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SHAPING TOMORROWS HEALTHCARE TECHNOLOGY:

A strategic dive into Philips

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Abstract

This report is an equity valuation of Koninklijke Philips N.V., a global leader in healthcare technology and based in the Netherlands. The company has over a century of experience and operates in 3 business units: Diagnostic and Imaging, Connected Care and Personal Health. In august 2023, Exor N.V bought a 15% shareholding in Philips. Therefore, fully supporting Philips' leadership, strategy, and value creation potential. Philips has to a two-tier board structure consisting of a Board of Management and a Supervisory Board. Over the past decade, Philips has transformed into a high-tech health technology company, focusing on high-growth healthcare sectors. Their strategic direction addresses challenges such as an aging population and healthcare costs, aiming to deliver efficient, data-driven solutions. This equity report employs a bottom-up approach to estimate market sizes for Philips. Using product-level sales data, ratios, and national statistics, the report projects market sizes based on factors like population, ICU units per inhabitant, and price per ICU unit. The approach is transparent but relies on simplifying assumptions detailed in the accompanying Excel file. Market sizes were cross-checked with analyst consensus, and growth geographies were analyzed using region-wide GDP growth as a proxy for healthcare spending. Assumptions and methodologies aim to balance accuracy with practicality.

Keywords (up to four):
Philips Healthcare Technology
Market Sizing
Equity valuation
International

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This report is part of the *Shaping tomorrow's Healthcare Technology: A Deep Dive into Philips' Equity* report (annexed), developed by Bram Heesen and Victor Jacobs and should be read has an integral part of it.

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First part of integral report

Introduction of the first of the integral report

Embarking on a journey of comprehensive analysis, this first part of the integral equity research report focuses on Philips, a global leader in health technology. Employing a robust qualitative research methodology, we aim to provide investors with profound insights into Philips' strategic positioning, business units, operational dynamics, and prevailing market trends.

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Qualitative analysis in the context of finance involves a deep dive into the intrinsic qualities that shape a company's success and market standing. In the case of Philips, our approach is centered on understanding key factors such as research and development initiatives, acquisitions, sustainability efforts and a market outlook of each business unit (D&T,CC and PH). These elements, often intangible and difficult to quantify, but play a crucial role in determining a company's competitive edge, risk resilience, and potential for sustainable growth.

The organizational structure, corporate governance practices, and management philosophy are also integral components of our qualitative analysis. By examining these aspects, investors gain a nuanced understanding of Philips' operational efficiency, risk management practices, and the company's overall resilience in navigating complex market environments.

Furthermore, our research methodology extends to a forward-looking market forecast for each segment within Philips. This forecast is not merely a projection of numerical data but is deeply rooted in qualitative insights derived from a meticulous analysis of market drivers, challenges, and opportunities. By understanding the qualitative aspects influencing market dynamics, investors are better equipped to make informed decisions in the dynamic landscape of health technology.

In essence, this report serves as a bridge between the qualitative and quantitative realms, leveraging qualitative insights to inform quantitative projections.

This report stands as a valuable resource for those seeking to decipher the multifaceted landscape of qualitative analysis in Philips and its implications for strategic investment choices in the healthcare technology sector.

Company overview

The Company Overview section, is divided into four key parts, including Philips' History, which outlines Philips' journey and social responsibility initiatives. Philips Today highlights the company's current focus on healthcare technology. Additionally, the Shareholders Structure provides insights into ownership and governance. Lastly, the Business Model section covers, a breakdown of the business and future growth strategies.

