

The Myanmar JOURNAL

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Letter from the Editor-in-Chief

Myanmar and Korea have many similarities and are complementary relationship. Therefore, we believe that research exchange will expand mutual understanding between Myanmar and Korea, and will be the cornerstone for mutual development.

KOMYRA and YUE have co-published The Myanmar Journal since August 2014. So far, many scholars have published numerous papers through the journal, and We are sure that this journal has helped many people understand Myanmar and Korea more clearly and closely.

The Myanmar Journal covers various issues in Myanmar and Korea. It covers various topics that can promote bilateral development and mutual understanding, not limited to specific topics such as economy, industry, society, education, welfare, culture, energy, engineering, healthcare, and agriculture.

We hope that this journal will continue to promote understanding of the current status and potential capabilities of Myanmar and South Korea and promote in-depth international exchange and cooperation.

We would like to express our deepest gratitude to the editorial board and YUE and KOMYRA for their valuable support in The Myanmar Journal publication.

August 30, 2022

Youngjun Choi *yj choi*

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INFORMATION ABOUT The Myanmar Journal

The Myanmar Journal (ISSN 2383-6563) is the official international journal co-published by Yangon University of Economics (YUE) and Korea Myanmar Research Institute (KOMYRA).

This journal aims to promote the mutual cooperation and development of Myanmar and Korea through intensive researches in the entire field of society, economy, culture, and industry.

It will cover all general academic and industrial issues, and share ideas, problems and solution for development of Myanmar.

Articles for publication will be on-line released twice a year at the end of February and August every year on the Myanmar Journal webpage (http://www.komyra.com/bbs/board.php?bo_table=articles).

Sanofi's Value-based Services for Sustainable Business: ESG and Sustainability Strategies

Jae-Woong Byun
Keimyung University

ABSTRACT : The global pharmaceutical market has experienced significant growth in recent years. Amid the pandemic, Sanofi engages in the ESG activities and sustainability strategy, and it is the one of the best case the value-based services for sustainable business. Sanofi is an innovative global biomedicine and healthcare company. This paper analyzes the value-based services for sustainable business of the Sanofi, focusing on the ESG activities and sustainability strategy amid the pandemic. First, the Sanofi's business activities is analysed in Chapter 2. after analyzing the case of Sanofi's ESG activities and sustainability strategy contributes to the production and prevention of the pandemic through successful case studies in Chapter 3, Chapter 4 draws implications for the Korean biopharmaceutical industry, respectively.

Key words : *COVID-19, Sanofi, ESG, Sustainable Business, Korean Biopharmaceutical Industry*

I. Introduction

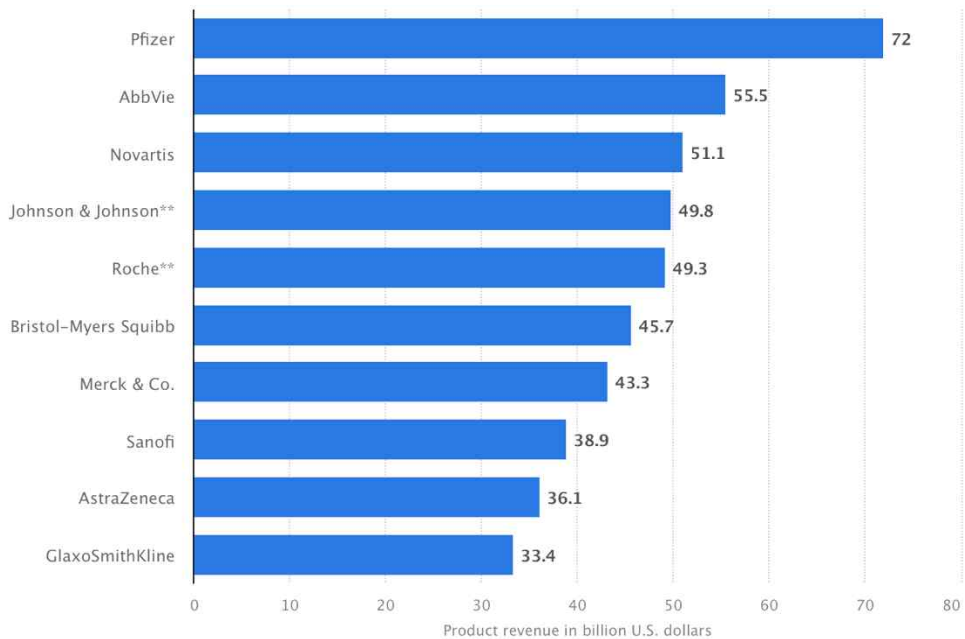
COVID-19 has created a huge burden on healthcare systems since its outbreak in 2019. Researchers across the world are continuously making efforts to cope with this rising burden.¹⁾ Gagnon et al(2022) found the economic effects of the pandemic differed between rich and poor countries: COVID-19 deaths exerted a somewhat greater drag on GDP in advanced economies, whereas lockdown restrictions were more devastating to economic activities in emerging and developing economies.²⁾

