

19. THE DEMING SYSTEM OF PROFOUND KNOWLEDGE

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Dr. W. Edwards Deming passed away on the 20th of December 1993 after leading a long and fruitful life. He was best known for catalysing one of the greatest ever industrial turnarounds in history – namely the resurgence of Japan in 1950. He was later rediscovered in his own native America almost 30 years after this and spent all his life after that “preventing America from committing suicide”. Towards the end of his life he professed what he called “A System of Profound Knowledge” – which I believe is his greatest legacy. It encapsulates 70 years of profound thinking and learning. In this paper I wish to introduce to the reader the System of Profound Knowledge.

After Dr. Deming released his classic “Out of the Crisis” in 1986 – which was an improvement on his book “Quality, Productivity and Competitive Position” released in 1982 – his thinking went up by a staggering degree. In 1989 he began talking of what he called as “Profound Knowledge” during his lectures and talks over dinners with his close friends. It was around the same time that he was invited to give a talk on Management for the Future at the Institute of Management Sciences at Tokyo, Osaka. This was in July 1989. The title of the paper he presented was “Foundation of the Management of Quality in the Western World”. It was during this talk that he professed for the first time “The System of Profound Knowledge”.

The System of Profound Knowledge is much like the Bootstrap Theory of Sciences. Dr.

Deming has interwoven four different and interdependent disciplines needed to understand, lead and manage organisations and approach issues that challenge us in the future. These four disciplines are themselves a system – each affects the others. The System of Profound Knowledge is made up of four parts

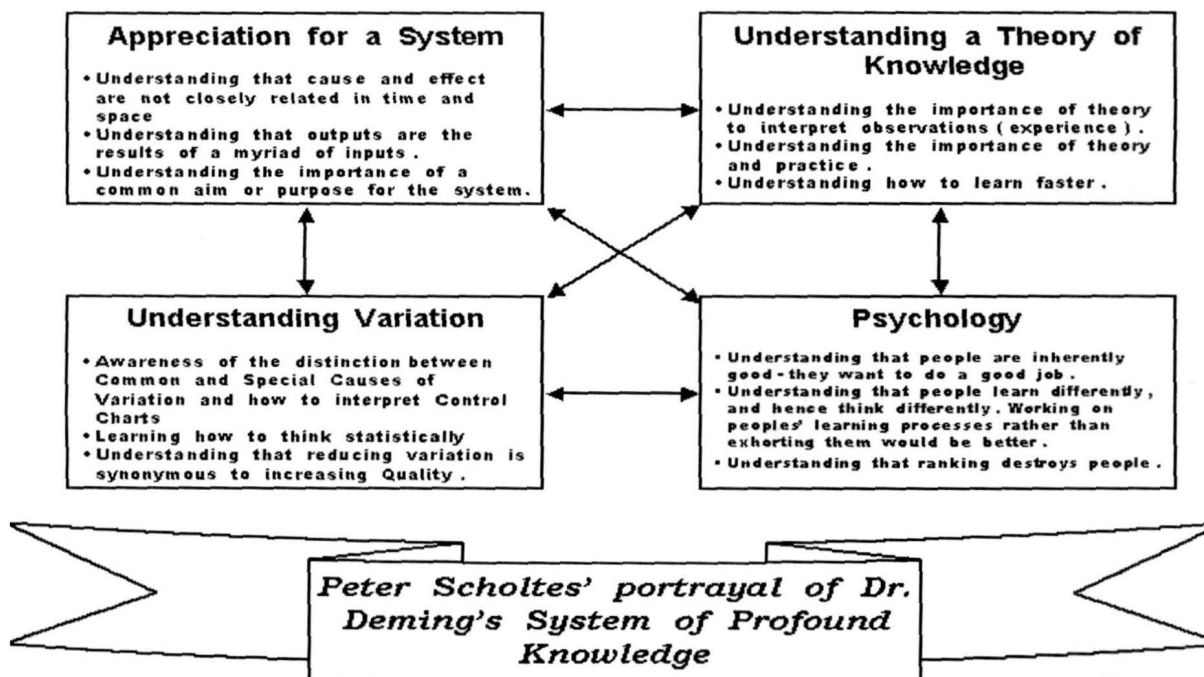
- Appreciation for a System
- Understanding Variation
- Understanding Psychology
- Understanding a Theory of Knowledge

The figure below brings out the SOPK effectively

Appreciation for a System

What is a System? Dr. Deming defined a system as “A Network of interdependent components that work together to achieve the aim of the System.” Every System must have an aim - without an aim, there is no System. The key words here are Network, Interdependent and Aim.