Philips' History

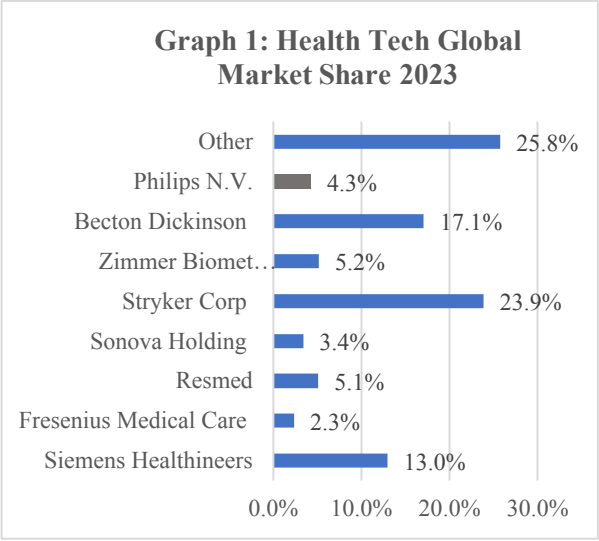
Frederik Philips, 1891

Philips was founded in 1891 in Eindhoven as Philips & Co by Frederik Philips and his son Gerard Philips. Philips began as a lighting company, but as the 20th century progressed it evolved into a conglomerate with social responsibility and innovation in various field such as electronics, healthcare and lighting. In the 1910s, they established their first research lab, 'Philips Nat Lab,' this lab stepped into the field of scientific research on visionary projects, such as investigating new lighting technologies for healthcare. The ultimate breakthrough of the lab were Philips X-ray tubes, which was the first innovation of Philips into healthcare technology. In the 30s Philips introduced its famous electric razor, called the Philishave. Ever since 1939, Philips has been selling an average of 700 electric razors per hour. [i] After World War II, Philips developed innovations to aid post-war recovery, but its most significant investment management companies, pension funds to individual investors. introduction was the mass-market television followed by continuing innovation in sound, data, and vision technologies.

Philips logo, 1891

In the 50s Philips established Philips Medical Systems, ever since, Philips has extended its presence in medical imaging, patient monitoring and healthcare informatics. In the 1980s Philips became a leader in the digital world by remaining at the forefront of emerging consumer digital technologies. A human-centred approach to product design followed in the 90s, this approach harmonized and integrated all aspect of improving patient experience. From the 00s onwards Philips further committed to a people-centric approach to deliver advanced health technology solutions, aiming to improve the lives of 2.5 billion people annually by 2030[ii]. For this reason, in 2021, Philips sold its home appliances business for 3,7 billion, emphasizing its focus on their healthcare technology products[iii].

Philips Today

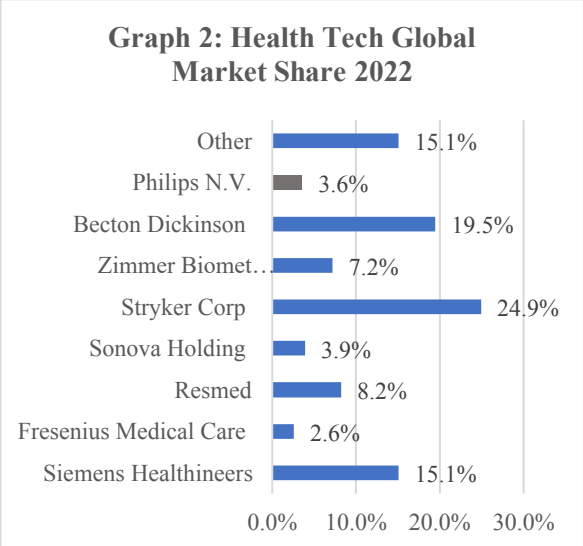


Source: globenewswire

Currently Philips is focused on healthcare and operates three main segments: the Diagnosis & Treatment department, Connected Care businesses and the Personal Health units. These three entities are responsible of more than 95% of Philips revenue worldwide. The market share displayed in the graphs portrays the global healthcare technology market of which Philips takes part in.

To this date Philips is known for its innovative solutions in the healthcare sector, some of which are medical imaging systems, patient monitoring solutions and healthcare informatics. Philips also maintains a presence in consumer health products, such as personal care and home appliances.

Moreover, Philips focuses on sustainability, invests in sustainable R&D, and continues to strive for meaningful innovation that improves people's lives and healthcare outcomes worldwide. In 2022 Philips' market share was 3.6% of the Global Healthcare Technology market and in 2023 Philips' global health technology market share is expected to grow slightly to 4.3%. Slow growth will be described more thoroughly throughout the report but is mainly caused by legal and geopolitical uncertainty. In the two Market Share graphs one can see that out of its comparable companies Philips was the only one that witnessed YOY market share growth from 2022 to 2023.