1) <<https://www.mordorintelligence.com>>

2) Gagnon et al(2022)

Due to the pandemic, the biopharmaceutical industry has gained more prominence in today's society. The biomedicine(biopharmaceutical) market is segmented by novel antibody biopharmaceutical drugs, new technology of stem cell medicine, biosimilar, vaccines, gene therapy, and products based on biomedicine.

Figure 1. Leading Pharmaceutical Companies Worldwide by Revenue in 2021³⁾



The global pharmaceutical market has experienced significant growth in recent years.⁴⁾ At the end of 2020, the total value of the global pharmaceutical market was about 1.27 trillion U.S. dollars. The market value has experienced a significant increase from 2001, which was at only 390 billion U.S. dollars. The US accounts for over 45% of the global pharmaceutical market and boasts six of the ten largest pharmaceutical companies.⁵⁾ In Europe, Roche and Novartis lead the pharmaceutical market followed by Sanofi, which is also placed in the top ten largest pharmaceutical companies. Based on the global market shares in 2021, the leaders in the pharmaceutical market are Pfizer, Roche, and Johnson & Johnson. Sanofi generated

3) Statista: <<https://www.statista.com/statistics/407969/projected-sales-of-top-pharmaceutical-companies-worldwide/>>

4) Statista: <<https://www.statista.com/statistics/263102/pharmaceutical-market-worldwide-revenue-since-2001/>>

5) Pharmaceutical companies worldwide: <<https://www.visualcapitalist.com/worlds-biggest-pharmaceutical-companies/>>

nearly 38 billion euros in revenues -highest in recent years. In general, the company's revenues have been increasing since 2006 when its revenues were at 28 billion euros. A majority of Sanofi's revenues can be attributed to their pharmaceutical sector. In 2021, the global biopharmaceutical market was estimated to be at USD 330.7 Billion and is expected to reach USD 478.08 Billion by 2026, growing at a CAGR of 7.65%-increasing Investments in R&D.⁶⁾

There are major risks and challenges facing pharmaceutical manufacturers as follows: reduced demand for prescription medicine, growing competition from generic pharmaceuticals, pharmaceutical fraud, rising consumer expectations, and difficulties in managing brand health, data breaches, and other cybersecurity threats, and supply chain disruptions. Top 6 challenges faced by pharmaceutical supply chains are lack of transparency, digitization, pharmaceutical fraud, compliance and regulations, rising competition from generic pharmaceuticals, developing patient-centric pharmaceutical supply chain.⁷⁾

Covid-19 influenced social impact strategies. Companies aim to include sustainability strategies on environmental issues. On a brighter note, this creates more opportunities for companies to develop their Environmental, Social, and Governance (ESG) activities and Sustainability Strategy by using the 4th industrial revolution. Sanofi is a French multinational healthcare company headquartered in France. It was originally established in 1973 and merged with Synthélabo in 1999. In 2004, Sanofi-Synthélabo merged with Aventis and renamed to Sanofi-Aventis, which were each the product of several previous mergers. It changed its name back to Sanofi in May, 2011.⁸⁾ Sanofi is an innovative global biomedicine and healthcare company.

