Introduction

3 The Search for Principles of Management

Chapter 4 outlines the benefits of bureaucratic organization and the need to simplify the organization. The Industrial Revolution and the emergence of the factory system led to the development of management principles. The search for universally applicable principles of management began in the industrial revolution. Two important classic theorists described the main ideas of management.
title, in which the French ‘administration’ had been translated as ‘management’. His fear was that with such a title Fayol’s work would be seen as relevant only to industry, whereas, in Urwick’s view, it was just as applicable to central and local government as well. History has shown that he need not have worried, since Fayol’s ideas have had a major influence on the world of organisations.

**Fayol’s Definition of Management**

4. Fayol prefaced his famous definition of management by stating what he considered to be the key activities of any industrial undertaking. He outlined six such key activities, as follows:

1. Technical activities, eg production.
2. Commercial activities, eg buying and selling.
3. Financial activities, eg securing capital.
4. Security activities, eg safeguarding property.
5. Accounting activities, eg providing financial information.
6. Managerial activities, eg planning and organising.

Fayol accepted that the first five were already sufficiently well known, but recognised at the outset that the sixth group of activities would require further explanation for his readers. Whilst the other activities were all interdependent to some extent, there was no single one which was concerned with broad planning and resourcing. It was vitally necessary to isolate these last mentioned activities, said Fayol, and it is these to which he gave the name ‘managerial’.

5. To manage, said Fayol, is to ‘forecast and plan, to organise, to command, to coordinate and to control’. He saw forecasting and planning as looking to the future and drawing up a plan of action. Organising was seen in structural terms, and commanding was described as ‘maintaining activity among the personnel’. Coordinating was seen as essentially a unifying activity. Controlling meant ensuring that things happen in accordance with established policies and practice. It is important to note that Fayol did not see managerial activities as exclusively belonging to the management. Such activities are part and parcel of the total activities of an undertaking. Having said this, it is equally important to point out that Fayol’s general principles of management take a perspective which essentially looks at organisations from the top downwards. Nevertheless, they do have the merit of taking a comprehensive view of the role of management in organisations. Thus, Fayol’s analysis has more far-reaching implications than F.W. Taylor’s ideas on scientific management, which were centred on the shop floor.

**Fayol’s Principles of Management**

6. In his book Fayol lists fourteen so-called ‘principles of management’. These are the precepts which he applied the most frequently during his working life. He emphasised that these principles were not absolutes but capable of adaptation, according to need. He did not claim that his list was exhaustive, but only that it served him well in the past. The fourteen ‘principles’ listed below in Figure 3.1 are given in the order set out by Fayol, but the comments are a summary of his thinking on each point.
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<td>1.</td>
<td>Division of work</td>
<td>Reduces the span of attention or effort for any one person or group. Develops practice and familiarity.</td>
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<td>2.</td>
<td>Authority</td>
<td>The right to give orders. Should not be considered without reference to responsibility.</td>
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<td>3.</td>
<td>Discipline</td>
<td>Outward marks of respect in accordance with formal or informal agreements between firm and its employees.</td>
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<td>4.</td>
<td>Unity of command</td>
<td>One man one superior!</td>
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<td>5.</td>
<td>Unity of direction</td>
<td>One head and one plan for a group of activities with the same objective.</td>
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<td>6.</td>
<td>Subordination of individual interests to the general interest</td>
<td>The interest of one individual or one group should not prevail over the general good. This is a difficult area of management.</td>
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<td>7.</td>
<td>Remuneration</td>
<td>Pay should be fair to both the employee and the firm.</td>
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<td>8.</td>
<td>Centralisation</td>
<td>Is always present to a greater or lesser extent, depending on the size of company and quality of its managers.</td>
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<td>9.</td>
<td>Scalar chain</td>
<td>The line of authority from top to bottom of the organisation.</td>
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<td>10.</td>
<td>Order</td>
<td>A place for everything and everything in its place; the right man in the right place.</td>
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<td>11.</td>
<td>Equity</td>
<td>A combination of kindliness and justice towards employees.</td>
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<td>12.</td>
<td>Stability of tenure of personnel</td>
<td>Employees need to be given time to settle into their jobs, even though this may be a lengthy period in the case of managers.</td>
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<td>13.</td>
<td>Initiative</td>
<td>Within the limits of authority and discipline, all levels of staff should be encouraged to show initiative.</td>
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<td>14.</td>
<td>Esprit de corps</td>
<td>Harmony is a great strength to an organisation; teamwork should be encouraged.</td>
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**Figure 3.1. Fayol’s Principles of Management.**

