



Pharmaceutical Revolution

2-SP02-11-245

This problem situation was written by Elvira Nohemi Luna Hernandez (elvira.luna@tec.mx), with the purpose of serving as discussion material in the classroom; it does not intend to illustrate good or bad administrative practices. The story on this document is based on different people's experiences; some data has been modified at the request of the people and institutions involved.

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The Company

A group of five friends, specialists in disciplines such as biotechnology, pharmaceutical chemistry, industrial engineering, marketing, and management, have been observing the advances and challenges in the global pharmaceutical industry. Inspired by the growing demand for innovation in the sector, they have decided to undertake and create a micro enterprise focused on the development of innovative products and/or services to address critical needs in the market.

However, they are facing the barrier of limited initial capital, so they must design an attractive value proposition to attract investors and position themselves in a sector that is known for its high development costs, strict regulations, and strong competition. To this end, they have hired a consulting company in Strategic Foresight Planning to support them in the decision-making of their venture.

Context

The Ministry of Economy defines the pharmaceutical sector as "focused on the research, development, production, and commercialization of chemical products or biopharmaceuticals used for the prevention or treatment of diseases." Among the products offered there are drugs, vaccines, antisera, vitamins, and those for veterinary use. They have different classifications, including origin, medical prescription, and exploitation rights (Secretaría de Economía, 2013).

In the World

Statista, in its report on the pharmaceutical market, mentions that it has grown by 312% since 2001 with revenues of US\$390 billion to US\$1,607 billion in 2023. Among the best-selling segments in 2023 we find oncology, followed by antidiabetics and immunological drugs. It also highlights that biotechnology has grown 14 percent, from 26% of total sales in 2016, to 40% of total sales in 2023. The trend is for it to grow to 46% of total sales by 2030 (Statista, 2024c).

In this same report, it is mentioned that the most relevant companies for sales of prescription drugs in 2023 are *Johnson & Johnson*, *AbbVie*, and *Novartis*. In terms of capitalization in the biotechnology area we find *Eli Lilly & Co.*, *Novo Nordisk*, and *Johnson & Johnson* (Statista, 2024c).

In terms of production, Statista finds that Malaysia is expected to grow by up to 236.9% from 2015 to 2025, with the highest growth in revenue in this industry. In terms of the largest exporters, Germany ranks first, followed by Switzerland, Ireland, and Belgium (Statista, 2022).

In its report on Industry 4.0, Statista mentions that the chemical sector can benefit from smart manufacturing using Big-Data analysis. In addition, in relation to the use of artificial intelligence, there is talk of the *Precision Medicine* for the treatment of allergies and blood transfusions, or even for genetics that attack tumors, creating new devices such as consumer laptops, sensors, and connections to detect mutation patterns and their link to diseases (Statista, 2024a).

Likewise, the use of AI can be used mainly to better understand human DNA and treat its condition in a personalized way. *AstraZeneca* expects to analyze up to two million sequences of the human genome by 2026, and *Editas Medicine* specializes in research to edit the genome to treat disorders such as eye diseases, cancer, sickle cell anemia, or Duchenne muscular dystrophy (Statista, 2024a).