Amid the pandemic, Sanofi engages in ESG activities and sustainability strategy, and it is one of the best cases of the value-based services for sustainable business. This paper analyzes value-based services for the sustainable business of Sanofi, focusing on the ESG activities and sustainability strategy amid the pandemic. First, the Sanofi's business activity is analyzed in Chapter 2. after analyzing the case of Sanofi's ESG activities and sustainability strategy contributes to the production and prevention of the pandemic through successful case studies in Chapter 3, Chapter 4 draws implications for the Korean biopharmaceutical industry, respectively.

6) Research and Markets(August 25, 2021)

7) MetaOptionLLC(September 7, 2021)

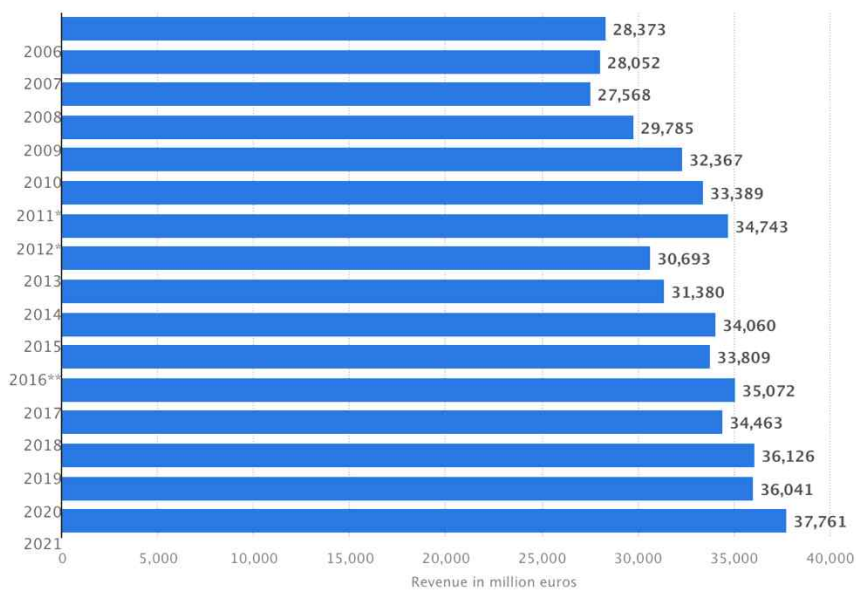
8) Wikipedia: <<https://en.wikipedia.org/wiki/Sanofi>>

II. Covid-19 and Sanofi

1. Business Activity Analysis

Sanofi engages in the R&D, manufacturing and marketing of pharmaceutical drugs mainly in the prescription market, but the company also develops over-the-counter medication. According to an official report published by Sanofi(2021), they provide 400 medicines including more than 200 drugs of major therapeutic interest, 17 vaccines and other health products. Sanofi's top pharmaceutical products, based on revenues include Dupixent that treats eczema, Lantus for diabetes, and Aubagio that treats multiple sclerosis. Sanofi also used to have an animal health sector but the business was sold to Boehringer Ingelheim in 2016.⁹⁾

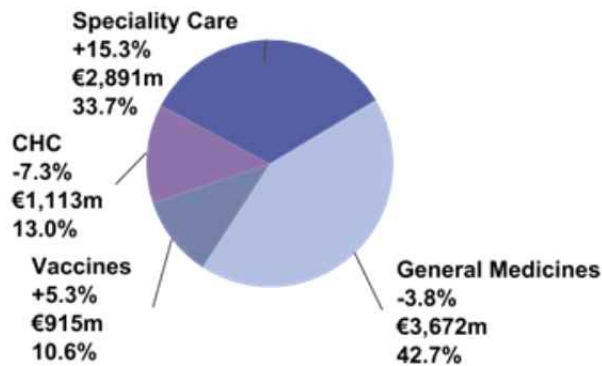
Figure 2. Revenue of Sanofi from 2006 to 2021 in million euros¹⁰⁾



9) Statista: <<https://www.statista.com/statistics/266506/sanofi-top-pharmaceutical-products/>>

