Do I/we know the consequences of not understanding data?
6. What checks would we need to carry out to know whether our data is of sufficient quality to assess System behaviour?
7. Have I/we made the progression from reporting data in tabular or graph formats to using Process Behaviour Charts?
8. Do I/we know the difference between the Voice of the System and the Voice of the Customer?
9. Do I/we understand that to deliver excellent performance, it is necessary to bring the Voice of the System into alignment with the Voice of the Customer?
10. Do I/we realise that setting goals does nothing to improve the system.
11. Is being in control the same as being on target? Discuss.
12. To what extent am I/we using Voice of the System thinking to drive continual improvements and innovation?

WANT TO KNOW MORE ABOUT VOICE OF THE SYSTEM?

The following books are recommended:

- Donald J. Wheeler. Understanding Variation – The Key to Understanding Chaos. SPC Press
- Donald J. Wheeler, David S. Chambers. Understanding Statistical Process Control. SPC Press.
- Shoji Sheba, David Walden. Four Practical Revolutions in Management – Systems for Creating Unique Organizational Capability. Productivity Press. Chapter 8, Process Control and Variation, puts Voice of the System into a wider context.
- Also suggested: Frank Price. Right First Time, Using Quality Control for Profit, Gower Publishing [really nicely written, accessible and 'fun' guide to using process charts of various types.

See also MoSO: 'System of Profound Knowledge'.

Glossary of Terms:

Voice of the System defines what you will get from a process / system

Voice of the Customer defines what you want

INNOVATION

Lead Author: Malcolm Gall Peer Reviewers: Derek Richings, Alan Hodges

1. What is Innovation?

For a sustainable organization a proper engagement with innovation is inescapable.

Innovation is not invention; neither is it just improvement or novelty. Effective innovation creates value, either social or economic.

Improvement: Doing existing things better.

Invention: Finding or creating a new thing.

Innovation: Doing or using new things to change for the better.

2. Some definitions

Unplanned Discovery	Serendipity — Finding a use for something you have found.
Planned Discovery	Having a use in mind for something you are looking for.
Invention	Making a model or prototype that works.
Innovation	Introducing a new good or service to customers.
Entrepreneurship	Making a business out of new goods and services. Perhaps starting a new venture.
Serial entrepreneurship	Bringing new goods and services to the market, one after another.
Breakthrough	Completely new "out of the box" thinking (eg. Shiba).

3. Innovation is essential for survival

Every organization today is under pressure to be efficient in pursuing its aims, and to do more with less. Without innovation in an organization its customers or stakeholders will drift away.

When addressing the role of management's responsibility in securing its organization's future by pursuing innovation, Deming used to say:

"Improvement is essential, but relatively unimportant".

Deming gave Four Prongs of Quality, starting with the most important:

- **Innovation in product and service**
- **Innovation in process**
- **Improvement of existing product and service**
- **Improvement of existing process**

Innovation is necessary, but not sufficient, for survival

Some innovation comes from continuous improvement activity. The removal of confusing signals, by separating special and common causes of variation, for example, enables processes to be understood. The effect of a special cause may be highly desirable (they are not all bad!), but it has to be understood if it is to be produced as a consistent new feature.

For some organizations it is necessary to install improvement before self-generating innovation, so that the innovation can be carried through reliably.

4. Conditions for Innovation

These can only be set by the senior members of an organization. It is their responsibility. They must understand why innovation is vital to the long-term survival of their enterprise, so that the nurturing conditions are in place.

5. How to innovate

A purposeful approach to Innovation: Innovation follows a path:

Create (idea generation)

Judge and evaluate

Develop

Implement

Every organization has its own aims, systems processes and self-awareness. This affects how innovation happens within it. Every organization also has its own degenerative tendencies, which can stifle innovation.

The following steps show ways of making innovation a way of life for an organization

Step 1. Decide to do it.

Step 2. Set up strategies, policies, plans appropriate to the organization

Step 3. If improvement is already formalised, include innovation.

Step 4. Give Permission

Step 5. Study opportunities for innovation

Step 6. Identify the most promising opportunities and assess them by trials

Step 7. Implement, but learn from what you are doing

Step 8. Make sure that innovation is an established part of your organization

The order of steps 2, 3, and 4 may vary, or not even be applicable in some organizations.

Step 1. Decide to do it.

Whether you like it or not, you have now engaged upon the management of change. Your current organization has its own history and culture, which make it what it is. You may have values that you do not want to lose, eg. of public service and of justice. But you may also have practices and a culture which stands in the way of progress, or even survival. You must decide how to change these. Even the vocabulary you use may be troublesome. You may not want to formally be "a learning organization" or "a knowledge organization", although you will be adopting some of these characteristics. You may need external help. This is most usefully engaged at the start. . .

Viewing your organization as a system has many benefits, not least recognising the elements of your enterprise and the connections between them; these are all potential areas for innovation. You also have the opportunity to recognise the system of the future, ie what you want your organization to be and be able to do, and thus plan to create it and to achieve new aims. You may recognise that you need external help in areas of cooperation, creativity or systems thinking. Again this best employed from the start.

Step 2. Set up Strategies, policies, plans appropriate to the organization.

Reduce conflicts with existing practices. This may include your reward policies.

Make constraints clear (eg. Safety or Confidentiality);

Carte blanche experimentation by all and sundry cannot be allowed. For example: the safety engineers at Chernobyl were trying to find out how little retardation the core needed to run safely; they went into new territory, which proved irreversible.

Make clear when people can innovate – e.g. when it is within their area of responsibility and it does not adversely affect the overall process; when there is agreement from all affected stakeholders and it does not adversely affect the overall process.

Step 3. If improvement is already formalised, include innovation.

You may have established programmes for improvement, with or without formal management steering. Make sure that you tackle innovation appropriately in your organization. You may need to add mechanisms to encourage creativity and the bringing forward of innovative ideas.

Step 4. Give permission.

This is part of the psychology of change. Some people in an organization are less likely to come forward with innovative suggestions unless they know that they are allowed to. Some people may take pride and derive comfort in 'doing the same job' all the time. They have become experts. You will have to show them that innovation is not a threat and it is not just change for change's sake.

In some organizations suggestion schemes encourage widespread participation. In other organizations schemes have petered out, mainly due to lack of feedback. Compulsory suggestion schemes, where everyone (up to and including the chief executive) must submit at least one idea for improvement, do at least show commitment. They require much work to

administer and expectations are raised. The question of reward is nearly always raised and is always in everyone's mind.

Step 5. Study opportunities for innovation.

The greatest opportunities arise when you can observe customers using your product or service. You can see what they are trying to do, what frustrates them and what bores them. You can even see if they really understand what their own aims are.

The opportunities to innovate have been classified into seven areas by Drucker. He sees these as windows – more than one window can offer a different view of the same innovation. The windows are not the same size – some are much bigger than others.

Technological changes are the most noticed by the superficial observer. Technical innovation can hide much management failure. This may come to light when the competition has also adopted the new technology, as an industry standard, and their management is better.

Step 6. Identify the most promising opportunities and assess them by trials.

The selection of potential innovations should be informed by knowledge. Understand the systems within your organization's current and potential operations when making your choices.

It is best to keep the innovation simple and focussed, although you can still aim to be a leader. If your innovation is complex, ensure that you have the resources to support it during its difficult starting times. Do not stumble into diversification. If diversification is your strategy, do it knowingly, get the knowledge and resources, or you will founder.

Pilots are useful; they can uncover unimagined faults.

Example: Sinclair QL

Step 7. Implement, but learn from what you are doing.

Check that the innovation is doing what you intended and that it supports the aims of your organization. It may give you the means to develop the aims of your organization further.

You must learn from failures, successes and delays in your organization.

Example: "Working for a FTSE100 client to improve their accounts receivables from 98.7% to over 99%, our consultants encountered comments about a certain individual within the client receivables unit, perceived as a troublemaker and negative. While gathering facts we decided to leave our interview of this individual until last in the department. When we spoke to this individual it became clear that they concurred with our conclusion that the factor holding back improvements was a culture that the clients were so good that they could never be wrong! Our conclusion was that the bulk of their receivables delays were due to legitimate client queries, misdeliveries etc. The failure of their department to take such queries seriously was their main stumbling block, creating client friction and further delaying payments... the individual involved was thus not only correct in identifying the problems, but what his colleagues were overlooking was that he was also offering a solution which would enable their department to be even more successful in future.

Unexpected success is difficult to deal with. Everyone is very busy and the management has misunderstood the customer, or emerging customers. There are no alarm signals going off and, unlike cases of unexpected failure or external changes, there is not a recognised urgent need for investigation, just pressure on resources.

Huge success is an invitation for competitors or other providers to join in.

A large organization may find it advantageous to run the innovation as a distinct activity, with different controls from established routine operations.

Step 8. Make sure that innovation is an established part of your organization.

If innovation is an integral part of your organization you will be able to adapt to changing environments and develop new aims.

Example: During World War 2, 617 RAF squadron was tasked with delivering bouncing bombs to attack German dams. They encountered a problem in establishing and maintaining their height at exactly 50' at night, necessary for the innovative bomb to work reliably. This detail was resolved after crew members visited a theatre and got the idea to focus two spotlights to overlap at exactly 50': a simple innovation that made the the difference between success and failure.

Look ahead. Don't paint yourself into a corner.

6. **Examples of innovation**: Innovations fall broadly into three categories:

- **Innovation in product or service** (product innovation).
- **Innovation in skills and processes** used to make the products or services and bring them to market (managerial innovation).
- **Innovation in the market place** and in customer behaviour and values (social innovation). For example :iPod, iTunes and iPhone (See Steve Jobs below); also what about Xerox in Poalo Alto where they invented the PC, mouse, GUI interface, networks etc, so computers & PC; Internet + WWW

Product innovation

Safety Razor

W King Gillette did not invent the safety razor. His razor was sold cheap. His business made money by selling replacement razor blades. His customers believed they were buying a good, safe shave rather than just a razor blade.

Safety Razor blades in the 1960s

Stainless Steel replacement for carbon steel. The lower stress corrosion gave a longer lasting blade. The same manufacturing plant could be used.

Low friction coating on the cutting edge. Finding a material which gave thin, durable coatings on the blade tip took much work. The best material was PTFE, an intractable polymer which melted, but did not flow, at 327°C, a temperature at which steel discolours in air. Developing a reliable process that could coat millions of blades per week was long and arduous. The first company to succeed patented the coating and process. The product gave such a superior performance in comfort and lifetime over uncoated blades that all manufacturers had to provide such a product, and had to pay royalties to the first company.

Cars

Manufacturers produce new models every few years.

Enter a market segment new to a manufacturer. Toyota entering the luxury segment of the market with the Lexus was an example of strategic innovation. As was their Prius petrol/electric hybrid.

Solar powered miner's lamp

This concept came out of an R&D department's creative Forced Paradox session

Obviously the sun does not shine underground.

In mines there is a need for local meters and gauges. What is not wanted is kilometres of cabling, or a stand-alone device with a battery that needs replacement. Mining engineers would not want to carry around such devices, or even the extra batteries to power them. They do carry lamps or flashlights. A meter powered up from photocells charged up by a flashlight just for the purpose of giving the engineer a reading there and then, when he needs it, was a solution and gave rise to a range of products.

Process Innovation

Chemical Industry

In a continuous chemical process there was a stage which involved a stream of product, a solid suspended in water, dropping under gravity over plates in a column while being exposed to a counter current of vapour. Because product got caught up in the column, the company had a programme of periodically cleaning the column by stopping the process and partially dismantling the column and cleaning it by hand. This resulted in the loss of one day production plus downgraded material several times a year.

The company had a structured improvement programme which functioned mostly by facilitated projects. A shift supervisor proposed to his local steering group a proposal for investigating a procedure of stopping and bubbling the column for a few hours as a means of keeping the plant clean. The supervisor was given leadership of a team, his own shift plus technical help from process engineers. The team developed a procedure which resulted in much lower loss of production time and downgraded material.

A process for training in new methods existed in the plant already, and qualified training staff were available, so that shifts ended up following the same procedure within a few days.

The innovation put in across many plants within the company in several countries.

Farm Machinery Sales

In the nineteenth century many American farmers were too poor to buy harvesting machinery. A manufacturer, Cyrus McCormack, introduced instalment buying so the farmers, or groups of local farmers, could use future earnings as well as past earnings (savings) to get the machines that increased their productivity.

Penny Post

Roland Hill did not invent the postal service in the UK.

The existing postal service required senders to take their letters and packets to a post office, get them costed, according to weight and distance of the destination. They were then taken to the receiver, who would pay for them, but only if they wanted the letter, or had the money. If not, the letters were taken back. The change to a charge pre-paid by the sender got the income. Using adhesive stamps made the use of pillar boxes for letter collection possible. Also the charge was cheaper. One penny replaced possible charges of around a shilling (12 pence). Thus writing and posting letters became a much more popular activity.

Product & Process Innovation together

Innovation	product or service	skills and processes	market place
Safety Razor	Product		Social
Stainless steel blades	Product		
PTFE coated blades	Product	Process	
Automobiles	Product		Social sometimes
Miner's equipment	Product		
Chemical process		Process	
Farm Machinery Sales		Management (Financial) Process	Social
Penny Post		Management Process	Social

7. Innovation FAQ

Q. What is the best way to have a good idea?

A. "Have lots of ideas." Linus Pauling (Winner of two separate Nobel prizes).

Q. Can people have ideas in your organization?

A. They will, but some sort of structure is needed for the ideas to appear and to be developed.

Q. How can the ideas be turned into action?

A. This is a clear responsibility of management.

Q. How can your organization recognize a 'good' idea?

A. Examine the idea – can it be made into a product or service or improve a process?

Q. How can you systematize innovation?

A. **"You can't."** Steve Jobs (Apple and Pixar). Is he right? Where did Apple's innovation come from? Do not confuse creativity with innovation.

Q. Is there a hard and fast difference between improvement and innovation?

A. Not really. If you were to take an out-of-control process and remove the special causes of variation, you will have improved it. If you then change the mean value and spread (stable variability) you are beginning to innovate. Innovation essentially involves putting ideas together that have not effectively been connected before. At the extreme of innovation is starting up a new venture to bring a brand new product or service to users.

Q. Can pubic service organizations innovate?

A. A public service has legal duties, aims and a budget (rather than earnings). If it wants to extend, or even achieve, its aims, with respect to its budget, for example, it has got to innovate.

Q. Is innovation is essentially technological change?

A. No, scientific and technological change are only one type of innovation. See Drucker's work to identify all the other types. Technological change is relatively high risk, slow to deliver, and has many participants. You do not have to invent everything new. You can buy it in, license it, or outsource the need. Some organizations are in activities where they benefit from having research activities, skunk works etc., and having proprietary knowledge.

Q. Can real innovation only be achieved by a genius inventor?

A. The flash of genius is like a miracle cure. It does happen, but very rarely. It cannot be taught or learned from. Nevertheless genius inventors are rarely one idea people - their ability to identify potential problems and rationalise them into solutions can be used in many areas.

Innovation is more reliably (and much more commonly) achieved by hard work, in a structured, purposeful way.

Just about every human being has had an experience where everything came together, and can recall the exhilaration of that moment. They may call it "Finding the missing piece, the electric light coming on, the 'ah-ha' moment, eureka moment, or epiphany".

Archimedes was given a problem by his local Tyrant, who had been sold a crown claimed to be made of gold. The tyrant wanted to know whether the crown was truly made of gold, so that he could pay the supplier or execute him as a cheat. Archimedes knew how to weigh things and he understood about density – the same sized block of gold weighed more than one of silver, iron or copper - but he spent much thought on the problem of how to estimate the volume of an irregular-shaped, bumpy object (a crown, shaped like a laurel wreath). When he walked down into his bath he saw that an irregular-shaped, bumpy object (Archimedes himself) displaced a volume of water and the water level rose. He realized that when he got out of the bath the water would drop down to its original level. At this moment all his previous thoughts came together to give him his shout of "I've got it" – Eureka. Whether or not he ran through the streets naked shouting is irrelevant, but typical of the human love of telling stories and trying to make them memorable.

Edison said that genius was 1% inspiration and 99% perspiration.

Q. Where would people in your organization get their inspiration from?

A. Try listening to your customers or users. See VOC.

Q. Does the customer know what is needed?

A. Not necessarily, but he may think he knows what he wants. He will recognise what he really wants when someone shows it to him. He will be enthusiastic about acquiring it, and to tell his friends where he got it from (you).

Q. What is the best type of innovation?

A. The one where people say, "Why didn't we think of that?"

In these circumstances you must have put together familiar things in a novel way to get that sort of response. Well done. What can you learn from this?

As time passes you will look back at the innovation and it will appear in increasing retrospect to have been more and more logical and almost inevitable. That is just human nature.

Q. Should we copy Toyota (generally accepted to be best-in-class)?

A. Not necessarily. Toyota has spent fifty years getting to where they are now. Their tools and techniques have a context. This context may be quite different from yours and their tools and techniques may not be relevant to you. Their guiding principles of Continuous Improvement and Respect for People almost certainly will be. However, many books have been written about the company by perceptive authors, which may help you. Some of these are given in the reference section below.

Q. What did Deming mean when he said innovation can only come from people who take joy in their work?

A. It is said there are only two fundamental human emotions in essence; love and fear. In an organization that is dominated by fear, or that has its attention consumed with meeting targets, a context of negativity, or punishment, is liable to stifle innovation (due to perceived individual risk), at the same time it will reduce enthusiasm, erode individual input and focus practical and pragmatic individuals onto what it not possible, or what is not socially acceptable. Thus a limiting, negative outcome is encouraged from the culture itself.

