Contemporary Security Management

Second Edition

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For Barbara, my beautiful and persevering wife

Contents

1. Historical Roots

That men do not learn very much from the lessons of history is the most important of all the lessons that history has to teach.
—Aldous Huxley

INTRODUCTION

Efforts to organize human work have existed at least since people started living in tribes, but few descriptions of managed work were recorded prior to about 200 years ago. Before then, work activities were fairly simple and involved relatively small groups. Typically, the workplace was a single room containing raw materials, simple tools, a craftsman, and an apprentice. The craftsman was the equivalent of today's line supervisor, a skilled and knowledgeable practitioner of a trade. The apprentice was not difficult to manage because the tasks he performed relied on low levels of technology. The apprentice learned mainly by observing the craftsman and by accepting direct supervision.

INDUSTRIAL REVOLUTION

The Industrial Revolution changed that arrangement. It began in Europe in the late eighteenth century and spread quickly to the United States. In his classic book *The Wealth of Nations*, Adam Smith stole a glance into the future when he recognized the great increase in work output offered by the use of machines.

Fertile Ground

The United States provided fertile ground for cultivating a system of mechanized factories. Funds needed to form large manufacturing companies were willingly provided by the affluent. The lack of tariff barriers between the states, coupled with an expanding network of roadways and waterways, facilitated large-scale movements of mass-produced goods. Nature's generous endowment ensured a large and dependable supply of raw materials. The advent of

the steel plow opened the West to agricultural production, and the factories that produced farm equipment and other work-enhancing machines provided jobs that attracted large numbers of people to urban industrial centers.

Growth of Factories

The growth of the factory system led to mass employment, which in turn provided incomes that made mass consumption possible. Consumer demand enabled mass production to prosper. At the same time, improvements made in agricultural techniques freed a large part of the workforce from food production. With abundant farmland and industrial raw materials, the young American republic developed a balance of agriculture and industry.

Mass Production

As the production of goods migrated from small workshops to large factories, many more people were engaged, each working on only one part of the manufactured product and having little contact with those who were making the other parts. This marked the beginning of specialization of labor, which introduced new requirements for managing production. Coordination of separate work efforts was essential and at the same time difficult to achieve.

The absence of recorded references to management practices cloud the Industrial Revolution and the ensuing changes it fostered. Although managers likely discussed common problems among themselves, few or no exchanges of ideas in writing were circulated or passed on to succeeding managers. Later, however, descriptions of management practices began to appear mainly in the professional journals of management societies. The faint outlines of a management movement began to unfold.

SCIENTIFIC MANAGEMENT

Frederick W. Taylor observed that workers were pretty much free to carry out their job assignments at their own paces by their own methods. In search of better ways of performing jobs, he used the scientific method of logical inquiry to experiment with work methods .

Although not all of the principles that came to be known as scientific management originated with Taylor, he brought the standard principles of his time into a comprehensible whole, put them into operation, and verified that they worked. Taylor published his findings in *Principles of Scientific Management*. He stressed that his concepts provided a method for labor and management to work together. Taylor's pioneering efforts, however, were widely misunderstood at the time [1].

Taylor is often referred to as the Father of Scientific Management, but he was not the only expert in this area. Among others, Frank and Lillian Gilbreth developed the principles of motion study, through which jobs were broken

into component movements and studied so that wasted motions and fatigue could be reduced [2].

Similar management research was taking place in Europe. For example, Henri Fayol — chief executive of a large French mining and metallurgical firm — studied management from the top down, with emphasis on overall administration. He published widely on management practices applicable to industrial and governmental organizations.

HUMAN RELATIONS

The pioneers of scientific management, although clearly oriented to efficiency in production, recognized the human element in management. Elton Mayo's study of workers' social needs at the Hawthorne plant of the Western Electric Company emphasized the need to take workers' attitudes into account (see Figure 1-1) and to recognize them as important contributors to production [3].

The emphasis by Mayo and others did not downplay the prevailing interest in efficiency. It simply added a new dimension; that is, that management's legitimate interest in getting the work done has to be tempered with an interest in the people who do the work. Technical systems for performing work through social interactions of workers quickly evolved, and the term *sociotechnical systems* came into use to describe the merger.

Figure 1-1 The "human relations" era ushered in an emphasis on relationships among employees.

OPERATIONS RESEARCH

Efforts to apply hard science to management led in 1937 to the development in the United Kingdom of a separate discipline called operations research. By 1942, spurred by the pressing demands of World War II, all three of Britain's military services were engaged in operations research. Learning from the British experience, the United States committed heavily to the use of the approach in the industrial environment — and with the advent of the computer in the early 1950s it took on an entirely new dimension.

Operations research has three pillars: a systems approach to problem solving, the use of teams from many disciplines, and the application of scientific methods. The systems approach recognizes that an effect on one part of a system will have an effect on the behavior of the system as a whole. It is the interaction between and among parts, not the actions of one or a few parts, that determines how well or how poorly the system performs. The use of interdisciplinary teams brings expertise to the work, much of which involves the application of highly technical analyses and mathematical modeling (e.g., see Figure 1-2).

Operations research brought about significant change in problem-solving techniques. Computers and other scientific tools capable of dealing with large and complex problems are routinely used for business purposes, requiring the modern manager to have strong quantitative skills.

Program Evaluation and Review Technique

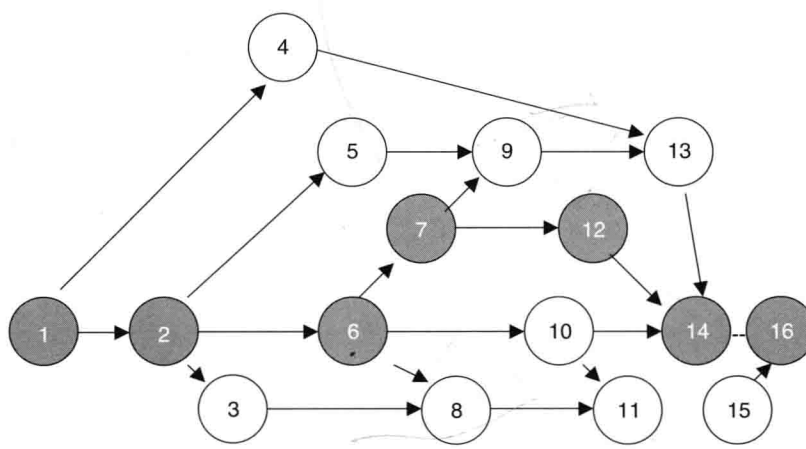

Figure 1-2 The Program Evaluation and Review Technique (PERT) is commonly used to track progress in large and complicated projects. The critical path is the sequence of activities and events that takes the greatest amount of time to complete and that has the least slack in activity [4].