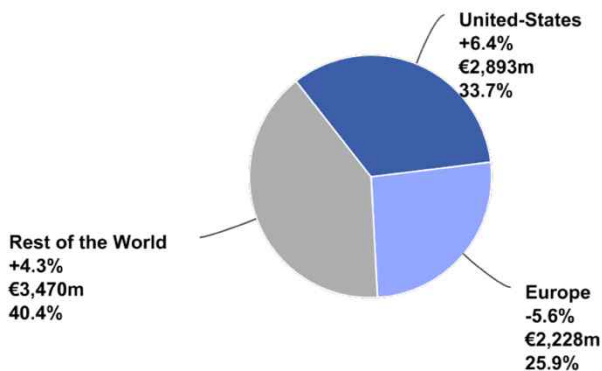
10) Statista: <<https://www.statista.com/statistics/266509/revenue-of-sanofi-since-2006/>>

Figure 3. Revenue of Sanofi by Global Business Units in 2021¹¹⁾



The healthcare company works in several therapeutic sectors with different entities. A Specialty medicine entity (33.7%), previously known as “Sanofi Genzyme” includes immunology, rare diseases, hematology, oncology, neurology, and multiple sclerosis; The vaccine entity (10.6%), previously known as “Sanofi Pasteur” protects: children, teenagers, and adults from many infectious diseases; the General medicine entity (42.7%) includes diabetes, cardiovascular disease, transplantation, and infectiology; the Autonomous entity dedicated to consumer health (13.0%) includes pain, winter ailments, digestive problems, sleep, and stress management.

Figure 4. Revenue of Sanofi by Geographic Region in 2021



11) Sanofi, 2021 financial report: <<https://ml-eu.globenewswire.com/Resource/Download/b59b0cf7-a1a2-4fd5-a9c2-29cfbdebe1af>>

Sanofi is a global healthcare leader. Revenues are distributed in a balanced way between Europe, United States, and the rest of the world. Their 54,000 suppliers are from 138 countries including 90% of OECD countries and 10% of non-OECD countries in 2020.¹²⁾ In France, Sanofi owns 33 sites including 16 production sites, 4 Research and Development sites, 4 distribution sites, 5 office sites, and 4 others in overseas departments. Sanofi's mission is to combine groundbreaking science and advanced technology to develop life-changing medicines and vaccines for the communities they serve. They work every day to create value for society and transform the practice of medicine for patients around the world. Sanofi's core business strategy is called the "Play to Win" strategy which focuses on four key priorities to drive growth and unleash fresh inspiration across their activities: focus on growth, lead with innovation, accelerate efficiency, and reinvent the way of work.

Figure 5. Sanofi's Weight in the Euro Stoxx Health Care Index in 2022 Report¹³⁾

EURO STOXX® HEALTH CARE INDEX

Top 10 Components⁵

| Company | Supersector | Country | Weight (%) |
|----------------------|-------------|-------------|------------|
| SANOFI | Health Care | France | 26.44 |
| BAYER | Health Care | Germany | 12.50 |
| ESSILORLUXOTTICA | Health Care | France | 11.67 |
| PHILIPS | Health Care | Netherlands | 6.87 |
| MERCK | Health Care | Germany | 5.67 |
| SIEMENS HEALTHINEERS | Health Care | Germany | 3.95 |
| ARGENX | Health Care | Belgium | 3.22 |
| FRESENIUS | Health Care | Germany | 3.16 |
| UCB | Health Care | Belgium | 3.04 |
| EUROFINS SCIENTIFIC | Health Care | France | 2.86 |

Sanofi is part of the Euro Stoxx 50 market Index and weighing 26.44% in the Health Care super sector in 2022. When looking at the shareholding of the group, 82.8% is managed by the public sector, which includes 62.9% of foreign institutional investors, 15.1% of French institutional investors, and 4.8% of individual shareholders. L'Oréal holds 9.5% of the shares, employees hold 1.8% of the shares, and shareholders from other countries hold 5.9% of the shares. The company, like most

12) Sanofi, 2020 integrated report : <https://integrated-report.sanofi.com/wp-content/uploads/2021/05/Sanofi_2020_Integrated-Report.pdf>

13) Euro stoxx Health Care Index, 2022 report: <<https://www.stoxx.com/document/Bookmarks/CurrentFactsheets/SXDGT.pdf>>

pharmaceutical companies, is majority public, which grants its access to colossal public funds devoted to health and social security.¹⁴⁾ Sanofi's successful factors are a global network of sites, outstanding launches, best-in-class service, production costs optimization, innovation for patients, connected and intelligent equipment.

