2022 BORYUNG
ANNUAL REPORT

2022 BORYUNG ANNUAL REPORT

CONTENTS

※ The Company cannot, either implicitly or explicitly, guarantee that certain information set forth in this report is accurate or complete, while data provided herein do not constitute a promise or statement of the past or future.
※ The Company is not liable or responsible in any way for damage or losses that arise from investments made based on the information contained in this report.

01 Business Overview

CEO Letter | Chairman & CEO, Jay Kim 03
CEO Letter | CEO Pharma Biz, Daniel Chang 12
Our Mission & Core Values 15
2022 Business Highlight 16

02 Pharma Biz

Boryung's Pharma Biz 17
Earnings Summary 19
Key Strategies 20
- Strengthening Competitiveness of In-house Produced Products 20
- Establishing Stable Product Portfolio 21

Strategic Direction & Earnings 22
Strengthening Competitiveness of In-house Produced Products 22
- LBA 22
- Production Infrastructure 25
- R&D 26

Establishing Stable Product Portfolio 27
- Hypertension/Dyslipidemia 27
- Diabetes 29
- Oncology 30
- CNS 31
- Renal 32
- OTC 34

03 Care In Space

Meaning of CIS 35
Technologies 36
- CIS Challenge 37
- Status of CIS Challenge 38
- CIS Challenge Winners 39

Infrastructure 40
- Axiom Space 40
- Why LEO 40
- Why invested in Axiom Space 41

04 Financials

Share Price Performance 42
Consolidated Financial Statements 43
Stand-alone Financial Statements 45

CEO Letter

Chairman & CEO
Jay Kim

As the country and generations before ours were the basis of Boryung's growth so far, it is the duty of Boryung and mine to contribute to the way forward of the country and its next generation.

I want to describe Boryung's 2022 as a year of the half-moon. One side of the company was visible and shining, whereas the other was unknown.

Thanks to your support and encouragement, you may have noticed that our pharmaceutical business did well this year. But you may have also wondered what we were doing with our Care In Space (CIS) business, which we started in earnest this year. We didn't do a great job telling you about our CIS-related activities and investments, and I apologize. I want to provide you with sufficient information about our venture so that you will feel comfortable looking at Boryung from now on. Also, I will explain in more detail at our annual shareholder's meeting. Please stay tuned.

In last year's letter, I highlighted three points.

1. Boryung Pharmaceutical to Boryung

2. Pharmaceutical business : past year's review

3. CIS business : purpose and the CIS Challenge

This year's letter follows a similar outline.

1. Redefining Boryung : what we do and why we do it

2. Pharmaceutical business : past year's review and plan from now on

3. CIS business : our vision towards CIS and plan going forward

4. General business issues

I will discuss each topic in turn.

CEO Letter

Chairman & CEO
Jay Kim

Boryung will not remain as a company only doing pharma business.

Since the investment in Axiom Space, which was disclosed at the end of 2022, became known, the question I get most often, public or private, is, "Why on earth is Boryung investing in Space?" That question comes with many more sub-level questions. For example,

1. Why is Boryung Pharmaceuticals (many people still don't acknowledge the name change) investing in Space, which has nothing to do with its primary business?

2. Should Boryung focus on something other than investing in the continued growth of our pharmaceutical business?

3. Is Boryung capable of handling continued investment toward Space?

I realized how strongly Boryung as a brand was imprinted on many people as a pharmaceutical company. (This also has positive implications for our LBA strategy in the pharmaceutical business) I tried to explain why Boryung Pharmaceuticals became Boryung in last year's annual letter, but I realized that continuous communication was needed, especially on that topic.

Ultimately, shareholders wish to be assured of what kind of company Boryung wants to be and whether we can continue to grow the company (especially profitability). I also needed to define what I do and our company's definition.

As the Chairman and CEO, my job is to grow our company, increase its value for those who invested their assets in us, and leave a better South Korea for my children and their friends' generation through our company.

After the Korean War, I think many entrepreneurs created companies, created jobs, motivated their employees, grew businesses, generated profits, paid taxes, and contributed significantly to causing South Korea today under the mission of "business for the country" or "we will not leave poverty to our next generation." As the country and generations before ours were the basis of Boryung's growth so far, it is the duty of Boryung and mine to contribute to the way forward of the country and its next generation.

CEO Letter

Chairman & CEO
Jay Kim

This is what made Boryung look toward Space.

We would like to today the second Age of Exploration. But there are two fundamental differences from the first one, which started in Portugal at the end of the 1400s.

1. The destination is beyond the Earth

2. The first Age of Exploration started in peripheral countries and made them into great powers, while the great powers themselves led the second one.

South Korea rose to the top 10 economic power in the world based on compressed growth centered on heavy industries, called the Miracle on the Han River, and by riding on the unprecedented globalization that came after the collapse of the Soviet Union. But what will happen to our next generation's future if we fall behind in the new market that Space will create? UAE became the fifth country to send a Mars-orbiting satellite. China began the operation of its Space station in Low Earth Orbit, and two companies, each from Japan and the United States, expect to land on the moon's surface for the first time as private corporations… the list can continue. Many people think Space has to do with the distant future; however, I would like to say that Space is now.

Space will bring about more change than discovering a new continent. The Age of Exploration that began in Portugal at the end of the 1400s provided seeds for Britain's Industrial Revolution in the early 1800s. Because of technological development accumulated through exploration, Europe could dominate our planet until before World War II. In terms of curing diseases, new diseases emerged due to people coming from different continents to Europe. It was no coincidence that drug development progressed first in Europe to solve them.

I fear that if South Korea does not join the current Age of Exploration toward Space with a differentiated strategy, it will face the same fate as the countries that were discovered during the Age of Exploration or, more recently, the countries that did not ride on the change of globalization 30 years ago.

Fortunately, many in our country have deeper concerns than I do and work tirelessly to find solutions. Their achievements are the successful launches of Nuri and Danuri. However, Space is still an unknown world. There are far more problems to solve than those already solved. Thus, Boryung focused on the issues humans will face in an unknown environment like Space. And we will emphasize securing technologies necessary for human survival in Space and infra to

Chairman & CEO
Jay Kim

research and develop these technologies. A more detailed explanation will be in the CIS section.

As a shareholder of Boryung, I have staked everything on the company and would like to consider that I am in the same boat as every shareholder of Boryung. Instead of short-term gains, long-term trust is embedded in Boryung's shareholders' minds. I sincerely honor everyone's trust and lead Boryung into a company that matters to humanity.

To this end, we changed the company's name from Boryung Pharmaceutical to Boryung at last year's shareholders' meeting. I also mentioned that earning power is paramount because the company needs to build strength to invest continuously for growth.

Indeed, the pharmaceutical business is still the only one that generates revenue and profit, but we will continue looking for opportunities to increase our earning power and future growth. We will prioritize acquiring 100% of assets, but we will also approach investing in part of businesses as if they were 100% acquisitions.

As we get closer to our goal, one step at a time, the value of our company will grow together.

Pharma business

Boryung's pharmaceutical business achieved record-breaking results in 2022, with sales and operating profit increasing by 21% and 37%, respectively, compared to 2021 (sales of KRW 760.5 billion / operating profit of KRW 56.6 billion). As I studied the industry, I noticed many companies achieved significant growth and broke their records last year. Although the South Korean pharmaceutical market expected 8-9% growth in 2022, Boryung's result was remarkable.

In 2022, companies were still experiencing tailwinds from Covid-19, and Boryung was one of them. However, the increase in the absolute number of patients due to the aging population is the driving force for the growth of the pharma industry in South Korea. And Boryung is well-suited to take this more considerable tailwind. We will not achieve 20-30% growth annually, but our business portfolio will help exceed the market growth in the years to come.

Based on this, we acquired Alimta, the third product of our LBA strategy. This is our second original brand anti-cancer drug acquisition following Gemzar, and this acquisition will boost the growth of our anti-cancer drug business.

We are constantly looking for LBA products to help our pharmaceutical business grow, and we will actively pursue acquisitions if opportunities arise. We will also continue to explore opportunities to expand our business globally based on our global-level production know-how and understanding of global pharmaceutical supply chains accumulated through LBA.

There is no 100% in business and human life. For example, even if we set a sales target of KRW 200 billion for the Kanarb family and an operating profit target of KRW 200 billion for the company in 2026, we may or may not accomplish those goals. However, we have a high chance of accomplishing those goals and only consider how to achieve them. I recommend you read Daniel Chang's letter for more details about our pharmaceutical business.

Also, I want to thank everyone in the pharma business for their accomplishments.

Care In Space business

"I've been living on the moon for a long time, and I wonder if Gelfos will help me with my stomach ache."

It is one of the questions to be answered by the CIS business. Humanity already plans to send people to the moon and mars to stay. We will invest in technologies enabling human long-duration activities and infrastructure to research and develop those technologies. Through the CIS Challenge, we explore companies developing technologies and have invested in Axiom for research and development activities in Low Earth Orbit (LEO). We are also building strong partnerships with them.

The inaugural CIS Challenge in 2022 was an opportunity to show Boryung's sincerity toward Space. From the second CIS Challenge in 2023, we will define and find solutions with more diverse and devoted partners. We will share more detailed plans soon as they become formalized, so please look forward to it and cheer for us.

Many people ask me why Boryung is pursuing a journey to Space. I have three simple answers to it.

1. CIS business will guide us to accomplish our goals of becoming a company that matters to humanity.

2. Decreasing the cost of accessing Space allows private companies to become creative in approaching Space. Thanks to SpaceX, which offers 1/20 of the cost that NASA used to provide, and many other innovators, who will bring down the price even further.

3. Fortunately, running a pharma business helps us determine what needs to be done in Space regarding human health.

Nicholas Butler, an American philosopher who won the Nobel Peace Prize in 1931, said, "Businesses are the greatest inventions in human history." The entrepreneurial spirit and fast decision-making system representing businesses have given birth to many technologies that have changed human history. SpaceX is a great example. And although a Portuguese prince started the first Age of Exploration, entrepreneurship led to the discovery of a new continent. Eventually, companies like East India Company were established. The Age of Exploration caused businesses to thrive. Businesses joining forces and writing a new history book chapter will also lead to today's second exploration of Space. This new era has already begun, and Boryung will not be left out.

Then people ask me when to expect the financial result of this initiative. People can merely perform anticipated results within the expected period. The financial result will eventually follow if the business behind the investment performs well over time. We will find those businesses that genuinely matter and are run by a remarkable management team and allocate our capital there.

There are two types of investments in the CIS business. One is the motivator investment to the challenge winners from the CIS Challenge, and the other is for companies like Axiom Space.

