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Since their initiation—characterized by an unsophisticated structure—organizations declare the necessity to organize, coordinate, and manage resources. This necessity is emphasized through the appearance of emergent types of structure assorted with crossing boundaries strategies (strategic alliances, virtual enterprise, modular enterprise, and so forth). This paradigm shift has a prevailing effect on the "way of doing" within organizations and networks. The chapter aims to expose the theoretical approaches that explain the formation and the dynamics of the supply chain (Section 1). As a second step, the notion of the supply chain management (Section 2) and the supply chain performance. It also presents the impact of the IOS use on supply chain performance (Section 3).

Section 2
Global Pharmaceutical Industry

The section contains the description of the global pharmaceutical industry, megatrends and macrotrends in the global economy influencing its development, and many other issues allowing for the general analysis of the current state of this sector.

The pharmaceutical industry is seen as one of the most dynamic, volatile, and innovative parts of the global economic environment. It also has a big impact on the society and is an indicator of the healthcare systems' condition. Some changes have happened in the last decades, for example, shifting the production facilities to the developing countries, new market entries, or the new law changed the previously established and stable layout of market forces. The chapter aims at presenting the current situation of the global pharmaceutical industry including the main trends influencing the changes in this sector. Describing this part of the global market will ensure the right interpretation of the research results of the other parts of the book.

The pharmaceutical industry is trending in business decisions to demonstrate financial impact, influence on the behavior of consumers, governments, and businesses. This impact is beyond geographies and industries. It must be understood how a trend's impact will manifest itself in an actionable business planning horizon. Most of the pharmaceutical industries believe that global trends will shape business decisions over the next 5 to 10 years. Each management team in the pharmaceutical industry works on the global forces shaping their strategic context. The collisions approach

is a systematic way to capture trends in strategy that enables your leadership team to rapidly combine multiple trends, facts, and perspectives to identify the "market-shaping force" that has the power to significantly shift spending and profit pools. This chapter discusses the effective competition in the pharmaceutical industry in the implementation of new technologies and trends to contribute to broader solutions.

Section 3
Primary and Support Processes in the Pharmaceutical Industry

This section presents the details of the production process (the primary process) in the pharmaceutical industry and the chosen functions of the support (logistics) process in this sector (product development, sales, and distribution).

The composite of the present pharmaceutical industry requires more effective medication improvement and generation. A product lifecycle (PLC) is the progression of stages from the product's production to the world until its last withdrawal from the market. Product lifecycle comprises various stages that a product must possess in its lifespan, for example, launching, growth, maturity, and decline stage. While each stage brings huge changes, a progression of procedures for the administration of product lifecycle is required. Product lifecycle management (PLM) is a precise, controlled idea for overseeing and creating products and product-related data. Enhanced patient consistency, income development, extended clinical advantages, and faster market dispatch are among the primary utilization of product lifecycle management. To create a viable and productive product lifecycle management program many qualities are viewed like promising start, vital arranging clear authority, supporting information and abilities, readiness for changing tenets of government and associations.

The most significant attribute of the pharmaceutical industry is its creations and advancements. The innovation of new drugs is necessary for improving the quality of human life and duration. Pharmaceutical drug development is a time-consuming, costly, and crucial process. The essential goal of drug development is to discover a dosage or dosage scale of a drug application that is both efficient in curing the desired disease and safe. Clinical trials including newly developed drugs that are

directed in a progression of successive steps called stages to decide the security and efficacy of the new drug moreover the viability against the targeted diseases. There are four phases through which clinical trials are conducted. An investigational item can be assessed in more than one stage all the while in various clinical trials, and some clinical trials may cover two unique stages.

The most important stress related to the industrialized societies are diseases and health issues caused by taking medicines that are in unfavorable condition. The health issues caused due to the medications mainly depend on the quality of drugs. This is the main test confronted by any pharmaceutical organization wishing to guarantee its survival. The benefit in the pharmaceutical industries is higher. But now, the cost of the medicines is reduced as per the estimation is given by the government. Hence, pharmaceutical organizations now confront a moment of challenge to diminish costs through upgrading and enhancing their production methods. Based on the production process following in the pharmaceutical industries, the product quality can be varied and improved. This chapter prescribes the detailed information regarding the production practices that are followed in the pharmaceutical industries for the production of high-quality products.