2. Covid-19 and Sanofi

Covid-19 has placed pharmaceutical companies in the spotlight, as companies' vaccines and treatments are at the heart of society's effort to end the pandemic. With its knowledge in vaccines, Sanofi is playing a major role in the pandemic working to find an antidote against the virus. But the pharmaceutical industry has also been facing increasing scrutiny related to pricing and reimbursement of their products, as governments seek to slow the rise of health care costs, while the incremental value of innovation within traditional pharmaceuticals has declined. Companies depend heavily on human capital for innovation, continuous development of novel medicines, and the quality of marketing strategies. The industry is characterized by extensive capital invested in sales, marketing, and research and development, and there is a high risk of failure in product development. This makes process optimization and human capital management critical.

As of May, 2022, the outbreak of the Covid-19 had spread to almost every country in the world, and almost 6.3 million people had died after contracting the respiratory virus.¹⁵⁾ Over one million of these deaths occurred in the United States. In February 2022, Sanofi declared: "As a health actor, it is our responsibility to act to deal with the Covid-19 epidemic and to provide our support, resources and expertise to the national effort, alongside health professionals, whose commitment requires our absolute solidarity. Thus, many initiatives have emerged in the interest of patients and as close as possible to caregivers."¹⁶⁾

Since April 2020, Sanofi and GlaxoSmithKline announced their collaboration in the fight against Covid-19. The companies are developing an adjuvanted vaccine for Covid-19, using innovative technology from both companies, to help address the ongoing pandemic. Through this collaboration, Sanofi contributes its S-protein Covid-19 antigen that stimulates the body's immune response against the virus, and GSK contributes its proven adjuvant technology that enhances the immune response






















14) Sanofi, 2020 report: <<https://www.sanofi.com/en/investors/sanofi-share-and-adrs/shareholding-structure>>

15) Statista: <<https://www.statista.com/statistics/1093256/novel-coronavirus-2019ncov-deaths-worldwide-by-country/>>

16) Sanofi website, article from February 2022: <<https://www.sanofi.us/en/about-us/our-stories/our-response-to-covid-19>>

and reduces the amount of vaccine protein required per dose, allowing more vaccine doses to be produced and therefore contributing to protect more people. This vaccine is different from Pfizer or Moderna in that it is a protein-based vaccine, which is the common type of vaccine that has been in use for many years. In February 2022, they announced the high effectiveness of their vaccine based on clinical results.¹⁷⁾

Figure 6. Comparison between Existing Covid-19 Vaccines¹⁸⁾

| Company | Type | Doses | Storage |
|---|---|--|--|
|  Oxford Uni-AstraZeneca | Viral vector (genetically modified virus) | x2  |  2 to 8°C (6 months) |
|  Moderna | RNA (part of virus genetic code) | x2  |  -25 to -15°C (7 months) |
|  Pfizer-BioNTech | RNA | x2  |  -80 to -60°C (6 months) |
|  Gamaleya (Sputnik V) | Viral vector | x2  |  -18.5°C (liquid form) 2 to 8°C (dry form) |
|  Sinovac (CoronaVac) | Inactivated virus (weakened virus) | x2  |  2 to 8°C |
|  Novavax | Protein-based | x2  |  2 to 8°C |
|  Janssen | Viral vector | x1  |  2 to 8°C (3 months) |

While working with GSK, Sanofi is mobilizing its industrial tool to quickly manufacture and deliver its future Covid-19 vaccine once it is authorized by the health authorities. Moreover, the French biopharmaceutical giant is committed to putting its industrial network and know-how at the service of public health on a global scale, by contributing to the production of half a billion doses of authorized vaccines (Pfizer, Moderna and Johnson & Johnson). Sanofi also created Adaptive Vaccination Solutions to help healthcare providers keep patients on their vaccination schedule and meet expected record demand for flu vaccinations.