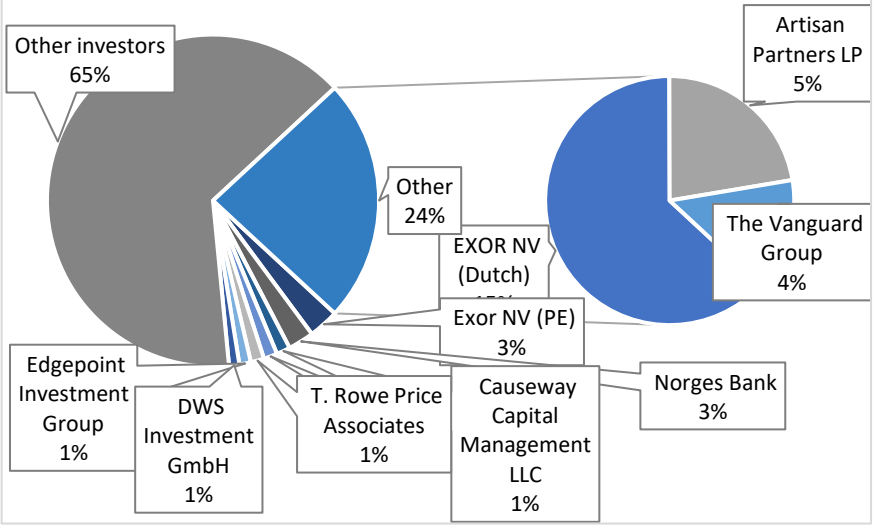
Source: globenewswire

Most recently, in Q3 2023 Philips has entered into a decade-long contract worth EUR 100 million for the provision of Enterprise Monitoring as a Service to one of the largest healthcare systems in the United States, spanning 20 hospitals with a collective capacity of over 3,000 beds[iv]. Even though, Philips improved performance year-to-date and has a strong order book, uncertainties still remain present because of the apnea machine court cases against the FDA. Already, Philips agreed to pay $479 million to resolve part of stretched out litigation, the recall of millions of machines in 2021 and the current courtcase still results in uncertainty about predicting the company's future performance. Moreover, Philips increasingly deals with a volatile geopolitical environment.

Shareholders Structure

Philips' shareholder structure includes a diverse group of shareholders, ranging from large institutional investors to small retail investors. The largest stake of Philips is held by Exor N.V., Exor bought a 15% shareholding in Philips in August 2023 and supports Philips' long-term company strategy[v]. Exor N.V. is a Dutch holding company incorporated in the Netherlands and controlled by the Italian Agnelli family, known for founding Fiat motor company. Exor has its focus on investing in health, technology, and luxury sectors. Artisan is the second largest shareholder of Philips and holds 5.3% of common stock. Their strategy involves targeting companies with the potential to outperform relevant benchmarks. The Vanguard Group, Philips' third largest shareholder, is an American investment management company with almost $7.7 trillion assets under management and currently one of the most well-known investment management companies around the world.

Graph 3: Largest Shareholders of Philips

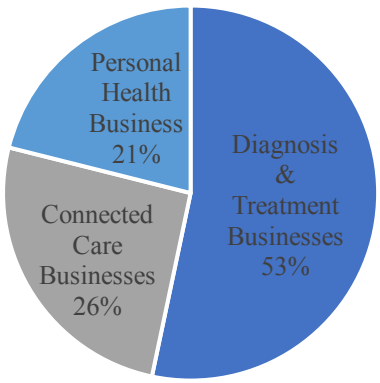


Sources: Market Screener

Business model

Over the past decade, Philips has pivoted from a broad-spectrum conglomerate to a focused high-tech health technology company. The company's transformative journey aims to tap into high-growth and high-margin sectors in the healthcare landscape. Philips aims to deliver high- quality, efficient and data driven solutions for the healthcare market worldwide[vi]. Several market dynamics underpin Philips' strategic direction. The world is witnessing an ever-growing and aging population, leading to an increased demand for healthcare. Coupled with this are the increasing cost of healthcare and staffing shortages, which presents both challenges and opportunities. These shifts necessitate innovations to make healthcare delivery more efficient, productive, and outcome driven.