So, a System is not only a linear series of components, processes, etc – rather it transcends to become a lateral network as well. This means that it not only is sequential but also parallel. No particular component is more important than the other – each assumes relative importance based on what the system is subjected to which gives rise to the aim of the system.



This means that all the components are interdependent – that is not only are they independent but are also dependent on the other components for their existence. In effect, the components not only exist for each other but also because of each other.

We are talking of man – made systems here, so, a system, in an organisation, consists of an integrated collection of personnel, knowledge, abilities, motivations, equipment, machinery, methods, measures, processes and tasks. To manage a system – there must exist an aim for the system – without an aim there can be no system. Without an aim, all the components of the system are unguided, and, left to themselves, operate independently in a selfish manner thus destroying the system as a whole. For an organisation – there must exist an aim and the aim must not be defined in terms of some specific activity or method but should always relate to a better life for everyone. Thus the aim should be for all the components to gain – over the long term. An Organisational System also includes all the organisation's competitors

as well – so it does not serve to try to choke your competitor. Instead working with your competitor to put out better product without duplication of efforts expands the market making life better for everyone – the Customer, the Organisation as well as your competitor. The market then becomes infinite instead of finite.

Taking a leaf out of nature – when we are asked to draw a tree – we conveniently draw the trunk, branches and leaves, and if necessary, flowers and fruits but forget to draw the roots. We must be aware of the fact that the roots grow deep – even more deep into the ground than the tree does above the ground. Research has now shown that these roots actually enmesh and eventually enjoin to become one. This explains why in rain forests when one part of the forest gets rain, the whole forest grows green and flowers.

Dr. Deming would always say “Why do you want a bigger slice of the cake? Make the cake itself bigger – everyone will get a bigger piece – not only you.” So – everyone will win – some

may win less than others – but they will win all the same. In 1950 in Japan, he asked the Japanese to consider the whole country as a System!

Understanding Psychology

Dr. Deming's view of Psychology transcended the normal approach to psychology as we see it today. By understanding Psychology he did not mean Psychiatry which is a science of solving mental disorders. He meant trying to understand how and why people do the kinds of things they do, what really motivates them to stretch themselves beyond merely carrying out tasks, what drives them to work in teams, and what really are their learning processes.

Man is a social animal. He exists because of relationships. Man is also born with a natural inclination to learn. Different people learn differently. Some learn by reading, some people learn by watching, some by reading and watching. Some learn by listening, some by pictures, some learn faster than normal some slower than normal – but they show an inclination to learn all the same. The trouble sets in when we as managers or superiors do not understand the learning process of a person. We must understand the learning process of a person and improve the process continually. So, the job of a manager or a leader changes. Not only should we understand how people work together – but we must also understand how they learn and hone their learning processes that would lead to them improving.

Ranking and grading destroys people's natural inclination to learn. They do not do their work because it gives them pleasure – but they do it to please the boss. The Performance Appraisal system acts as a system akin to Quality by Inspection. People, in a quest of achieving a higher rating, put others down. The job of a manager is not to be a judge – rather he / she should be a coach and a counsel. As a corollary, the job of a teacher is to discover and

sharpen the learning process of a student – besides of course giving them in depth information about subject matter.

The only living parts of any organisation are its people. If an organisation wants to grow – it must allow its people to grow. Enhancement of abilities / capabilities is one of the prime duties of management. Merely treating workers / staff as people who are supposed to carry out pre – programmed tasks is an old fashioned way of managing.