8. Want to know more……

There are many hundreds of books, chapters in books, articles and websites covering Innovation.

The following resources look at innovation from a systems perspective *and* show an understanding of what makes people tick – you need both to support innovation and manage change effectively.

1.***The Deming Dimension***, H R Neave, 1990, SPC Press.	*Particularly chapter 14*
2. ***Innovation and Entrepreneurship***, P Drucker, 1993, Collins, and 2007,	*A classic text with still much relevance today. It expounds principles with many examples. A few*

Elsevier (BH)	*of his exemplars of innovation have now been overtaken by new innovators using the principles that Drucker identified. In the second half of the book he gives a lot of insight into entrepreneurship and its impact on the USA economy in the late twentieth century.*
3. ***The Myths of Innovation***, S Berkun, 2007, O'Reilly.	*A good corrective to over-reduced business school case histories, vigorously displaying the human factor present in all innovations. The author was on the Microsoft Explorer development team.*
4. ***Harvard Business Review on Innovation***, 2001, HBS Press	*Eight interesting, detailed cases. Very instructive if read bearing Drucker's classifications in mind. Application of the elements of the System of Profound Knowledge enables the reader to envisage extensions in scope and duration of the innovations described.*
5. ***The Toyota Way***, J K Liker, 2004, McGraw Hill.	*Chapter 5 covers a Strategic Innovation, the creation of a new brand, the Lexus, done in the Toyota way.*
6. ***The Toyota Way Fieldbook***, J K Liker and D Meier, 2006, McGraw Hill.	*Chapter 11 includes an account of the Toyota Suggestion Scheme. Since Toyota is a somewhat individual firm this should be read with an account of its culture, which supports improvement and innovation.*
7. ***Toyota Culture – The heart and soul of the Toyota way***, J K Liker and M Hoseus, 2008, McGraw Hill.	*Chapter 6 covers the engagement of people in continuous improvement and innovation.*
8. ***Smart things to know about Innovation & Creativity***, D Sherwood, 2001, Capstone.	*A how to do it book that covers the four basics of innovation:* *Idea Generation* *Evaluation* *Development* *Implementation*
9. ***The Toyota Product Development System: Integrating People, Process and Technology*** by James M. Morgan & Jeffrey Liker	*All about the art and the science of innovation with a good section on set based innovation*
10. ***The Elegant Solution: Toyota's Formula for Mastering Innovation*** by Matthew May, 2007, Simon & Schuster.	*Another book on the principles, practices and protocols of the Toyota Product Development System*
11. ***Product Development for the Lean Enterprise: Why Toyota's System Is Four Times More Productive and How You Can Implement It*** by Michael Kennedy	*Another book on the Toyota Product Development System that explores some of the pre-requisites for innovation – Vision, system, engaged leaders, involvement*
12. **Competing on the Basis of Speed.mp4** by Mary Poppendieck http://video.google.com/videoplay?docid=-5105910452864283694.	*Great thinking about innovation in software development with many applications elsewhere and overview of set based innovation*
13. ***Breakthrough Management,*** Shoji Sheba & David Walden, 2006, CII	*How to change your organization fundamentally so that it operates in a completely different way. It describes how to use image and language data as well as numerical data*

14. ***Four Practical Revolutions in Management***, Shoji Sheba & David Walden, 2001, Centre for Quality Management	*This book describes four revolutions: Customer Focus, Continuous Improvement,Total Participation and Societal Networking. Chapter 14 covers Proactive improvement to Develop New Products.*

9. SELF EXAMINATION QUESTIONS

1. Have senior management in your organization shown leadership in innovation?
2. Is there a support infrastructure for innovation in your organization?
3. In your organization's terms, what is the difference between innovation and improvement?
4. Do you know where to start?

Glossary

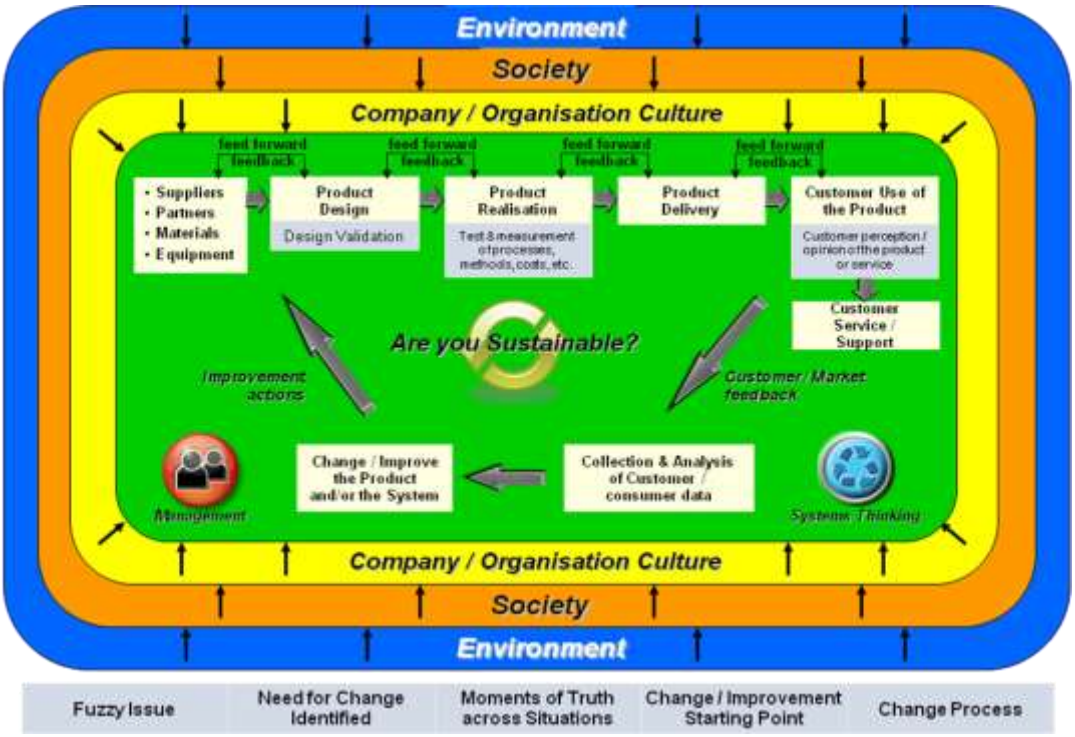
Forced paradox is taking two different viable ideas and pushing them together to see whether the outcome is viable. An example would be the first time someone thought of putting a modern minicamera into a mobile phone.

Continual improvement is the sum of continuous improvement (eg Kai Zen) and dis continuous improvement, eg. breakthrough, such as would come from radical innovation.

THOUGHTS ON BUSINESS SUSTAINABILITY

Authors: Tony Brown, Alan Clark, Terry Rose

1. OVERVIEW



AN ORGANIZATION VIEWED AS A SUSTAINABLE SYSTEM (after W. E. Deming)

Never before in human history has the rate of change in our society led to the demise of so many enterprises. Whether in financial management, Banks, automotive or other industries the rate of decline, job losses and industrial infrastructure loss, the decline has accelerate with the current recession.

The rate of technological progress continues to speed up. Globalisation has seen the Government helpless to prevent the flight of capital, industries or outsourcing to low cost countries in the east. The prospects for the future look grim.

Survival is management's number one task. Sustainability has to be the number one item on every CEO's agenda. Dr Deming's track record with companies that have stood the test of time is convincing. His legacy, philosophy, System of Profound Knowledge (SOPK) and other teachings provide a platform for survival and a bed rock for building a sustainable enterprise based on quality management principles.

2. INTRODUCTION /EXECUTIVE SUMMARY

'If it is hard to make a success of something, it is an order of magnitude harder to sustain the success'.

Andy Grove, formerly Chairman and CEO of Intel Corporation

Sustainable success then is hard to achieve. We seem to accept as the norm that organizations in the public, private and not-for-profit sectors will not last over the long term. Partly the difficulty is due to sustainable success being a balancing act of three elements: social, economic and ecological. Long term success cannot be achieved in one area at the expense of the others.

Two quotes from Dr WE Deming: *"It is not necessary to change. Survival is not mandatory."* And *"Learning is not compulsory... neither is survival."* These seem to sum up the essence of sustainable success, namely that it requires learning and change. The fundamentals of sustainable management are listed below and explored in greater depth elsewhere in the MoSO website. However, the core is focus on the customer and what flows from that, quality. Quality is what the customers say it is and this will continually change due to rising customer expectations and the complexity of the global operating environment.

Forces of destruction are continually at work limiting the life of an organization. Like ice melting in a glass in a warm room, organizations tend towards chaos or at least lose the vital spark that is essential for longevity. Top managements become unwilling to experiment or try new solutions to problems, become inflexible and cannot learn from the present and finally become submerged by tradition.

The three elements of enterprise sustainability are social, economic and environmental; also know as the "triple bottom line" (see Appendix 1). Whilst economic considerations have traditionally been at the forefront when considering viability a more balanced approach is taking hold. Human factors within organizations go back as far as Robert Owen at the beginning of the nineteenth century. In the twentieth century the human relations movement led to the recognition of the importance of human factors in organizational performance and in this century in longevity. More recently the wider social impact of organizations has gained in importance, as has the natural environment. Even in the unlikely event that it is shown that CO2 emissions are not linked to human activity there are the peak oil situation, pollution, and the impact of global population growth on water and food to consider.

The silent killers that stalk the corridors of enterprises link directly to the forces of destruction and are the result of the loss of that vital spark. There are many listed below that can be fatal, but the most serious is neglecting customers. It seems obvious but it still happens even to the best companies, see the Toyota case study below.

Top management are responsible for the fitness of the enterprise system on this Deming was quite clear. The actual elements of the system and their capabilities, as a whole and individually, determine long-term success. People can and do make a difference, but the system always wins in left unchecked.

At the end of this article there is a list of enterprises that make worthwhile case studies. There are many examples are out there of both long-lasting and, sadly, the majority who do not survive.

3. MAIN CONTENT

WHAT IS SUSTAINABILITY?

> **"Extend the socially useful life of an enterprise so that they contribute resources to achieve the enterprise's and society environmental, social and economic goals"**

Sustainability may be thought to have taken one step closer to the mainstream with the publication of ISO 9004:2009 *Managing for the sustained success of an organization — A quality management approach*. This standard defines **sustained success** as the 'result of the ability of an organization to achieve and maintain its objectives in the long term'. It goes on to define the **organization's environment** as the 'combination of internal and external factors and conditions that can affect the achievement of an organization's objectives and its behaviour towards its interested parties.'

Fundamentals for Sustainability

Sustainable organizations are characterised by the following

- ***Putting customer first***
- ***Quality is job number 1***
- ***Devolution of leadership***
- ***Avoidance of the forces of destruction***
- ***Good enough never is never enough in the search for the competitive edge***
- ***Keeping the culture agile and achieving constant renewal***
- ***Maximising the enterprise's capabilities***

Achieving these requires leadership throughout the organization and particularly by top management. It also requires a management style transformed from the typical Western management style or at least the Anglo-American one.

The Forces of Destruction

Top management are usually responsible for unleashing the forces of destruction either through misguided belief, the sins of omission or sometimes just greed. The following are some of the most obvious:

- Takeovers or 'buyouts' funded by large borrowings that laden companies with debt
- Asset stripping
- Inappropriate Mergers

- Bonus payments that are assumed to be the way to obtain performance
- McColough's cycle: emergence; full flower of growth; prestige; stagnation and death
- Obsession with direct labour costs
- Abandoning large businesses with low margins
- Creating a mismatch between the product and the market place
- Using resources to buy other companies
- Appraisal systems

Peter McColough, cited above, was one of the founders of Xerox. A creative thinker, he started their research facility, which invented most of the ideas upon which was based the success of Apple, Intel and Microsoft. Xerox had failed to develop any of their innovations. They also lost the battle with the Japanese for their copier market. McColough said,

> **"Is it inevitable that such organizations as Xerox should have their periods of emergence, full flower of growth and prestige and then later stagnation and death?"**

Well certainly if reliance is placed on the management dogma listed above. This is the very opposite of the reflective and agile mindset required in a constantly changing operating environment. The inflexibility of top managements who are unprepared to challenge the perceived wisdom is at the heart of the problem, but then the status quo is easier...

Elements of Enterprise Sustainability (see Appendix 1)

- ***Social sustainability –*** *human factors internal and externally*
- ***Economic sustainability*** *– producing returns and funds for reinvestment*
- ***Ecological sustainability*** *– husbanding the natural environment and resources*

To which we would add

- ***Culture built on efficiency, effectiveness and involvement in the development, renewal regeneration of the enterprise and societies***

The Silent Killers

Many silent killers are usually present in any organizational failure. Again it is the unwillingness to try something different, inflexibility, unwillingness to learn and straightjacket of tradition that combine to nurture these issues:

- Customer neglect
- Unclear strategy and/or conflicting priority
- An in-effective management team
- Command and control style of management system
- Poor vertical communication
- Poor co-ordination across functions
- Insufficient leadership skills from top to bottom

Enterprise fitness – enterprise elements

A healthy and thus sustainable enterprise can be characterised will comprise many features, some unique. The following list provides those common to all organizations:

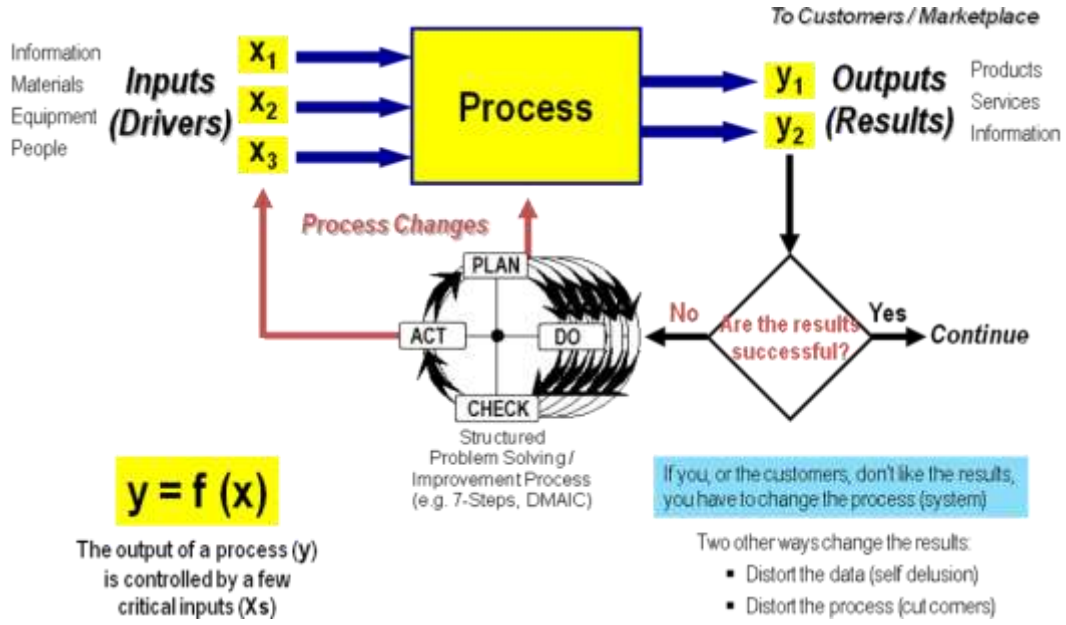
- Systems thinking
- Leadership team
- Vision, values and mission, that crucially feature quality and quality management
- Policy deployment
- Management systems and lean processes
- Reliable work system
- Human resource system
- Supply chain synergy

And you may know of more.

GENERIC MODEL – SYSTEMS THINKING

This diagram, developed by Terry Rose, schematically brings together many of the elements involved in taking a systems thinking perspective of a sustainable organization. In order that it is

continually trying something different, is flexible even agile, is willing to learn and a free of tradition



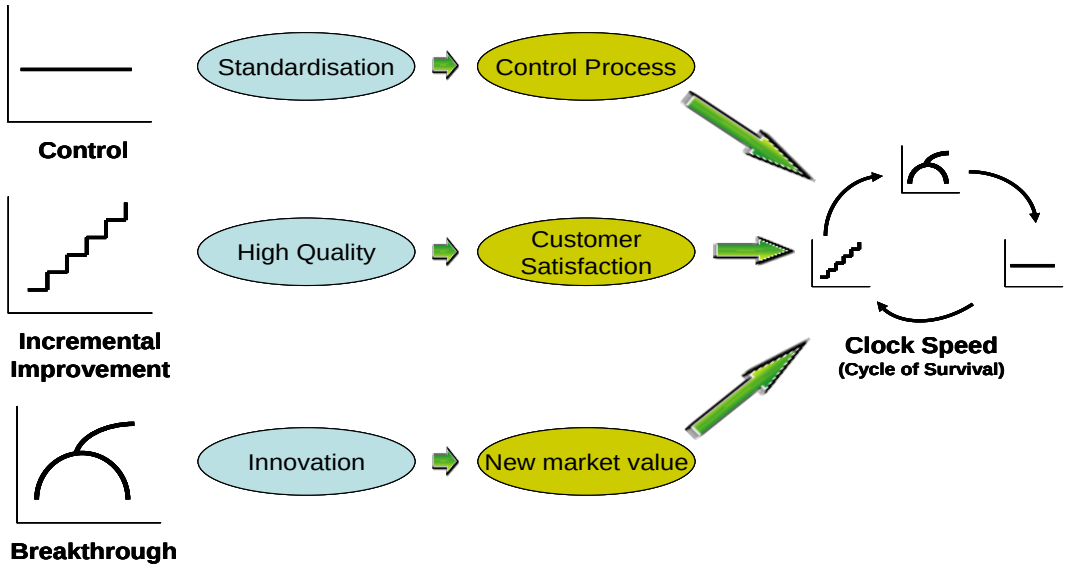
You will see these elements in the Model of Sustainable Organization and in various forms throughout the MoSO website. Customer focus and the engine of ceaseless learning cycles of Plan-Do-Study/Check-Act at every level rejuvenate the whole enterprise. The knowledge that emerges from this openness to learning feeds not only step-by-step improvement but also innovation.