17) Cnet article from March 2022: <<https://www.cnet.com/health/medical/new-covid-vaccine-from-sanofi-gsk-what-to-know/>>

18) Wikipedia: <https://ko.m.wikipedia.org/wiki/파일:COVID-19_vaccine_comparison.png>

III. ESG Activities and Sustainability Strategies

What are the implications of COVID-19 for the biopharmaceutical industry? Covid-19 influenced social impact strategies. Companies have a tendency to focus their sustainability strategies on environmental issues, but the pandemic has exacerbated existing inequalities, with many people losing their jobs and unable to support their families, and that has actually pushed up the whole social agenda. In a way, this creates more opportunities for companies in their ESG activities and Sustainability Strategy by using the 4th industrial revolution such as groundbreaking technologies, data science and digital technologies, innovative clinical trial design, R&D productivity, artificial intelligence and big data, and technology platforms.

1. ESG Activities

In 2021, Sanofi has been awarded the second highest score in the pharmaceutical industry by the Dow Jones Sustainability Index. The company is recognized for its performance for the 15th consecutive year. This recognition for many years reflects Sanofi's long-term commitment to society, based on solid fundamentals and an ambitious new social strategy.¹⁹⁾

Sanofi's social impact strategy focuses on four building blocks aligned with their "Play to Win" core business strategy: Ensuring affordable access to healthcare, Innovating for vulnerable communities, Protecting the planet, and Building an inclusive workplace.²⁰⁾ First, Sanofi's social impact strategy aims to build a healthier, more resilient world by ensuring access to healthcare for the world's poorest people. Based on the observation, 2 billion people lacked access to quality medicine and healthcare. Sanofi Global Health, a non-profit business unit, provides 30 essential medicines to 40 of the world's poorest countries. The company also implemented the Global Access Plan that ensures vulnerable countries have access to new products two years after their launch.

Second, Sanofi works to help the most vulnerable communities by bringing a much-needed focus to the development of treatment for childhood cancer and people suffering from polio. Integrated into the company's Play-to-Win business strategy, Sanofi's commitment to society will continue the fight against infectious

19) Sanofi website, article from November 2021: <<https://www.sanofi.com/en/about-us/our-stories/dsji-recognition-for-our-commitment-to-society>>

20) Sanofi, 2021 CSR report:

<<https://www.sanofi.com/-/media/Project/One-Sanofi-Web/Websites/Global/Sanofi-COM/Home/en/our-responsibility/docs/documents-center/brochures/Declaration-of-Extra-Financial-Performance.pdf?la=en&hash=463A22969391C0FCAC98E2398C80DD0C>>

diseases while accelerating its third goal which is to reduce the environmental impact of its products and its worldwide operations. To fight global warming, Sanofi's goal is to have eco-design for all new products by 2025, remove blister packs for its vaccines by 2027, and use 100% renewable electricity on all sites by 2030.

Finally, Sanofi initiates the global challenges of society within its company by building a diverse and inclusive workplace. To enhance employee engagement, Sanofi implemented a company-wide community service program. Sanofi also aims to balance a gender ratio in the top 2000 leadership teams by 2025. As of 2021, 38.8% of women are in senior leadership.

Figure 7. Summary Table of Sanofi's Social Impact Strategy²¹⁾

| Affordable Access | Vulnerable Communities | Healthy Planet | Inclusive Workplace |
|--|---|--|---|
| <ul style="list-style-type: none"> • Non-profit Business Unit Sanofi Global Health to provide 30 essential medicines to 40 of the world's poorest countries • 100,000 vials to be donated to patients with rare diseases • Global Access Plan for all new products two years post-launch | <ul style="list-style-type: none"> • Eliminate sleeping sickness by 2030 • Eradicate polio • Develop treatments for childhood cancers | <ul style="list-style-type: none"> • Eco-design for all new products by 2025 • Blister free vaccine packs by 2027 • Carbon neutrality all scopes by 2030 including 100% renewable electricity and carbon neutral fleet | <ul style="list-style-type: none"> • A senior leadership community representative of society by 2025 • Social & economic engagement in all communities where we operate (e.g. volunteering) • Social impact integrated in leaders' career development |