7. Fayol’s General Principles have been adopted by later followers of the classical school, such as Urwick and Brech. Present day theorists, however, would not find much of substance in these precepts. From our present day viewpoint, the following general comments may be made.

1. The references to division of work, scalar chain, unity of command and centralisation, for example, are descriptive of the kind of formal organisation that has come to be known as bureaucracy. Fayol, in true classical fashion, was emphasising the structural nature of organisations.

2. Issues such as individual versus general interests, remuneration and equity were considered very much from the point of view of a paternalistic management. Today, questions concerning fairness, or the bona fide conflict of interests between groups,
have to be worked out jointly between management and organised labour, often with third party involvement by the State.

3. Although emphasising the hierarchical aspects of the business enterprise, Fayol was well aware of the need to avoid an excessively mechanistic approach towards employees. Thus references to initiative and esprit de corps indicated his sensitivity to people’s needs as individuals and as groups. Such issues are of major interest to theorists today, the key difference being that whereas Fayol saw these issues in the context of a rational organisation structure, the modern organisation development specialist sees them in terms of adapting structures and changing people’s behaviour to achieve the best fit between the organisation and its customers.

4. Fayol was the first to achieve a genuine theory of management based on a number of principles which could be passed on to others. Many of these principles have been absorbed into modern organisations. Their effect on organisational effectiveness has been subject to increasing criticism over the last twenty years, however, mainly because such principles were not designed to cope with modern conditions of rapid change, flatter structures, and increased employee participation in the decision-making processes of the organisation.

**F W Taylor and Scientific Management**

8. The following paragraphs summarise the key ideas of the pioneers of ‘Scientific Management’ – F.W. Taylor, Frank and Lilian Gilbreth and H. Gantt – and comments on the main consequences of their work.

9. Frederick Winslow Taylor (1856–1915), like Fayol, was one of the early practical manager-theorists. Born in Boston, Massachusetts, in 1856, he spent the greater part of his life working on the problems of achieving greater efficiency on the shop-floor. The solutions he came up with were based directly on his own experience at work, initially as a shop-floor worker himself and later as a manager. His career began as an apprentice in engineering. Having served his time, however, he moved to the Midvale Steel Company, where, in the course of eleven years, he rose from labourer to shop superintendent. It was during this time that Taylor’s ideas of ‘scientific management’ were born. In 1889 he left Midvale to work for the Bethlehem Steel Company, where he consolidated his ideas and conducted some of his most famous experiments in improving labour productivity. Taylor was keen to pass on his ideas to others, which he achieved through his writings, most notably ‘The Principles of Scientific Management’ published in 1911. After his death, his major works were collected together and published as ‘Scientific Management’ in 1947. He did not meet Henri Fayol and it is possible that he did not know of Fayol’s analysis of management.

**The Setting for Scientific Management**

10. The last twenty years or so of the nineteenth century were a time for facing up to the often ugly realities of factory life. From the employers’ point of view, efficiency of working methods was the dominant issue. The gathering pace of the industrial revolution in the Western world had given rise to new factories, new plant and machinery; labour was plentiful. The problem was how to organise all these elements into efficient and profitable operations.
11. It was against this background that Taylor developed his ideas. He was passionately interested in the efficiency of working methods. At an early stage he realised that the key to such problems lay in the systematic analysis of work. Experience, both as a worker and as a manager, had convinced him that few, if any, workers put more than the minimal effort into their daily work. He described this tendency as ‘soldiering’, which he subdivided into ‘natural’ soldiering, i.e. Man’s natural tendency to take things easy, and ‘systematic’ soldiering, i.e. the deliberate and organised restriction of the work-rate by the employees. The reasons for soldiering appeared to Taylor to arise from three issues:

1. Fear of unemployment.
2. Fluctuations in the earning from piece-rate systems.

Taylor’s answers to these issues was to practise ‘scientific management’.