ENTERPRISE CAPABILITIES

Systems and processes are required to be in place to continually educate, train, research and renew all of these capabilities otherwise the enterprise will decline. Particularly in the modern era knowledge and new knowledge are critical the critical success factors. How capable is your organization in all of the following areas?

- Co-ordination
- Human competences
- Commitment – brought about by inspirational leadership
- Innovation, continual improvement
- Capacity and delivery system
- Capable management processes
- Knowledge learning, transfer and management

In addition the enterprise must have the capability to integrate into a coherent strategy three management paradigms of control, incremental improvement and innovation. Again any one on its own is not a survival strategy.



Business Logic of the Three Management Paradigms

Diagram provided by Terry Rose based on original work by Prof Shoji Shiba on Breakthrough Management

CASE STUDIES

A health warning! Whilst the following companies offer excellent examples what is of primary importance is the thinking behind what they do. Your organization is unique, as are its people, in this time and at the place you are. When you study the following businesses, as examples of sustainable organizations, look for the underlying thinking. How could it apply in your situation?

- ***WL Gore – autonomous management system***
- ***John Lewis – not for profit enterprise***
- ***Toyota – 40 years of profit improvement and market share, Deming award winner in 1963***
- ***Ford Motor Co. Deming transformation lost and regained. 1980-2009***
- ***Dunn's Bakery – Crouch End London excellence since 1827!***
- ***Lloyd's shipping 249 years – still transforming itself***

This article will only take as an example one of these the Toyota Motor Corporation

Brief Case Study – Toyota

> **"*Toyota has recorded annual losses in the last two years of global recession, after nearly 50 years of achieving unmatched financial results in its industry*"**

Shoichiro Toyoda, the 84-year-old family patriarch and honorary chairman of Toyota Motors, responded to this by announcing a stunning shake-up of top management. He chastised top managers for losing sight of the fundamentals that had made the company so outstanding and promised that the company would "return to basics."

Source: Tom Johnson November 2009 *Qualityworld*

A sharp decline in Toyota's inventory-turnover ratio after the late 1980s as evidence of "lean fatigue", resulting in excessive inventory growth and diminished financial performance.

This is the company that had achieved the legendary 56 stock turns!

> Toyota's expansion into an increasingly dispersed global network of plants and suppliers made it difficult to fill customer orders for the manufacturer's increasing variety of models in a reasonable lead-time.
>
> The loss of highly skilled Toyota trained people and the inability to fill the gaps with suitably trained replacements in the Toyota Way

Producing to customer order – a condition relentlessly pursued in Toyota plants for decades – requires patient effort on the shop floor to increase the mix of models and to decrease delivery lead-times. But after the late 1990s, Toyota often replaced its patient problem-solving techniques with quick compromises, or workarounds such as shipping units over long distances

Compromising long-standing fundamentals such as flowing work continuously in lot sizes of one and addressing any abnormality with an immediate solution – Stop and Take Action.

- *Toyota's management culture at its zenith was process-driven, not results-driven.*
- *Toyota eschewed the financial markets' absurdly impossible demand to produce higher results quarter by quarter.*
- *It rejected the idea espoused by lean authorities that a company can improve its overall performance by subtracting parts.*
- *It assumed that a properly orchestrated process would generate results sufficient to sustain the organization's on-going activities.*
- *Its pathway to higher results echoed Deming's advice, given many years ago, to improve the capability of the process, not to demand that people meet higher targets.*
- *The reversal of Toyota's fortunes in the past decade suggests that many of its top managers lost the habit of thought that had previously shaped the company's policies and actions.*
- *They lost the habit of thought that caused the company, perhaps unconsciously, to act like a living system.*
- *Toyota adopted the finance-oriented mechanistic thinking that had spawned the inferior management practices and the poor performance shown by most of its competitors after the 1970s*
- *And because it abandoned living-system thinking for mechanistic thinking, Toyota began to embrace a virtual world of finance, not a concrete world of humans in cooperative relationships.*

What is interesting about the modern malaise of Toyota is that it confirms that it was the underlying principles that led to success. It is almost as if fate decided to conduct a scientific experiment to prove that it was the underlying principles that were responsible for success. By departing from these principles performance and quality declined resulting in the poor financial results and vehicle recalls. By returning to the fundamentals both financial and quality results will be regained.

SUMMARY AND CONCLUSIONS

'Predicting the future is a tough gig, history is bunk' said Henry Ford

What are the conclusions?

We have seen that even the best companies can stray from their successful principles and when they do performance declines. Sustaining success is hard but the rewards in social, economic and environmental terms are high. To achieve this success it is essential that the people, particularly top management, are prepared to try new things, to be flexible, to value knowledge, to learn new knowledge and to not be hidebound by tradition.

You do not have to do these things, as Deming once said, survival is optional.

SELF EXAMINATION QUESTIONS

1. To what extent do you think your organization is currently sustainable as a business?
2. How can you measure the vitality of your organization? Do you dare?
3. Which of the silent killers stalk your corridors?
4. What is your enterprise fitness rating out of ten for each of the enterprise elements above?

5. How do you rate the capabilities of your organization against each of the items in the list above?

Want to know more… The following books and articles are definitely worth a read:

Out of the Crisis *by W Edwards Deming 1986*

The New Economics *by W Edwards Deming 1993*

ISO 9004:2009 *Managing for the sustained success of an organization — A quality management approach*

The Unnatural Environment by Tom Johnson* QW Qualityworld *ISSN 13528769 November 2009 Vol. 35 issue 11, pp32-35

Profit Beyond Measure: Extraordinary Results through Attention to Process and People *by H Thomas Johnson and Anders Broms 2000*

Toyota Production System: Beyond Large-Scale Production by Taiichi Ohno 1988

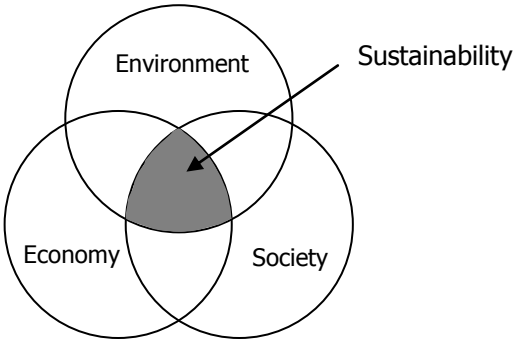
Built to Last: Successful Habits of Visionary Companies by James C Collins and Jerry I Porras 1994

Good to Great: Why Some Companies Make the Leap… and Others Don't by Jim Collins 2001

Breakthrough Management: Principles, Skills, and Patterns for Transformational Leadership by Shoji Shiba and David Walden 2006

The Three Secrets of Green Business: Unlocking Competitive Advantage in a low Carbon Economy by Gareth Cane 2010

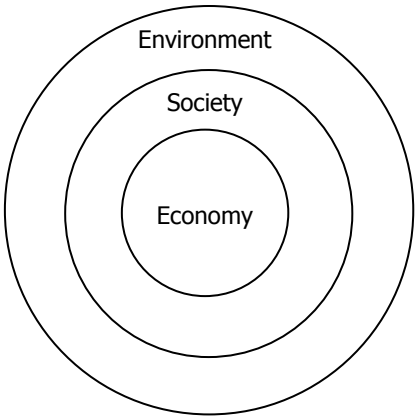
Appendix 1
Some Models Associated with Sustainability



The most popular way of visualizing sustainability is three interlocking circles representing economy, society, and environment. The nexus at the middle is regarded as sustainability.

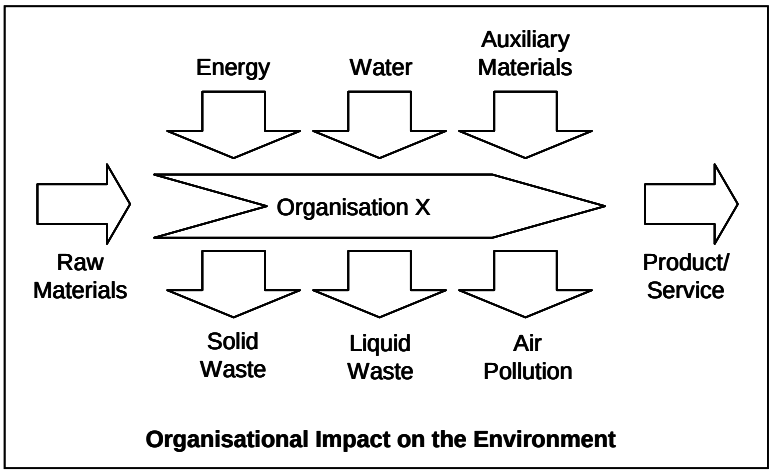
The danger of this model is that it suggests that sustainability is a balance between the three, implying that not hitting the target is an option.

It's very easy to find a social, economic and environmental benefit to any enterprise, but this doesn't mean it is sustainable. True sustainability requires a paradigm shift.



Perhaps a more meaningful version is the 'fried egg' Model in which sustainability is defined as the situation where the economy operates within the limits set on it by society and where society flourishes within the ecological limits placed on it by the natural world.

MoSO captures these imperatives from an organizational standpoint.



A model showing organizational Inputs and Outputs from an environmental perspective.

TRANSFORMATION

Lead Author: Terry Rose Reviewers: Tony Brown, Antony Aitken, Alan Clark

INTRODUCTION

For the purposes of MoSO, **transformation** is seen as a journey that an existing organization may take to becoming ever more sustainable.

Transformation is the journey of change. Changing an organization's

- Systems
- Policies
- Values
- The way it does things

In other words, changing anything that can help an organization perform better and be more sustainable.

The gap between "Where we are today" (the current state) and "Our vision of us as a sustainable organization" (the destination) represents the length of this journey and its degree of difficulty.

Whilst every organization's journey will be different, there are likely to be some generic steps or milestones to help signpost the way forward. Experience shows that the journey will include dead ends and wrong turnings – it's typically an iterative and yet hugely enjoyable process.

There is great value to be had in the journey itself.

BEGIN WITH THE END IN MIND (a word about the destination)

Before looking at the journey (the transformation process), it is worth exploring some ideas about the destination. We are interested in the specific **organizational capabilities** that a sustainable organization, of any type or size, will very likely need to possess. In other words the things it needs to be really good at – and does as a matter of course, not exception.

In a rapidly changing world driven by free market economies with increasing societal and environmental influences, sustainable organizations need ***an inherent ability to continually improve*** *and, when necessary,* ***radically change.*** Put another way, a sustainable organization will need an inherent **capability** to:

- **Get better and better at understanding, meeting, and exceeding the expectations of its key stakeholders** – *continually improve the things it does*
- **Get better at getting better** - *continually increasing the rate of innovation, evolution and improvement*

The Transformation Process will need to put in place an enduring set of ***principles, practices, and infrastructures*** capable of continually aligning and mobilising the organization to deliver products and services that meet the existing, and future (perhaps as yet not known) needs of customers, other key stakeholders, and the wider marketplace.

Principles: The guiding principles that the organization will use to underpin all efforts to build a sustainable organization. Some examples are:

- Deming's 14 points, Toyota's 14 Principles and ISO 9001 8 Quality Management Principles

Principles should be based on tried and tested concepts / knowledge / theory that will not radically change with time. E.g., a fundamental principle is ***customer focus***.

The principles should address all elements of the MoSO becoming part of an organization's DNA. Over time they embed themselves in the leadership and culture of an organization and can be tested against an organization's actions and behaviours.

Practices: A core set of common processes, tools, and techniques used throughout the organization to help put the principles into practice.

Common practices create a common language and way of thinking (never underestimate the power of having common practices across all functions and at all levels of an organization) reinforcing individual and organizational learning and continual improvement across an organization

Infrastructures: The way an organization governs and organises (manages) the change / transformation process

Typically organised as a cascading 'management' team structure that touches all parts, and all levels of an organization.

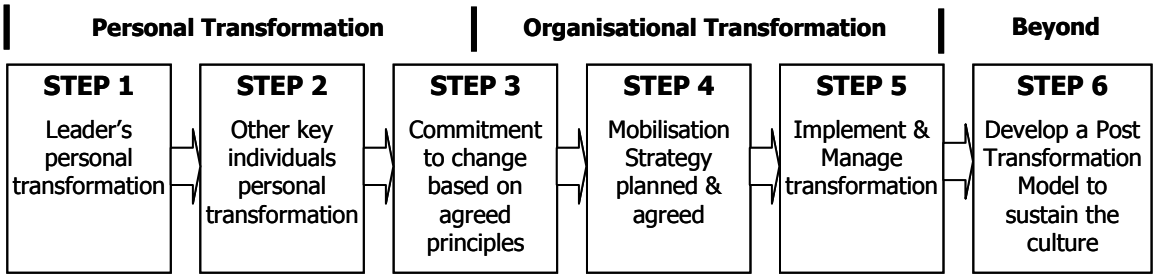
The structure will likely need to be adapted to meet the needs of different parts of the organization

THE JOURNEY

There appears to be two main phases of any transformation process:

- ***Personal transformation*** and
- ***Organizational transformation.***

Personal transformation is a prerequisite to organizational transformation.



The following figure shows the typical high level, generic transformation steps:

Figure 1. High Level Generic Transformation Process

FIGURE 1: STEP 1. Leader's Personal Transformation

Changing one's thinking, in the sense of embracing thoughts beyond present limitations or thought patterns.

Individuals need to be convinced, or more likely convince themselves, that the transformation journey is worth the effort. This is particularly true of individuals who will have leadership roles in the transformation process, perhaps:

- The CEO / MD / Owner
- Senior managers
- Change Agents / Local Managers
- Real Change Leaders (someone at any level in an organization who uses their skills and drive to bring about improvements within their scope of influence).

What motivates leaders to lead a transformation? Two parts:

- Learning and
- Fear / Crisis or a jolt

Learning takes place mostly from outside the organization from seminars, parent company, customers, suppliers, government agencies, communication with other leaders, personal experience (particularly influential), advisors, partners, consultants.

However, learning alone is not enough to provide the necessary motivation. Learning only creates interest. Another trigger is needed – a second, perhaps more powerful, motivator.

Fear / Crisis, or a Jolt. Major organizational change of any kind is usually precipitated by fear (survey of Deming winners by Prof. Noriaki Kano). It could be fear that the organization is "out of step" or falling behind competitors, market forces, societal influences or customer expectations. If something is not done, then the organization will possibly not thrive or not survive.

Delaying action until a full blown crisis occurs may be acting too late. A Leader's job is to focus the organization's thinking on the latent crisis that others cannot yet see

A Leader's Personal transformation may take some or all of the following steps. It's unlikely to be a serial process – more likely to be iterative, taking place over time.

Fuzzy Issue Identified:	An uncomfortable feeling or notion that a problem (which must be dealt with at executive level) exists
Need for Change Identified:	Fuzzy issue is more clearly defined. There is a feeling that the problem must be addressed sooner rather than later. Fear for my job, my future or the organization's future. **Fear sets in.**
Moments of Truth across situations:	Once aware of the problem, seek out and/or intuitively come across examples of the symptoms of the problem. Become aware of many other problems which have the same/similar root cause. The "aha! or lightbulb" moments – many of them across the organization - not isolated
Personal Learning Journey:	Gain knowledge and understanding. Seek out those who potentially have skills associated with the same or similar problems. Perhaps other organizations; read books / articles; talk to trusted peers; go to seminars; meet with consultants.
Create Hypothesis / Vision:	Based on increasing knowledge and understanding, articulate – perhaps with the help of others – a hypothesis of what's causing the symptoms and a vision of what needs to done.

FIGURE 1: STEP 2. Other Key Individuals Personal Transformation

A leader cannot do it by him/her self. Nothing will happen without the buy-in and commitment of other key individuals in the organization. Just because the leader says so is not enough.

The leader will have to gain the buy-in of those key individuals who will have to drive or cooperate in managing the leadership for transformation. Key individuals could be other senior managers / peers.

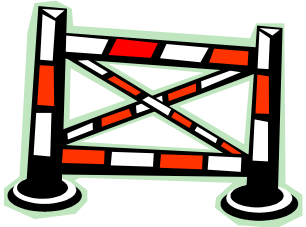
These key individuals must go through their own personal transformation – possibly as a team - guided by the leader (possibly with outside help). The steps of Figure 2 still apply.

Some patterns of successful leader involvement in helping others to make a personal transformation include:

- **Holistic Personal Approach**: Spend personal time; convey passion; share own personal transformation process
- **Strategy**: Lead by example; be open and accepting to different ideas; work in teams; do it again and again. Allow sufficient time and space

FIGURE 1: STEP 3. Commitment to Change Based on Agreed Principles

This is the first Step involving Organizational change. It is said that individuals learn naturally whereas organizations need a process or way to make it happen.