Section 4
Supply Chain Management in the Pharmaceutical Industry

This section provides enhanced knowledge about supply chain management in the global pharmaceutical industry. It gives a detailed analysis of all functional areas related to the pharmaceutical supply chains including the newest solutions and current problems.

The pharmaceutical supply chain is presently a noteworthy research topic in process operations and administration. A lot of research has been embraced on office area and configuration, stock and circulation arranging, limit and generation arranging, and point-by-point planning. Just a little extent of this work straightforwardly addresses the issues confronted in the pharmaceutical division. The pharmaceutical industry is facing extraordinary difficulties caused by a maturing population, the expanding

expense of medicinal services, the priority given by the governments to bring down the cost of medications, boundaries to a passage in developing markets, and the more extensive reception of non-specific medications. These are quite recently a portion of the many difficulties making weight on the overall revenue of pharmaceutical firms. Expanded expenses of R&D and a diminished number of affirmed sedates additionally demonstrates that the lion's share of prescription, which is anything but difficult to find, has just been found.

Chapter 9

The pharmaceutical industry quite broadly encompasses a large and varied number of logistics and supply chain activities. The industry, as a whole, relies on some standard benchmarking indicators such as months of on-hand inventory and inventory turns; however, the existing metrics do not allow for idiosyncrasies of the industry or provide adequately detailed insight into the key factors that make a pharmaceutical supply chain excellence. Over 75% of the markup on pharmaceutical products takes place at the manufacturer. This causes inventory-carrying costs to increase dramatically once the distribution segments of the supply chain purchase the product. Wholesalers and large pharmacy chains suffer high carrying costs on the final product. Inside pharmaceutical supply chains, companies must also face issues of product expiration and limited shelf lives. Seasonal and short shelf life products such as flu vaccines leave companies without the opportunity to redistribute or reallocate product in order to meet demand.

Chapter 10

The pharmaceutical industry is under severe pressure due to complex supply chains that are underutilized, inefficient, and ill-equipped to cope with the sort of products. The pharma supply chain must meet the demands of a fast-evolving marketplace and the shift from patient to an outcome to undergo a radical overhaul. Research and development (R&D) costs in the pharma industry are spiraling, development timelines are growing, and consumers are becoming increasingly knowledgeable about care options including drugs and treatment. The marketplace is fixed through the development cycle and increasing efficiency through rationalization or outsourcing of non-core activities. Recently, the pharma industry moved from the "one-size-fits-all" approach for the supply chain flexibility, responsiveness, and reliability. This chapter enables readers to understand the techniques for rapid commission and decommission new products and markets and alternate supply models, inventory tracking tools to eliminate counterfeiting and parallel-importing risks.

Section 5
Pharmaceutical Supply Chain Characteristics: Case Studies

The last section contains a detailed description of the current issues in the pharmaceutical sector: one chapter about national issues and one from a company's perspective.

Corporate social responsibility policies have become an important management strategy in companies. This sector tries to respond to stakeholders' needs while developing socially responsible business activities and sustainable values. A sustainable supply chain is an integral part of CSR strategy in a pharmaceutical industry. Purchased goods and services have to present high standards and quality. As international companies have many suppliers and contractors, it is important to conduct and promote worked out values among all business partners. The aim of this chapter is to investigate the corporate social responsibility values of Polpharma Group. The chapter describes the long-term strategy of sustainability in Polpharma and the responsibilities of Polpharma in all business sectors. The most essential part will be the description of the process of sustainable supply chain formation. The chapter will describe the implementation of a code of conduct among suppliers. The case study in this chapter will be based on Polpharma, one of the largest Polish pharmaceutical companies.

The objective of this chapter is to analyze the collaboration networks of the Mexican pharmaceutical industry from an institutional approach. The pharmaceutical sector at a global level is characterized by a high dynamism in innovation and collaboration. One could say that the high value recorded by the industry is due to this. However,

in Mexico, the lack of efficient institutions that ensure the appropriation of profits for investment in research within the industry is not perceived; this situation leads us to the next question, What are the dynamics of collaboration between pharmaceutical companies in Mexico? To answer this question, a database was created that identifies the alliances of the companies belonging to the Canifarma. Finally, a comparison of the number of registrations and patent applications between eight of these companies is made to measure the results of this situation.