

Mechanistic  
management  
paradigm and  
newtonian paradigms  
commerce essay



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The mechanistic paradigm is considered as one of the oldest paradigm, where the organization is basically viewed as a special-purpose clockwork machine. The mechanistic paradigm is also known as the Newtonian paradigm. The Newtonian paradigm is named after Isaac Newton and in the eighteenth century, Newton's law of Physics became a paradigm. It became the central paradigm in the nineteenth century, which started with the inception and rapid rise of large hierarchical business organizations after the great depression of the 1870s. Newton's mechanical systems are entirely deterministic which suggested that the future can be predicted accurately from analysing the past. In other words, organizations or market places can be view as a machine, provided we understood how the parts inter-related and than assume we can predict how the machine will work in the future. It also suggested that the world could be more or less predictable and controllable. According to the 19th century mechanistic outlook and fuelled by the division-of-labour specialization philosophy, humans were supposed to behave like the efficient parts of a machine. Where the believes were that all the systems can be treated like independent mechanical systems and that problems can be reduced to a largely independent parts. It was also believed that relevant data both exists and can be measured and analysed, where theories can either be built up from analysing observation or if developed top down can be tested against observations. Newtonian paradigm revolutionised the physics and the sense of ability to control the nature. Newtonian paradigm have made it possible to design and build complex mechanical structure and within its limits to give correct descriptions of interaction of mechanical bodies under certain conditions which are if the system is closed where it does not interact with the outside world and where

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environment that included customers was of a non-issue, then the closed system thinking had focused the managerial attention inward on the efficient running of the internal organization. The other conditions were correct descriptions of interaction of mechanical can be given are when the system is fixed and when the increase in the size of an input gives a proportional increase in the size of output. The Newtonian paradigm / mechanistic paradigm supported the Taylor's system of scientific management. Those days the business trend were the Scientific Management under which the management techniques were developed. Scientific management was also known as the Taylorism. The theory of management that had developed standard method for performing each job, a appropriate selection process of the workers by their abilities to perform each job, improving labor productivity by training worker in standard method, eliminating their interruptions and planning their work and providing wages incentive to the workers with the increased in their output, was known as Taylorism. Taylorism was often mentioned along with Fordism because it was closely associated with mass production methods in manufacturing factories. These mechanical principles ensure that 'organizational life is often routinized with the precision demanded of clockwork'. As the German sociologist Max Weber already argued, 'eroding the human imperative, which by virtue of its basically coercive character, may be referred to as 'order through force'.

### **The paradigm shift in management thinking;**

It can be argued that there has been a paradigm shift in the western thought, that is basically changing the views of the management how they

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think, how they perceive the world and what they value. In other words moving away from mechanistic paradigm that concerns with rationally analysing elements in a predictable world to Organistic paradigm that concerns with intuitively perceiving relationships in an unpredictable world. In an organistic paradigm the organization is viewed as organism. The focused shifted from reductive analysis and predetermined plans to holistic analyses, not of individual worker but of the whole system of interdependence. The table below highlights the different approach between the mechanistic and the organistic paradigm.

## **The paradigm shift- from analysis to perception:**

### **Old paradigm**

### **New paradigm**

Mechanistic

Organistic

Reductionist

Holistic

Elements

Ecology

Rational

Intuitive

Materialistic

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Sustainable

Fragmented

Systemic

Control

Commitment

Short term

Long term

Hierarchy

Network

Structures

Relations

Generalized knowledge

Situated knowledge

Explanation

Construction

Competition

Co-operation

Individualism

Interdependence

(Henry. J, 2001)

Arguably it can be said that the management of the past, which was entirely rational with objectives, plans, forecasts and quantitative measures have change into a management with soft, impressionistic and qualitative data having the vision, mission statements, scenarios and focus groups.

## **The force, fit and fluctuation paradigm of change:**

### **Paradigm**

### **System thinking**

### **Metaphor**

### **Order through**

### **Organization form**

Mechanistic

Closed

Machine

Force

Functional

Organismic

Open

Organism

(Information processing)

Fit

Divisional

**&**

Business Unit

Evolutionary

Non-equilibrium

Self-organizing

Complex

(Knowledge Creating)

Brain

Fluctuation

Network

(Talbot L, 2008)

### **Innovative Paradigm:**

Arguable it can consider that innovative paradigm has come about after the shifts in the paradigm from the mechanistic paradigm to Organistic

paradigm. It can also be argued that the shift in paradigm was bound to happen because of the change in the technologies, perceptions and the environment. In the past businesses mostly ran on traditional principles in line with the mechanistic paradigm. They were structured hierarchically and had command structures that kept tight control of the employees in the production machine. They only competed with others operating in the same area. However in the 21st century the principles of businesses changed with the change in western thoughts and change in the paradigms. Organisations started decentralizing and divisionalizing by forming cells and base production round multidisciplinary teams. The boundaries between departments and job descriptions became less distinct as portfolio workers were split across the organization.