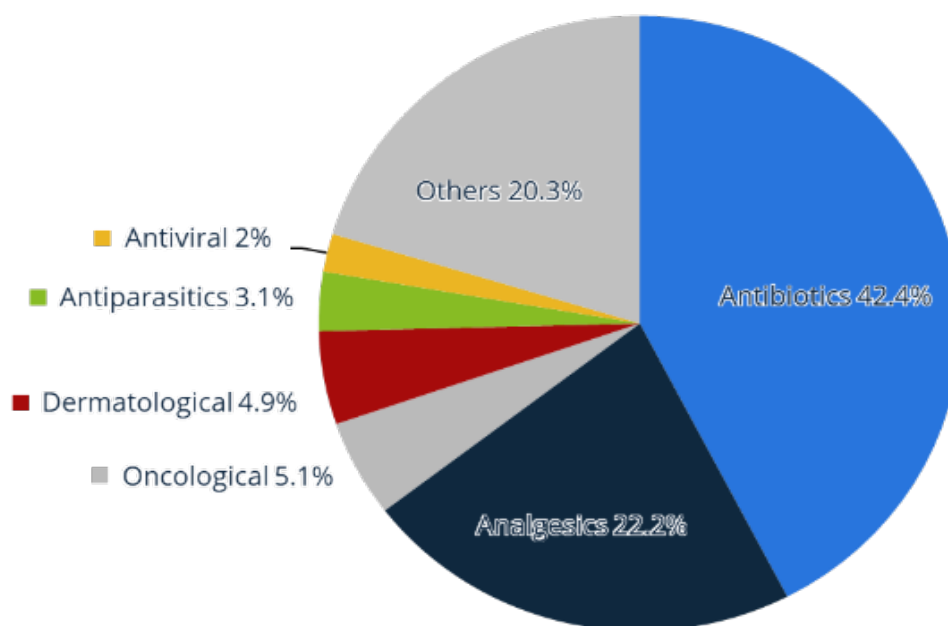
Mexico

In a joint report with INEGI- Canifarma (2024) states that in Mexico this industry grew a cumulative 27.4% from 2019 to 2022, with 70.5% of sales in 2021 in medicines for human use, 21.6% and 7.9% in those for veterinary use. 21.6% of that year's sales were for medical devices.

Regarding research and technological development, this same report mentions that only 5.6% of companies presented projects in this area from 2019 to 2022, with the therapeutic area of endocrinology and metabolism being the largest with 16.9% of the total projects, followed by analgesia with 12.6%, and cardiology with 8.5% (INEGI- Canifarma, 2024).

Statista shows that the pharmaceutical market's revenue is expected to grow by 74.2% in 11 years, from US\$5.25 billion in 2018 to an expected US\$9.15 billion in 2029. Likewise, pharmacy revenues are expected to grow by 56.2%, from US\$10.84 billion in 2018 to US\$16.94 billion in 2029. Mexico imports pharmaceuticals from the United States of America, Germany, and France, while it mainly exports to the United States, Canada, and Colombia (Statista, 2024b).

As for the segments, the most demanded in the country is antibiotics, followed by analgesics and oncology. The other segment, which represents 20.3%, is made up of products such as flu remedies, digestive and intestinal remedies, skin treatments, vitamins and minerals, and sanitizers.



Source. Statista, 2024b.

According to Statista, the main companies in this industry in Latin America are *Raia Drogasil* in the 79th place in the world ranking, followed by *Profarma Distribuidora de Productos Farmacéuticos* in the 236th place, and *Hypera Pharma* in the 239th place, all of them from Brazil. The first Mexican company in the ranking is *Genomma Lab Internacional* in the 332nd place, followed by *Farmacia Benavides* in the 341st.

For consumers, they have seen an increase in the average price of medicines of 34.4% in the last four years, with the highest average cost being cardiovascular, followed by respiratory and those prescribed for mental and behavioral disorders.

Alternatives

The consulting firm they hire must support them in defining the direction of the microenterprise and thus be able to venture and be clear about where they should focus on the creation of their products and/or services and look for an innovative offer that they can use now, but also thinking about innovation in the medium and long term.

They must also create their identity as a company, find the ideal place to establish it, and clearly define their objectives in the short, medium, and long term. In addition, they need to generate strategies and initiatives and seek the necessary investment for the funding of their projects, determining the most appropriate type and conditions.

They are open to making strategic alliances with other players in the sector, since they know that mass production would be impossible as a microenterprise, so they are also looking for the best option to carry it out. Moreover, they must clearly define their organizational structure to take advantage of future opportunities in the sector and remain competitive and agile in decision-making.

References

INEGI, Canifarma. (2024). “Encuesta Nacional de la Industria Farmacéutica (ENIFARM) 2023”: <https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2024/ENIFARM/ENIFARM2023.pdf>

Secretaría de Economía. (2013). “Industria Farmacéutica”. *ProMexico*: https://www.gob.mx/cms/uploads/attachment/file/121182/Sector_Industria_Farmaceutica.pdf

Statista. (2022). “Global Manufacturing of Pharmaceuticals: Industry Insights & Data Analysis”: <https://www.statista.com/study/57194/manufacturing-pharmaceuticals---global/>

Statista. (2024a). “Industry 4.0: in-depth market analysis”: <https://www.statista.com/study/66974/in-depth-report-industry-40/>

Statista. (2024b). “Pharmaceutical Industry in Mexico”: <https://www.statista.com/topics/6074/pharmaceutical-industry-in-mexico/#topicOverview>

Statista. (2024c). “Pharmaceutical Market Worldwide”: <https://www.statista.com/outlook/hmo/pharmaceuticals/worldwide>