This is a crucial step. It is a gating factor. If the leader cannot gain commitment from selected key individuals, then no significant or lasting changes can take place. In which case the leader has a major decision to make; whether to abandon the transformation – or change the key players. This is perhaps an example of what Jim Collins in his book Good to Great, calls 'Getting the right people on the bus in the right seats'.

The reason why this is such an important step is that the key individuals are already, or likely to be become, leaders in their own areas of influence. They need to be fully engaged – cannot delegate to others.

Doing the 'transformation work' builds understanding and skill and embeds the process/ thinking so that it becomes the accepted way of doing things.

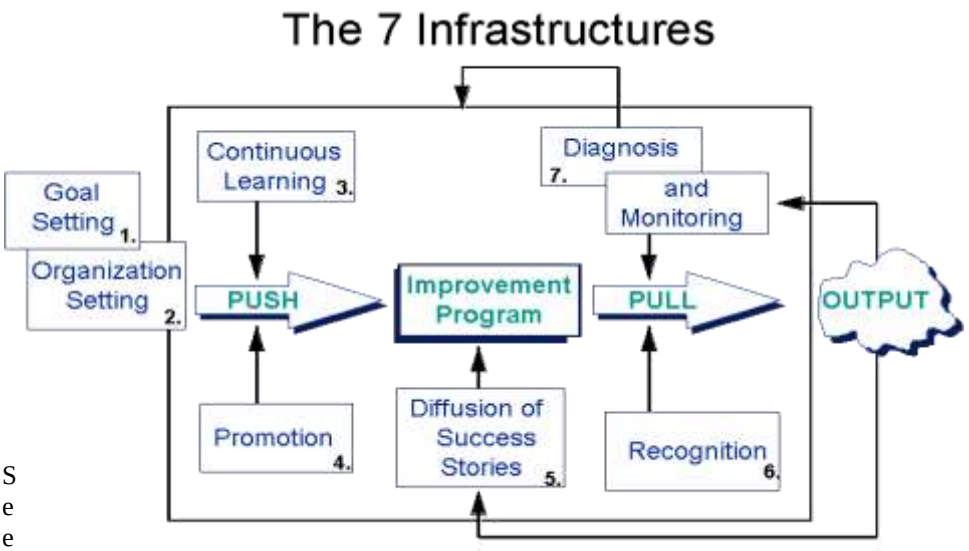
For this reason, it is usually these key individuals working with the leader as a team who devise a set of core enduring **principles** which form the bedrock of the transformation. The set of principles **address each of the Elements of the MoSO**.

FIGURE 1: STEP 4. Mobilisation Strategy Planned / Agreed

Organizations, regardless of type or size, need a (mobilisation) strategy and a structure for introducing and managing change initiatives. Mobilisation Strategies typically have three integral parts:

1. **Leader as driving force for change**. This involves high visibility involvement - hands-on participation; making decisions; evaluating change process as well as results; leading from the front - not delegating to 'experts'. Demonstrates commitment 'Walks the talk'. Becomes the expert.
2. **Strategies for introduction.** Chosen to suite the style and culture of the organization. Many different models are available, but typically phases include:
   - **Initiating:** Goal setting; telling people what is coming and why; sharing the importance of the change; initial training
   - **Empowering or Mobilising:** Giving people the ability to act – setting to work; further training as required (e.g. action learning); organising teams
   - **Aligning:** Ensuring all the work is aligned to required results (e.g., Operational Excellence). The MoSO can be used for this purpose.
3. **Organizational infrastructure.** This is the organization and processes that will be used to manage (govern) the transformation and beyond. This is typically a management team structure using standing teams to manage training programs, promotion of success stories, etc.

   From the author's experience, the 7 Infrastructure model which Professor Shoji Shiba helped to develop, is an excellent way of managing change initiatives.



S
e
e also 'Leadership Principles of the New Six Sigma' (Align, Mobilize, Accelerate, Govern) in the book The New Six Sigma published by Motorola University

FIGURE 1: STEP 5. Implement & Manage Transformation

the organizational infrastructure put in place during **Step 4** is used for on-going management of the transformation mobilisation plan.

Basic project management principles can be used both to manage the process of transformation and to manage individual improvement projects.

FIGURE 1: STEP 6. Develop Post Transformation Model to Sustain the Culture

Post transformation, leaders need to devote time and effort to determine how to sustain the changes. There have been many cases where the culture engendered during the transformation has become watered down or even replaced (perhaps out of sight of the leadership) due to new people (including leaders and managers) joining the organization.

Post transformation activities are seen as an essential part of the transformation.

Some Additional Thoughts on Organizational Transformation:

- Most likely to be a mass movement – reach / involve as many people in the organization as possible (or everyone in the part of the organization that is to undergo improvement).
- This is not easy - therefore the need for a (mobilisation) strategy.
- An important 'success criteria' is the lack of or absence of strong opposition. Opposition can gradually be reduced by efforts to build trust and realisation of the benefits.
- In the absence of top management involvement, a strong culture of quality and business improvement is required (sufficient knowledge of the need for and the methods to achieve organization improvement)
- Is possible to create an 'Island of change' – if local leader is reasonably autonomous,

Facilitators (external or internal) cannot be successful in driving change without visible involvement of the leader and key individuals.

SOME RECOGNISED TRANSFORMATION PROCESES

Step	Ford 6 Steps	Kotter 8 Step	Motorola New Six Sigma	MoSO Group
1	Benchmark	Increase urgency	Align	Fuzzy Issue
2	Management Commitment	Build the guiding Team	Mobilize	Need for change identified
3	Employee Involvement	Get the vision right	Accelerate	Moments of truth across situations
4	Participative Management	Communicate for buy-in	Govern	Change / Improvement starting point
5	Transforming Programs	Empower action		Change / Transformation process
6	Integrating & Systemising Continual Improvement	Create short-term wins		Post Transformation model to sustain the culture (at all levels in the organization)
7		Don't let up		
8		Make change stick		

Note:

The Deming Award process, the Baldrige criteria and the EFQM European Excellence model could also be said to be transformation processes.

SELF EXAMINATION QUESTIONS

Some *initial* questions for a leader or a leadership team (and you will have others)

1. To what extent has your vision for the future been agreed between yourselves?
2. Have the imperatives for change (the Whys) been clearly set out and agreed?
3. To what extent has the gap between the organization's 'current state' and the 'destination' been articulated?
4. Have the benefits of using MoSO as a comprehensive framework for sustainability been explored?
5. Has a defined set of principles (and values) that will form an enduring foundation for transformation and beyond been agreed?
6. To what extent are you (the leadership team) prepared to personally devote time and effort to building knowledge, understanding and skill in the practices that will drive change?
7. Developing an infrastructure for change throughout the organization is essential. Has the team developed a suitable infrastructure for your organization that involves all the leadership team playing an active role?

Want to know more … The following books are definitely worth a read:

Any of Dr. W. F. Deming's books

The following books by Shoji Shiba and David Walden:

'Four Practical Revolutions in Management'

'Breakthrough Management'

'The New Six Sigma' published by Motorola University

Jim Collins, 'Good to Great'

And there are many others that could be added, but why not start with those above.

Glossary of Terms

- **Transformation:** A journey of significant change
- **Principles:** The guiding principles that an organization will use to underpin all efforts to bring about organizational change or transformation.
- **Practices:** A core set of common processes, tools, and techniques that can be used throughout an organization to help put the principles into practice
- **Infrastructure:** The way an organization governs and organises (manages) the change / transformation process
- **Breakthrough Management** refers to a systemic approach to the exploration of significantly new directions or horizons needed to sustain the organization. Breakthrough could be in processes, technologies, the way a business operates or a totally new business area.

SYSTEMS THINKING

Lead Author: Esther Ridsdale

Key Contributors: Alan Clark, Alan Mossman, Patrick Hoverstadt, Terry Peterson, Tony Korychi

1. OVERVIEW

The Model of a Sustainable Organization (MoSO) is based on a *systems thinking* approach to organizational development. But what does this mean and how does it work?

Systems Thinking is a term that is increasingly relevant in a range of contexts; relating to the environment, organizational life, private and more recently public sector, as well as in biology, engineering, and the social sciences, including management.

Commonly today the term is used loosely but there is also a more defined science of systems thinking building on foundational thinking as well as a body of thinking defined as 'systems thinking' associated with psychology and psychodynamics.

There are a multitude of systems based methodologies that draw on systems principles and a handful of approaches closely related to the seminal thinking of the foundational thinkers (see Section 4).

This article aims to give an overview of ideas associated with systems thinking to help those interested in supporting the development of organizations. It does not currently extend to psychodynamic approaches but draws mainly on the work of the thinkers referred to in Section 4.

This article gives a brief summary, considers how to acquire systems thinking skills, gives a brief outline of some key concepts and concludes with some self-examination questions and a list of sources of further learning.

A longer article, containing explanations on systems thinking, what it is, descriptions of key concepts from key thinkers, and pointing to different practical methods is available on the MoSO website.

2. SUMMARY

Everything is connected to everything else - Leonardo Da Vinci

Most of us derive satisfaction from doing a good job, by meeting or exceeding customer expectations, by having good relationships with colleagues, and by having opportunities to develop and learn. We want an enjoyable working environment where we're not continually 'fighting the system' and where various parts of the organization are working together, not against each other.

As customers we want to be treated with respect, which means: not having to make five phone calls to different departments to obtain information; not getting off a train to find that the connecting bus left five minutes ago; being sold products that work with 'compatible' accessories. We expect fast, efficient, easy to use, 'joined-up' service where all parts work together seamlessly.

You'll have your own examples, but those above typify what Systems Thinking is all about. It says that everything is impacted by complex interaction of many different factors. We operate within systems of interconnected parts. Systems thinking acknowledges that 'improvements' made to one area of a system without proper attention to the wider system may result in a deterioration of overall 'performance' or 'experience'. An organization has characteristics that cannot be understood merely by looking at the parts in isolation – i.e. by 'reduction' and using 'reductionist' approaches. Hence to improve experience or 'results' we need to take into consideration the systemic nature of things; we need to understand how things function as a whole taking into consideration different factors and different perspectives.

'Systems Thinking focuses on how the individual (i.e. person, organization or other entity) that is being studied interacts with the other constituents of the system. Rather than focusing on the individuals within an organization it prefers to look at a larger number of interactions within the organization and in between organizations as a whole,' Wikipedia (from section on Peter Senge).

3. BEING A SYSTEMS THINKER

Systems Thinking is arguably an invaluable competency for any human and particularly important for anyone in a leadership or management role. So how do we acquire this skill?

Simplistically, we need to improve our skills in understanding the *systemic* nature of the world; the joined-up-ness and how parts work in relation to the whole. We need to broaden our understanding

of - and attention to - the many different factors that influence behaviour ('results', or 'outcomes') in areas of interest to us.

We need to increase our skills in examining different perspectives and synthesising them to gain a rich picture of the whole. For example, in an organization, structure is not just determined by the organizational hierarchy but also by process flows, attitudes and perceptions, the quality of products and services, the ways in which decisions are made, and many other factors.

Our world is complex so we need to find ways of assimilating enough of the complexity to intervene wisely without being swamped. Gaining this balance is the archetypal challenge of those attempting sympathetic action. Just as a picture speaks a thousand words, a set of pictures (diagrams or maps) can not only help in developing a good individual understanding, but can also importantly help gaining a *shared* understanding. This is invaluable to gain the commitment to the collaborative action needed for sustainable change.

Pictures that are of particular help in considering human organization include,

- systems diagrams – defining a system of interest -,
- process maps - of the focus area in detail and also how it fits within the macro system in which it sits - and
- causal loop diagrams - which depict different influences and how these factors impact on each other.

This understanding guides us to appropriate use of other data. For example, some forms of statistics, such as Statistical Process Control (SPC) is particularly helpful for understanding performance characteristics of particular processes within a system. Such approaches take into consideration performance over time, rather than examining a static and meaningless snapshot.

And we need to collaborate with others:

- to build useful mental models and 'pictures' to aid understanding and also, in order…
- to effect any systemic change (change that is robust and sustainable).

In brief, we need to learn to understand inter-relationships & connectedness, handle the complexity of holistic thinking, and link in to broader purpose and higher level goals and values. Developing our skills in this area will enable us to take action that achieves more robust, sustainable and far-reaching benefit. Systems Thinking is about achieving 'wholeness' in all senses of the word.

4. THE ORIGINS

Systems Thinking is a term that is increasingly relevant in a range of contexts; relating to the environment, organizational life, private and more recently public sector, as well as in biology, engineering, and the social sciences, including management.

Commonly today the term is used loosely but there is also a more defined science of systems thinking building on foundational thinking by people such as Ludwig Bertalanaffy, Stafford Beer, Jay Forrester, Peter Checkland, Peter Senge, Russell Ackoff, W.R.Ashby and Donella Meadows. There is also a body of work on 'systems thinking' from a psychodynamic perspective and related works on management cybernetics focused on conceiving organizations as 'systems'. Peter Senge talks of 'personal mastery' but there are few other works linking the domains. There are a multitude of systems based methodologies that draw on systems principles and a handful of approaches closely related to the seminal thinking of the foundational thinkers.

5. THE NEED FOR SYSTEMS THINKING

In order to achieve better outcomes for a wider number of stakeholders, we often hear the call for more joined up thinking, a more holistic approach, more sustainable solutions, greater collaboration and more common sense.

> *All we lack, perhaps, the will to establish a more entire and connected perspective. Without such a systemic approach, I fear we will continue to deal with each individual crisis without seeing the connections between them.* Prince Charles in the July 2009 Richard Dimbleby Lecture.

Systems Thinking responds to this call. It is a means of understanding the joined-up-ness, understanding how things work together, what purposes are served and evaluating how effectively this happens. This understanding helps us discern high leverage from low leverage action. It provides us a basis for taking informed, meaningful action.

> *The proper role of management is to lead people to understand business as a system of work, as a system that links each worker's capacity to serve with a specific customer's needs.* Johnson and Broms, 2000

6. SYSTEMS THINKING BENEFITS AND CONCEPTS

Systems Thinking involves understanding an area of interest systemically, that is, as a part in a system of interrelated parts. We can gain an understanding through considering an area in terms of its behaviour as a system and part or sub-system of a larger system or larger inter-related systems. We can build up our understanding by considering, for example:

- What purposes are served?
- Who are the customers (and the customers' customers)?
- What are the outputs and outcomes?
- What are the inputs and who are the suppliers?
- What other stakeholders are there and what is their relationship with, role within and needs from 'the system'?
- What is the environment with which the system interacts?

It involves understanding the various different drivers and influences in the system and the consequential effect on behaviour or results. Systems Thinking draws on social, biological science, engineering and management to help gain a broader and deeper understanding.

Systems Thinking is a powerful discipline for seeing the structures that underlie complex situations.

The fundamental tenet of systems theory is that systems have properties and behaviours that are not properties of their components. This is termed emergence; emergent behaviours, emergent properties or synergy. The implication of this is that in order to effect any change, to avoid unanticipated and undesirable consequences, we need a broader understanding of how our area of focus works in relation to the whole. In other words, it follows that to understand, predict or design in these emergent properties, you have to be able to understand the system as a system, not just as a collection of parts. You can only do this using systems approaches. If you don't understand systems as systems, then you are constantly surprised by how they behave and are effectively unable to manage them.

Systems Thinking therefore aims to avoid sub-optimising; i.e. optimising one component or priority to the detriment of more over-arching goals and priorities. For example, achieving cost reductions at the expense of quality and service hence losing customers to the point of becoming more unprofitable. Similarly, adding features to the point of making a loss.

Systems Thinking advocates considering the relationship with the wider world and bigger picture. It also advocates considering different perspectives on a problem e.g. the people, processes, variation and theory of knowledge, as in Deming's System of Profound Knowledge (see SoPK section of the MoSO website).

This differs from traditional analytical approaches which are reductionist; narrowing focus and often losing sight of the significance of interconnections and the emergent behaviours; behaviours that are lost sight of by narrow focus. Systems Thinking aims to combine analysis with synthesis, by understanding the broader meaning, so retaining sight of the bigger picture.

Even when we understand areas of concern as a system we are always limited by where we choose to draw the boundaries and the angles of examination taken. This is one of the reasons that

advocates of the science of systems thinking are critical of some systems and process based approaches as not taking a sufficiently systemic perspective and understanding broader influences, perspectives and dynamics of the area of concern. Wherever we draw boundaries and narrow focus we invariably run the risk of sub-optimising; of losing sight of the bigger picture. To achieve a holistic understanding we need to consider where best to draw boundaries to gain a good perspective on the whole.

The aim of the practitioner then is arguably to understand how best to gain sufficient systemic understanding and determine appropriate action within the scope of their control and influence. (Specific debate on the merits and limitations on different approaches in achieving this is beyond the scope of this work to date but could be an interesting and useful development of it.)

In the words of Peter Senge, "Systems thinking is about whole… By understanding whole we learn how to foster health".