For the challenge winners, we want to be the bridge to their access to Space and bring their idea into reality and to the commercial stage. Even though these companies have a relatively long road ahead until making their business competitive, Boryung acknowledges the significance of creating an ecosystem for what we do at CIS.

Axiom Space is a company building a private Space station in LEO. The utilization of LEO will increase further because humans can go to the moon and Mars only through the gateway to Space called LEO. The company was founded and is currently being operated by the team who built and managed International Space Station (ISS) at NASA. The chance of replacing the 30-year-old (Space) infrastructure by the team who made the first one seems reasonable, and it is the only private company that can utilize the existing Space station during the process.

CEO Letter

Chairman & CEO
Jay Kim

Demand for manned astronaut projects and research/development in outer space is rapidly increasing, and Axiom Space continues to win national-level contracts. Along with such circumstances, Axiom Space grew over 50% of its 2022 target, resulting in revenue of USD 250 million. None of the competitors currently perform at this financial-performance level, proving the company's competitiveness. Because of the competitors' current status in the private Space station market and their technological gap with Axiom Space, Axiom Space is the most potential candidate to inherit the International Space Station's position after 2030.

Following this trend, Boryung invested USD 60 million in Axiom Space in 2022. If Axiom Space's executives achieve milestones set going forward, their accomplishment will position the company as one that truly matters to humanity, and its value will adjust accordingly. Based on the Axiom Space investment, we will explore various new opportunities and create the future together. There could be a time when the company's value in the market is lower than the actual, considering an additional investment is proper decision-making for Boryung's value. If we face this point, we will actively communicate with shareholders to make decisions.

Although we explained our CIS business in length and depth, Boryung's priority remains the same. Focusing on strengthening earning power is of utmost importance. We will adhere to the CIS principle as well. We will focus on acquiring companies entirely or partially to grow our earnings.

Like in the pharmaceutical business, the best talents leading the CIS business are already in Boryung. I'm confident that they are writing a page in the history of South Korea. Questioning the CIS business is having doubts about working with these talents, and I will not invest in a company that is unwilling to work with talent with a clear purpose and direction.

Developing new treatments and replacing existing international Space stations are just a few ideas to grow business and positively impact humanity. Boryung will continue to look for those ideas.

Chairman & CEO
Jay Kim

General business issues

We thought Boryung's market value was significantly lower than its intrinsic value in the second half of 2022. We could have chosen to buy back our shares and reduce the number of shares outstanding, but we ultimately decided to invest in Alimta and Axiom Space, which would contribute to the long-term growth of our company.

Investing continuously in businesses and assets that can lead to long-term growth is the best policy for our shareholders. The source of funds for our investments will be based on the cash flow generated by our businesses, and after repaying all of our current debt, we plan to minimize borrowing.

I explained Boryung's present and future through this annual letter. However, some parts are insufficient, and I will do my best to answer them at the annual meeting on March 21, 2023

Below is what I said at a meeting with Space economy pioneers hosted by the president on February 21, 2023. I am sharing it with you for your reference.

"We are now in the Age of Exploration towards Space. The most significant difference between the first Age of Exploration that Portugal started in the late 1400s and now is two-fold : first, our destination is beyond Earth, and second, the countries that led the first Age of Exploration became dominant powers by discovering new continents, now it is the existing dominant powers that are leading the Age of Exploration to Space.

Forty years ago, in February 1983, despite many criticisms, Chairman Lee Byung-chul of Samsung announced his investment in the semiconductor industry, which laid the foundation for South Korea to become an advanced country today. If we don't go into Space with a differentiated strategy from now on, even though the U.S. and China are leading the Space exploration era, I'm sure our descendants' future will not be like today 40 years from now.

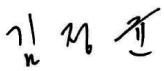
That's why Boryung wants to lead the new market of Space healthcare in the U.S. and contribute to business and national development. Since Yuri Gagarin of the Soviet Union went into Space for the first time in human history in 1961, only about 630 people have experienced beyond Earth orbit for 60 years. The most prolonged extended stay was 437 days. But humanity plans to send people to live on the moon and to Mars, which takes at least three years round trip. The ultimate goal of Space development is to expand human life beyond Earth. And technology development for a long-term human stay in Space is still unexplored.

CEO Letter

Chairman & CEO
Jay Kim

To this end, Boryung will hold the CIS Challenge in America annually to secure technology for human survival in Space. And we have implemented a strategic investment in Axiom Space, a private company that will replace International Space Station as a base for research and development using secured technology. And we are discussing how to secure South Korea's base inside Axiom Space Station."

Boryung
Chairman & CEO Jay Kim



CEO Letter

CEO Pharma Biz
Daniel Chang

If 2022 were the ‘year of innovation and change’ for Boryung, 2023 would be a year that Boryung solidifies its position as a ‘sustainable, innovative growth company.’

In 2022, Boryung performed ‘enhancing profitability’ as the top priority of its pharmaceutical business, bearing in mind that it needs to secure a stable and reliable cash-generating capacity based on substantial growth to invest in future growth engines and achieve sustainable growth development.

In particular, ‘strengthening the product competitiveness’ is crucial in enhancing profitability. Focusing on the competitiveness improvement of existing products, mainly on the Kanarb family, which is the ‘new Korean-manufactured drug with the highest prescription rate,’ developing attractive incrementally modified drugs (IMDs) and first generics that can quickly penetrate the market, and promoting global product asset through the Legacy Brands Acquisition (LBA) strategy, Boryung aimed to establish itself as a ‘leader in chronic diseases’ by improving the competitive power of self-manufactured products.

The year 2022 was the starting point for such challenges. Despite the challenging business environment with the ongoing COVID-19 pandemic and the economic downturn at home and abroad, we achieved the highest-level growth in the industry based on fundamental innovation. According to the consolidated financial statements, Boryung's revenue and operating profit in 2022 were KRW 760.5 billion and KRW 56.6 billion, respectively, representing 21% and 37% year-on-year growth, the highest performance since its foundation.

What is most remarkable is that the entire business area evenly experienced rapid growth compared to the previous year, with 19% growth in the Kanarb family, 61% in anti-cancer drugs, 126% in CNS, 52% in consignment, and 19% in OTC drugs, not only in appearance but also in profitability.

Boryung's pharma business will not be complacent about these achievements but will continue to pursue the innovative path we must follow this year. If 2022 were the ‘year of innovation and change’ for Boryung, 2023 would be a year that Boryung solidifies its position as a ‘sustainable,

innovative growth company.' We will continue to invest more intensively in specialized drugs for chronic diseases in 2023. By establishing a business structure with the highest-level profitability in the industry, Boryung will achieve KRW 1 trillion in revenue and KRW 200 billion in operating profit early by 2026.

To this end, Boryung plans to develop competitive self-manufactured products that can quickly settle into the market this year. While concentrating on developing first generics for large-scale items with expiring patents, we will build a pipeline for IMD in various areas such as diabetes, hyperlipidemia, and urology to improve profitability by increasing the proportion of our products. Also, this year, based on the two pillars of 'manufacturing competitiveness' and 'sales marketing capability,' Boryung will continue to pursue global product acquisitions that lead the treatment market through the 'LBA,' its unique management strategy.

Second, we will strengthen our market dominance by providing various treatment options to prescribers and patients with six different product lineups for Kanarb, a new antihypertensive drug. While accelerating the development of new Kanarb complex products, Boryung will expand the market into new areas by adding indications utilizing the AI platform.

Third, to maintain our reputation as the 'No. 1 in the anti-cancer drug market,' we will focus on improving our portfolio by cancer type and increasing the market share of new items. Specifically, we will concentrate on raising the market share of various items ranging from newly introduced non-small cell lung cancer drug 'Alimta' and small cell lung cancer drug 'Zepzelca,' to blood cancer therapies, biosimilar, and cancer adjuvants. Moreover, we will continue to invest in producing safe and outstanding anti-cancer drugs based on the manufacturing competitiveness of Yesan Plant's anti-cancer injection facility, proven by EU-GMP certification.

Fourth, we will secure new growth engines in the chronic disease market by launching various self-manufactured drugs. Above all, with the release of new treatments containing dapagliflozin and sitagliptin, we will continue active marketing to achieve our goal of becoming the 'top player in the diabetic generic drug market.' We also plan to expand the number of large-scale products with annual sales of over KRW 10 billion in the chronic-disease area from 11 in 2022 to 14 in 2023.

CEO Letter

CEO Pharma Biz
Daniel Chang

Fifth, to nurture a business specialized in the CNS sector, we will continue to focus on expanding the prescription of central nervous system drugs this year, centered on Zyprexa, whereas striving to increase business performance in the renal field this year to firmly establish our position as the 'only comprehensive dialysis company in South Korea.' Regarding OTC drugs, we will expand our business into new disease areas this year by launching various new products and reinforcing the market dominance of mega brands such as Gelfos and Yonggaksan.

Although the business environment is unfavorable this year due to the economic downturn, a tree with solid roots never falters. Maintaining fundamental innovation such as 'improving profitability,' 'strengthening our self-product power,' and 'establishing a stable portfolio,' Boryung will continue to secure investment resources for our future vision steadfastly. I ask for your support and encouragement in Boryung's journey toward its grand dream of becoming a 'healthcare leader.' Thank you.

Boryung
CEO I Pharma Biz Daniel Chang

장두현

Our MISSION

Boryung is committed to becoming an indispensable contributor to the health and well-being of humanity.

Boryung
Core Values »

01 Become Irreplaceable

02 Think Long-Term

03 Pursue Extreme Transparency

04 Be Nice

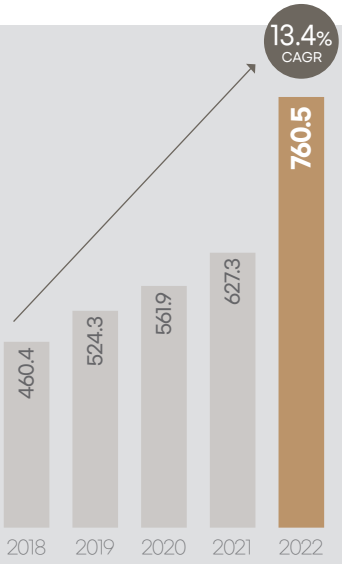
Business Highlight

In 2022, Boryung embarked on a journey of “innovation” and “transformation”, starting with a name change from Boryung Pharmaceutical to Boryung Corp. We are committed to becoming an irreplaceable contributor to the health and well-being of humanity. Our focus is on strengthening our earning power by enhancing our product competitiveness and developing a profit-oriented business portfolio. In addition, we are driving bold innovation by venturing into new business areas that will serve as future growth drivers.