Nowadays, with the advent of new technology and speedy ways of gathering information, it is obvious that the customers are getting more aware than ever before which has resulted in them becoming even more demanding than ever before. Organisations who have to respond to these rapid changes rapidly must have a workforce that is ready to respond to these changes or even make changes proactively. This is possible only through continual learning and continual education, which eventually leads to continual improvement.

Understanding Variation

Variation is the product of any System.... management's job is to study Variation, with the proper theory, to unravel the message that variation is trying to tell us about how to improve the processes.

The above sentence was Dr. Deming's advice to Managers at a meeting at Ford. The truth is that we live with variation in every aspect of our lives. Variation is the very essence of Nature. Even identical twins are not "Alike".

Life is Variation. There will always be variation in people, in service, in output, in product. Managers encounter variation in many forms. There is variation in the materials purchased for production. Similarly there exists variation in the times of delivery, quantity, features, and economic conditions of markets and the needs of customers.

The central problem in management is the failure to understand the information in variation within the system. To manage for improvement, managers need to recognise variation, interpret the messages it contains about the system and act based on the inference of those messages. In the 1920s, Dr. Walter Shewhart put forth the following theory – There exist two types of causes of variation in any system; Common causes and Special causes. Common causes are those which can be attributed to properties or lack of properties of the system or the way it is structured and managed; Special causes are those which can be attributed to some “outside” or alien disturbances to the system.

Shewhart defined and developed empirical rules which help us make decisions based on whether systems or processes were subjected to Common or Special causes of variation. One must understand that the decisions vary a great deal depending upon the kind of variation we are trying to tackle. Confusion between the two could lead to complete destruction of the system. We cannot eliminate mistakes made because of this folly of distinction between these causes – but we can minimise the errors with the help of these rules and the tool that embodies these rules which he (unfortunately) christened The Control Chart. This chart is now being correctly termed as The Process Behaviour Chart.

However, the theory that Shewhart invented based on these rules need not be used only for processes but also to understand people (as before). Most people lie within the “common cause” region – some lie in the special cause region. This means that there are some – but only some that perform exceedingly well and some that perform exceedingly badly. Instead of reprimanding those that lie on the lower side – we must help them come into the system; alternatively, the performers must be studied in order to raise the level of all the people in the system. This is an important use of this theory but is seldom carried out.

Understanding a Theory of Knowledge

To put it simply – a theory is a statement that relates cause with effect. However it must fit without fail all observations of the past and help you predict the future. The theory in hand need not be elaborate. It may be a hunch, or a statement of principles. It may turn out to be a wrong hunch.

Hypothesis or theory gives us a ground to stand upon; a starting point. A venture into the unknown could be simplified by establishing a theory and while actually experiencing the journey the theory would be revised, extended or even disbanded. The four important points to be remembered here are:

- Information, though easily available to everyone, is not knowledge.
- Theory is a statement that relates cause to effect and helps us predict the future.
- Interpreting information with the aid of theory leads to knowledge.
- No theory is wrong - just adequate or inadequate.

If we manage our organisations with the aid of theories, we can learn and improve the systems we work in. If we do not have any theory to guide us we tend to copy examples of success without really understanding why or how the other company or division really achieved this success. Sometimes we look into past data, draw graphs, and then extrapolate to set future targets. This is not good management. This is like driving a car by looking into the rear mirror - you will surely crash into a wall! Is collecting and stratifying past data wrong? No it isn't! It's just not enough. Instead, if we were to first decide what it is we are trying to study, collect data accordingly, stratify the data accordingly and then interpret the data with the aid of theory, we will then realise what we can expect in the future! Again, the theory should be a statement that relates cause to effect.

For example, if we come across an example of success which we would like to implement in our organisation, we must first collect data pertaining to this example of success, learn how and why the success was achieved and formulate a theory.

Armed with this theory, we can carry out a small experiment to test this theory on a small scale -maybe in a single department, a line of products, a single process, etc. Since we have predicted certain outcomes, we must actually record our observations of the "Experiment" and compare the data to our predictions. If our observations matched our predictions, we can say that our theory is adequate. We can then go for a full scale implementation of this theory and watch what actually happens when the theory is implemented on a large scale. We might observe certain things that we did not when we tried out our experiment. We must use these observations as inputs to the revision, extension or even abandonment of our theory and start all over again.

