

Scientific management critical analysis

[Business](#), [Management](#)



Course: Bachelor of Business Studies (BBS) Module: Principals of Management Title: Explain Scientific Management. Comment on the contribution of this approach to the development of management thought. What are its limitations? 33 Submission Date: 8th of March 2010 Word Count 2183 “ The Principal object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employee” (Taylor, 1947) Introduction The Author will discuss Scientific Management under the following headings: Section 1 An explanation on Scientific Management.

Section 2, The contribution of Scientific Management to the development of Management thought and Section 3 looks at the limitations of Scientific Management. What is Scientific Management? Bratton et al (2007: 355) defines scientific management as a process of systematically partitioning work into its smallest elements and standardising tasks to achieve maximum efficiency. The scientific management approach was developed at the end of the 19th Century; its father is commonly accepted to be Frederick Winslow Taylor (1856-1917) although some variations of the theory have been developed by Gantt and Gilbreth.

The scientific management approach was set up to improve labour productivity by evaluating and setting up workflow practices. Taylor was Chief Engineer at the Midvale Steel Company his first-hand experience here led Taylor to recognise that labour productivity was largely inefficient due to a workforce that functioned by “ rules of thumb” methods. In 1898 Taylor was employed as a consultant by the Bethlehem Steel works Company,

where he applied his principles of scientific management through evaluating work in a scientific manner.

Taylor gained this information with his “ Time and Motion Study”, as Dale explains, Taylor employed a young man to analyse all the operations and the motions performed in each and to time the motions with a stopwatch. From knowing how long it took actually to perform each of the elements in each job, it would be possible ... To determine a really “ fair days work”. (Dale 1963, p155) Taylor’s experience at Bethlehem Steel led him to develop four principals of management. The first being substitute rule of thumb work processes with processes based on a scientific study of the tasks.

Taylor broke down each part of the production process into individual tasks to accomplish task specialisation. Taylor also used time and motion studies to establish the most proficient technique for performing each work task and giving rest periods. Secondly, managers should select, train, teach and develop the most suitable person for each job. Taylor hated “ soldering”, and by introducing a piece-rate system of pay he eliminated the group process in which workers slowed their speed of work to suit the ordinary worker’s needs.

Thirdly, comprehensive training and supervision to each worker must be given by management to guarantee the job is done in a scientific way and finally scientific management principals need to be applied to the planning and supervising of work and the workforce complete the tasks. The Principals of scientific management were widely accepted and spread as far as the Soviet Union where Taylor’s principals were included into a variety of five-

year development plans. The most well-known application of Taylor's principals of scientific management was in Henry Ford's Model T.

Frank Gilbreth (1868 –1924) and his wife Lillian (1878 – 1972), developed variations of Taylor's scientific management, they were mostly concerned with the elimination of waste and like Taylor thought that a " One Best Way" to carry out a task could be found. Another contributor to scientific management was Henry Gantt (1856-1915) who was a protege of Taylor's who designed the Gantt chart a straight line chart to display and measure planned and completed work as time elapsed. The contribution of Scientific Management to the development of Management thought

Scientific management does play an important role in the 21st Century. Examples of scientific management can be seen in our car and computer industries, the hospitals and the restaurants we eat in and nearly all function more efficiently due to scientific management. In today's economic environments scientific management is probably more important in today's businesses then ever before. The Author will discuss this under the following headings: Scientific Study of work, use of incentives, division of labour and the selection and training of workers. Scientific Study of work

The fundamental tools that result in increased productivity are time study standards and work design. For example in the production department of any company materials are requested and controlled; the sequence of operations, inspections, and methods are determined; tools are ordered; time values are assigned; work is scheduled, dispatched and followed up. A good example of scientific management in today's society is any of the

directory enquires numbers, staff read from a script and simply ask what number you want and then a computer reads out the number and even asks if you would like to be connected.

Use of incentives According to Taylor workers were only motivated by money, in today's workplace Taylor's piece rate pay may have a different name "performance related pay" is how its new trading name and most of the Multi International companies now pay their workers a very basic pay and only rewards staff who excel at their jobs. According to Taylor one should "pay the worker, not the job". In the Author's organisation Eircom all staff from the lines engineers to the managers are all paid by performance and this has helped to eliminate a lot of the 'soldiering' that used to take place.

Division of Labour Scientific management gives managers control and this can be seen in many of our call centres whether its directory enquires or calling the bank 'thank you for calling and how may I direct your call?' these scripts show us 21st Century management control. Management see these scripts as necessary to keep workers efficient and consistent but it is just modern day Taylorism which assumes that workers are dim and lazy. Selection and training of workers Finding the 'best' person for the job is still a challenge for many companies.

Many companies now use automated curriculum vitae processing by computers with scientific personality testing to try and match the job to the right person. Employers are looking for employees to work hard, be flexible and to be skilled. It is imperative to get the right people, with the right skills in the right positions and at the right time. Choosing the right people may

increase an organisations competitive advantage which is after all central to competitive success of any organisation. Limitations of scientific management Scientific management has been in a state of constant evolution since its adoption.

