Frederick Winslow Taylor
(1856 - 1915)
Principles of Scientific Management

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In the past the man has been first; in the future the system must be first (p. 7).

Principles of Scientific Management

Taylor's focus of attention was plant management. He argued that labor problems (waste, low productivity, high turnover, soldiering, and the adversarial relationship between labor and management) arose from defective organization and improper methods of production in the workplace. Production, he contended, was governed by universal and natural laws that were independent of human judgment. The object of scientific management was to discover these laws and apply the "**one best way**" to basic managerial functions such as selection, promotion, compensation, training, and production.

Taylor advocated using time and motion studies to determine the most efficient method for performing each work task, a piece-rate system of compensation to maximize employee work effort, and the selection and training of employees based on a thorough investigation of their personalities and skills.

Taylor also promoted changes in the organizational structure of the firm, such as replacing the single omnipotent foreman in charge of all aspects of production and personnel management in a given department with several foremen, each of whom would be trained in the knowledge and skills of a specific functional activity (e.g., productivity, machine repair, quality assurance).

The gist of the problem. Taylor believed that under the traditional management each worker was to become more skilled in his own trade than it was possible for any one in management to be, and that, therefore, the details of how the work should best be done must be left to him (p. 63). Unfortunately, four problems existed that rendered this situation untenable for society: **First**, management used rules of thumb to decide on what constitutes a fair day of work (p. 22), work procedures, personnel matters, etc. **Second**, being self-centered, workers abused managers' trust in two ways (pp. 17, 19, 20, 50). According to Taylor, "the natural instinct and tendency of men is to take it easy, which may be called ***natural soldiering***" (p. 19). "To ward off a rate cut was one reason to soldier. To thumb his nose at the boss, protest wages deemed too low, or husband shop work otherwise apt to run out were others" (Kanigel, 1997: 164). **Third**, even those employees who wanted to perform to the best of their capabilities were forced to conform to an informal, group-made norm that was always lower than their optimal performance (p. 13). This Taylor labeled "***systematic soldiering***," where the whole shop conspired to restrict production (p. 20). **Fourth**, any man phlegmatic enough to do manual work was too stupid to develop the best way, the 'scientific way' of doing a job, hence the vast amount of waste in the workplace (p. 63).

An important brick in the intellectual edifice of Taylor's scientific management is the "rabble hypothesis:"

1. Natural society consists of a horde of unorganized individuals;

2. Every individual acts in a manner calculated to secure his self-interest (especially in times of economic scarcity). In itself this may not be detrimental to an organization. However, when viewed in the context

Taylor portrayed of crafty workers who tried to squeeze more money for less effort, it is clear why self-interested workers are a menace.

3. Every individual thinks logically, to the best of his ability, in the service of this aim. This is why the best incentive to induce workers to work harder is money.

What then should management do with employees? (See pp. 36, 140):

1. Science, not rule of thumb
2. Harmony (playing by the rules of the game designed by management), not discord (p. 15)
3. Cooperation, not individualism (p. 36)
4. Maximum output, in place of restricted output (soldiering)
5. The development of each man to his greatest physical capability (pp. 39, 55, 57, 59)

We begin to see that Scientific management has a strong HRM component.

Taylor strongly believed that the successful manager was a manager who controlled every aspect of the production process. To achieve this, managers should:

- Centralized planning. Uncouple planning and execution -- i.e. workers only execute what managers plan (pp. 37-8). This is probably the most well-known principle of Scientific management. At a lecture he gave in 1906, Taylor explained:

> **In our scheme, we do not ask for the initiative of our men. We do not want any initiative. All we want of them is to obey the orders we give them, do what we say, and do it quick (Kanigel: 169).**

- Systematic analysis of each distinct operation. Create an elaborate set of rules to regulate every aspect of worker behavior at the workplace (pp. 22, 36).

- Detailed instruction and supervision. Breakdown every job to its minuscule components so that no one worker would posses any knowledge which might be unique enough to put this worker in a position of power vis-à-vis management (see p. 36 - the 4 rules of Scientific Management).

- Uncouple 'direct' and 'indirect' labor. All preparation and servicing tasks are stripped away to be performed by unskilled workers as far as possible. Thus, he created two classes of workers -- laborers and maintenance workers.

- Recruit the most stupid men they can lay their hand on (p. 40-1, 43-6, **59**, 62, 137).

- Functional management/foremanship (123-5; 129). Few tend to pay attention to this point. Taylor advocated the division of the function of the shop-floor inspector into four functions (setting-up boss, speed boss, quality inspector, and repair boss), and placing them under the control of the ***planning department***. Thus foremen like workers became subject to the rule of clerks. In this way, Taylor tackled a major problem faced by management of large, complex organizations, that is, the integration of conflicting instructions. In the process, he was laying the ground for the modern division between 'staff' and 'line' functions.