Graph 4 : Sales split by businessunit, 2022



Sources: Philips Annual Report 2022

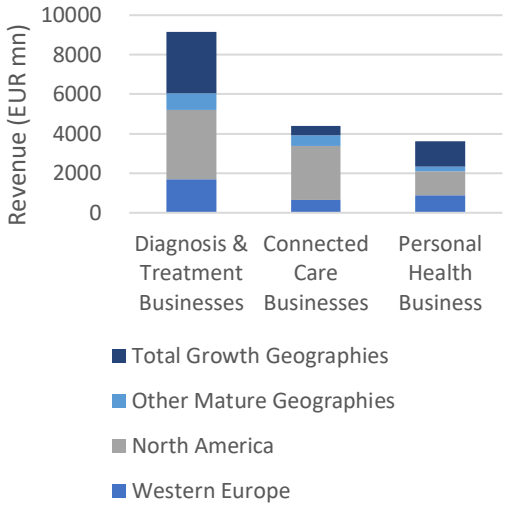
Philips' business can be divided into four different business units: Diagnosis and Treatment (DT), Connected Care (CC) and Personal Health (PH) and Other Business. In respective order, these business units count for 51, 25, 20 and 4

percent of revenue in 2022. As these units vary wildly in nature, we provide a strategic insight into the relative importance, products, and customers of each department.

Diagnosis and Treatment Business

The Diagnosis & Treatment division of Philips stands at the forefront of several pivotal product markets. Customers are exclusively healthcare providers. Therefore, DT is a business-to-business (B2B) department. Income is primarily generated from product sales, lease agreements, service charges, recurring fees for one-time-use devices, and licensing fees for software. It provides a mix of high-tech machinery and services.

Graph 5: Revenue split by BU and location



Source: Philips' Annual Report 2022

Within the DT department, we can distinguish four different markets. First, Philips delivers products in the 'Diagnostic Imaging market' (41% of revenue DT). It specializes in helium-free MRI technologies, Philips offers enhanced workflow software for both MRI and X-ray systems. Second, Philips serves the 'Ultrasound market' (18% of revenue DT): Philips delivers echography solutions for various medical fields like cardiology and gynaecology. Third, Philips is active within the so-called 'Enterprise Diagnostic Informatics' market (8% of DT). Philips' comprehensive services bridge clinical data, optimizing workflows across diagnostics. Fourth and last, Philips sells products in 'Image Guided Therapy' (33% of DT): This includes integrated systems combining imaging data, devices, and patient records for efficient interventions.

Connected Care

The Connected Care (CC) division of Philips is designed to improve and enhance care universally by providing data-driven insights. Philips establishes a link between patients and healthcare providers across different care environments, offering solutions that are clinical, operational, and therapeutic in nature. As sales also happen directly to healthcare providers, the CC is also B2B focussed. Revenues are generated by product sales, licenses, and support.

Philips CC department can be divided into four sub-parts. First, 'Hospital Patient Monitoring' (47% of CC's revenue): Philips offers acute patient management and monitoring solutions for in the hospital. Second, 'Emergency Care' (5% of CC's revenue): Philips provides emergency tools like AEDs and other emergency care devices. Third, the 'Sleep & Respiratory Care' department (28% of CC's revenue). Philips Respironics is responsible for delivering sleep and respiratory solutions, ranging from care for obstructive sleep apnea to ventilators for

hospitals. Important to note, the products made in the CC department have caused the CPAP litigation. Fourth and last, Connected Care Informatics (20% of CC revenues): Philips focuses on clinical analytics solutions to enhance patient data insights and suggest future treatments.