7. SYSTEMIC MANAGEMENT AND TQM – A COMPARISON

So how is Systems Thinking different from well-known and widely-deployed approaches such as Total Quality Management? A comparison was provided in Russell Ackoff's talk 'Beyond TQM', presented on 18th September 1992 at the University of Hull. [ref: SCIO website: www.scio.org.uk]

TQM	Systemic Management
Exceeding expectations of customers	Exceeding expectations of all stakeholders
Ask customers what they want	Stakeholders design what they want
Use continual improvement to get rid of what you do not want	Use continual improvement to get what you want
Use continual improvement to achieve incremental changes	Use discontinuous improvement to create leaps in performance
Efficiency	Effectiveness
Reductionism	Whole system
Optimisation of parts	Optimisation of the total system
Start solving the current problem	Start to design what you want and work backwards
No theoretical basis	Use proven relevant theory or create new theory to understand the phenomena being controlled
Practice based on knowledge and intuition	Practice based on understanding
Unintended weakening of controls that drive quality through inappropriate incentives	Align incentives with self-interests of all stakeholders with that of the organization
Assumes that more communication must lead to improved solutions	Align information flows to total system performance

This is not to suggest that organizations should not pursue TQM, 6-sigma, lean engineering or other approaches to help them improve. However if management and leadership wishes to embed changes within an overall, holistic way of working that leads to sustained success, then Systems Thinking has clear advantages.

8. SOME SELF EXAMINING QUESTIONS

Systems Thinking involves understanding, so it may be worth asking, for your organization:

- What is the identity/purpose of your organization (consider customers, suppliers and any other stakeholders)?

- Who is your customer, and their customers? How do those relationships work?
- What are your key outputs and desired outcomes? How does your organization add value and are there any critical outcomes within your organizational system that need particularly close attention?
- What are the inputs to your organization and which suppliers provide these? How well do your input processes work?
- What other stakeholders does your organization have? What is their relationship, role and needs from 'your system'?
- What is the environment with which your organizational system interacts (political, social, regulatory, economic)?

9. SOURCES OF FURTHER LEARNING

Key Introductory Texts - on aspects of / congruent with Systems Thinking

Peter M. Senge (1990) *The Fifth Discipline - The Art & Practice of The Learning Organization*. (Currency Doubleday) ISBN 0-385-26095-4 (Core text)

Recommended by: Lots of people! i.e. a well-known & well-read text (ER, AC, AH, TK, TR, TP, TB, MG)

Comment: I read his two books the Fifth Discipline and the Field book, which is all ST and use quite a lot of it - *Tony Brown*

Comment: Personally I'm a fan of this. As a popular management work that proselytises systems it's excellent. One Caveat - though highly successful and undoubtedly about systems, this was a contentious work with the systems dynamics community when it came out. System Dynamics as a discipline relies on building mathematical models of interactions within systems to predict counterintuitive behaviours. You could read the whole of 5th discipline without ever realising that its based on mathematical models and the implicit message of the book – that you can intuitively understand the emergent behaviour of complex dynamic systems runs exactly counter to one of the core messages of system dynamics that you can't intuit the behaviour of non linear systems – that they are counterintuitive. - *Patrick Hoverstadt*

Peter M. Senge (1994) *The Fifth Discipline Field Book: Strategies and Tools for Building a Learning organization*. (Currency Doubleday) ISBN 0-385-47256-0

Recommended by: Esther Ridsdale, Tony Brown, Alan Clark

Barry Oshry (1995) *Seeing Systems, Unlocking the Mysteries of Organizational Life*. (Berrett Koelher) ISBN 1-881052-99-0

Recommended by: Esther Ridsdale

Peter Checkland (1981) *Systems Thinking, Systems Practice*. (Wiley) ISBN 0-471-27911-0

Recommended by: Terry Peterson (core text), Tony Brown, Alan Clark

Other Texts - on aspects of / congruent with systems thinking

Russell L. Ackoff (1999) *Ackoff's Best: His Classic Writings on Management*. (Wiley) ISBN 0-471-31634-2

Recommended by: Patrick Hoverstadt, Terry Peterson (core text), Tony Brown (core), Malcolm Gall (core)

Comments: "I found this interesting as it starts with a generic model of a system", *Tony Brown*

Stafford Beer, *Heart of Enterprise* (Wiley)

Recommended by: Patrick Hoverstadt, Tony Korycki, Terry Peterson (core), Tony Brown, Alan Clark

Bela H. Banathy (1996) *Designing Social Systems in a Changing World (Contemporary Systems Thinking)*. (Springer) ISBN 0-306-45251-0

Recommended by: Tony Brown (core)

Bela H. Banathy (2000) *Guided Evolution of Society: A Systems View (Contemporary Systems Thinking)*. (Springer) ISBN 0-306-46382-2

Recommended by: Tony Brown

Ludwig von Bertalanffy (1976 - revised) *General System theory: Foundations, Development, Applications*. (George Braziller) ISBN 0-807-60453-4

Recommended by: Tony Brown, Terry Peterson (core), Alan Clark

Peter Checkland, Jim Scholes (1990) *Soft Systems Methodology in Action*. (Wiley) ISBN 0-471-92768-6

Recommended by: Tony Brown (core), Tony Korycki

Peter Checkland, Jim Sue Holwell (1998) *Information, Systems and Information Systems*. (Wiley) ISBN 0-471-95820-4

Recommended by: Tony Brown

Peter Checkland, John Poulter (2006) *Learning for Action*. (Wiley) ISBN 0-470-02554-9

Recommended by: Tony Brown

John Seddon (2008) *Systems Thinking in the Public Sector*. (Triarchy Press) ISBN 978-0-9550081-8-4

Recommended by: Tony Brown, Malcolm Gall, Esther Ridsdale

Comment: This author has long been a vocal critic of command and control management. In this book he examines the consequences of not using systems thinking, but, instead, relying on targets, incentives and economies of scale. Examples are taken from housing benefits, policing and social care. He advocates using systems thinking, replacing blame with responsibility and stresses end-to-end performance. – *Malcolm Gall*

Barry Oshry, *Leading Systems, Lessons from the Power Lab*. (Berrett Koelher) ISBN 978-1-57675-072-8

Recommended by: Esther Ridsdale

C. West Churchman (1984 - revised) *The Systems Approach*. (Delacorte Press) ISBN 0-440-38407-9. John Gall (2003) *The Systems Bible: The Beginner's Guide to Systems Large and Small*. (General Systemantics Pr/Liberty) ISBN 0-961-82517-0

Recommended by: Tony Brown

Jamshid Gharajedaghi (2005) *Systems Thinking: Managing Chaos and Complexity - A Platform for Designing Business Architecture*. (Butterworth-Heinemann) ISBN 0-750-67973-5

Recommended by: Tony Brown

Charles François (ed) (1997), International Encyclopaedia of Cybernetics and Systems, München: K.G. Saur.

Recommended by: Tony Brown

Charles L. Hutchins (1996) *Systemic Thinking: Solving Complex Problems* CO:PDS ISBN 1-888017-51-1

Recommended by: Tony Brown

Bradford Keeney (2002 - revised) *Aesthetics of Change*. (Guilford Press) ISBN 1-572-30830-3

Recommended by: Tony Brown

Lars Skyttner (2006) *General Systems Theory: Problems, Perspective, Practice* (World Scientific Publishing Company) ISBN 9-812-56467-5

Recommended by: Tony Brown

Gerald M. Weinberg (2001 - revised) *An Introduction to General Systems Thinking*. (Dorset House) ISBN 0-932-63349-8

Recommended by: Tony Brown

Brian Wilson (1990) *Systems: Concepts, Methodologies and Applications, 2nd ed*. (Wiley) ISBN 0-471-92716-3

Recommended by: Tony Brown, Malcolm Gall (core), Alan Clark

Brian Wilson (2001) *Soft Systems Methodology: Conceptual Model Building and its Contribution*. (Wiley) ISBN 0-471-89489-3

Recommended by: Tony Brown

Alan Clark (2007) *Picture Your Business: the way to extraordinary performance and quality*. (Word4Word) ISBN 978-09551677-5-1

Recommended by: Esther Ridsdale, Malcolm Gall

Comments: Contains a good practical start to process charts – *Alan Hodges*

Robert Pirsig (1974) *Zen and the Art of Motorcycle Maintenance: An Enquiry into Values* (The Bodley Head) ISBN 0-370-10338-6

Recommended by: Terry Peterson, Esther Ridsdale, Tony Brown (core), Alan Clark (core)

Comments: Powerful messages portrayed in a thought provoking way – *Tony Korycki*

Excellent philosophy about quality thinking – *Alan Hodges*

Essential in providing an underlying philosophy for quality – *Alan Clark*

Robert Pirsig (1991) *Lila: An Inquiry into Morals* (Bantam Press) ISBN 0-593-02507-5

Recommended by: Esther Ridsdale, Alan Clark (core)

Comments: Classic fiction exploring amongst other things the problems with reductionism; 'where the knife cuts'. The sequel *"Lila"* could be said to conclude that quality; patterns of value is what life is all about. Esther Ridsdale

Robert Louis Flood (1999) *Rethinking the 5th Discipline*. (Routledge) ISBN 0-415-18530-0

Recommended by: Julian Simcox, Antony Aitken

Comments: Adds complexity theory – *Antony Aitken*

'Includes an intro to the gurus of systemic thinking - Senge, Bertalanffy, Beer, Ackoff, Checkland & Churchman' - *Cover text on book*

Elliott Jaques with Wilfred Brown (1965) *Glacier Project Papers* (Heinemann) ISBN 0435851020

Recommended by: Terry Peterson

John Gall (1978), *SystemAntics*: *How systems work and especially how they fail* (Pocket) ISBN 0671819100

Recommended by: Malcolm Gall

Comment: A side-ways look. This book presents systems in the same spirit that Parkinson's Law and the Peter Principle were presented in management studies. It is an appropriate book for those already immersed in systems and beginning to question their own understanding. The author points out, for example, that 'fail-safe systems fail by failing unsafe' and that a complex system that actually works will have evolved from a simple system that also actually worked, *Malcolm Gall*

Stephen Haines, *Becoming a Strategic Thinker on a Daily Basis: Raise Your Strategic IQ for 21st Century Success.* Published paper as pdf on Stephen Haines.com website.

Recommended by: Alan Mossman

Eliyahu Goldratt (2004 – 3rd edition), *The Goal - A Process of Ongoing Improvement* (Gower)

Recommended by: Terry Rose

Comment: A business novel explaining the ideas which underlie the Theory of Constraints (TOC) developed by Goldratt. TOC as a concept is closely aligned to aspects of Systems Thinking therefore serves to show a practical application of ST on management thinking in a manufacturing environment. Also read *The Critical Chain* by the same author which uses TOC in a project management environment.

William J (Bill) Schwarz (2006), *Building a Generative Organization from Reactive Behaviour to Inspired Performance.* (Ardvark Global Publishing) ISBN 159971647X

Recommended by: Tony Korycki

Comments: Applying Systems Thinking principles and practices to executive behaviour and thinking, so an essential to address necessary changes in how leaders 'lead' – Tony Korycki

Patrick Hoverstadt, (2008) *Fractal Organization: Creating Sustainable Organizations with the Viable System Model*, (Wiley) ISBN 978-0-470-06056-8

Recommended by: Alan Clark

Comment: This book should be required reading for every manager. It is about a true science of organizations and as such is a serious book, although not without humour. As the author says, an effective science of organizations explains what they are; why they

work when they do and why they don't work when they don't; how to fix them when they are broken; and how to design them from new. – *Alan Clark*

O'Connor and McDermott (1997), *The Art of Systems Thinking – Essential skills for Creativity and Problem Solving*. (Thorsons).

Web Resources

www.scio.org.uk - the website of SCiO: Systems and Cybernetics in Organization, a community of practice for systems practitioners which has a table of systems approaches. Also contains further reading lists and recommendations at: http://www.scio.org.uk/toolbox

www.deming-network.org – the Deming Electronic Network or 'The DEN', The DEN web site and companion discussion list were created in 1994 as a focal point for sharing resources, discussions, learning, and research on the Deming Philosophy. These currently have more than 1,000 papers, essays, files, and programs; as well as more than 1 million archived discussion list messages freely accessible in the web site.

www.managementkybernetik.com/en/index1.html - Carel Isaf Institute was set up by Stafford Beer and Fredmund Malik and named after the cottage where Stafford lived in Wales. The website provides first-hand information on management cybernetics or, as it is also called, the science of effective organization.

www.pegasus.com – Pegasus Communications Inc offers an array of resources and opportunities for advancing your knowledge and skill in systems thinking and other innovative approaches to management.

www.fieldbook.com - home to *The Fifth Discipline Fieldbook* Project, currently featuring *Schools That Learn* & *The Dance of Change: The Challenges of Sustaining Momentum in Learning Organizations*,

http://forum.thecqi.org/forum/?f=32 - CQI web site 'systems thinking' discussion network

http://www.linkedin.com/groups?mostPopular=&gid=2639211 - Systems Thinking World is the LinkedIn networking group on 'systems thinking'

http://www.idea.gov.uk/idk/core/page.do?pageId=11216560 - Local Government Improvement & Development, Innovation, Deming & Systems Thinking discussion threads in UK Local Government

THE DEMING APPROACH

Lead Author: Alan Clark

Reviewers: Tony Brown, Terry Rose, Alan Hodges, Val Thomas, Kate Kelly, Ros Allcott and Tony Korycki. Thanks to Pauline Clark for editing this article.

1.0 OVERVIEW

The aim of this article is to draw out the essence of Deming's approach to management and its continuing relevance to managers. The Deming approach is a reasoned, wide-ranging system of management that delivers consistent high performance over the long term. It views an organization as a whole system focused on meeting the needs of the customer and other stakeholders, which means quality is the central value. Improving quality reduces wastes and hence improves productivity. There is a short insight into the sort of person he was and a Deming Timeline.

2.0 SUMMARY

The Model of Sustainable Organization (MoSO) web pages have been inspired by the writing, teaching and lecturing of Dr W. Edwards Deming. It is therefore appropriate that this article on the website provides some information about Deming.

Deming was possibly one of the most influential 20th century figures in the World, as we know it economically and organizationally. His contribution will continue long after his death through his thinking about management.

This article aims to draw out the essence of Deming's approach to management in private, public and not-for-profit sectors of society and its continuing relevance to managers. The Model of Sustainable Organization (MoSO) diagram, which is the subject of this website, has its roots in the Deming flow diagram (*Out of the Crisis* p.4 and *The New Economics* p.58) that is critical for understanding and applying his approach.

Deming Management, as outlined below, follows Deming's own lecturing, teaching and writing. It is intended to complement the MoSO Principles, which are written in more up- to-date and widely applicable terms.

Appendix 1 contains some impressions about the sort of man he was. There is a short insight into Deming's personality.

Much has already been written about his life. The article contains what is intended as a comprehensive Deming Timeline in Appendix 2.

MAIN CONTENT

3.0 THE HEART OF DEMING MANAGEMENT

During his long life Deming developed an approach to achieving enduring success for organizations and the managers and people working in them. Its origins were in his life experiences, education and significantly, in the work of Dr Walter A Shewhart on quality and statistical methods.

A manager, said Deming, is primarily a manager of **People**. This is in line with many thinkers, teachers and writers on organizations and management including Douglas McGregor, Frederick Herzberg and William Ouchi. People, given respect, the context and freedom to contribute, make the difference in achieving enduring organizational success. More radically he said management should ensure **joy in work and in learning for everyone**!

People are born with the potential for intrinsic motivation, self-esteem, dignity, cooperation, curiosity, innovation and joy in learning. Intrinsic motivation means inherently wanting to do a good job. All of this can be destroyed by life, education and work experiences such as ranking and rating, competition, trying to look good and extrinsic motivation. Extrinsic motivation is the complete reliance on external pressures, such as rewards and punishment – "If you do this you'll get that." Deming Management therefore advocates the removal of extrinsic motivation and the creation of conditions in which intrinsic motivation, self-esteem, dignity, cooperation, curiosity, innovation and joy in learning flourish.

Deming's approach is distinctive because of its far greater range of principles, knowledge and understanding. The seven themes below seem to be at the heart of this difference. It is the **combination** of these themes with the people aspects that achieves enduring organizational success.

3.1 ***The Customer*** is the most important part of the 'production line', or service provision. This means the focus must be on customer satisfaction. Deming often referred to customers as consumers, highlighting that it is the users of the outcomes who are the focus and not necessarily those who pay the bill.

Researching and therefore understanding the needs of the customer, now and in the future, is perhaps his fundamental principle. This was taught by Deming to Japanese management in 1950 and still holds today. The second principle, which follows from this, is that it is impossible to even estimate the future losses resulting from a dissatisfied customer.

Properly understanding the needs of the customer should lead on to **innovation**. Deming is often misrepresented as promoting only continual improvement of products and processes. Time and again he emphasises the need for innovation, which is absolutely the responsibility of the supplier or provider.

3.2 Only the customer can define ***Quality***. Everything flows from quality. Quality is not an incidental or support issue but the central issue for management.

Deming referred to his approach as **Management for Quality.** This is quite different from the familiar Management by Results or Objectives, which often ends up as just setting targets, often arbitrarily. Management for Quality focuses on customers' needs and the methods used to produce outcomes to satisfy them.

See pp 27, 255 & 408 in *Deming Dimension* Dr Henry Neave

3.3 ***The Chain Reaction*** was used by Deming to assert that quality and productivity are able to coexist. In fact quality is fundamental to achieving the best productivity. His chain reaction may be summarised as:

Improve Quality ➔ Costs Decrease ➔ Productivity Improves ➔ Prices Decrease ➔ Market Increases ➔ Stay in business ➔ Create jobs and more jobs

Adapted from *Fourth Generation Management* by Brian Joiner

Quality had also been identified earlier in the 20th century by Henry Ford (he called it accuracy) as being essential for productivity. This was one secret that Toyota learned from Ford and Deming. Lean management, which derives from the Toyota Production System, is thus also based on quality.