Alternatively, if the outcome of our "Experiment" does not match our predictions, we can revise our theory and start all over again. This revision of theory must be cyclic - in the sense that we must not stop once our theory has been proved "adequate" we must keep on observing and learning and trying to prove ourselves wrong so that we can gain more knowledge. In other words, our improvement, revision or abandonment of theory actually is increasing our learning. He popularised this theory of knowledge by what he called "The Deming Cycle".

As seen from above, this is a rich legacy. It combines marrying of philosophy with the scientific method thus giving us an all round view of events and observations. He would often remark:

"The System of Profound Knowledge is a lens with which you view events. It helps you see things that you normally wouldn't see. It helps

you interpret information the way you normally wouldn't. It helps you focus on issues you would have normally ignored".

This changes your perception from "either – or" to "and". So viewed from this lens Dr. Deming often said:

A product or service possesses Quality if it helps someone live better (materially and / or otherwise) and enjoys a large and sustainable market.

This is also analogous with his idea of the purpose of a business...

The purpose of a business is...to create value/satisfaction....at a profit.

The sequence and choice of the words is very important. *It's important to create something* of value and also focus on generating profits if you are running a business. Again, having an "either – or" mentality doesn't help.

Dr. Deming did not live long to promulgate this theory of Management to the world.

One must understand that Profound Knowledge is not the same as Subject matter knowledge. One may know a lot about ice but very little about water. Profound Knowledge comes from the outside by synchronously applying the above mentioned four sciences to get a deeper insight into understanding a complex system. No one science is more important than the other. Each assumes importance based on how you want to view and understand the system.

In winter of 1992, his friends Dr. Myron Tribus, Bill Scherkenbach, Brian Joiner and others sent in Dr. Deming's nomination for the Nobel Peace prize. They considered his contributions more an attempt understand the world around us and to promote world peace than merely increase the profitability of an organisation. The inscription on the Deming Medal brings out his thoughts on Quality.

The Right Quality and Uniformity are foundations of Commerce, Prosperity and Peace....

He was among the final five who were short-listed for the prize. Unfortunately that year the prize was awarded jointly to Yaseer Arafat and Begin for having signed a cease fire to reduce tensions in the Middle East. Unfortunately – because as we can see – they continue to war with each other even now . The world once again

ignored the message and works of this great man.

Finally, the transcription of a very moving account of an incident in Dr. Deming's life as narrated by Jim McIngvale the owner of Gallery Furniture one of the many who have been impacted by the man's teachings. It brings out what Dr. Deming – the man – was really all about.

In finishing, I'd like to talk about the last time I saw Dr Deming. My son James was very young back then in 1993 and he went to that seminar with me. It was a four-day seminar. At that time Dr Deming was 93 years old, he weighed less than 100 pounds, and disease had pretty much ravaged his body.

He had a big oxygen tank on his belt, and they were pumping oxygen into his nose. And he did this seminar all day Tuesday, all day Wednesday, all day Thursday. Friday was the fourth and final day there in Houston. We were sitting up towards the right of the front row. He did the first hour and a half's lecture that Friday morning. He was coughing and wheezing, having a hard time getting through his notes, and shaking. And came time for the first break there at 9.30 in the morning.

One of the seminar participants came up to him and said: "Dr Deming, you're old, you're tired, you're sick, you're coughing and wheezing." He said: "Why don't you cancel the next six hours of the seminar, and go home and get some rest?" He said: "Nobody will get upset. Everybody here will understand. Why, why, why are you doing this? Why are you punishing yourself?" I'll never forget - Dr Deming looked him in the eye and said: ***"I'm doing this because I have a responsibility to make a difference."***

Courses are now being conducted all over the world based on Dr. Deming's teachings. In India – these courses are being conducted by

THE DEMING FORUM (INDIA) based in Pune.
One can contact the author for details.