Consolidated revenue, OP, and EBITDA for 2022 increased 21.2%YoY to KRW760.5bn, 36.6%YoY to KRW56.6bn, and 28.1%YoY to KRW93.2bn, respectively, indicating a strong and continued upward trend in Boryung’s earning power. This positive trend bodes well for our mid/long-term goal of achieving revenue of KRW1tr and OP of KRW200bn.

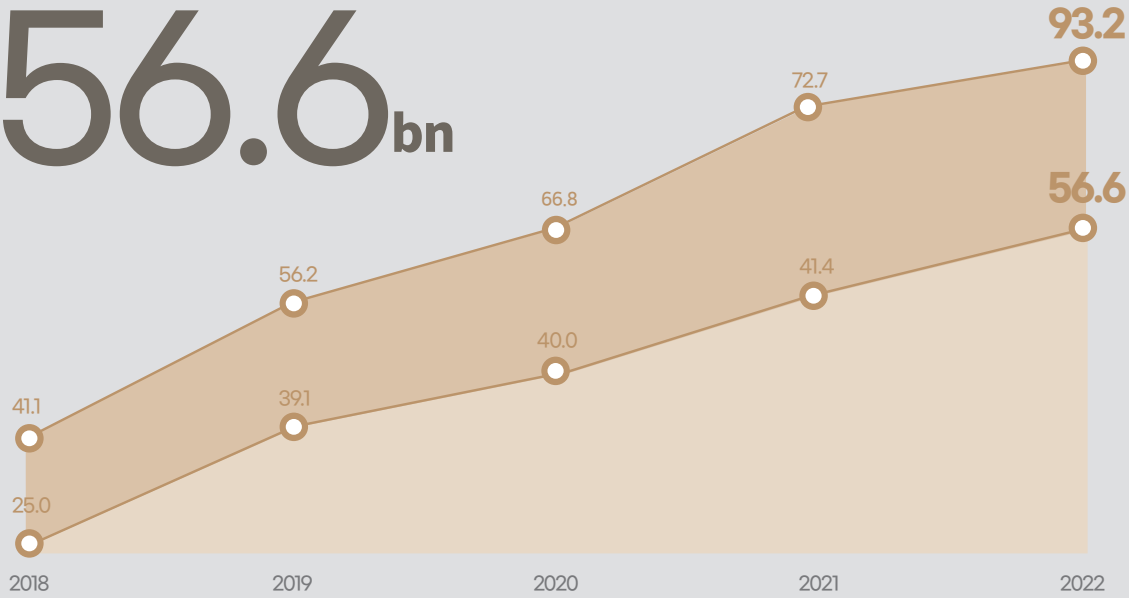
2022 revenue

KRW 760.5bn



2022 EBITDA / OP

KRW 93.2bn / 56.6bn



Pharma Biz

Boryung is committed to continuing fundamental innovation, including improving profitability, enhancing the quality of in-house produced products, and establishing a stable business portfolio, while also preparing financial resources for investment to realize our future vision.



Earnings Summary

At a glance

Summary of Major Item Sales

Unit : KRW billion

Segment	Name	2022	2021	2020	2019	2018
Hypertension & Dyslipidemia	Kanarb family drugs	**134.5**	112.6	90.3	74.0	58.4
	Others	**39.9**	51.4	45.9	47.9	49.8
	sales	**174.4**	164.0	136.2	121.9	108.2
Diabetes	Trulicity	**54.1**	46.9	36.8	33.8	23.7
	Others	**0.2**	0.2	0.2	0.2	0.2
	sales	**54.3**	47.1	37.0	34.0	23.9
Oncology	Gemzar	**10.9**	17.2	12.3	13.7	13.5
	Xeloda	**12.7**	11.8	10.7	10.7	10.1
	Neulasta	**34.6**	2.5	-	-	-
	Grasin	**17.6**	-	-	-	-
	Onbevzi	**19.3**	0.4	-	-	-
	Samfenet	**7.2**	2.8	-	-	-
	Others	**58.3**	65.0	59.7	55.4	46.4
	sales	**160.6**	99.7	82.7	79.8	70.0
CNS	Zyprexa	**13.1**	-	-	-	-
	Others	**13.5**	11.7	12.5	11.1	10.2
	sales	**26.6**	11.7	12.5	11.1	10.2
Renal	Hemosis	**19.1**	17.2	15.4	13.8	11.7
	Others	**36.1**	34.0	32.9	28.7	22.8
	sales	**55.2**	51.2	48.3	42.5	34.5
OTC	Gelfos	**22.0**	20.5	15.9	18.4	13.6
	Yonggaksan	**21.3**	15.0	8.1	5.5	6.6
	Others	**35.4**	31.2	26.8	14.7	18.1
	sales	**78.7**	66.7	50.8	38.6	38.3
Specialty Care	Mucomyst	**14.8**	13.5	13.1	15.4	13.1
	Meiact	**14.5**	10.1	11.2	18.0	15.6
	Maxipime	**12.2**	12.4	11.8	13.0	11.4
	Stogar	**17.6**	18.5	18.5	14.3	10.1
	Naseron	**10.3**	9.7	8.6	8.2	5.5
	Others	**69.3**	66.7	66.6	57.2	50.3
	sales	**138.7**	130.9	129.8	126.1	106.0
Contract manufacturing		**60.0**	39.1	46.5	52.9	52.7
Others		**12.0**	16.9	18.1	17.4	16.6
Total sales		**760.5**	627.3	561.9	524.3	460.4

※ Based on internal consolidated sales; Exports included
※ Sales of Kanarb family drugs include sales of Kanarb, Dukarb, Tuvero, Akarb, Dukaro and Dukarb Plus.

Earnings Summary

Pharma Biz

Our pharmaceutical business is prioritizing profitability growth while taking steps toward sustainable growth. To ensure a stable cash stream through increased profitability, Boryung is pursuing fundamental innovations, including enhancing the competitiveness of in-house produced products and establishing a stable business portfolio. Boryung is committed to becoming a leader in the healthcare industry.

Earnings Summary

Kanarb family



YoY 19%

Kanarb family achieved the No. 1 spot in outpatient prescription drug sales among new domestic drugs in 2022, underpinning the stable growth of Boryung's pharmaceutical business.

Oncology



YoY 60%

As a dominant market leader, Boryung is expanding its share of the domestic cancer drug market based on its superb sales and marketing competence.

CNS



YoY 128%

The CNS segment has become a major growth pillar with the addition of the blockbuster drug Zyprexa.

In 2022, the pharmaceutical business is experiencing solid growth across all segments, including the Kanarb family, oncology, and CNS. In addition, contract manufacturing sales soared 52%YoY and OTC drug sales rose 19%YoY.

Key Strategies

Strengthening Competitiveness of In-House Produced Products

To achieve profitability growth, Boryung needs to enhance the competitiveness of its in-house produced products. By selling these products, rather than acquired merchandise, Boryung can reduce costs and strengthen the competitiveness of its offerings, which is the first step toward achieving sustainable growth. Boryung can achieve stronger product competitiveness by leveraging its superb manufacturing prowess, R&D expertise, and sales and marketing competence.

1 Manufacturing Competitiveness

Boryung owns both the Ansan and Yesan campus. The Ansan campus employs a multiple-product and small-lot sized production method, while the Yesan campus is a modular smart factory focused on small-quantity batch production. These exceptional production facilities and capabilities enable us to stably provide products of great quality.

2 R&D capabilities

Boryung takes pride in its solid R&D capabilities, which have been honed through the successful launch of its proprietarily developed new drugs like Kanarb and various combination drugs. With such R&D expertise, we are well-positioned to conduct R&D on IMDs for new diseases such as diabetes.

3 Sales and Marketing Competence

Boryung has a track record of successful co-promotion campaigns with global pharmaceutical companies. Our exceptional sales and marketing prowess is evidenced by the strong performance of our original brand, Kanarb, and the successful acquisitions of legacy brands (LBAs). With such a robust sales and marketing competency, we are well-positioned to effectively promote our in-house produced drugs ahead.





Key Strategies

Establishing Stable Product Portfolio

Boryung has developed a product portfolio with a focus on the top five chronic diseases, namely hypertension, dyslipidemia, diabetes, CNS disorders, and cancers, all of which represent significant market potential. By strategically selecting these promising market segments, we have achieved continued growth.

Hypertension/Dyslipidemia

- Six Kanarb family drugs offer various treatment options to both doctors and patients.
- Kanarb family drug sales topped KRW130bn; Dukarb Plus successfully advanced into the market.
- Boryung is scheduled to foray into new areas by adding new therapeutic indications based on AI platform.

Oncology

- Boryung achieved the No. 1 share of the cancer drug market.
- Cancer drug sales surpassed KRW160bn in 2022.
- In addition to Alimta (acquired in October 2022), Boryung aims to expand the market shares of various items, including blood cancer drugs, biosimilars, and adjuvants.

Diabetes

- Boryung established its sales and marketing network in the diabetes market by expanding the reach of Trulicity.
- Sales of Trulicity exceeded KRW54bn in 2022.
- Boryung has a goal of achieving the No. 1 spot in the generic diabetes drug market and is expected to launch its own diabetes drug.

CNS

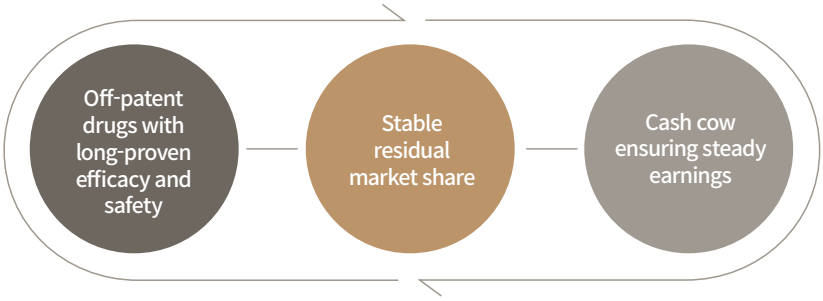
- Boryung is advancing into both psychiatry and neurology markets with Zyprexa.
- Sales of Zyprexa reached KRW13.1bn in 2022.
- Boryung is scheduled to build a portfolio covering all CNS disorders in the mid/long run.

Strengthening Competitiveness of In-house Produced Products

LBA (Legacy Brands Acquisition)

Boryung is dedicated to becoming an indispensable company for the betterment of humanity's health. As we considered the fundamental aspects of human health within the pharmaceutical industry, we developed the legacy brands acquisition (LBA) strategy with the aim of enhancing human health and bolstering corporate earnings simultaneously.