Personal Health

The Personal Health (PH) department within Philips provides essential tools for consumers to healthy living, prevention, and home care. It is Philips' only department which has a direct consumer focus (B2C). Philips' products enable individuals to embrace and actively manage a vibrant and healthy lifestyle.

The PH department can be divided in three different sub-departments. First, Personal Care (51% of PH revenues) specializes in grooming and beauty products, e.g. OneBlade. Second, Oral Healthcare (37% of PH revenues) primarily sells power toothbrushes across various price categories. Third, Mother & Childcare (11% of PH revenues) focuses on selling products supporting parents and babies during the initial 1,000 days.

Other business

The remainder of Philips business consists of all other departments. Noteworthy are Innovation & Strategy and IP Royalties. These departments focus on R&D and royalties from newly made innovations. At year-end 2022, around 18,000 people were working for Philips' 'Other Business' and the department accounted for 3.5% of world-wide revenues[vii].

Strategy for future growth

Philips wants to increase its business performance through the following three pillars. First, it targets 'focused organic growth'. After already having solidified its identity as a health technology leader, Philips aims to unlock the full potential of its portfolio, especially in sectors where it holds leadership positions like Image Guided Therapy, Ultrasound, and Personal Health.

Second, Philips aims at 'Scalable and People-centric Innovation'. The company believes that true innovation should be driven by the needs of patients and consumers, making care more accessible, convenient, and sustainable. With its global reach and comprehensive informatics platforms, Philips is in a good position to provide solutions that span the entire spectrum of care. Philips provides care for both consumers at home and patients in hospitals.

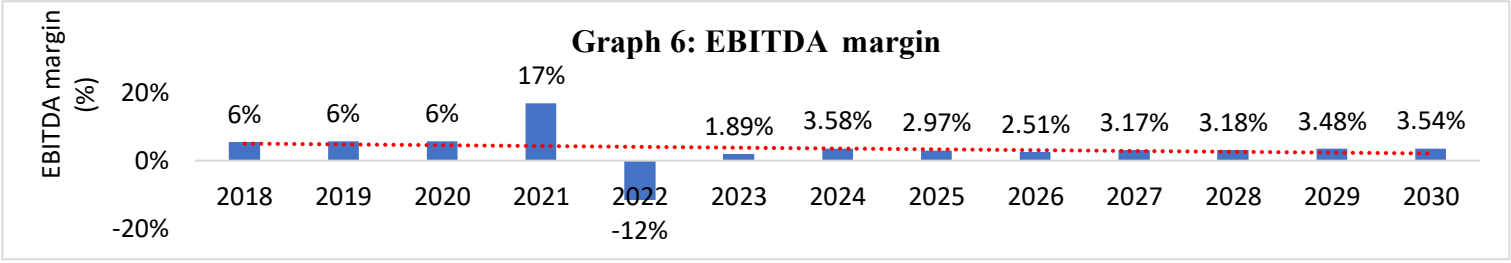
Third, for Philips, improved performance hinges on operational excellence. Especially after the CPAP-recall, Philips is taking concerted actions to enhance

patient safety, bolster supply chain reliability, and adopt a streamlined operating model, where accountability, agility, and patient-centricity are paramount.

For the year 2023, management anticipated a modest single digit increase in comparable sales. The Philips' management adjusted EBITDA margin is projected to be in the upper range of the single digits. Noteworthy is an update made in July 2023, elevating the forecast to a medium single-digit elevation in comparable sales, positioning the adjusted EBITA margin at the higher end of the single-digit spectrum. The organization projects an adjusted EBITDA margin in the lower teens, coupled with a free cash flow ranging from EUR 1.4 to 1.6 billion. Beyond 2025, Philips expects a steady mid-single digit rise in comparable sales.

The forecast reveals an adjusted EBITA margin fluctuating between the middle to upper teens. Our EBITDA margin forecast is not adjusted and that is why it is lower than what Philips' management expects. Philips uses an adjusted EBITDA that assess non-recurring items and restructuring costs differently than our analysts do. In our forecasted share price, the positive scenario resonates with Philips adjusted EBITDA and the neutral with the analyst's views.

