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Commentary

Operations management and production systems

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DESCRIPTION

Operations management aspects are designing and controlling the production process, as well as rethinking company operations in the creation of goods or services. This management includes ensuring that business operations are both efficient and successful in terms of serving customer expectations while using as few resources as possible. Planning, coordinating, and overseeing in the production, manufacturing, or supply of services are the fundamental issues of operations management. It is concerned with the whole management of a production or service system, which is the process of converting inputs (raw materials, labour, consumers, and energy), into outputs (goods and/or services for consumers). When managing manufacturing or service operations, decisions are made about operations strategy, product design, process design, quality management, capacity, facilities planning, production planning, and inventory control. These responsibilities necessitate the capacity to assess the present situation and devise new tactics for increasing production and service efficacy and efficiency. Although technological inventions and division of labour increased productivity, the problem of systematic measurement of performances and their calculation using formulas remained largely unexplored until Frederick Taylor's early work, which focused on developing a "differential piece-rate system" and a series of experiments, measurements, and formulas relating to metal cutting. The differential piece-rate system offered two pay rates for completing the same job: a higher rate for workers who were efficient and produced high-quality items (effectiveness), and a lower rate for those who did not meet the criterion.

The technological elements such as machines and tools as well as organizational behavior make up a production system like division of labour and information flow. Because an individual production system is usually analyzed in the literature in terms of a single business, it's usually inappropriate to include in a given production system the operations required to process goods obtained through purchasing or the operations performed by customers on the sold products, for the simple reason that businesses must to create their own manufacturing systems. The focus of analysis, modelling, and decision-making then shifts to this. Process production refers to when a product undergoes physical-chemical changes but does not require assembly, making it difficult to recover the original raw ingredients from the finished product. The notion of production systems can be applied to the service sector; however there are three key differences between services and material commodities: intangibility, client presence during transformation processes, and no "finished goods" stocks. A service process matrix can be used to categorise services: degree of labour intensity vs degree of customization. Mass Services and Professional Services (e.g., personal physicians and lawyers) have a high degree of labour intensity, whereas Service Factories (e.g., airlines and hotels) and Service Shops have a low degree of labour intensity. The systems mentioned above are ideal kinds; real-world systems may be hybrids of those categories. Consider how jeans are made: first, the fabric is carded, spun, dyed, and woven, then the cloth is cut into various shapes and assembled into pants or jackets by mixing the fabric with thread, zippers, and buttons, and finally the fabric is finished before being distributed to shops, the pants/jackets are distressed.

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