The objective of the scientific management movement was to increase efficiency by carefully planning workers' movement in the most efficient way. Taylor's ideas and those of his followers led to time-and-motion experts with their stopwatches and clipboards observing workers, and seeking the 'one best way' in which every job could be performed. From the late 1920s, a 'human relations' school of thought emerged, challenging Taylorist beliefs in formal work structures and what was considered to be the over-simplification of the concept of motivation.

Scientific Management was based on the assumption that workers were driven entirely by economic concerns but Human Relations researchers examined the behaviour of people at work and argued that social factors such as informal work groups and management styles influenced performance. As a result, the personnel management function began to focus on matching the needs of employees with those of management, through the creation of informal structures and managerial styles (Gormley 2009).

The Hawthorne Studies conducted by Elton Mayo and his colleagues are exemplary early studies in this tradition and work on motivation by Abraham Maslow although their ideas were built on the original quantitative theories of measuring work as seen in scientific management they also discovered

some of the limitations of 'Taylorism'. The Author will now discuss the limitations of scientific management as discovered by Mayo, Maslow and Deming. Elton Mayo and the Hawthorne Studies

The Bank Wiring Observation Room Experiments which involved a group of men being observed in their natural work setting with no changes to their working conditions but with an observer taking notes and interviewing them. The group had set their own standards and restricted their output. They had decided what their daily limit was and what constituted as a fair day's work and this was not to be exceeded by any worker. The results showed Mayo that workers were dissatisfied with the scientific approach. Mayo's results placed focus on the social context of work: in particular, worker motivation, group dynamics and group relations.

The workers were joined in their opposition to management and were not motivated by the financial incentives offered for higher output. Data gathered at the Hawthorne plant (collectively known as The Hawthorne studies) suggested a positive association between labour productivity and management styles. Abraham Maslow (Maslow's Hierarchy of Needs) Maslow was concerned with the issue of employee motivation and wanted to explain how workers could be motivated to achieve higher performance. Maslow focused on the paternalistic style of management focusing on employees' social needs as the key to better relations and better performance. This became known as Maslow's hierarchy of needs, the needs which Maslow identified started with • Physiological needs - food and shelter • Safety needs - the need to feel secure • Acceptance needs - the need to feel accepted by

others • Esteem needs – the need for selfrespect • Self Actualisation – the need for self achievement and fulfilment W. Deming and Total Quality Management Total quality management (TQM) sees quality as a key to organisational success and emphasizes prevention rather than the correction of mistakes.

In the Authors opinion TQM is probably the modern day ‘ Taylorism’ the four principals of TQM are. Plan Prepare and plan in a structured way by learning from the past and setting benchmarks for change. Do If your goal is far-reaching, start small and evaluate your results before going wider. Study Analyze the results of what you have done and find out how to apply what you have learned to future activities. Act - Do what you need to do to make your process better and easier to replicate In Demings 14 point management plan, Deming wanted everything to be uniform , in delivery times , prices and work practices. . Create constancy of purpose towards improvement. Replace short-term reaction with long-term planning. 2. Adopt the newphilosophy. The implication is that management should actually adopt his philosophy, rather than merely expect the workforce to do so. 3. Cease dependence on inspection. If variation is reduced, there is no need to inspect manufactured items for defects, because there won't be any. 4. Move towards a single supplier for any one item. 5. Improve constantly and forever. Constantly strive to reduce variation. 6. Institute training on the job. If people are inadequately trained, they will not all work the same way, and this will introduce variation. 7. Institute leadership. Deming makes a distinction between leadership and mere supervision. 8. Drive out fear.

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

9. Break down barriers between departments. Another idea central to TQM is the concept of the 'internal customer', that each department serves not the management, but the other departments that use its outputs. 10. Eliminate slogans.

Another central TQM idea is that it's not people who make most mistakes - it's the process they are working within. Harassing the workforce without improving the processes they use is counter-productive. 11. Eliminate management by objectives. Deming saw production targets as encouraging the delivery of poor-quality goods. 12. Remove barriers to pride of workmanship. Many of the other problems outlined reduce worker satisfaction. 13. Institute education and self-improvement. 14. The transformation is everyone's job. Each of these management models teaches us something about the limitations of scientific management.

Scientific Management is often associated with negative consequences both for workers, who may consider themselves to be victims of exploitation and for managers, who may find it difficult to motivate such workers or to deal with poor performance and resistance. Conclusion Considering that Frederick Taylor has been dead for nearly a century and in this time a knowledge explosion has taken place, Taylor's track record is extraordinary. If Taylor, Gantt, Gilbreth and Lillian were alive today would they be happy with what has become management thought? In the Authors pinion many of the different management styles all share certain similar characteristics of

scientific management and the Author believes that they would all find the total participation movement quite acceptable. The Scientific management theories discussed above evolved from the needs of the past to manage mainly the labour force. The needs of the present in the current economic climate may require similar recording of procedures as involved with time and motion studies during the Industrial Revolution in the past to regulate the workings of Finance in Banking and related areas mainly facilitated by the IT Revolution.

Rest assured that changes in the past and the present and their successful resolution by scientific management will be replicated many times in the future and hopefully the resolutions will improve/maximise the return for the employer (stakeholder) and employee. In conclusion there is no single 'best' strategy or style of management. The 'best' solution is the one that is most fitting in relation to the particular needs of that organisation. Bibliography
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