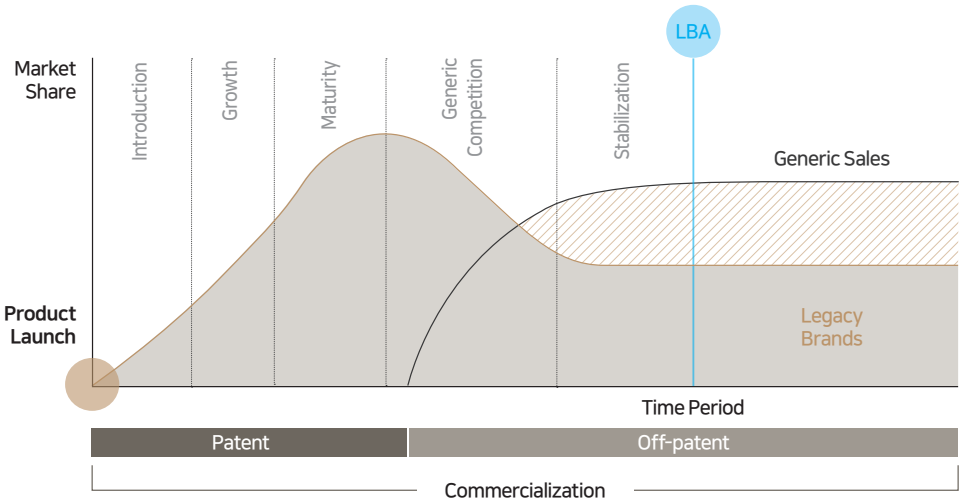
Legacy Brands



A legacy brand refers to a pharmaceutical product that altered the treatment paradigm for a specific disease upon its launch and demonstrated its efficacy and safety over the long term. These brands maintain their positions and influences as the original drug, making them an essential option for both doctors and patients. As a result, they continue to hold stable market shares and market leadership even after patent expiry, despite the challenges posed by generic versions.

Boryung leverages the exceptional global presence of legacy brands in specific treatment markets as anchor products to facilitate expansion into new markets. These legacy brands also serve as cash cows by maintaining or even increasing their stable market shares.

Product Life Cycle



Boryung has adopted the LBA strategy as its path towards becoming an essential player in the healthcare industry while also increasing revenue. Boryung is actively pursuing LBAs to penetrate new markets and establish stable growth engines.

Strengthening Competitiveness of In-house Produced Products

Four Pillars of Boryung's LBA Strategy

Boryung has four core growth pillars underpinning its successful execution of the LBA strategy.

01 Manufacturing Competitiveness

Firstly, Boryung has solid manufacturing capabilities, which are crucial to its ability to capitalize on the LBA strategy. Strong margins during in-house production are essential for LBAs to serve as cash cows. Boryung's Yesan campus is a smart factory that was completed in 2019 and built to global standards, making it a significant asset. The factory features a one-stop system that covers everything from production to delivery, with internal telecommunication functions that delegate relevant authority to each facility and allow for independent operation. In addition, the factory has recently received the EU-GMP certification, demonstrating its world-class manufacturing competitiveness.

02 R&D Expertise

Secondly, Boryung's outstanding R&D expertise is well-positioned to take the LBA strategy to the next level. The LBA strategy aims to achieve meaningful revenue growth by leveraging the exceptional global reach of legacy brands to expand a product portfolio for targeted disease treatments. In addition, R&D expertise that addresses the market's unmet needs, such as the development of more convenient medication dosages, is crucial for driving the growth of the acquired legacy brands. In this regard, Boryung's diverse R&D experiences gained from the development of Kanarb (a proprietary new drug) should support the implementation of the LBA strategy.

03 Sales and Marketing Competence

Thirdly, Boryung possesses competitive sales and marketing capabilities. The company's track record of successful co-promotions for original brands with global pharma firms has already been integrated, which will greatly benefit the sales and marketing of legacy brands. Furthermore, Boryung's exceptional success with Kanarb and significant market shares of its cancer drugs achieved through a disease-specific focus are valuable assets that bode well for the implementation of the LBA strategy.

04 Solid Compliance System

Fourthly, Boryung has a robust compliance system in place. When acquiring legacy brands with a global presence, it is essential to have a suitable reference and compliance system since the reputation of the original developer can still be influenced even after their sale to other pharma firms. Boryung is well-suited for LBAs due to its extensive experience as a major pharmaceutical firm for over 60 years and its world-class compliance system, as demonstrated by its achievement of ISO37001 and 37301 certifications.

Strengthening Competitiveness of In-house Produced Products

Current Status of LBAs

2020



Gemzar (gemcitabine), the first outcome of our LBA strategy, was acquired in 2020 and successfully manufactured in-house starting in July 2022. According to the market research firm IQVIA, Gemzar sales reached KRW14.3bn in 2020, KRW15.8bn in 2021, and KRW19bn in 2022 (up 20.3% YoY), which is a clear indicator of the success of our LBA strategy.

2021



In 2021, Boryung acquired Zyprexa (olanzapine) as the second target of the LBA strategy. Zyprexa is the cornerstone of our CNS drug portfolio and contributed to a doubling of CNS drug sales.

2022



In 2022, Boryung acquired 'Alimta (Pemetrexed,)', an original drug for non-small cell lung cancer (NSCLC), from the global pharma firm Eli Lilly. Alimta has been credited with bringing about a paradigm shift in the NSCLC treatment market. Even after its patent expiry in 2015, Alimta has achieved annual sales in the range of KRW20bn and has maintained a dominant market of about 60% of the pemetrexed prescription market based on its strong clinical value as an originator drug (IQVIA data).

Boryung aims to maximize the desired effects of the LBA strategy by stabilizing legacy brands such as Gemzar, Zyprexa and Alimta, whose domestic rights were acquired through the strategy. Additionally, the company plans to reinvest the returns from the strategy to create a virtuous cycle.

Furthermore, Boryung is actively expanding into overseas markets by acquiring the global rights to its legacy brands. In addition, Boryung is exploring various business possibilities, including CMO (Contract Manufacturing Organization) and CDMO (Contract Development & Manufacturing Organization) orders, leveraging its advanced manufacturing and R&D capabilities gained from the LBAs.

Boryung is looking to export Kanarb family drugs and foray into global markets, leveraging its enhanced capabilities gained through the LBA strategy. This move is expected to serve as a future growth engine.

Strengthening Competitiveness of In-house Produced Products

Production Infrastructure

Yesan Campus Achieves EU-GMP Certification Process



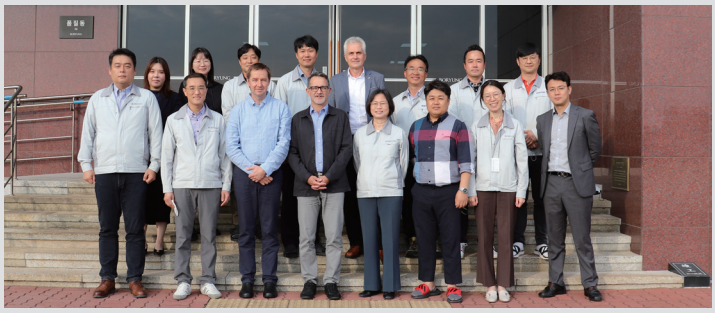
EU-GMP certification process

- Apply for EU-GMP certification to EMA
- Pre-qualification test (Submission of essential papers)
- On-site inspection
- Evaluation of on-site inspection report and results (Germany Hamburg State Government, BJV)

Attainment of EU-GMP Certification

Groundwork Laid for Exports and Contract Manufacturing

Boryung's anticancer injection factory in Yesan received the European Union Good Manufacturing Practice (EU-GMP) certification on Feb 1st, 2023. The certification is granted by the European Medicines Agency (EMA) and is mandatory for pharmaceutical companies seeking to market their products in Europe.



For the certification, our anticancer injection factory underwent an inspection by the Behorde fur Justiz and Verbraucherschutz (BJV), a regulatory authority based in Hamburg, Germany from September 28th, 2022 to October 1st, 2022. As a result, Boryung's aseptic drug manufacturing and quality control systems were granted the EU-GMP certification.

The EU-GMP and the U.S. Food and Drug Administration (FDA)'s current good manufacturing practice (cGMP) are recognized as the highest standard requirements. The EU-GMP sets the most stringent standards for the manufacturing, quality control, and shipping of aseptic medications.

Winning the EU-GMP certification demonstrates Boryung's compliance with the strict EU standards for aseptic drug manufacturing and quality control in the region. This certification highlights Boryung's world-class GMP competitiveness, which will allow us to export anticancer drugs and pursue contract development and manufacturing organization (CDMO) business in Europe and other countries worldwide.

Strengthening Competitiveness of In-house Produced Products

R&D

Maximizing R&D Efficiency



Achieving early-stage profitability with IMDs and first generics

In the R&D segment, we are focused on fully leveraging our R&D resources and maximizing efficiency to expand flagship Kanarb family drugs, as well as our forte products, namely anticancer and renal product lineups. As a result, we launched Dukarb Plus and obtained approval for two innovative products in Korea. The first product, Zepzelca, is a new orphan anticancer drug and the first of its kind to be released in Korea. The second product is Finjuve Spray, the world's first finasteride-based hair loss medication in a spray form.

Boryung aims to optimize its development process by analyzing market needs and trends in the early stages of projects, while also reducing development time without compromising quality. These efforts will enable Boryung to maintain competitiveness in the market and secure profitability early through the timely release of new products.