The Principles of Scientific Management

12. Taylor recognised that the measures he was proposing would appear to be more than just a new method – they would be revolutionary! He stated at the outset that ‘scientific management’ would require a complete mental revolution on the part of both management and workers.

13. In its application to management, the scientific approach required the following steps:
   - Develop a science for each operation to replace opinion and rule-of-thumb.
   - Determine accurately from the science the correct time and method for each job.
   - Set up a suitable organisation to take all responsibility from the workers except that of actual job performance.
   - Select and train the workers.
   - Accept that management itself be governed by the science developed for each operation and surrender its arbitrary power over worker i.e. cooperate with them.

14. Taylor saw that if changes were to take place at the shopfloor level, then facts would have to be substituted for opinion and guesswork. This would be done by studying the jobs of a sample of especially skilled workers, noting each operation and timing it with a stopwatch. All unnecessary movements could then be eliminated in order to produce the best method of doing a job. This best method would become the standard to be used for all like jobs. This analytical approach has come to be known as Work Study, the series of techniques now utilised all over the world (see Chapter 40).

15. In Taylor’s time the most usual practice at the work organisation level was for the management to leave working methods to the initiative of the workers – what Taylor called rule-of-thumb. His suggestion that managers should take over that role was certainly new. Not only that, it was controversial, for he was deliberately reducing the scope of an individual’s job. Contemporaries said it turned people into automatons. Taylor argued that the average worker preferred to be given a definite task with clear-cut standards. The outcome for future generations was the separation of planning and controlling from the doing, or the fragmentation of work. McGregor’s Theory X assumptions about people (see Chapter 5) are essentially a description of the managerial style produced by Taylor’s ideas. In the last decade or so, ideas such as job enrichment and work design have been put into practice precisely to combat the fragmentation effects of years of Taylorism. Another comment of Taylorism is that the gradual de-skilling of
work has been accompanied by a rise in educational standards, thus tending to increase worker-frustration even further.

16. Taylor felt that everyone should benefit from scientific management – workers as well as managers. He disagreed with the way most piece-rate systems were operated in his day, as the practice was for management to reduce the rates if workers’ earnings went up beyond an acceptable level. Taylor’s view was that, having scientifically measured the workers’ jobs and set rates accordingly, then efficient workers should be rewarded for their productivity without limit. The difficulty for most managers was that they lacked Taylor’s expertise in measuring times and had to resort to arbitrary reduction in rates where measurements had been loose.

17. So far as the workers were concerned, scientific management required them to:

- Stop worrying about the division of the fruits of production between wages and profits.
- Share in the prosperity of the firm by working in the correct way and receiving wage increases of between 30% and 100% according to the nature of the work.
- Give up their ideas of soldiering and cooperate with management in developing the science.
- Accept that management would be responsible, in accordance with the scientific approach, for determining what was to be done and how.
- Agree to be trained in new methods, where applicable.

18. One of Taylor’s basic theses was that adoption of the scientific approach would lead to increased prosperity for all. It was, therefore much more important to contribute to a bigger cake than to argue about the division of the existing cake. Needless to say this kind of approach did not receive much favour with the trade unions at the time. Taylor saw them as a decidedly restrictive influence on issues such as productivity. In his view wages could now be scientifically determined, and should not be affected by arbitrary factors such a union power or management whim. His own experience had shown how considerable were the increases in earnings achieved by workers adopting their part of the scientific approach.