3.4 ***The Deming Wheel or Plan-Do-Study-Act (PDSA) Cycle*** is the way to put quality into practice both day-to-day and strategically. It includes the way to look at any organization as a system serving the customer. It is a learning cycle, based on **Scientific Method***, which applies to individuals, organizations and society. Every employee and manager should use PDSA to drive continual improvement and innovation. Kerridge (2008) suggests Deming's management approach was based on Scientific Method, as laid down by Walter A Shewhart, and process improvement, though relevant, was a minor part.

Improving quality starts by observing the whole situation. Deming later used "Study" rather than the previous "Check"; hence PDCA, since check could imply a tick in a box. Study on the other hand implies more thorough observation and review of the situation consistent with Scientific Method. Study in PDSA initiates feedback in the learning cycle.

*Scientific Method is the investigation of observable events (sometimes extraordinary ones), the acquisition of new **knowledge** or the correction and integration of previous **knowledge**. It features the collection of data through observation and experimentation, and the creation and testing of possible explanations, known as hypotheses. Possible explanations are proposed for the observed events. Experiments are then designed to test these possible explanations, the results of which must be repeatable. Scientific inquiry often includes significant original thinking and creativity. Crucially scientific inquiry also involves much social interaction. Explanations are **useful when they enable predictions** to be made. For more information see http://en.wikipedia.org/wiki/Scientific_method.

3.5 ***Systems Thinking*** provides an end-to-end view of the **flow** of activities in an organization from supplier to customer. Meeting the needs of the customer must be the **aim** of an organizational system. To maintain that aim th*e Systems Thinking view of an organization recognises that* **feedback** is required to continually adapt the outcomes to meet ever changing customer needs.

Systems Thinking understands that outcomes, results and performance emerge from the interaction of all the elements that make up the system. Any system is defined by its chosen boundary. There will also be influence from outside the system boundary.

Deming recognised the importance of viewing any organization as a whole. The people and parts of the system are all important and work together. His **flow diagram** shows the integration of all parts of an organization. *The critical* feature of the flow diagram is that it

models a **feedback** system that continually adapts the outcomes to keep them in line with customer needs. It is management's job to **Optimise the System** with everyone's help.

Here 'optimise' means making delivery of products or services as good as possible to meet customer needs. This is achieved by balancing or making trade-offs between all of the factors such as human needs, suppliers and partners, returns for investors, impact on society, the environment and natural resources. Eliminating waste from the system, maximizing human contribution and planning sustainability through a long-term commitment to innovation helps to achieve optimisation.

Financial engineering or control, appraisal systems, extrinsic motivation (such as incentives), measuring only outputs not throughputs and short term thinking are some of the factors that **sub-optimise** performance of the system.

The MoSO diagram has its roots in the Deming flow diagram that is critical for understanding and applying his approach.

3.6 ***Understanding Variation*** is an essential part of 'Study' when using PDSA in continual improvement and innovation. Study, which means understanding the whole situation, requires measurement. Measurement of any aspect of an organization provides objectivity to counterbalance human nature. Measurement also allows us to know whether, and how much, change has been achieved. This is Scientific Method.

In the real world, measurements are subject to random variation. Furthermore Deming stated that there is no true value of anything, since it depends on how it is measured. The random variation comes from the complexity of the interactions in any organizational system or process. From time to time there will also be significant exceptional or special causes of variation.

Deming advocated the use of Shewhart's Control Chart as the method for accommodating this variation in measured data to enable sound action to be taken. This method puts the measurement data into a graph against time and adds three decision lines calculated from the variability of the data. It is then possible to:

- decide if the system or process is stable enough for it to be safe to take action based on the measurements – Shewhart's main innovation
- distinguish exceptional events from chance variations
- show if a change has been an improvement

Donald J Wheeler is one of the leading writers and teachers of this technique for understanding variation. He calls it **Process Behaviour Charting**. The author of this article prefers it to the common alternative: Statistical Process Control (SPC). The reason is, apart from being more descriptive, it avoids the misunderstanding that it in some mysterious way the chart can control the data. The chart indicates the stability of the process, changes in the process and whether extraordinary events have occurred. Operators and management must act to **change the process** to achieve stability.

Process behaviour charting should be applied to **all** boardroom, management, process and quality data in all organizations. Indeed the technique has far greater application outside the field of manufacturing in which originated.

3.7 Effective ***Leadership*** inspires and engages people in ongoing change. It works through the six themes above, particularly leadership of the system. Thinking systemically does not appear to come naturally to many managers who either think linearly or become lost in the detail of daily life. Only leadership from management can initiate and sustain changes to the system in organizations and so achieve the outcomes.

The Customer, Quality, the Chain Reaction, the PDSA Cycle, Systems Thinking, Understanding Variation and Leadership can be seen to run consistently through Deming's writing and teaching. It is the **combination** of these seven distinctive elements with the people aspects that is important. You cannot cherry-pick the ones you 'fancy'. The approach is developed in the following section.

4.0 THE TRANSFORMATION OF MANAGEMENT STYLE

Transformation starts with the individual, particularly individual leaders and managers. True transformation takes place slowly.

The prevailing way organizations are managed is not effective in achieving consistent high performance in the long run and requires radical change or transformation of management style. This is Deming's stark message.

Too many conventionally managed organizations are not able to endure in the long term and produce all sorts of unintended consequences and side effects. Currently there is the new challenge of creating environmentally friendly organizations.

The evidence is all around us. In his book *The Living Company: Growth, Learning and Longevity in Business,* Arie de Geus states, "The average life expectancy of a multinational company… is between 40 and 50 years. … A full one-third of the companies listed in the 1970 Fortune 500, for instance, had vanished by 1983 – acquired, merged or broken into pieces." He goes on the quote Ellen de Rooij of the Satrix Group whose research suggested that the average life expectancy of companies in Japan and Europe was only 12.5 years!

Toyota Motor Corporation is perhaps one of the most visible examples of an exception and after World War 2 was influenced by Deming, being revered there still. Even though it has been affected by economic cycles it has outperformed its competitors throughout the world over the long term. It has become the World benchmark for manufacturing companies.

Other articles in these web pages and in the CQI Body of Quality Knowledge go into the detail of all the aspects of Deming's thinking and approach for managers. However, for completeness mentioned below are the well know elements of the Deming approach from which this article has drawn out the above distinctive elements of his approach.

The most important is the ***System of Profound Knowledge*** (SoPK), which identifies the balanced structure of four essential fields of knowledge that managers require for the most effective, transformed style of management. In *The New Economics for Industry, Government, Education* he listed them as:

- Appreciation for a system – *performance comes from parts working together*
- Knowledge about variation – *proper measurement and use of statistics*
- Theory of knowledge – *conscious domain knowledge about the business*
- Psychology – *understanding people's needs - and why they behave as they do*

He called this a *System* because each field is related to the others and cannot be considered in isolation. This has deep implications for the education and training of management, which rarely considers all of these elements and almost never as a complete system.

Using this wide range of knowledge provides what he called a **lens** to view and understand an organization in its context. Thus facilitating transformation from the prevailing Western management style to the one of optimisation, achieving what we are calling a sustainable organization. This distillation of the knowledge managers require came in his final book. It is, however, consistent with his teaching throughout his life.

The famous **14 Points or Obligations for Managers**, the **Deadly Diseases** and the **Forces of Destruction** all flow from SoPK.

It is important to understand that these approaches were aimed at management and that they were in the form of principles. Ironically although one of his most famous questions of managers was, "By what method?" he hardly ever told managers a method or how to do something. The outstanding exception is the use of the Shewhart control chart to understand variation in the measurement of system and process characteristics.

5.0 ARE THERE BENEFITS FOR MANAGERS FROM USING THIS APPROACH TODAY?

Arguably Deming Management is more important today than it ever was. Customers have new priorities and the World is moving ever faster under the influence of rapidly developing information and communications technology. For managers and their customers the global economic recession, which was triggered by the 2007 sub-prime mortgage collapse is certainly a crisis, harks back to the 1980s crisis addressed in the title of his book *Out of the Crisis* and the one faced by Japan after World War 2. Added to which the spectre of global warming is still with us increasing the complexity of the operating environment for every organization.

Systems thinking and leading an organization as a whole system are the better way to handle this complexity and emerge stronger from these crises. Making the most of the abilities of everyone in the organization to continually improve and innovate can deliver better processes and products or services.

People interacting within any organization and externally with customers and wider society forms a system. The enduring success of an organization depends upon the quality of the outcomes from the organization as perceived by the customers. How the people working in an organization feel depends upon the extent to which they are able to engage with and contribute to the aims of the

organization. How they engage with it will determine the quality and economic success of the organization. There is also the impact an organization makes on the outside world in addition to the products or services that it supplies, which includes the impact on the environment and society.

Managers, by whatever name, appear to have been part of most organizations throughout recorded history. The job of a manager is to optimise or balance or seek trade-offs to satisfy customers, investors and society at large. Deming's approach facilitates this balancing act.

People working together encounter problems achieving the outcomes that their organization strives to deliver to customers. Some of the problems derive from human nature and some from the sheer complexity of what they are trying to achieve and how they are trying to achieve it.

Managers, especially senior managers, are challenged by Deming that they are not doing and do not know their job! This was based on his direct experience combined with his knowledge of statistics and science.

Senior management, both in companies and the Public Sector, appeared to Deming to believe, and unfortunately continue to believe, that all they have to do is set near impossible standards or targets, so-called "stretch targets". They give the impression of having no interest in whether the standards are attainable nor in the changes necessary to methods and equipment to achieve these targets and even whether their policies must also change. They seem content to employ specialists to handle the "technical" details of performance and quality. Deming firmly believed that quality is made in the Boardroom. In the Red Bead Experiment (see *The New Economics*, Chapter 7) Deming demonstrated management setting impossible targets without any attempt to determine if the targets can be met nor making any changes to the system.

Certainly Deming has contributed to the World as the statistical expert that he was through his books, see below, and over 170 academic papers. However, he was not purely an academic as witnessed by a "hot" online debate that ensued at the end of 2007 on the Deming Electronic Network (DEN) after one contributor suggested this.

The consensus was that he was interested in using scientific method and statistics, and particularly his emphasis on theory (proven explanations of observed events), *in order to find practical ways to solve business problems*. Contributions on the DEN at that time from Del Nelson and John Dowd show that Deming also genuinely cared about people and improving the quality of life of everyone in the world of work. Something many managers have yet to do.

Today the Deming emphasis on verified **knowledge**, based on evidence obtained through ongoing scientific inquiry, is the key to sustainable organizations, ones that endure in the long term whilst minimising their environmental impact through continual improvement and innovation.

6.0 YOU SAY THIS IS BASED ON HIS DIRECT EXPERIENCE?

Deming worked his way through school and higher education and knew what it was like to be a worker. One of his vacation jobs was at Western Electric in the summers of 1925 and 1926, ironically at the same time as Dr Walter A Shewhart, although they did not meet until a year later. Perhaps it was with the worker's life in mind in his book *The New Economics* he related the warning from his new boss at Western Electric not to get caught on a stairway when the whistle blows for fear of being trampled to death. It seems he understood only too well how bad the experience of work was for many people.

He also knew what it was like to be a manager. According to Bill Cooper, in a posting to the DEN on 20-Dec-2007, Deming corrected the view of him only as a statistician and consultant, "I managed 450 people when I worked at the Census Bureau and together we developed the methods, procedures and processes that are used by the Census Bureau today."

When he went to Japan in 1950 he was keen to talk to senior management, for it was already his experience as a consultant that management would not willingly get involved the detail. Rather they would delegate quality matters to the quality specialists. Thus in 1981, triggered by the groundbreaking 1980 NBC TV documentary "If Japan can why can't we?", when the Ford Motor Company asked for his help, he insisted on only working with the CEO, Don Petersen. His experience in World War 2 and Japan showed that the leader must personally lead the change and the change must come from within each person.

7.0 YES, BUT IS THIS ALL STILL RELEVANT TODAY?

Definitely. Whilst quality has improved in many organizations the original approach has been lost. One only has to look at the media to see the current preoccupation with targets, particularly in the public sector. Politicians wanting the quick-fix "instant pudding" of demonstrating that they are

'doing something' by setting a target. No consideration being given to how the target can be achieved.

Targets in a more subtle way bedevil the private sector. The myopic focus on shareholder benefits and the expectations of the returns on investment by stock markets is just another manifestation of the target mentality. Deming was not against targets *per se*. He understood that there were facts-of-life (survival) numbers. What he railed against were arbitrary, externally imposed targets that lack planning or method and the exhortations that accompany them.

8.0 DEMING MANAGEMENT IS NOT JUST ABOUT STATISTICS THEN?

No! Categorically not.

In the Deming approach, management is responsible for the whole system that includes people as well as methods, processes and suppliers. Statistics is just one of the four essential fields of knowledge that enables managers to take a balanced, outside-in view of the whole system.

9.0 CONCLUSION

The Deming approach is a reasoned, wide-ranging system of management that delivers consistent high performance over the long term. It views an organization as a whole system, focused on meeting the needs of the customer, which means quality is the central value. Improving quality reduces waste and hence improves productivity.

Organizations comprise people working together to achieve this aim. It is the job of management to create the conditions within the organization in which people can maximise their intrinsic motivation, self-esteem, dignity, cooperation, curiosity, innovation and joy in learning. Intrinsic motivation means inherently wanting to do a good job.

Management must lead the organization as a system that continually improves and innovates using the PDSA Cycle. An essential part of PDSA is measurement of performance, which is then analysed using Shewhart's statistical methods.

Parts of the approach are seen throughout current management practice. However, where the full system of management is applied over the long term the result is enduring high performance.

Adoption of this approach to management starts with you, the individual manager, really wanting sustainable high performance, wanting things to be different and being willing to start to do things differently. The starting point is to ask yourself where you are now.

10.0 MOSO HEALTH CHECK:

Deming inspired questions to ask yourself and your fellow managers

- To what degree are we an organization that thinks in terms of the whole system of operation, stakeholder interests, process flow and quality?
- Who are our customers, the consumers of our outcomes?
- How focused are we on our customers?
- What research do we do on the needs of our customers?
- In what ways are we pushing for innovation?
- How do create the conditions in which creativity and innovation can thrive?
- What evidence do we have that quality is a central issue for us as managers?
- How does the Board of Directors use quality as a basis to set policy?
- To what extent do Directors (Executives) and all managers set an example about the importance of quality?
- What proportion of our focus is on productivity and how much is on quality?
- To what extent is the PDSA (or PDCA) cycle central to the way we run our organization?
- How much performance management and appraisal of individuals is there and how is this consistent with systems thinking?
- What evidence do we have to show how we concentrate on continually improving and innovating the flow in the end-to-end series of activities that are our value-adding chain?
- How can we demonstrate that the way we apply measurement based on a proper understanding of process behaviour, variation and the use of statistics?

- How are we continually improving our leadership and that of everyone in our organization?

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APPENDIX 1
WHAT SORT OF A MAN WAS DEMING?

Firstly Bill Cooper, who worked with Deming, in an insightful posting to the DEN on 20-Dec-2007, said that he defied categorisation. Cooper says he was many things including an academic; a theorist; a practical person who was interested in systems and their effect on organizations and their successes, or failures; a mathematician; a physicist and, reading further, the best kind of teacher – one who made you think.

To many people he was a stern-looking tall old gentleman in a three-piece suit. He could be critical and did not suffer fools gladly. Earning perhaps the "glare" remarked upon by Cooper in his posting. Possibly he was entitled. Having been scientifically educated and become eminent in statistics, he might not be expected to consider kindly partially thought out or ill-conceived questions.

One has a deep sense of a respectful, highly ethical stance emanating from his faith. In his books he was scrupulous in giving credit to those who had made a contribution. His respect manifested itself in his approach to the Japanese that was in stark contrast to the arrogance of many Americans in the occupation forces after World War 2.

In 1950 The Deming Award was formulated by JUSE with the funds accumulated from reprints of his lectures propagating his philosophy across Japanese industries. Possibly this was his most important legacy. The recognition it conferred encouraged Japan to take these ideas forward. Good examples are Taguchi and latterly Shiba plus the list of company transformations recognised, including Toyota in 1965.

Amongst his friends he was known for his kindness and consideration for those he worked with. He had a robust, if very subtle, sense of humour. Deming knew how to have fun. He was also a musician and composer.

Further insight into Deming as a person can be gained from reading an article by Lisa D McNary, which can be found at http://www.spcpress.com/pdf/deming_memorial_essay.pdf. Lisa was the last postgraduate student to be mentored by Deming. We get a picture of Deming as the challenging teacher contrasted with the way his humour and humanity shone through. This humanity is as important as any part of his approach.