2022 Results

Type	Product	Approval	Launch
Onco	Fulvet inj.	Jan.	○
	Gemzar inj.	Apr. (manufacturing)	○
	Levlikin cap.(5, 10, 15, 25mg)	2021	○
	Levlikin cap. 20mg	Aug.	○
	Zepzelca inj. (orphan)	Sep.	
Hypertension, hyperlipidemia & diabetes	Dukarb Plus tab.	Mar./Jun.	○
	TrusitaM tab. (sustained-release)	May	Slated for 2023
	Lzero tab. 2mg	Oct.	○
	TrusitaM tab.	Dec.	Slated for 2023
Renal	Incevel tab.	Jul.	○
	Napasta inj.	Sep.	Slated for 2023
Others	Boryung Mucomyst sol. 10%	Jan.	○
	Breathon inj.	Feb.	○
	Mentum Ibucool plaster	Aug.	Slated for 2023
	Finjuve Spray	Sep.	Slated for 2023

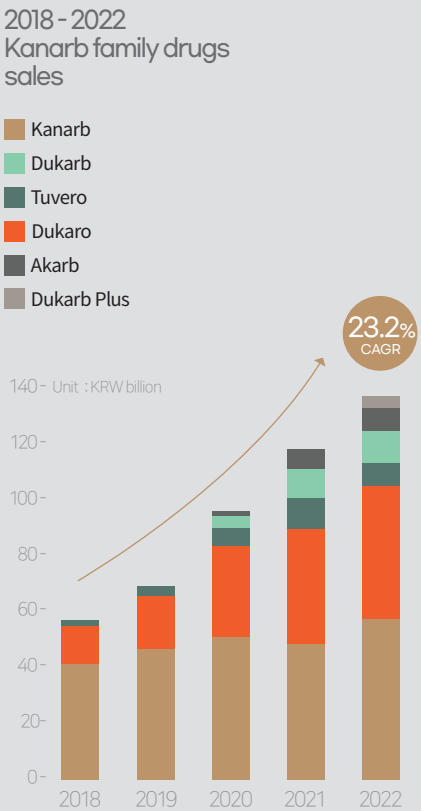
Establishing Stable Product Portfolio

Hypertension/Dislipidemia Segment

Kanarb Family Sales Top KRW130bn







Kanarb Family, No. 1 New Drugs in Korea

Hypertension is one of the most prevalent diseases in Korea, affecting 12mn people or one out of three adults. It is also a leading cause of death worldwide and is closely linked to cardio-cerebrovascular diseases, which are the primary cause of death among adults. Given its impact, there is a consensus in Korea that the prevention and management of hypertension are crucial, as stated in the Korean Society of Hypertension's 2022 guidelines.

Boryung's Kanarb (fimasartan), which celebrated its 11th anniversary in 2022, won the Korea New Drug Award and became the 15th newly developed antihypertensive drug in Korea, positioning itself as the unmatched No. 1 brand in the single-agent ARB antihypertensive drug market. Leveraging the superb brand power of Kanarb, Boryung has launched its family drugs, Kanarb, Dukarb, Tuvero, Dukaro, Akarb, and Dukarb Plus. The Kanarb lineup is being touted as an exemplary case of new drug development in Korea.

The Kanarb family drugs achieved annual sales of KRW100bn for the first time in 2011, when they celebrated their 10th anniversary. Sales growth continued in 2022, mainly driven by the launch of the triple-combination antihypertensive drug, Dukarb Plus (fimasartan + amlodipine + hydrochlorothiazide). As a result, the sales of the Kanarb family drugs exceeded KRW130bn in 2022, resulting in a CAGR of a staggering 23.2% during 2017-22. Today, the Kanarb lineup has firmly established itself as a prominent brand in the hypertension treatment market.

Establishing Stable Product Portfolio



Dukarb Plus, which hit the market on June 1st, 2022, has gained market share at the fastest pace compared to previously released triple-combination antihypertensive drugs. Given its successful launching, Dukarb Plus is well-positioned to become a blockbuster drug in the near future. Boryung's successful new drug launching process is likely to be highlighted once again when new Kanarb family drugs are introduced.

Boryung has strived to expand the therapeutic indications of Kanarb through various clinical studies. In 2021, Boryung successfully obtained a new indication for reducing albuminuria and expanded the age range for its use. Kanarb boasts the largest clinical database among new drugs, with 124 theses and approximately 50,000 clinical reports.

Thanks to its extensive clinical data and various indications, the Kanarb family drugs have achieved the highest prescription volume among both family drug lineups and new drugs in Korea, further widening the gap from generic drugs that are scheduled to be released.

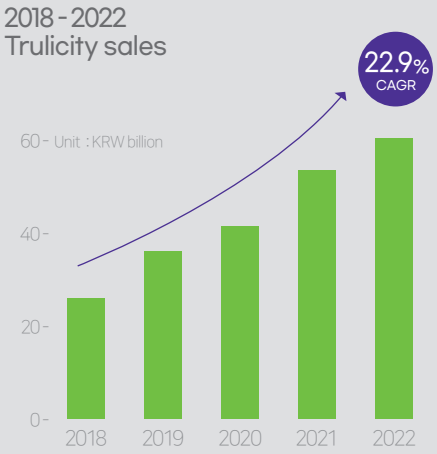


Establishing Stable Product Portfolio

Diabetes Segment

Up 15%YoY





Beachhead esetablished to enter diabetes drug market

Diabetes has been the heaviest health burden for Korean people over the past decade. According to the 2022 Diabetes Fact Sheet, around 60mn people or one in six individuals aged 30 and above were diagnosed with diabetes in 2020. If people with prediabetes are included, approximately 200mn Korean people are either living with diabetes or are at the risk of developing it.

Diabetes not only leads to chronic diseases, such as hypertension and dyslipidemia, but also increases the risk of cardiovascular and kidney diseases. Therefore, it is of utmost importance to diagnose diabetes early and proactively manage it to prevent the onset of these complications.

Boryung entered the diabetes treatment market with a co-promotion alliance for Trulicity with Eli Lily in 2016 and has since been actively pursuing growth opportunities in the market, which holds great potential. Trulicity is a once-weekly, long-acting GLP-1 analogue injection that has demonstrated its efficacy and safety in controlling blood sugar levels, both as monotherapy and in combination therapy. With its heightened user convenience, Trulicity has emerged as a viable treatment option for patients who had previously avoided injections.

Supported by Boryung's solid sales and marketing infrastructure, Trulicity achieved sales of over KRW54bn in 2022 and has maintained the largest share of the domestic diabetes injection treatment market. Boryung's Trulicity has led a paradigm shift in the diabetes treatment market, which was previously dominated by tablets, by promoting the growth of injection sales. Trulicity has registered a five-year CAGR of a whopping 18% over the past five years.

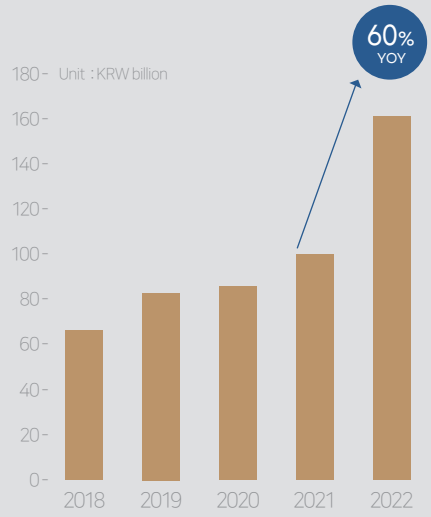
Boryung will continue to focus on the diabetes drug market in the future, drawing on the confidence and expertise gained from Trulicity. Our goal is to become a leader in diabetes treatment by expanding our diabetes drug pipeline and introducing drugs and IMDs optimized for the market.

Establishing Stable Product Portfolio

Oncology Segment Up 60%YoY



2018 - 2022
Oncology sales



Outstanding leader in domestic cancer drug market

In 2022, Boryung's oncology segment saw a significant increase in sales, surging about 60%YoY to KRW160bn. As a leading player in the domestic market for cancer drugs, Boryung has steadily increased its market share thanks to its specialized sales forces tailored to the field.

Drugs for various types of cancers have exhibited growth, including gastrointestinal cancers such as Gemzar, Campto, Oxaliplatin, Xeloda, and Onbevzi; women's cancers such as Genexol, Ditaxel, and Samfenet; hematologic malignancies such as Neulapeg, Belkin, and more; as well as palliative treatments like Neulasta and Grasin. Boryung is looking to expand its share of the oncology market by diversifying its product portfolio and forming new strategic partnerships.

To strengthen its anticancer drug portfolio, Boryung signed a co-promotion agreement with Kyowa Kirin Korea in 2022 for Neulasta and Grasin, which are leading neutropenia drugs in both domestic and global markets. In addition, Onbevzi (Bevacizumab; biosimilar of Roche's Avastin) was launched in 2021 and has successfully established a solid presence with a 20% market share.

Boryung acquired the original drug 'Alimta' from Eli Lilly in October 2022 as part of its LBA strategy, increasing annual sales by KRW20bn. This second anticancer drug acquisition following Gemzar is anticipated to contribute to the continued expansion and profitability growth of the oncology segment.

Furthermore, 'Zepzelca', a newly acquired small cell lung cancer drug developed by PharmaMar S.A. of Spain, received marketing approval from the Korea Food & Drug Administration in September 2022 and is scheduled to be released in March 2023. There are high expectations over the drug as patients with a small cell lung cancer have limited treatment options in the second-line therapy.

Boryung's expansion of drug coverage for lung cancer is expected to drive growth in overall oncology drug sales in 2023, serving as a new source of growth momentum. As a result, Boryung's oncology segment is projected to achieve an overwhelmingly large share of the domestic market for anticancer drugs in the coming years.

Establishing Stable Product Portfolio

CNS Segment Up 128%YoY

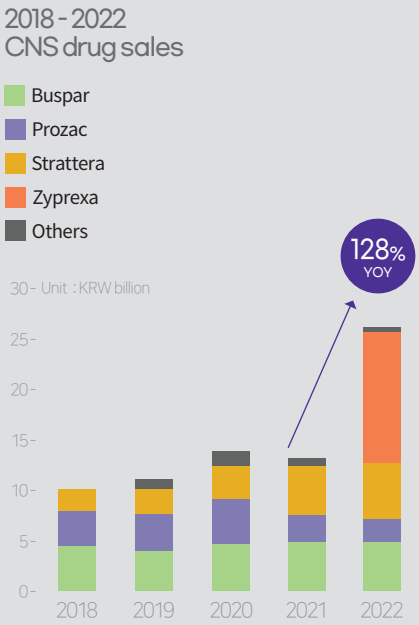


Strattera


Buspar

Zyprexa





Building foundation for expanding CNS coverage

The domestic central nervous system (CNS) disorder treatment market, which was valued at approximately KRW2.2tr in 2022, is believed to have strong growth potential as Korea has the world's most rapidly aging population. The global CNS treatment market is also considered to have tremendous growth potential, leading to increasing R&D projects for CNS disorders and robust M&As among related companies.

Boryung's CNS segment has been solidifying its position in the psychiatric drug market, with an expanding pipeline of CNS drugs for various conditions such as anxiety disorders, depression, and attention-deficit hyperactivity disorder. Our goal is to establish a comprehensive product portfolio for all areas of CNS disorders over the mid/long term.

In October 2021, Boryung signed a contract with Lilly Korea to acquire Zyprexa (olanzapine), an antipsychotic drug that began generating noticeable sales in 2022. Since its launch in 1996, Zyprexa has become the most prescribed drug among antipsychotics globally. It is currently ranked as the 13th most prescribed drug globally in terms of prescription value across all types of medications.