- Wage payments. Wage systems should be carefully designed to induce each worker to follow the detailed instructions. Taylor preferred a piece-rate system of compensation. Frequently, piece-rate systems are associated with bonuses for extra efforts. Characteristically, these systems tend to evolve upward. Continuously and consistently, what used to be an extra effort worthy of a bonus, becomes the new performance norm. And vying to gain or regain competitive advantage, managers are driven to establish a higher norm for their employees.

These principles constitute a dynamic of ***deskilling***. Importantly, the drive for deskilling was initiated not by Taylor but by larger factories, and more specialized machines.

HOW TO READ TAYLOR

- SM is a *philosophy* and a *set of principles* an organization uses to make the most of workers' physical capabilities (pp. 129-131). Therefore,

- like quality improvement gurus who emerged years after Taylor's death in 1915, Taylor believed that successful implementation of Scientific Management required a "thought revolution in management." In other words, implementation of the principles of Scientific Management without a supportive philosophy (culture) is a recipe for failure (pp. 130-31):

  > When, however, the elements of this mechanism, such as time study, functional foremanship, etc., are used without being accompanied by the true philosophy of management, the results are in many cases disastrous... the really great problem involved in a change from the management of "initiative and incentive" to Scientific Management consists in a complete revolution in the mental attitude and the habits of all those engaged in the management, as well as the workmen... This change in the mental attitude of the workman imperatively demands time... The writer has over and over again warned against those who contemplated making this change that it was a matter, even in a simple establishment, of from two to three years, and that in some cases it requires from four to five years.

  Management of initiative and incentive refers to a system whereby managers would have to provide workers with special incentives to obtain their best effort, or initiative. The reason being, workers believed "it to be directly against their interests to give their employers their best initiative" (p. 33).

- SM creates an organization that strives for maximum interchangeability of personnel (with minimum training) to reduce its dependence on the availability, ability, or motivation of individuals. Taylorism represents a form of organization devoid of any notion of a career-structure for the majority. Thus, Taylorism can be defined as the bureaucratization of the structure of control, but not the employment relationship (no unions/CB/labor law) or career development.

- Taylor's recognition of the problems of cooperation, gaining consent and legitimacy and shared understandings, as well as the meaning of work should not be disregarded, see:

    - Harmonious society (pp. 10, 85);

    - Prosperous society and thriving individuals (pp. 10, 15, 29, 55, 125-128);

    - Management-cum-instructors (p. 26).

- Ultimately, Taylor evoked the authority of science to legitimize his ideas. With science as a foundation, Taylor hoped to improve efficiency and usher in an era of peaceful coexistence between capital, management and labor based on an objective understanding of what was best for all three groups. However, not everyone interested in SM had the same goal. Clearly, capital had much more to gain from the shift to SM than labor in terms of control and profits.

- Taylorism does allow for teamwork, yet it should be as regulated as possible. Thus, teams should be created only with management permission. No more than 4 people per team are allowed, and the team should disband within one week of its creation (pp. 72-3).

- Whenever Taylorism was introduced, it was filtered through and shaped by

national socio-economic contexts. In Japan, for example, employers relied on group discussions and collective problem-solving through quality circles (QCs). The adoption of motion study was important in the development of pay incentive systems and safety programs in modern Japanese industry. This led to the adoption of aptitude-testing of workers by the National Railways, which was then widely copied by other enterprises (early 1920s and 1930s). Importantly, the intention was not, as in the USA, to simplify work methods and thus to raise the efficiency of untrained labor. On the contrary, the Japanese managers wanted to build on the existing skills of their workforce in the railways, to encourage them to stay with them for their entire careers. In the final analysis, Japan absorbed and adapted Taylorism in an "organization-oriented," rather than a "market-oriented," context. In other words, the ways American managers used SM to adapt production to market whims was very different than their Japanese counterparts'.

Elements of Fordism

Taylorism provided the technological and intellectual foundations for Fordism -- a system whereby giant factories employ thousands of mainly unskilled workers and specialized machines to turn out huge quantities of a single product (emphasis should be put on interchangeability of parts and ease of assembly).

1. Production system - rested on work that was organized hierarchically, on a continuous flow technology, on high-volume production of standardized consumer goods, targeted standardized and uniform markets, acknowledged working class consumption, displaced a division of labor more centered on craft production, created unskilled production jobs, emphasized high level of specialization, demanded no learning experience and, therefore, offered little on-the-job training -- The implementation of Taylorism in relations to work processes.

2. Personnel Departments - maintained industrial peace and ensured that the labor process operated effectively and smoothly. Importantly, personnel departments were removed from the key corporate strategy-making within the business. Personnel managers were given no initiating role; they were regarded as being basically reactive, responding to the demands made by trade unions. No strategic HRM at that point in time.

3. Collective Bargaining - meshed with Fordism as a mechanism insuring that consumption power was tied to productivity growth.

4. Homogeneous Customers - large numbers of potential customers have essentially identical and well-defined wants for a long list of products.

   A combination of reduced profit levels (inability to sustain increased wages together with falling productivity), increased international competition and fragmented consumption patterns brought an end to Fordism in North America.