APPENDIX 2
A DEMING TIMELINE

Deming		Parallel events
Born 14 October, Sioux City, Iowa	1900	
Starts at University of Wyoming Electrical Engineering	1917	
Graduates with B.S.	1921	
Received an M.S. from the University of Colorado	1924	Dr Walter A Shewhart called in by Western Electric
Summer work at Western Electric, Hawthorn Plant	1925	
Summer work at Western Electric, Hawthorn Plant	1926	
Starts work at US Department of Agriculture	1927	
Introduced to Shewhart by Dr C.H.Kunsman of USDA	"	
PhD in mathematical physics from Yale University	1928	
	1931	Shewhart publishes *Economic Control of Quality of Manufactured Product*
Studied in London for a year under Dr R A Fisher	1936	
Statistical Adjustment of Data first published	1938	
Invited Shewhart to lecture at US Dept. of Agriculture	"	
Adviser in Sampling, Bureau of the Census	1939	Shewhart publishes *Statistical Method from the Viewpoint of Quality Control*
	"	World War 2 begins in Europe
	1941	Pearl Harbour – War begins in the Pacific
Teaches first wartime course to engineers & inspectors	1943	
	1945	World War 2 Ends
Professor of Statistics, Graduate School of Business Administration, New York University	1946	American Society for Quality Control formed
First visit to Japan to work on census	1947	
Establishes practice as a statistical consultant	"	
In Japan on 13 July spoke to 21 CEO's which totalled 100 that Summer	1950	
Some Theory of Sampling first published	"	
Elementary Principles of the Statistical Control of Quality, published in Tokyo, in English	"	JUSE established the Deming Prize for Quality
In Japan spoke to 400 Japanese business leaders	1951	
	"	Deming Prize for Quality first awarded
Awarded ASQC Shewhart Medal	1956	
Recipient of the Second Order Medal of the Sacred Treasure from Emperor of Japan	1960	
Sample Design in Business Research published	"	
Made Honorary Member by ASQC	1970	
Starts working with Bill Conway at Nashua Corporation, New Hampshire	1979	
First 4-day seminar at Sheraton Tara Hotel, Nashua, NH		
"If Japan Can, Why Can't We?" aired on public service TV	1980	
First recipient of ASQC Deming Medal	"	
Starts working with Don Peterson at Ford Motor Company	1981	
Quality, Productivity & Competitive Position published	1982	
Out of the Crisis published	1986	
Received National Medal of Technology from President Ronald Reagan	1987	
The New Economics published	1993	
Dies 20 Dec at his home in Washington, D.C.	"	

SYSTEM OF PROFOUND KNOWLEDGE

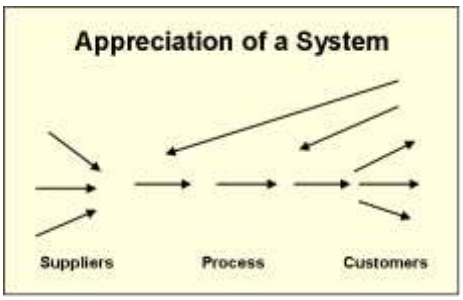
Lead Author: Malcolm Gall Reviewers: Terry Rose, Alan Clark

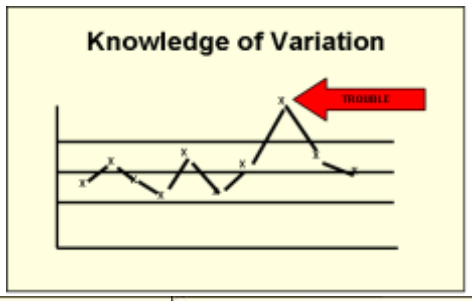
OVERVIEW

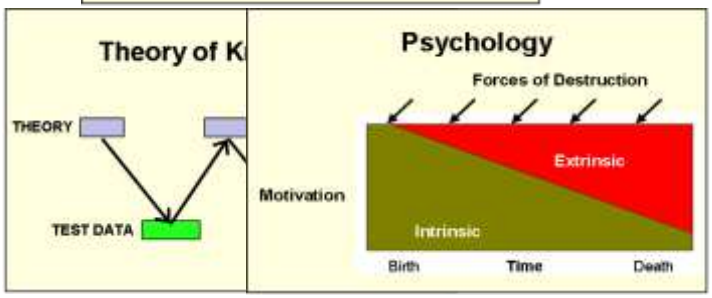
The system of profound knowledge is basically the thought processes we use to help us understand

- the world in which we live
- the family to which we belong
- the organization in which we work, even
- the team in which we work.

Fundamentally it is about viewing any organization from the outside through four lenses which often interact with one another:





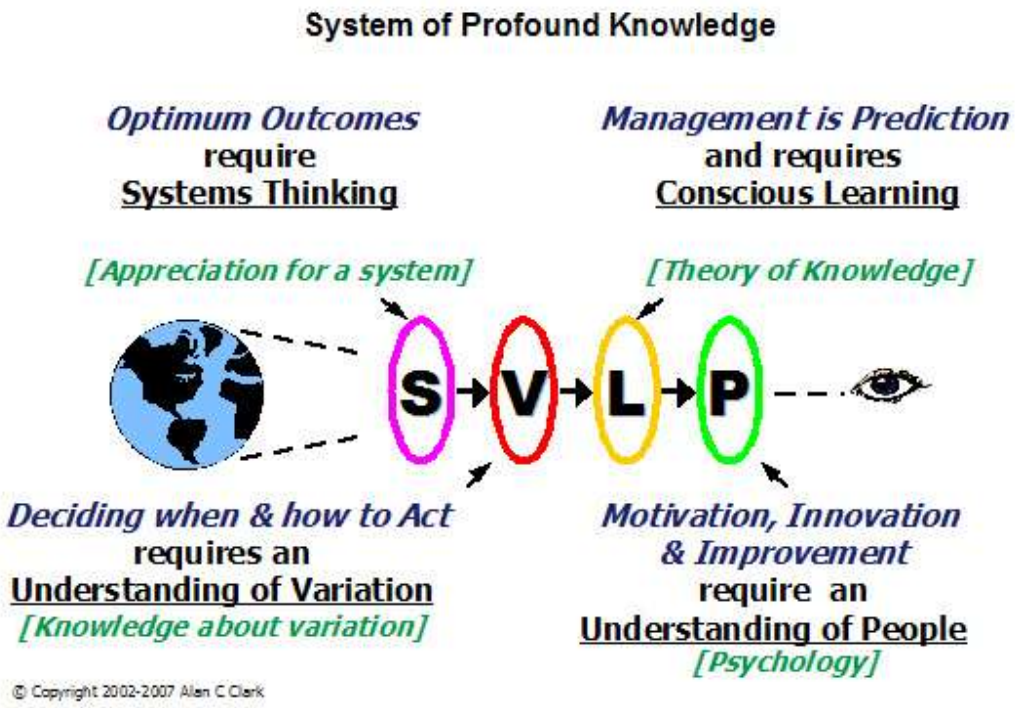


MAIN CONTENT

SoPK is a useful approach with which to view a problem and any proposed solutions.

The four lenses of the system are inextricably linked. However you do not have to be an expert in any of them in order to use the system.

Usually organizations need a view from outside in order to understand themselves. The system of profound knowledge can provide this.

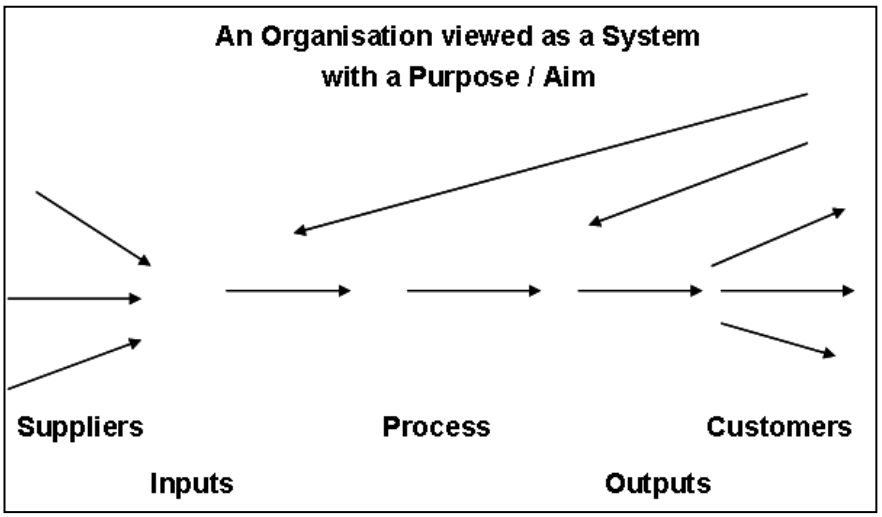


The system of Profound Knowledge can be thought of as a compound lens to view the world as depicted on the next page supplied by Alan Clark.

APPRECIATION OF A SYSTEM

A system involving people must have an aim; otherwise it has a destiny of negative, or at best, ineffectual action, or collapse. The system is a network of interdependent components that work together to try to accomplish the aim. A human example would be a football team. Lack of appreciation of the system leads to silo thinking and sub-optimisation in its elements, to the detriment of the aim of the whole. eg. "My department has got to win" is not an attitude focussed on the customer and may lose the organization business. The results of failing to recognise a system are often described as "the law of unintended consequences".

The



appreciation of a system also includes an understanding of the relation between the organization and its environment.

The process diagram raises our awareness of how our involvement and our department (or our project) contributes, interacts or influences the achievement of the aims of the organization.

KNOWLEDGE OF VARIATION

Knowledge of variation allows us to predict, in some circumstances, the outcome or result of a process and series of measurements.

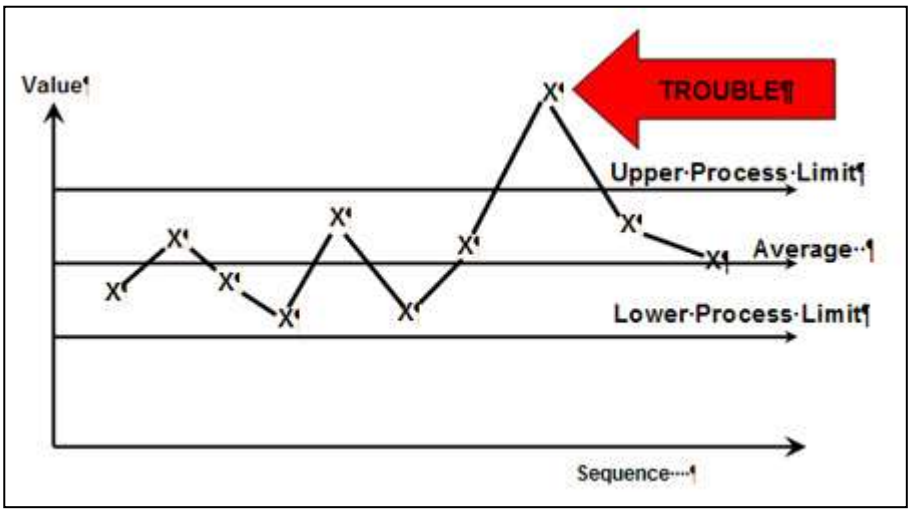
For any process, the measures we use to monitor the acceptability of the work can be recorded / plotted on a process behaviour chart (also called a Shewhart or control chart). The charts show changes over time or batches which helps identify whether materials people methods or equipment has changed and affected the process.

By analysing the data, the average results and range results can be plotted and then the upper and lower control limits can be calculated. The limits on the chart are calculated empirically from the data, and are set from economic criteria not any statistical model. This is the fingerprint or signature tune of the process, the voice of the process.

- points recorded outside the process (control) limits are termed special cause
- points recorded between the process (control) limits are termed normal causes

Use of Charts

Extraordinary variation comes from special causes of variation. These can be detected, as signals on a process behaviour chart, and tend to be localised in time or sequence. It is usually economically worthwhile investigating and removing them, to make the process stable and predictable.



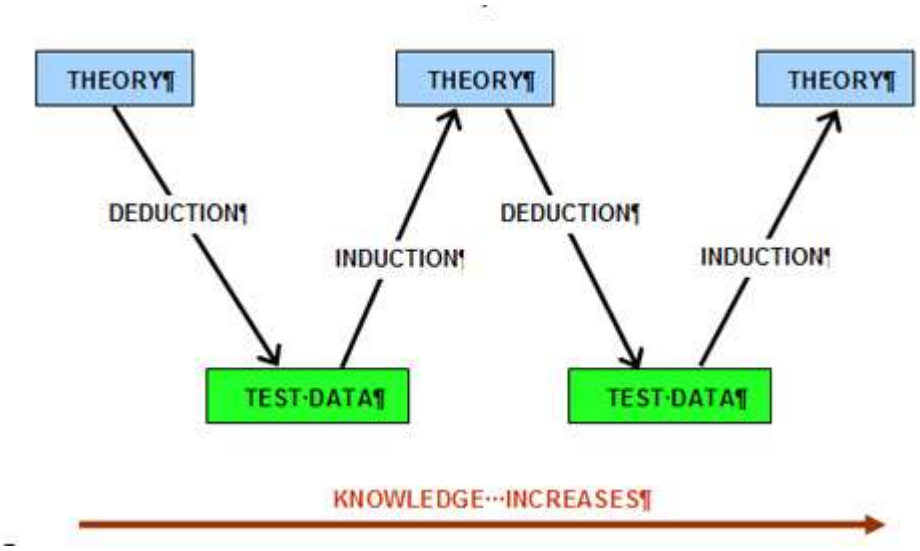
The output of a stable process shows as results between the process limits. This output can be predicted to an extent. The next individual point cannot be predicted, but the average and spread can be. The spread stays within the limits. A stable process can do no better. It is subject only to common causes of variation. This is *the Voice of the System*. This can be compared with what the customer wants, *the Voice of the Customer*, which may, or may not be expressed as a specification.

If a different average or smaller spread of output is required, then the process has to be subjected to improvement or innovation. This is likely to be a management responsibility. Tampering (adjusting a stable process) can increase variability.

Lack of appreciation of the difference between special and common cause inevitably leads to incorrect management action. Only processes subject to common cause variation are predictable; those subject to special causes are not.

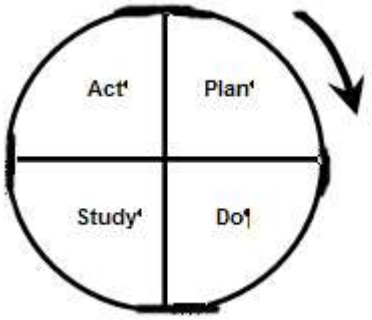
THEORY OF KNOWLEDGE

Theory is a necessary requirement for application of reasoning. It is a framework. Theory must be tested for its ability to predict and its usefulness.



The PDSA cycle is a shorter, more focussed version of the applied scientific method.

PDSA cycle can be used for learning, improvement or innovation, provided the system is stable during the time you go round the cycle.

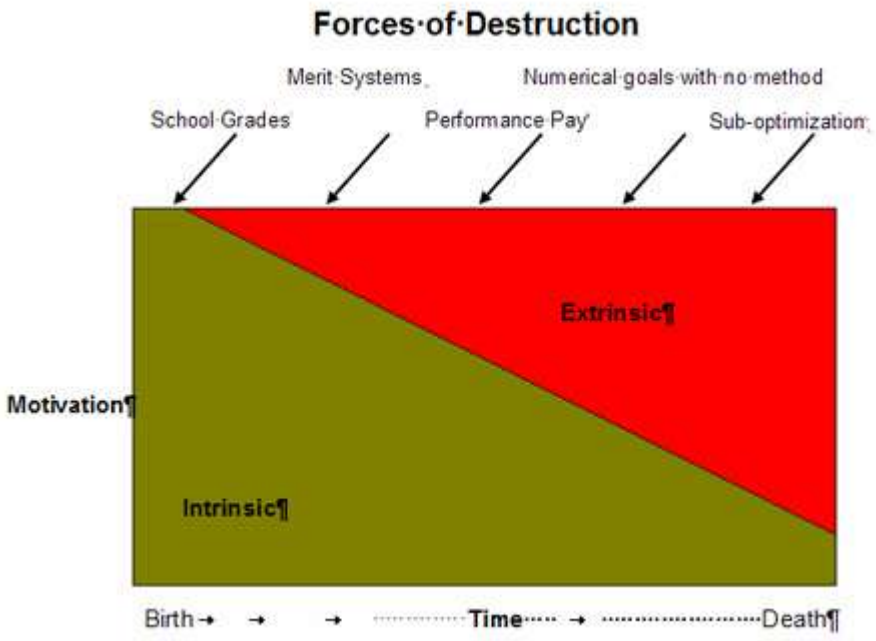


The job of management inevitably involves prediction. Prediction comes from theory. Without theory , examples and experience are unreliable guides. Initiatives based upon "common sense" can produce counter- intuitive and counter-productive results.

Another area where confusion and damage can be reduced is by the use of Operational Definitions. Operational Definitions (which comprise a test for the concept, a criterion for passing the test and a decision whether the test has been met or not) are very useful to give communicable meaning to a concept, or even a word. This reduces variation between people who have to use the concept together. If a concept is important enough it is worth the effort involved in setting up an operational definition. An example of an operational definition would be a standard test method. If necessary, operational definitions can be improved by using devices such as the PDSA cycle.

PSYCHOLOGY

Human motivation is of two types: extrinsic and intrinsic. Extrinsic motivation uses external stimuli, eg rewards and punishments, which can be material (eg money) or emotional (eg status or fear). This is found in command and control organizations. Intrinsic motivation comes from within the person. It shows itself as self-regard and a desire to learn, and leads to a pride in workmanship.



SOME EXAMPLES OF INTERACTIONS OF THE FOUR LENSES…

Psychology

System	Failing to use the strengths and opportunities arising from the interdependence of people.
Variation	Fear generates wrong figures.
	Ranking people without understanding natural variation.
	Setting performance targets without understanding the difference between average and extreme values.
Theory of Knowledge	People learn in different ways. They acquire knowledge differently.
	In the absence of operational definitions people ascribe different meanings to words.

Theory of Knowledge

System	The application of learning to only one component of a system.
Variation	In PDSA cycles the Study phase is curtailed due to lack of appreciation of variation.
Variation	Process charts on a small part of the system do not reveal the full benefits.
System	Not recognising that wrongly timed feedback increases variability.
	Using a performance measurement target that assumes a single number tells you all you need to know about a system.