After the acquisition, Zyprexa sales climbed 5%YoY to KRW13.1bn in 2022, which demonstrates the sales growth potential of newly acquired drugs based on the LBA strategy. Meanwhile, sales of Strattera, an ADHD medication, soared 38%YoY to KRW5.6bn while sales of Buspar, an anxiety disorder medication, rose 9%YoY to KRW5.5bn.

With the acquisition of Zyprexa, Boryung has taken a significant step toward strengthening its CNS segment. In 2022, total CNS drug sales reached KRW26.7bn, showing a whopping 128%YoY increase from KRW11.7bn in 2021. In this light, the CNS segment is well-positioned to become a major gvrowth pillar. Boryung aims to lead the CNS drug market by leveraging the client base of Zyprexa and continuously expanding its CNS drug pipeline.

Establishing Stable Product Portfolio

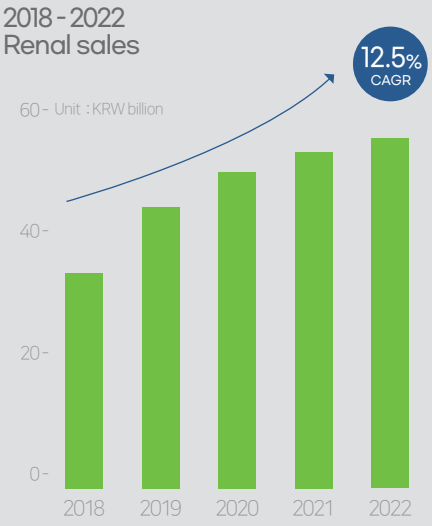
Renal Segment Up 8%YoY



Moving Beyond Portfolio Expansion Toward Sustainable Dialysis

In 2022, the number of patients newly diagnosed with end-stage kidney failure jumped 120.3% compared to nine years ago. Medical spending for these patients also soared 80.1% to KRW2.16tr in 2021 compared to 2012, suggesting a CAGR of 6.8% during the period. The aging population has driven an increase in the prevalence rate and duration of diseases that trigger chronic renal diseases such as hypertension and diabetes among elderly individuals. This trend contributed to the upward trend in the number of patients with end-stage kidney failure, leading to a growing demand for new alternative therapies, according to the National Health Insurance Corporation's data on the number of patients with end-stage kidney failure by dialysis type.

Boryung established its renal segment in 1989 and has been the only company in Korea that provides all kinds of relevant products and services to patients with kidney diseases, including hemodialysis equipment, peritoneal dialysis, and renal medications. The renal segment has exhibited a CAGR of 12.5% over the past five years. Boryung is now aiming to achieve over KRW50bn in annual sales. To this end, we are considering the expansion of our renal product portfolio and pursuing the concept of sustainable dialysis.



Boryung has recently expanded our renal product portfolio to cover all treatments for patients undergoing dialysis. For starters, we have developed a specialized dialyzer for hemodialysis that takes into account each patient's individual condition. We have also strengthened our portfolio of drugs for mineral-bone diseases, and introduced basic drugs that are essential for patients on dialysis.

Establishing Stable Product Portfolio



Furthermore, Boryung is committed to promoting long-term sustainability in dialysis in response to the growing chronic renal disease market. Hemodialysis requires significant amounts of energy, water, and consumables, resulting in the production of large amounts of carbon dioxide, a major contributor to climate change. To address this issue, Boryung's renal segment has started collecting and upcycling used dialysate containers into new products such as cosmetics containers. As a result, Boryung has become the first company in the dialysis industry to implement such a practice.

Collected PE containers are 100% recycled into upcycled products. Assuming that all used containers are retrieved, the upcycling policy is expected to reduce plastics consumption by up to 118 tons a month or 1,416 tons a year and therefore, lower carbon emissions.



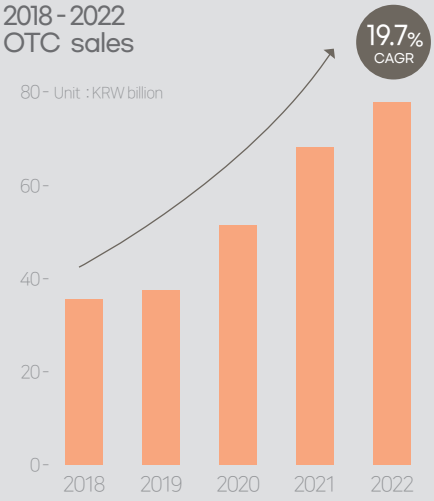
Establishing Stable Product Portfolio

OTC Segment Up 18%YoY





Continuing growth based on strengthening product quality and expanding consumer base



Boryung ConsumerHealthcare is a healthcare company with a diverse business portfolio ranging from OTC(over-the-counter) medicines with popular brand recognition, such as Younggaksan and Gelfos, to medical devices and health supplement. Revenue for 2022 increased 19.1%YoY to KRW78.7bn and resulting in CAGR of 19.7% in the last five years.

Yonggaksan is establishing itself as a leading self-medication drug for respiratory diseases, backed by aggressive marketing campaigns this year. Since 2020, the Yonggaksan Cool brand has been well-received by all age groups, including the Generation MZ, due to its “throat-clearing series” advertising campaigns. In 2022, the brand’s consumer sales reached KRW26.2bn (IQVIA data) as demand for household medicines soared amid the spread of the Omicron variant and homecare of COVID-19 patients.

The Yonggaksan brand posts the highest sales among OTC drugs for cough, with over 30% market share, leading the overall growth of the respiratory disease drug market. Products with new flavors, such as blueberry and mint coffee, are set to be released to cater to the diverse preferences of consumers.

Boryug Consumer is currently working to strengthen its Gelfos brand with a specific focus on “Gellfos-L”. In 2000, Boryung launched a renewed version of Gellfos called “Gelfos-M”, which was designed to provide better protection for gastric mucous membranes. Then, in 2018, Boryung released Gellfos-L, which combines the function of alleviating heartburn from Gelfos-M with a newly added substance of DL-carnitine. With this extended product line, consumers now have a range of options to choose from depending on their specific conditions.

Starting in December 2022, a popular rising female star, who is especially favored by younger generations, is featuring in commercial campaigns for the Gelfos brand. Gellfos-L, which can relieve heartburn as well as the feeling of a bloated stomach, is gaining popularity among the Generation MZ, who are always on the go and seeking effective solutions with time constraints.

In addition to the two flagship OTC drugs, Yonggaksan and Gelfos, Boryung is determined to expand its OTC drug pipeline with new drugs, such as vitamins, athlete’s foot treatment, and painkillers

CIS

Care In Space

Boryung is committed to becoming an indispensable company for the health of humanity. To achieve this goal, Boryung focuses on acquiring and developing essential technologies for the survival of humanity, as well as the necessary infrastructure for R&D in this field.



Meaning of CIS

Care In Space (CIS)

Boryung's founding spirit, which dates back to 1957 and was aimed at providing patients with access to even drugs that had not yet been released in the market, has evolved over time. In 2022, Boryung's mission expanded to become an essential company that positively impacts the health of humanity. While Boryung's growth has been supported by the nation and previous generations thus far, we are committed to contributing to the growth of our country and younger generations moving forward. With this in mind, Boryung has set its sights on space exploration and research as a new frontier for innovation and advancement.



Space is not just a future prospect, but an active and present realm where humans must continuously challenge themselves and harness their potential. As space exploration advances, the role of humans will undoubtedly become increasingly important. The ultimate goal of space development is to extend the scope of human life beyond the confines of Earth. However, developing the technology necessary for the long-term stay of humans in space remains a crucial challenge. Problems that must be tackled in space significantly outweigh those that have already been resolved.

Boryung has identified the potential challenges that humans may face in space. Through our CIS project, we are committed to acquiring the essential technology needed to ensure the survival and well-being of humans in space. Furthermore, we will invest in the necessary infrastructure to conduct R&D in this field.

Our top priority is to strengthen our earning power from a long-term perspective. By expanding the scope of our business to encompass the entire healthcare industry, we believe there are limitless opportunities for growth. In this regard, not only the existing pharma business, but also the CIS project will play a critical role in propelling Boryung to the next level. Through this project, we are laying the groundwork for sustained growth, positioning ourselves as an “essential company for humanity”.

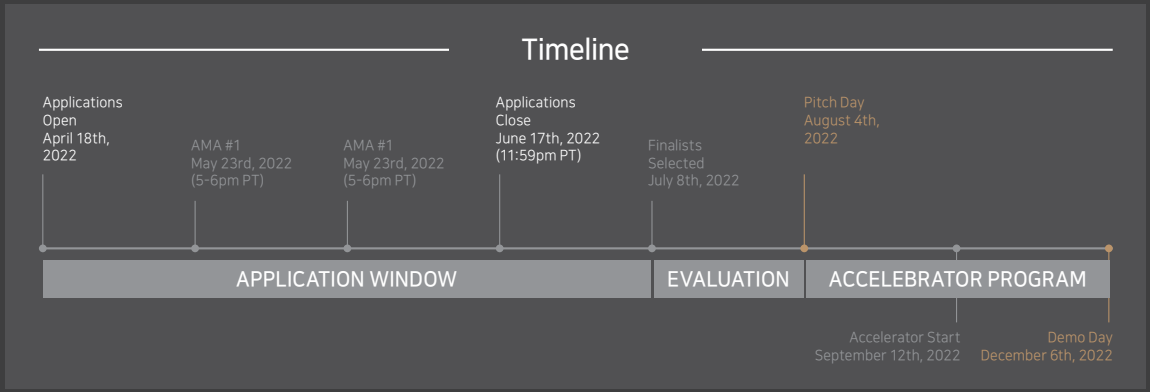
Through the CIS Challenge, Boryung remains committed to investing in companies that are developing the critical technology needed for human survival in space. As part of this effort, we have invested in Axiom Space to acquire the infrastructure required for R&D in the low Earth orbit (LEO). Through our partnership with Axiom Space, we have identified numerous new opportunities and created a new future for both companies.

Technologies

CIS Challenge

The CIS Challenge is the world's first healthcare accelerator program that is focused on space. We are committed to expanding the scope of viable businesses in space by identifying and supporting innovative startups and entrepreneurs. In 2022, Boryung held the global CIS Challenge event in Los Angeles, California to redefine the concept of space healthcare, explore potential challenges in space, and secure the necessary technologies for human survival in space.

As part of our CIS project, we've launched the CIS Challenge : a program aimed at identifying and providing systematic support to promising space healthcare startups in collaboration with Axiom Space, a space development company, and Starburst Aerospace, a startup accelerator. Through this initiative, Boryung handpicked startups with the potential to address various healthcare issues in space and pursued business opportunities in space healthcare by making preemptive investments and collaborating with the winners of the challenge. In addition, we formed strategic partnerships with various global companies to conduct R&D on the technologies acquired through the CIS Challenge and invested in securing the underlying infrastructure.