Innovation as defined by Barnett (1953), ' any thought and behaviour, thing that is new because it is qualitatively different from existing forms'.

Similarly, Manimala (1999) described, ' innovations are qualitatively different form existing products, services, ideas, modes of thinking.

### **The importance of Creativity:**

One of the most important elements of innovation is creativity, before any innovation a creative idea has to be generated. Teresa Amabile describes, creativity in an individual as three components that are expertise, creative-thinking skills and motivation. (Talbot L, 2008)

The diagram below would illustrate a better understanding:

Expertise

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Creative thinking skills

Creativity

motivation

The three components of creativity by Teresa Amabile. (Talbot L, 2008)

Expertise meaning here as knowledge, technical, procedural and intellectual.

Creative thinking skills- determine how flexible and imaginatively people approach problems.

Motivation here means the inner passion to solve the problem for creativity rather than external rewards.

### **The Six general managerial practice affecting Creativity in organisations:**

Creativity in organizations is affect by six general managerial practice categories, which are challenge, freedom, resources, work-group features, supervisory encouragement and organizational support.

#### **Challenge:**

The challenge here is that the managers within the organisation needs match the right employee for the right task. Therefore the managers should know its employees well by having detailed information about their expertise, skills and interest. Managers also need to have detail information about the task or project, which is to be allocated. Ideally it is in this section that the three component of creativity within individuals should be used.

Then again to collect all the information might be very time consuming and not possible in some cases.

At Semco the second principle is that the responsibility for any task belongs to the person who claims it (Semler, 1994). This means the tasks are chosen by the employees themselves which they are interested and consider it as a challenge. This helps them not only to perform better in their job but also to think creatively about new tasks.

### **Freedom:**

Freedom is the answer to creativity. Freedom in this context means giving a free hand to employees, how they want to progress to achieve the desired goals. By allowing the employees to decide their approach to achieve the goal, it helps them to be creative. The employees in order to make the right decision should know their objective and well-defined goal.

Semco was a unique company in mixing the freedom and the management control. It gave its employees the freedom to set up their own deadlines and objectives. They are also given the freedom to choose how they want to progress to meet the objectives and the deadline. Therefore, not only they are clear about their objectives but also are given freedom to adopt any method to achieve those objectives.

Not only but the company gave it the employees the rights to choose their own bosses. Semco never had a mission statement or clear objectives. They have a Survival manual, which helps the new employees to fit themselves in the right position. That allows the employee to feel that he or she can be successful and improve the work of the department with the new position.

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The freedom in work can be seen also in the working hours. The employee of Semco can start and finish work in any time of the day or at night. The point in Semco is that the employee does not need to synchronize his body clock with fixed working hours.

### **Resources:**

Resources are considered as important assets of organisations. According to Teresa Amabile, creativity is affected by two main resources, which are time and money. Shortage of time can often obstruct creativity, as creativity often takes time. It can be a slow process to explore new concept and to come up with unique solutions. Shortage or restriction of resources also obstructs creativity.

At Semco the teams working on the specific projects decide the funds for the projects. In other words, they have the adequate funds that would boost the creativity and performance.

### **Work-group feature:**

Work-group features mean a team's work towards performing task. The team should consist of right people with creative ideas for the right kind of job. According to Teresa Amabile to make the right team, managers should select a group of people having various intellectual foundations and approaches towards work - that is, different expertise and creative thinking styles - ideas often combine and combust in exciting and useful ways. People for the right team should share excitement over the team's goal, should be willing to help their subordinate through difficult times. Members of the team should

recognize the unique knowledge and perspective that other member brings in.

At Semco the teams are made up of experts from various areas. The formations of a team are done by announcing the project, where anyone who is interested can participate by sharing ideas, information and having discussions on it. Therefore any employee from any area can be in the team if his or her contribution is going to help to accomplish the project.

### **Supervisory encouragement:**

Supervisory encouragement means encouragement by the managers to the employee's efforts to creativity. This encouragement should be given for the effort put in even when creativity is unsuccessful. According to Teresa Amabile, the connection to intrinsic motivation here is clear. Certainly, people can find their work interesting or exciting without a cheering section for some period of time. But to sustain such passion, most people need to feel as if their work matters to the organization or to some important group of people. Otherwise, they might as well do their work at home for their own personal gain.

### **Organizational support:**

According to Teresa Amabile, encouragement from supervisors certainly fosters creativity, but creativity is truly enhanced when entire organisation supports it. Top managements and leaders of the organization needs to put in suitable procedure to develop creativity. Creativity should be given emphasis making clear that it is the top priority. Organization's leaders can support creativity by giving consent to information sharing and collaboration

and also by ensuring that no political problems come up. These steps would help the employees to be creative and work with high morale to accomplish the objectives.