Graph 6: EBITDA margin



Sources: Philips Annual Reports and Own Calculations

Corporate governance

Royal Philips adheres to a two-tier board structure consisting of a Board of Management and a Supervisory Board. These entities are accountable to the General Meeting of Shareholders, with governance grounded in Dutch corporate and securities laws, Articles of Association, and Rules of Procedure[viii]. The framework also aligns with the Dutch Corporate Governance Code and relevant US laws for Foreign Private Issuers. Philips places strategic importance on increasing workforce diversity in alignment with stakeholder and market diversity, therefore the Supervisory Board has adopted a Diversity Policy. To maintain market integrity, members of the Board of Management, the Executive Committee, and the Supervisory Board are restricted to trading Philips securities during specific 'windows' post-annual and quarterly. Long-term investment is encouraged, while short-term transactions are prohibited. There are also restrictions on trading in securities of peer companies during certain periods[ix]. Philips' shareholders are relatively activistic and closely monitor Philips corporate

behaviour. For example, in 2022 the shareholders voted against Philips' executive compensation plan because of the company's poor performance.

Table 1: Philips' acquisitions

Company acquired	Year	Sector	Deal size in millions	Country
DiA imaging analyssis	*2023*	AI	$100	Israel
Cardiologs Technologies SAS,	*2022*	AI cardiac diagnostics	$275	France
Vesper Medical	*2022*	Medical technology	$244	USA
BioTelemetry Inc.	*2021*	Remote cardiac diagnostics	$2,800	USA
Capsule technologies	*2021*	Data management	$635	USA
Carestream Health Inc.'s Healthcare Information Systems	*2019*	Healthcare information systems	$275	USA
Blue Willow Systems	*2018*	Senior care solutions	$100	USA

Sources: Philips Annual Reports

Acquisitions

When we look at Philips' acquisitions over the last 5 years, we can see that they have been acquiring companies which possess AI and data technology expertise. With acquisitions of senior-care and remote solutions, Philips has been following the trend of aging population in mature geographies together with the digitalization of the healthcare industry.

Healthcare market

In this section we explain the market in which Philips is active. First, we start with a broad overview of the market. Second, we apply Porter's Five forces and state our market size forecasts for each of the submarkets. Third, we provide a forecast of each of the market sizes. Fourth and last, we explain the methodology underlying the market forecasts.

Broader healthcare market

Philips current business is only active within the healthcare market. We regard the healthcare market to be an attractive investment area because of several reasons. As of October 31st, the S&P BMI healthcare index outperformed the market proxy, S&P BMI, on various metrics. First, the 10-year return of BMI healthcare index is higher. The healthcare sector increased with 8,14% whilst the general market grew with 7,02%. Second, because the nature of the industry, the sector is relatively well protected for economic downturns and therefore categorizes as a safe equity investment[x].

Also, when we zoom in on our company, Philips' beta of 0.95, benchmarked against the MSCI World Index in euros, indicates that its shares have a lower volatility relative to the market. A beta under 1 suggests that Philips is a more stable investment, less susceptible to broad market swings. We use MSCI world as proxy for CAPM's market. In doing so, we assume internationally integrated financial markets for investors.

The Healthcare market in which Philips is operating can be divided in line with Philip's three business departments. Making this division adds nuance to the analysis. These three markets vary extensively in nature. First, the Diagnostics

and Treatment market. This market consists mostly of machinery which is used within hospitals. Second, the connected care market. This market bridges the gap between software and healthcare. And third, the personal health market. Products within this market are mostly focused on the consumer health goods.

Market outlook Diagnostics and Treatment

Market introduction: This submarket captures a broad spectrum of equipment and services used for diagnosing and treating medical conditions. It typically includes imaging devices like MRI and CT scanners, ultrasound equipment, and X-ray systems, as well as therapeutic devices and solutions. In this segment, we analyse Philips its innovation in imaging technology, advancements in precision diagnostics, and the integration of AI and machine learning in treatment solutions. Market trends, regulatory environments, and competitive landscapes in this category are critical for understanding Philips' market position and growth potential.