Boryung has provided motivation to the management of the CIS Challenge winners, supported the commercialization of their viable ideas or products, and created an ecosystem for space healthcare. As new comers in this field, it may take some time for the challenge winners to become competitive in space healthcare. Nonetheless, we believe that investing in promising startups with great potential will accelerate the development of the space healthcare ecosystem in the long run.



Technologies

Current Status of CIS Challenge

Boryung hosted the CIS Challenge Demo Day in Los Angeles on December 6th, 2022, where we carefully selected promising six challenge winners from a pool of startups with innovative space healthcare ideas from around the globe.

Each of these six startups received an investment of USD100,000 and an opportunity to participate in various accelerating programs provided by the companies and institutions involved in the CIS Challenge. These programs will help bring their ideas to fruition. As part of this initiative, the companies will engage in full-fledged R&D activities and receive various benefits, including advice on academic research, development know-how, and extensive networking opportunities with global leaders in the aerospace industry.

Through the CIS Challenge, Boryung has proactively collaborated with industry experts and investors to explore various challenges in space healthcare and invested in businesses that aim to address these challenges. We believe that Boryung's efforts will play a critical role in creating an ecosystem that fosters sustained growth in space healthcare, positioning us as a leading company with a global presence in the space healthcare industry.



Technologies

CIS Challenge Winners

Advanced TeleSensors
The company offers the touchless real-time monitoring of breathing and heart rates using frequencies that were co-developed by the NASA Jet Propulsion Laboratory.

Deep Space Biology
The company developed an AI/Big Data-based research platform that can predict and identify vital signs during long-term stays in space.

Myelin-H
The company developed a remote monitoring and diagnosis system for neurological diseases using US FDA-certified nerve sensors and AI-based software.

Nano PharmaSolutions
The company uses physical vapor deposition to improve the bioavailability of insoluble drugs and offers diversified dosage forms.

ViBo Health
The company developed a smart health-tracking device that predicts individual health by digitizing metabolic information using multi-scanners.

Xtory
The company offers psychological relief in space through extended reality and a dialogue device, which can help alleviate stress and anxiety in space, and established a mental health monitor platform.



Infrastructure

Axiom Space

A Low Earth Orbit (LEO) is a highly active area where countries' space budgets are executed and private-led R&D activities and competition are intense. Axiom Space is leading the development of the Axiom Station, the first commercial space station, which will replace NASA's current International Space Station (ISS) when it retires in 2030. As a core partner of the NASA, Axiom Space is building space infrastructure around the Axiom Station and expanding the scope of its space business.

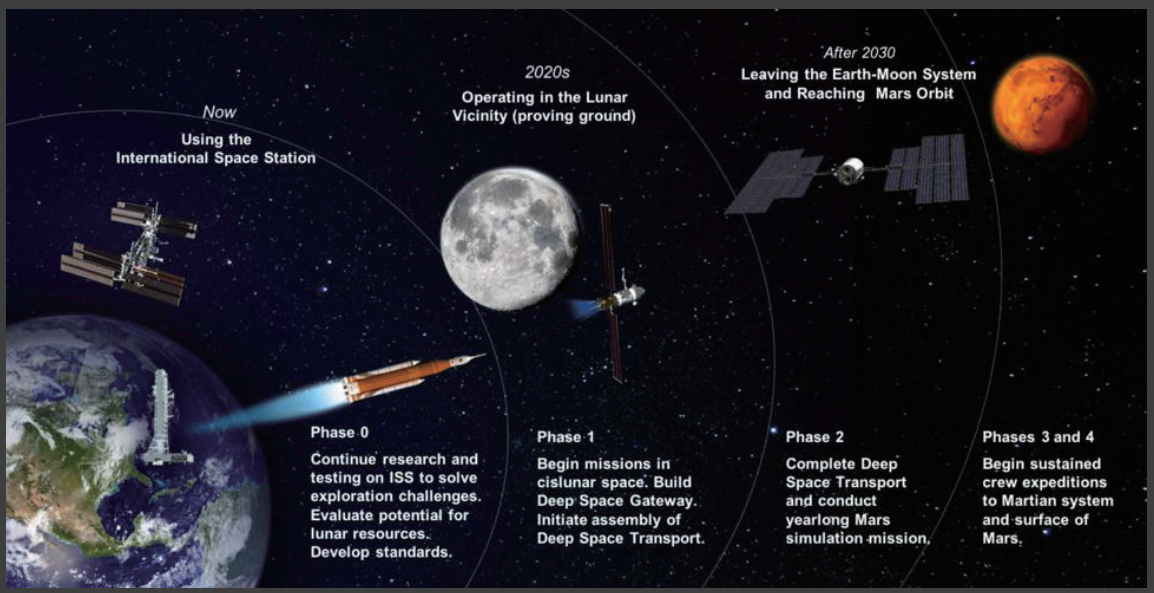
Infrastructure

Why LEO (Low Earth Orbit)

Over the past five to 10 years, space exploration and development trends have rapidly shifted, with the leadership of space development shifting from governments to the private sector. As a result, cooperative relationships with companies have become more important than ever. The success of SpaceX's reusable rocket technology in 2015 has drastically reduced the cost of rocket launches and improved access to LEO. When the private sector leads space development ahead, the LEO will become an increasingly important hub for space exploration.

As space exploration continues to advance, the importance of LEO will only grow, and the private sector will likely invest more in utilizing the LEO. NASA's Artemis mission, Mars exploration plans, and various deep space exploration initiatives all go through the LEO region, making it a crucial starting point for exploration strategies.

Although Korea has successfully developed space technologies such as the launch of Nuri and Danuri, there is still a significant gap between Korea and other advanced countries. To establish and utilize space infrastructure, collaboration with overseas countries equipped with superior LEO technology seems to be a prerequisite for the Korean private sector.



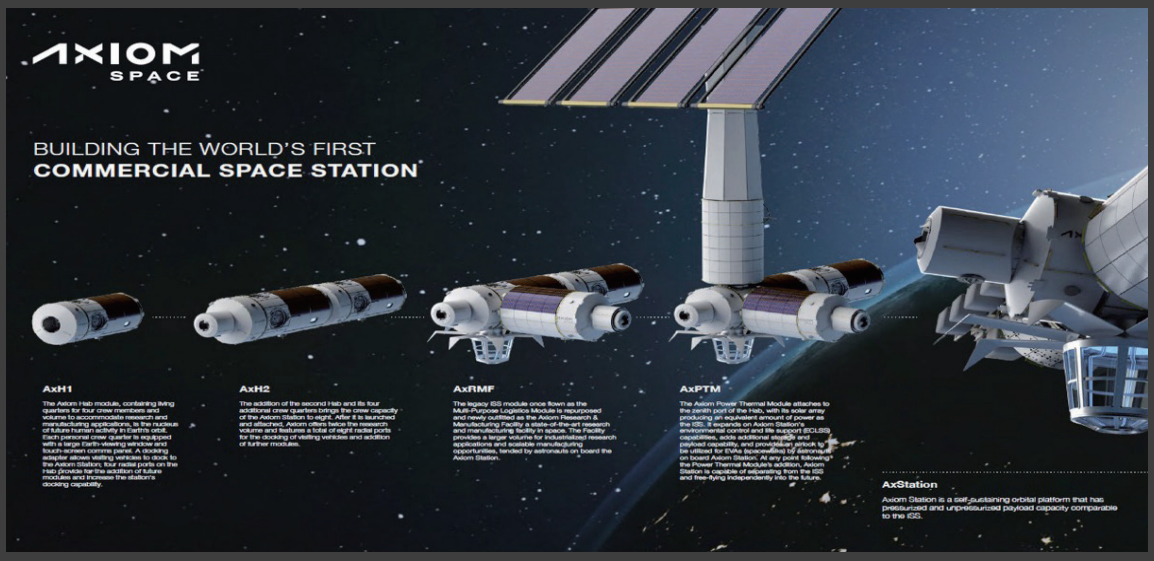
Infrastructure

Reasons behind Investment in Axiom Space

Boryung made a strategic investment of USD60mn in Axiom Space in 2022. This second round of investment was carefully decided, taking into account Axiom Space's technological competitiveness and the importance of LEO infrastructure in executing the CIS mission.

The investment in Axiom Space will help Boryung establish infrastructure needed for the R&D of essential space technologies that were secured through the CIS Challenge and provide a foundation for a platform business that can be utilized in various forms. Axiom Space is a quite promising company in itself as it is well-positioned to own the next ISS after the retirement of the current one in 2030. More importantly, Axiom Space's expertise as a platform operator could be a great asset for Boryung's efforts to secure long-term earning power from the CIS Challenge.

Boryung is laying the foundation for space business through the investment in Axiom Space, which has a technological advantage over its rivals in the field of commercial ISS. We believe that this investment will bring us the greatest efficiency compared to other investible resources. The investment will enable us to secure space infrastructure, establish an early presence in space healthcare R&D, and take a leadership position in the upcoming full-fledged space era. With this investment in Axiom Space, we will seek new opportunities and create a promising future.