At Semco the first principle states that information is the ultimate source of virtually all power (Semler, 1994). Therefore nothing is kept secret in the organisation. There are open meetings held in which information is shared between the employees. In other by sharing the information all the employees become big team supporting each other to work out different projects.

In the 21st century Creativity, knowledge and innovation have become the new added value to organizations rather the land, labour and capital, therefore in order for organisations to survive it needs to be more responsive and flexible enough to react quickly to environmental changes. Such new added values are seen clearly in knowledge base industry like the IT industry, Dot. coms and biotechnology. In such kind of industry their intangible assets are consider to be more than their tangible assets. Microsoft for example if compared their ratio of intangible to tangible assets are more likely to be 100 to 1.

### **3M:**

An international company called 3M, having thousands of employees and more than 60000 products is considered to be one of the major leading company that is very innovative when compared with other companies. The employees in 3M spend 15% of their time to do whatever they want. Which in return increases the productivity and allowing them to be more innovative

and come up with new ideas. The management in 3M apply the product and process innovation rules, giving the employees the chance to create and apply the new their ideas. It is a scheme where the employee is totally responsible from making of the product to the launch of the product in the market. Most of the senior employees in 3M have been with the company for quite sometime therefore they acknowledge and value the past. Important lessons such as new ideas to improve services, products and quality are learned from the past.

An organisation or a company in order to be innovative have to consider some factors like leadership, a common vision, trust, teamwork, effective, efficiency, structure, culture, creative climate and product development.

The first lesson that can be learned from Semco is the leadership. It took special place in the company. The leader Ricardo Semler had a strong belief in broadly inclusive participatory process with a future vision and the ability to take the potential talent of the participator. Arguable, many of the heavy industry manufacturing companies still follows the mechanistic approach because of the industry they are in and because of the organisational structure. Moreover the new innovative approach has only few companies who has successful e. g. Semco, Gore,

### **SEMCO as an innovative organisation**

Semco is another popular innovative company. Semco is a Brazilian company known for its radical form of industrial democracy and corporate re-engineering. Some of the business areas that semco deals in are industrial machinery unit manufacturing mixing equipment, semco also offers internet

service as semco ventures. Semco HR, a human resource firm and semco RGIS an inventory control firm. Semco also has many partnership business deals with other companies like: semco's partnership with Baltimore air cooler make cooling towers. Semco's partnership with Johnson controls manages large-scale facilities such as airports and hospitals. Semco's partnership with Rockefeller a property company manages properties across Brazil and Latin America under the named Cushman and Wakefield Semco. Semco's partnership with Environment Resources management gives consulting on environmental issues.

Semco was a traditional company in the beginning. However, when Ricardo Semler took over from his father, he managed to change the management of the company from the traditional to modern way. The income of the company increased from \$ 4 million in 1982 to \$ 212 million in 2003. In 1990s, the Brazilian economy went in a severe downturn, which affected many businesses and companies. The economic crisis had forced Semler to cut the salaries for the employees and give them a bigger share of the company. After two months, the company started to cover the expenses and after another five months, the company started to make small amount of profit. In 2003 the number of employees of the company reached 3000 employees comparing with 90 employees in 1982

([www. Wikipedia. org/wiki/semco](http://www.Wikipedia.org/wiki/semco))

Semco policy is that every employee should have a balance in his or her life. The employee can come to the office or work from the satellite offices around the city in anytime he or she wants. There is no Sunday break, the

day off can be one of the weekdays. Semco it designed to foster change, innovation and freedom and that will create the balance.

The bazaar mixture between freedom and management control in work will lead the employee to take the responsibility and trust. These factors are very important for the company to let it be successful and be different from the others. However, Semco managed to do all of that and after more than 25 years of experience the company proofed that this system will give extremely wonderful results.

Semco has two models of change that affect the company. The first one is the biological model of punctuated equilibrium, things can be changed smoothly and after a while there will be a bust of change and things settle down again. The other type of change is coming from the Chaos theory; if the change will happen in the organization in an emergency, it will take the organization from stability to imbalance position.

The communication is very important part in Semco structure. Semler used a unique bridge to let the information flow move very smoothly between the employees. The bridge was very flexible because of that it needed special skills to build it that helps to upgrade the confident level and trust to cross the bridge. Nevertheless, everyone in Semco was involved to maintain the bridge and take it to next level of development. From the most important points in Semco to be taken into consideration is how leadership can be nurtured at all the levels of the organization.



It is clearly that Semler like the concept of freedom by giving it to the employees to do the jobs in the company, and he may give the approve of the attempt to middle managers a greater sense of empowerment.

Trust will let the job done! From the main things, that it can be learned from Semler School is how the managers can trust their employees and give them the leadership. One of his statements " When people are given freedom they'll do whatever it takes to get the job done."

## **Conclusion**