Looking more deeply into cases will often reveal interactions between three or four of the elements of Profound Knowledge.

If you want to know more……

This system was first presented by Dr W E Deming during 1987 -90, to explain the basis of what he was saying in his Four Day Seminars, looking back to his Fourteen Points for management, as deployed in "Out of the Crisis". This System of Profound Knowledge was expounded in "The New Economics". A longer account is given in "The Deming Dimension" (H R Neave).

SOME FREQUENTLY ASKED QUESTIONS

What use is a knowledge of variation ?

Without it the numbers might mislead you – it is difficult to evaluate the possible effects of chance, or to sort signal from noise. If you are studying a process, without current knowledge of variation, you will not know whether it is stable or not.

Why is the Theory of Knowledge useful ?

Don't be put off by the terminology, which sounds very philosophical, and therefore of questionable relevance to people in the real world. Theory of Knowledge is about learning and knowing which facts are useful and reliable in a given set of circumstances. For example, the output of a stable process is predictable in the future, provided circumstances do not change.

Why have appreciation for a system ?

Because processes, operations and people are often linked and changes in one can easily affect another, often with unpredictable consequences. This applies to physical systems as well as to organizations of people.

What use is psychology ?

This is a vast subject, so for a start just consider the motivation of people. Their motivation directs their behaviour and actions. Organizations benefit from constructive and cooperative behaviour.

Why have these four been linked together ?

Because in real life, where people are involved, not just one, but often all four aspects can be found, if you look hard enough into a problem.

Where does SPC come in ?

SPC stands for "Statistical Process Control". It is the state that a process is in when a "control chart" (today it more likely to be called a "Process Behaviour Chart", or a "Shewhart Chart") of a key process characteristic shows no signals indicating the presence of a special cause of variation. Achieving this state was often the first step in improvement, since it is achieved by removing unnecessary variation .

Is Six Sigma all about Variation ?

No. It is usually a programme of improvement based upon projects which follow a methodology like the PDSA cycle. There are many different types of "Six Sigma", depending upon the provider or organization involved. It can involve much formal statistics. One key question for potential users is whether the requirements of their customers can be expressed as conventional, independent specifications, eg. ranges of values with upper and lower limits. If so, then capability indices are extensively used.

What is "Lean " ?

This describes an organization that has successfully applied improvement, say by using SoPK, to reduce waste generation in the organization's activities. Lean is about driving out all forms of waste: wasted time, wasted effort, wasted resources, wasted materials, wasted finance and so on. For example, the massive reduction of inventories (stock) in a set of processes reduces waste (money tied up in these stores) and uses the economies of flow. The adjective "lean" can also be applied to individual processes.

SELF EXAMINING QUESTIONS

1. Can you measure the variability of your key processes or production?
2. Have you used clear operational definitions for the items you have measured or counted?
3. Do **all** your process and systems support the aims of your organsiation, or do some frustrate them?
4. Which of your processes are stable and therefore predictable?
5. What motivates your people?
6. How do you solve problems and establish improvements?

VALUES

Author: Terry Rose Reviewers: Alan Clark, Terry Peterson

INTRODUCTION

The subject of values (some would include ethics) applies to all aspects of organizational conduct and is relevant to both individuals and organizations as a whole. Values remain consistent over the long haul, even as markets, strategies and goals change.

Many organizations develop a set of values to which they expect everyone who works on their behalf to adhere or aspire. The intent is to provide guidance for individuals on what is good / desirable / ethical behaviour. Each organization's values statements are likely to be different - or at least worded differently.

ORGANIZATIONAL VALUES

Business does not operate in a vacuum. Organizations of all types and sizes operate in the social and natural environment and therefore (from a MoSO perspective) are duty bound to be accountable to the natural and social environment in which they survive - irrespective of the demands and pressures upon it.

However, the need for, or indeed the efficacy of, values in an organizational setting is disputed. For example, Milton Friedman held that corporations are amoral and CEOs have only one duty: to maximize the profits of a company. He also said in an interview that business cannot have social responsibility. Peter Drucker said, "There is neither a separate ethics of business nor is one needed". Drucker also observed that ultimate responsibility of the directors of companies is above all not to harm. Everybody is a member of society. Why is it acceptable to behave in an ethical, principled way as a partner in a relationship, parent or community member and then in a selfish or immoral way when working for an organization?

So why do organizations spend time and effort formulating and training their people on non economic social values? Some might say to strengthen a corporate identity (core values reflected in the brand) or for compliance reasons. Others believe that policies are developed mainly to limit legal liability, or to curry public favor by giving the appearance of being a good corporate citizen.

One common problem is for an organization to allow, through culture and policies, a disconnection between their published code of values and actual practices. This can put individuals in difficult situations making them feel as though they have to choose between their conscience and their job or career. For example, an organization that includes ‘respect’ as a core value whilst there is a culture of senior managers bullying subordinates to meet monthly sales goals. Or having included ‘honesty’ feel that it is acceptable to be less than frank with a customer about the likely delivery date of a critical order. Or a senior partner of a law firm that espouses strong ethical values when signing a new client, knowing that in certain circumstances the junior partner working with the client will be under pressure to put the firm’s self interest above that of the client.

And you will know of many other examples. How can employees be held to, or expected to, apply the stated values in such situations?

So what is required to make a values policy successful? Would you agree with the following?

- The unequivocal support of top management, by both word and example.
- Involvement of stakeholders in their development
- Be explained in writing and orally, with periodic reinforcement.
- Be doable - something employees can both understand and perform.
- Be monitored by top management, with routine inspections for compliance and improvement.
- Backed up by clearly stated consequences in the case of disobedience.

How do organizations develop a set of values or core beliefs? We believe that organizations that enjoy enduring success have core values that have been developed and articulated by the people who work there rather than handed down from on-high. The core values are then much more likely to be embraced by all as part of the fabric of the institution.

SPECIFIC ORGANIZATIONAL VALUES THAT SUPPORT MOSO

There are values which could be listed by most, if not all, organizations, such as; honesty, integrity, trust, respect. However, our focus here is to ask whether there are any values which *specifically* support MoSO – and to articulate why. We’ve made a start below; deliberately using different styles of wording. What do you think?

- **Trust**

  MoSO is predicated on systems thinking which often relies on the implementation of cross functional or multi-agency solutions or programs over an agree period of time. You have to be able to trust other people / functions / agencies to do their best to fulfill their part of an agreement and not to revert to the usual 'silos of self-interest' when the opportunity arises. For teamwork to achieve results at any level in an organization an environment of trust must exist.

- **Customers can count on us**

  This means that an organization does whatever it takes to satisfy the customer – to go the extra mile to do what's right for the customer, because ultimately, individual customers must be able to rely on the organization to come through for them.

- **Openness to learning**

  Reflecting a high value placed on creating a learning and continual improvement environment right across an organization.

- **Transparency**

  Some might use the phrase, 'open door', reflecting the value placed on open and candid discussions throughout the organization and with partners and customers. When all the cards are on the table and all information is available to everyone - the right decisions can be made.

- **Sharing success equally**

  All stakeholders sharing equally and fairly in the success of the organization and placing very low value on bureaucracy and perks like special executive offices and bonuses only for a select few - the things that get in the way of doing what's right for the customer.

- **Respect for the environment in which we live and work**

  As you might expect, a value statement that goes to the heart of MoSO.

And you may have more…

SECTION 6
SELF-EXAMINING QUESTIONS

The purpose of this section is to bring together all the Self-Examiming 'powerful' questions from throughout the other sections of the book into one place for ease of access and to allow the big picture to emerge.

The list is by no means a comprehensive list of questions – it's more of a starting place.

QUESTIONS YOU MIGHT ASK ABOUT YOUR ORGANIZATION

1. To what extent is our organization sustainable?
2. What would our MoSO look like?
3. What strategies do we have in place for each of the elements?
4. Do they work together as a whole, focused on a common aim?
5. Are there gaps and inconsistencies?

QUESTIONS RELATING TO MoSO PRINCIPLES

1. ?
2. ?
3. ?
4. ?
5. ?

MoSO BENEFITS

1. Does your organization understand the difference between "Cutting Costs" and "Removing the Causes of Costs" and does it know where the causes of costs are to be found within it?
2. What is the result of your constructing the Chain Reaction for your organization?
3. How will you tackle the essential first step of the chain reaction? Without it, the remainder is just a wish list.
4. How does **WIN-WIN** help your organization?
5. In what way can **WIN-WIN-WIN** emerge from your organization's activities ?

CUSTOMERS

1. To what extent is the primacy of the customer recognised within our organization?
2. What evidence do you have that you use your customers to align both people and policy?
3. What evidence is there that your really are striving to achieve customer delight?
4. Where are customer perceptions of your products or services relative to the three types of quality: Attractive, More-is-better and Must-be? Be honest!
5. How much support do management provide to front line staff in moments of truth?
6. Give examples of ways customer-facing staff can resolve issues on the spot.
7. What active steps are you taking to build trust within your organization and with your customers?

YOUR OPERATIONS

1. To what extent are you ready for this journey? What help or support do you need?
2. To what extent is your organization ready for change – who will be the change champions who will work you? What constraints have to be overcome to gain initial momentum versus continued momentum?
3. How does the big picture of your organization align with the MoSO model? Are the differences significant in terms of sustainable performance?
4. If the differences are real what can be done to introduce the missing elements or improve ineffective areas?
5. To what extent are the three voices to renew and sustain the organization (VoC, VoS, VoP) used systematically and continually improved?
6. Looking at the MoSO model, what important influences are affecting, or likely to affect, your operations and how are you recognising and managing these influences?

PDSA

1. To what extent is the PDSA Learning and Improvement Cycle understood in your organization?
2. To what extent do you use a PDSA cycle in strategy and plan deployment?
3. Do you have a consistent process to improve your core operating processes to achieve better performance, to reduce variability, and to keep the processes current with business needs and directions?
4. Do improvement teams have a consistent method based on PDSA?
5. Do you have a consistent process to improve your support processes?
6. How do you translate data from organizational performance review into priorities for continuous and breakthrough improvement and into opportunities for innovation?
7. How are these priorities and opportunities deployed to work group and functional-level operations throughout your organization?
8. How are improvements shared with other organizational units and processes?
9. When appropriate, how are the priorities and opportunities deployed to your suppliers, partners, and collaborators to ensure organizational alignment?

PEOPLE, CULTURE, LEADERSHIP AND MANAGEMENT

1. On reflection, what more might you do?
2. How could you engage and encourage others to do likewise?
3. What responsibility can you take for designing the system?
4. How capable are the processes?
5. How will you avoid ‘tampering’?
6. Where does PDSA apply?
7. How do you lead by example?

SOCIETAL INFLUENCES AND LEARNING

1. ?
2. ?
3. ?
4. ?
5. ?
6. ?
7. ?

THE ENVIRONMENT

1. Does our management structure empower all levels of our organization to eliminate waste? Does our theory / self-image fit the facts?
2. What are we doing to introduce 'co-opetition', in order to share approaches and reduce costs with competitors, to address common environmental concerns?
3. What are we doing to change from a focus on maxima or minima to one where we continually improve the system / process in order to eliminate waste?

4. Does our system encourage or discourage innovation and the adoption of new ideas?
5. Are we driving out fear to encourage the flow of heartfelt feedback from every level of our organization? What is the quality and frequency of this feedback and how do we measure it?
6. Are our targets self-interested and short termist, or are they sustainable and stable over time, outside of management initiatives and fads? What exactly are we measuring, and why?
7. Do we genuinely encourage our creative thinkers and recognise that their new ideas may solve the problems of tomorrow? How, and how can this be improved?
8. Do we have a co-operative relationship with our community, or do we view them as an obstruction and a nuisance we'd rather ignore - if so, how do we change this relationship for the common good and mutual benefit?
9. Do we have a separate environmental function within our organization - or is our view of the environment and sustainability something every single member of our organization participates in and takes pride in, from the very top to the very bottom?
10. Are we running an organization that will leave the world a better place for our communities and our children? If not what should we be doing now and on an ongoing basis to address the issues?
11. Do politics and self-image obstruct our attainment of a truly sustainable, efficient and environmentally friendly organization? Are we being true to these goals? Does our aspiration in this area equal our self-image about other areas of organizational performance? (i.e. if we view ourselves as a world leader, are we also a world leader in our environmental policy?)
12. Are we really a zero waste organization? How do we continually move towards this goal by creating a sustainable, organic system - and what exactly are we measuring when we make our policy?"

VOICE OF THE CUSTOMER

1. Do I/we know who our customers are (both internal and external)?
2. Do I/we truly know the needs and expectations of our customers – both now and in the future
3. What is the predominant culture in my/our organization – Product-Out or Market-In?
4. Do I/we have the basic language skills to accurately capture the Voice of the Customer?
5. Do I/we have the appropriate Voice of the Customer processes in place?
6. Do I/we understand that to deliver excellent performance, it is necessary to bring the Voice of the System into alignment with the Voice of the Customer? (See Voice of the System)

VOICE OF THE PEOPLE

1. ?
2. ?
3. ?
4. ?
5. ?
6. ?
7. ?
8. ?

VOICE OF THE SYSTEM

1. When trying to make sense of numeric data, do I/we have a binary view of the world – always either “Doing OK”, or “In trouble”?
2. Do our management reports simply compare two values (for example, where we are now compared with last week / month / quarter, or compared to an average value) and use that comparison to drive actions?
3. Are our management reports ‘eye charts’ of tabular data from which people are expected to extract vital trends and unexpected values?

4. To what extent do our current data reporting systems allow us to distinguish between normal behaviour of the process / system, and identify exceptional (special) events and causes for investigation and improvement action?
5. Do I/we know the consequences of not understanding data?
6. What checks would we need to carry out to know whether our data is of sufficient quality to assess System behaviour?
7. Have I/we made the progression from reporting data in tabular or graph formats to using Process Behaviour Charts?
8. Do I/we know the difference between the Voice of the System and the Voice of the Customer?
9. Do I/we understand that to deliver excellent performance, it is necessary to bring the Voice of the System into alignment with the Voice of the Customer?
10. Do I/we realise that setting goals does nothing to improve the system.
11. Is being in control the same as being on target? Discuss.
12. To what extent am I/we using Voice of the System thinking to drive continual improvements and innovation?

INNOVATION

1. Have senior management in your organization shown leadership in innovation?
2. Is there a support infrastructure for innovation in your organization?
3. In your organization's terms, what is the difference between innovation and improvement?
4. Do you know where to start?
5. ?

SUSTAINABILITY

1. To what extent do you think your organization is currently sustainable as a business?
2. How can you measure the vitality of your organization? Do you dare?
3. Which of the silent killers stalk your corridors?
4. What is your enterprise fitness rating out of ten for each of the enterprise elements above?
5. How do you rate the capabilities of your organization against each of the items in the list above?

TRANSFORMATION

1. To what extent has your vision for the future been agreed between yourselves?
2. Have the imperatives for change (the Whys) been clearly set out and agreed?
3. To what extent has the gap between the organization's 'current state' and the 'destination' been articulated?
4. Have the benefits of using MoSO as a comprehensive framework for sustainability been explored?
5. Has a defined set of principles (and values) that will form an enduring foundation for transformation and beyond been agreed?
6. To what extent are you (the leadership team) prepared to personally devote time and effort to building knowledge, understanding and skill in the practices that will drive change?
7. Developing an infrastructure for change throughout the organization is essential. Has the team developed a suitable infrastructure for your organization that involves all the leadership team playing an active role?

SYSTEMS THINKING

1. What is the identity/purpose of your organization (consider customers, suppliers and any other stakeholders)?
2. Who is your customer, and their customers? How do those relationships work?
3. What are your key outputs and desired outcomes? How does your organization add value and are there any critical outcomes within your organizational system that need particularly close attention?
4. What are the inputs to your organization and which suppliers provide these? How well do your input processes work?

5. What other stakeholders does your organization have? What is their relationship, role and needs from 'your system'?
6. What is the environment with which your organizational system interacts (political, social, regulatory, economic)?

THE DEMING APPROACH

1. To what degree are we an organization that thinks in terms of the whole system of operation, stakeholder interests, process flow and quality?
2. Who are our customers, the consumers of our outcomes?
3. How focused are we on our customers?
4. What research do we do on the needs of our customers?
5. In what ways are we pushing for innovation?
6. How do create the conditions in which creativity and innovation can thrive?
7. What evidence do we have that quality is a central issue for us as managers?
8. How does the Board of Directors use quality as a basis to set policy?
9. To what extent do Directors (Executives) and all managers set an example about the importance of quality?
10. What proportion of our focus is on productivity and how much is on quality?
11. To what extent is the PDSA (or PDCA) cycle central to the way we run our organization?
12. How much performance management and appraisal of individuals is there and how is this consistent with systems thinking?
13. What evidence do we have to show how we concentrate on continually improving and innovating the flow in the end-to-end series of activities that are our value-adding chain?
14. How can we demonstrate that the way we apply measurement based on a proper understanding of process behaviour, variation and the use of statistics?
15. How are we continually improving our leadership and that of everyone in our organization?

SYSTEM OF PROFOUND KNOWLEDGE

1. Can you measure the variability of your key processes or production?
2. Have you used clear operational definitions for the items you have measured or counted?
3. Do **all** your process and systems support the aims of your organsiation, or do some frustrate them?
4. Which of your processes are stable and therefore predictable?
5. What motivates your people?
6. How do you solve problems and establish improvements?

VALUES

1. ?
2. ?
3. ?
4. ?
5. ?
6. ?