In a recent interview, Lise Kingo, independent board director at Sanofi declared: "Social impact strategy allows companies to get employee engagement, a stronger company brand and a better share price, revenues, and creditworthiness. It's not a simple process, but this approach turns risks into opportunities, makes investors happy and pushes the company to the next level. Having an integrated responsible business strategy has become the new normal and it's how most companies run their business today."²²⁾

2. The 4th Industrial Revolution

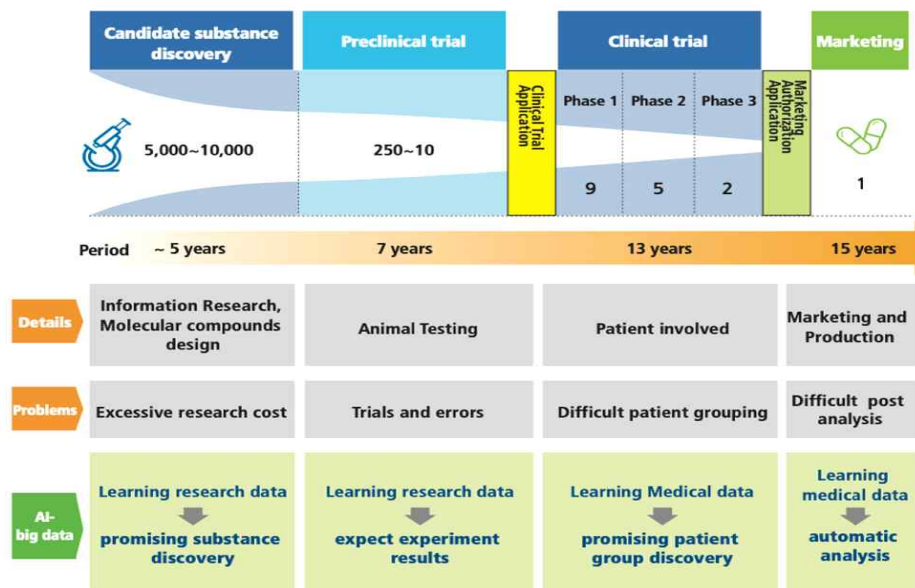
It takes the biopharmaceutical industry a considerable length of time - about 10 to 15 years - to commercialize an innovative medicine in the marketplace due to its high risk and high returns by nature. Longer life expectancy, health care, the

21) Sanofi, 2021 CSR report:
<https://www.sanofi.com/-/media/Project/One-Sanofi-Web/Websites/Global/Sanofi-COM/Home/en/our-responsibility/docs/documents-center/brochures/Declaration-of-Extra-Financial-Performance.pdf?language=en&hash=463A22969391C0FCAC98E2398C80DD0C>

22) Sanofi website, Lise Kingo interview:
<https://www.sanofi.com/en/our-responsibility/achieving-social-impact-an-interview-with-lise-kingo>

COVID-19 pandemic, and the rapid development of related industries make this industry the most important in the fourth industrial revolution. As a result of a decrease in the global pharmaceutical market's growth rate, product competition is getting intensified. Strategically, it is important to reduce costs and improve productivity. Emerging technologies improve the drug development process, including advanced tools that improve the efficiency and effectiveness of clinical trials. Sanofi has also applied various 4th industrial revolution measures as follows:

Figure 8. Drug development process accelerated with industry 4.0.²³⁾



Ground breaking technologies: Developing and acquiring innovative technologies equips scientists to increase the probability of success and accelerate the pace of R&D. When applied to well-understood pathways that impact multiple diseases, these technologies can be used to develop therapeutics that can treat more people.²⁴⁾

Data science and digital technologies: Incorporating patient experiences in drug discovery extends beyond patient advocacy and augments the ability to understand

23) <<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiNnILb6d73AhVB8WEKHbkTAzAQFnoECAoQAQ&url=https%3A%2F%2Fwww.khidi.or.kr%2FfileDownload%3FtitleId%3D127124%26fileId%3D1%26fileDownType%3DC%26paramMenuId%3DMENU00777&usg=AOvVaw3wZJjGXTCK0bo9WgNNafki>>