19. In terms of work-organisation, the workers were very much under the control of their management in Taylor’s system. Taylor felt that this would be acceptable to them because management’s actions would be based on the scientific study of the work and not on any arbitrary basis. It would also be acceptable, argued Taylor, because of the increased earnings available under the new system. He claimed that there were rarely any arguments arising between management and workers out of the introduction of the scientific approach. Modern experience has unfortunately shown Taylor’s view to be considerably over-optimistic in this respect. The degree of trust and mutual cooperation, which Taylor felt to be such an important factor in the success of scientific management, has never been there when it mattered. As a result, although workers’ attitudes towards Work Study have often been favourable, the ultimate success of work-studied incentive schemes has always been rather limited owing to workers’ feelings that the management was attempting to ‘pin them down’ and to management’s feelings that the workers had succeeded in ‘pulling the wool over their eyes’ concerning the timing of key jobs.

20. In support of his Principles, Taylor demonstrated the benefits of increased productivity and earnings which he had obtained at the Bethlehem Steel Works. He described to his
critics an experiment with two shovelers – ‘first-class shovelers’, in his words – whose efforts were timed and studied. Each man had his own personal shovel, which he used regardless of the type of ore or coal being shifted. At first the average shovel load was about 38 pounds and with this load each man handled about 25 tons of material a day. The shovel was then made smaller for each man, and the daily tonnage went up to 30. Eventually it was found that with smaller shovels, averaging about 21 pounds per load, the daily output rose even higher. As a result of this experiment, several different sizes of shovel were supplied to the workforce to enable each man to lift 21 pounds per load whether he was working with heavy ores or light coals. Labourers who showed themselves capable of achieving the standards set by the two ‘first-class’ shovelers were able to increase their wages by 60%. Those who were not able to reach the standard were given special training in the ‘science of shovelling’.

21. After a three-year period, Taylor and his colleagues reviewed the extent of their success at the Bethlehem Works. The results were impressive: the work of 400–600 men was being done by 140; handling costs per ton had been reduced by half, and as Taylor was quick to point out, that included the costs of the extra clerical work involved in studying jobs; and the labourer received an average of 60% more than their colleagues in neighbouring firms. All this was achieved without any kind of slave-driving which was no part of scientific management, at least so far as Taylor was concerned.
Comments on the Scientific Management School

28. The benefits arising from scientific management can be summarised as follows:

- Its rational approach to the organisation of work enabled tasks and processes to be measured with a considerable degree of accuracy.
- Measurement of tasks and processes provided useful information on which to base improvements in working methods, plant design etc.
- By improving working methods it brought enormous increases in productivity.
- It enabled employees to be paid by results and to take advantage of incentive payments.
- It stimulated managements into adopting a more positive role in leadership at the shop-floor level.
- It contributed to major improvements in physical working conditions for employees.
- It provided the foundations on which modern work study and other quantitative techniques could be soundly based.
29. The *drawbacks* to scientific management were principally the following:
   - It reduced the worker’s role to that of a rigid adherence to methods and procedures over which he had no discretion.
   - It led to the fragmentation of work on account of its emphasis on the analysis and organisation of individual tasks or operations.
   - It generated a ‘carrot-and-stick’ approach to the motivation of employees by enabling pay to be geared tightly to output.
   - It put the planning and control of workplace activities exclusively in the hands of the management.
   - It ruled out any realistic bargaining about wage rates since every job was measured, timed and rated ‘scientifically’.

30. Whilst it is true that business and public organisations the world over have benefited from, and are continuing to utilise, techniques which have their origins in the Scientific Management movement, it is also a fact that, in the West at any rate, a reaction against the basic philosophy of the creed has taken place. Tasks and processes are being re-integrated, the individual is demanding participation in the key decision-making processes, management prerogatives are under challenge everywhere by individuals and organised groups alike. Yet, as Chapter 15 points out, Japanese companies in particular have taken up many of the beneficial aspects of scientific management and combined them with other approaches to produce a highly successful production system (see Theory Z).

31. On balance, the most important outcome of scientific management was that it stimulated ideas and techniques for improving the systematic analysis of work at the workplace. It also undoubtedly provided a firm launch-pad for a wide variety of productivity improvements in a great range of industries and public services.

32. Its major disadvantage was that it subordinated the worker to the work system, and so divorced the ‘doing’ aspects of work from the planning and controlling aspects. This led to:
   - the creation of boring, repetitive jobs;
   - the introduction of systems for tight control over work; and
   - the alienation of shop-floor employees from their management.