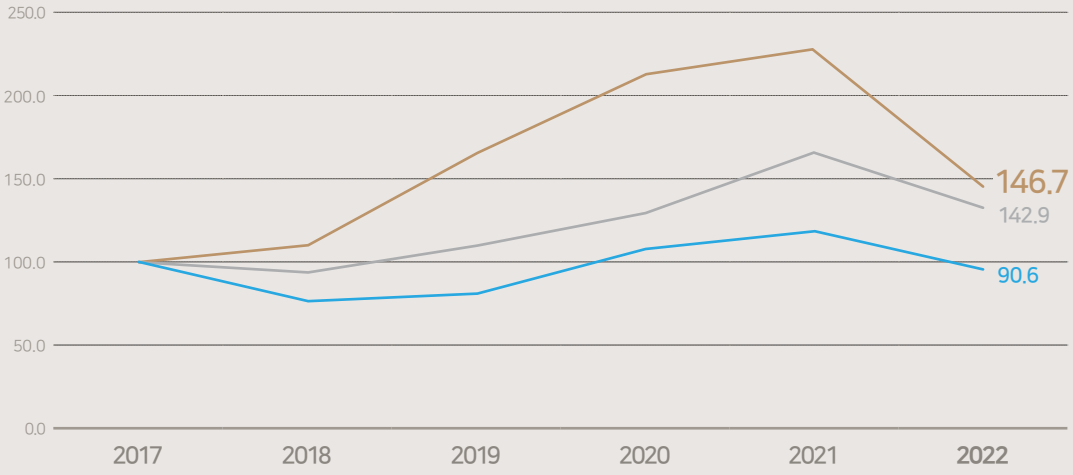
Share Price Performance

[5-Year CAGR]

Boryung 8.0%

KOSPI -1.9%

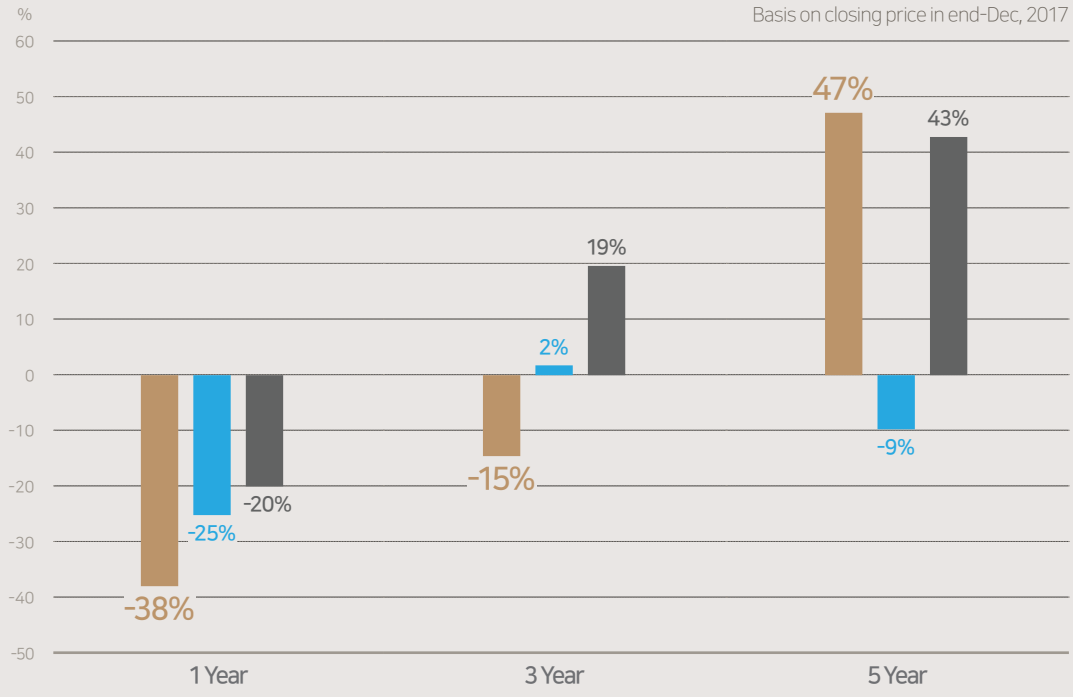
S&P 500 7.4%



Closing price in end-Dec, 2017 = 100

	2017	2018	2019	2020	2021	2022
Boryung	100.0	104.0	172.9	213.8	236.4	146.7
KOSPI	100.0	82.7	89.1	116.5	120.7	90.6
S&P 500	100.0	92.5	119.9	138.9	177.8	142.9

Basis on closing price in end-Dec, 2017



Consolidated Financial Statements

Statement of Financial Position

Unit : KRW mn

	2022 (59th)	2021 (58th)	Change (%)
Assets	**892,386**	**828,641**	**8%**
Current assets	338,378	437,314	-23%
Cash and cash equivalents	16,073	150,708	-89%
Short-term financial assets	1,844	50,730	-96%
Trade and other receivables	143,894	116,887	23%
Inventories	164,621	110,994	48%
Current income tax assets	-	1	-
Other assets (current)	11,946	7,994	49%
Non-current assets	554,008	391,327	42%
Long-term financial assets	9	9	-
Long-term investments	108,451	32,088	238%
Long-term other receivables	11,017	6,428	71%
Investments in associates	20,787	25,411	-18%
Property, plant and equipment	216,407	232,197	-7%
Investment properties	872	878	-1%
Intangible assets	183,642	92,819	98%
Right-of-use assets	2,061	747	176%
Net defined benefit asset	9,437	-	-
Other assets (non-current)	10	651	-98%
Deferred tax assets	1,313	99	1231%
Liabilities	**375,969**	**354,327**	**6%**
Current liabilities	277,483	155,953	78%
Trade and other payables	121,136	84,741	43%
Short-term borrowings	18,076	10,780	68%
Long-term borrowings (current)	16,875	15,000	13%
Debentures (current)	77,963	-	-
Lease liabilities (current)	783	493	59%
Current income tax liabilities	11,701	12,409	-6%
Contract Liabilities	842	775	9%
Provisions (current)	18	710	-97%
Other liabilities (current)	30,089	31,045	-3%
Non-current liabilities	98,486	198,374	-50%
Long-term borrowings	94,208	111,083	-15%
Debentures (non-current)	-	77,884	-
Lease liabilities (non-current)	344	263	31%
Net defined benefit liabilities	95	3,953	-98%
Other financial liabilities (non-current)	203	214	-5%
Other liabilities (non-current)	3,636	4,977	-27%
Equity	**516,417**	**474,314**	**9%**
Equity attributable to owners of the Parent Company	515,917	473,863	9%
Share capital	34,345	34,345	0%
Other paid-in capita	104,629	104,735	0%
Other components of equity	764	-44	-
Retained earnings	376,179	334,827	12%
Non-controlling interest	500	451	11%
Total liabilities and equity	**892,386**	**828,641**	**8%**

Consolidated Financial Statements

Income Statements

Unit : KRW mn

	2022 (59th)	2021 (58th)	Change (%)
Revenue	**760,476**	**627,279**	**21%**
Cost of sales	453,289	362,342	25%
Gross profit	307,187	264,937	16%
Selling and administrative expenses	208,879	184,343	13%
Research and development expenses	41,705	39,146	7%
Operating profit	56,603	41,448	37%
Finance income	37,461	11,916	214%
Finance costs	21,375	5,156	315%
Other income	2,317	1,377	68%
Other expenses	11,980	4,320	177%
Share of loss of associates	-4,154	25,453	-116%
Profit before income tax	58,872	70,718	-17%
Income tax expense	16,934	27,599	-39%
Profit for the year	41,938	43,119	-3%
Other comprehensive income	6,858	1,290	432%
Items that may be subsequently reclassified to profit or loss			
Gains (loss) on overseas operation translation	1,054	1,112	-5%
Share of other comprehensive income (loss) of associates	-	-42	-
Tax effects	-240	-256	-
Items that will not be reclassified to profit or loss			
Remeasurements of net defined benefit liability	7,862	616	1176%
Share of other comprehensive income (loss) of associates	-7	-	
Tax effects	-1,811	-140	-
Total comprehensive income for the year	48,796	44,409	10%
Profit is attributable to	41,938	43,119	-3%
Owners of the Parent Company	41,894	43,044	-3%
Non-controlling interest	44	75	-41%
Total comprehensive income for the year is attributable to	48,796	44,409	10%
Owners of the Parent Company	48,748	44,336	10%
Non-controlling interest	49	73	-33%
Earnings per share attributable to the equity holders of the Parent Company			
Basic earnings per share	636	689	-8%
Diluted earnings per share	634	683	-7%

Separate Financial Statements

Statement of Financial Position

Unit : KRW mn

	2022 (59th)	2021 (58th)	Change (%)
Assets	**870,257**	**808,104**	**8%**
Current assets	323,753	427,218	-24%
Cash and cash equivalents	11,020	145,752	-92%
Short-term financial assets	844	50,730	-98%
Trade and other receivables	140,518	113,988	23%
Inventories	159,662	108,926	47%
Other assets (current)	11,709	7,822	50%
Non-current assets	546,504	380,886	43%
Long-term financial assets	9	9	-
Long-term investments	95,007	18,023	427%
Long-term other receivables	10,851	6,233	74%
Investments in subsidiaries and associates	29,214	29,778	-2%
Property, plant and equipment	216,030	231,723	-7%
Investment properties	872	878	-1%
Intangible assets	178,416	87,105	105%
Right-of-use assets	1,861	653	185%
Net defined benefit asset	8,657	-	-
Other assets (non-current)	10	651	-98%
Deferred tax assets	5,577	5,833	-4%
Liabilities	**365,045**	**346,494**	**5%**
Current liabilities	267,000	148,615	80%
Trade and other payables	113,456	80,162	42%
Short-term borrowings	18,076	10,129	78%
Long-term borrowings (current)	16,875	15,000	13%
Debentures (current)	77,964	-	-
Lease liabilities (current)	584	398	46%
Current income tax liabilities	11,672	12,353	-6%
Contract liabilities (current)	714	583	23%
Provisions (current)	18	710	-97%
Other liabilities (current)	27,641	29,280	-6%
Non-current liabilities	98,045	197,879	-50%
Long-term borrowings	94,208	111,083	-15%
Debentures (non-current)	-	77,885	-
Lease liabilities (non-current)	345	262	31%
Net defined benefit liabilities	-	3,879	-
Other liabilities (Non-current)	3,492	4,770	-27%
Equity	**505,212**	**461,610**	**9%**
Share capital	34,345	34,345	-
Other paid-in capital	99,338	104,735	-5%
Retained earnings	371,529	322,530	15%
Total liabilities and equity	**870,257**	**808,104**	**8%**

Separate Financial Statements

Income Statements

Unit : KRW mn

	2022 (59th)	2021 (58th)	Change (%)
Revenue	**722,056**	**594,413**	**21%**
Cost of sales	434,723	346,269	26%
Gross profit	287,333	248,144	16%
Selling and administrative expenses	186,496	158,875	17%
Research and development expenses	40,573	39,146	4%
Operating profit	60,264	50,123	20%
Finance income	37,022	8,767	322%
Finance costs	19,392	5,147	277%
Other income	2,592	1,365	90%
Other expenses	11,923	7,626	56%
Profit before income tax	68,563	47,482	44%
Income tax expense	18,562	20,362	-9%
Profit for the year	50,001	27,120	84%
Other comprehensive income	5,586	151	3593%
Items that will not be reclassified to profit or loss			
Remeasurements of net defined benefit liability	7,273	199	3545%
Tax effects	-1,687	-48	-
Total comprehensive income for the year	55,587	27,271	104%
Earnings per share attributable to the equity holders of the Company			
Basic earnings per share	759	434	75%
Diluted earnings per share	756	430	76%

BORYUNG

Publisher | Boryung Corporation
Address | Boryung Bldg, 136 Changgyeonggung-ro, Jongno-gu, Seoul, Republic of Korea **Publication date** | May 4, 2023