24) Sanofi, 2020 integrated report : <https://integrated-report.sanofi.com/wp-content/uploads/2021/05/Sanofi_2020_Integrated-Report.pdf>

individual patient disease biology. Combining such measurable, real-world information with molecular and clinical data offers opportunities to better prevent, diagnose, and monitor diseases, and to discover new drug targets.²⁵⁾

Innovative clinical trial design: Gold-standard clinical trial designs represent the true diversity of a patient population and include clinical parameters that reflect real-world experiences. They incorporate knowledge gained in disease registries and other digital sources and are flexible enough to keep patients in the study even in the face of unexpected challenges.

R&D productivity: Simplifying regulatory processes can lead to gains in productivity, reducing clinical cycle times. Partnering across the industry and using a cloud-based platform to facilitate data sharing with health authorities can ultimately deliver new, safe, and effective medicines to patients faster. Sanofi and nine other pharmaceutical companies led an industry collaboration to form Accumulus Synergy, providing a strong framework to begin reducing regulatory review times.

Artificial intelligence and big data: A major challenge in drug discovery is understanding disease mechanisms to ensure success in early clinical trials. Artificial intelligence algorithms can help scientists gain unique insights into disease biology by combining and identifying patterns in multi-dimensional datasets. This can clarify disease drivers, help clinicians match patients to treatments, and reveal opportunities for new treatment options.

Technology platforms: Rapid technological advances are giving researchers the tools to target the root causes of disease and design precision therapeutics that would have been unimaginable just a few years ago.

IV. Implication for the Korean Biopharmaceutical Industry

Since 2020, Sanofi has started reviewing and rethinking their ESG Corporate Social Responsibility strategy. The ambitions of this new strategy have been fully aligned to and embedded in their Play-to-Win strategy. Sanofi's goal for the upcoming years is to make their mark where they can and where they are uniquely positioned to do so, to make a meaningful and long-lasting difference. It is clear that the pandemic has forced them to question some of the fundamentals of our modern society: not only how we live and work but also how we connect with our ecosystems and each other.

The US White House (2012) report on the National Bio-Economy Blueprint

25) Sanofi, 2020 integrated report : <https://integrated-report.sanofi.com/wp-content/uploads/2021/05/Sanofi_2020_Integrated-Report.pdf>

stresses the importance of the bio-industry, focusing on expanding R&D capacities, commercializing the R&D, enforcing education-training programs, and strengthening public-private partnerships. Successful government policies, such as those of the United States, and value-based services from global biopharmaceutical vendors. Examples of these would be Sanofi and others such as Pfizer, Moderna, and GlaxoSmithKline which can provide success and results, and improve South Korea's biopharmaceutical economy's competitiveness.

The biopharmaceutical industry is a key to ensure vaccinations and economic activities, and an aid to return to daily life during and after the pandemic. A Korean biopharmaceutical industry is relatively less competitive compared to other global biopharmaceutical vendors such as Sanofi, Pfizer, and GlaxoSmithKline. Therefore, being part of M&A, acquiring startups, and securing and enhancing its competitiveness is crucial for Korea. For the Korean biopharmaceutical industry to upgrade its manufacturing and research capabilities, it is essential to use technological advancements that are apart from the fourth industrial revolution. AI and big data are two types of technology that will be very beneficial.

To develop a strong biopharmaceutical industry in Korea, the country needs to become a hub of manufacturing vaccines to cooperate closely with major companies in this field like Sanofi, GlaxoSmithKline, Pfizer, and Moderna, just to name a few, which all have a strong R&D in biopharmaceuticals. South Korea is emerging as a key contributor to global healthcare innovation, as well as a healthcare hub in northeast Asia. Within the last decade, Korea has gained prominence in the global pharmaceutical market as one of the leading countries specializing in new drug research & development. In recent years, there has been a series of successful joint manufacturing vaccination partnership cases between South Korea and the US and European biopharmaceutical companies, such as Samsung Biologics and Modera, SK BioScience and AstraZeneca, and etc.

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