Porter's Forces	Market Overview	Philips' Position
Competition within Industry	Highly competitive with major players like GE Healthcare, Siemens Healthineers, Canon Medical.	Strong brand reputation, significant R&D investment, global distribution network. Intense competition
Bargaining Power of Consumers	Large entities have significant power; smaller entities less so.	Established relationships with large networks and government entities.
Bargaining Power of Suppliers	Reliance on high-quality suppliers; limited number of suppliers for specialized components.	Dependence on specific suppliers for advanced components could pose risks.
Threat of New Entrants	High barriers due to capital requirements and regulatory compliance.	Established brand, significant market experience, and customer trust. Agile startups can disrupt
Threat of Substitutes	Varies by product; lower for complex equipment, higher where rapid tech advancements occur.	Strong in healthcare areas, where hospitals rely on proven well-functioning machinery

Porter's Five Forces:

Competition: The Diagnostics and Treatment market is highly competitive, with several established players like GE Healthcare, Siemens Healthineers, Canon Medical, and Philips competing for market share. The competition is intense due to the rapid technological advancements, the need for continual innovation, and the significant capital investment required for R&D. Companies compete on factors such as technological superiority, distribution networks, customer relationships, and pricing.

Power of consumers: The power of consumers in this market varies. In the case of large hospital networks and government health agencies, the power is significant due to their large purchasing volumes and ability to negotiate lower prices or demand enhanced service levels. However, smaller medical facilities and private clinics have less negotiating power due to their lower purchase volumes. The decision-making process is influenced by factors such as the technology's effectiveness, price, brand reputation, and after-sales service.

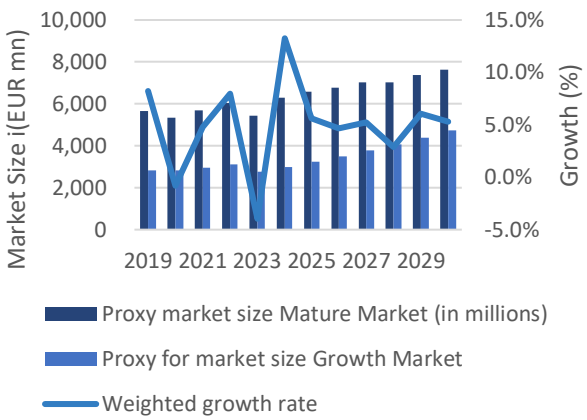
Bargaining Power of Suppliers: The suppliers in the Diagnostics and Treatment market, especially those providing specialized components and technology, hold considerable power. The market depends on high-quality and reliable components, often sourced from a limited number of suppliers, which can give these suppliers substantial leverage in pricing and terms. However, larger

companies in this sector may mitigate this through long-term contracts, vertical integration, or developing alternative supply sources.

Threat of New Entrants: The barrier to entry in this market is relatively high due to the significant capital investment needed for R&D, manufacturing infrastructure, regulatory compliance, and establishing distribution networks. Furthermore, the industry requires specialized knowledge and expertise. Also, the established trust and brand recognition of existing players can be obstacles for new entrants. However, health-tech start-ups focusing on niche innovations or emerging technologies could disrupt specific segments of the market.

Threat of Substitutes: In the Diagnostics and Treatment market, the threat of substitutes varies by product segment. For some equipment like MRI or CT scanners, the threat is lower due to the lack of direct alternatives offering the same level of diagnostic capability. However, in other areas, rapid technological advancements could lead to the development of new, more effective, or cheaper diagnostic and treatment methods, which could replace existing technologies. Continuous innovation is therefore key to staying relevant in this market.

Graph 7: Market development Diagnostics & Treatment



Sources: Philips Annual Reports and Own Calculations

Growth projections:

In the specific sectors of ultrasound and image-assisted therapy, our projections predict a sustained growth trajectory, with annual increases possibly ranging from high to mid-single digits over an extended period. However, in 2023, we see a decrease in the market. This can mainly be ascribed to increased difficulties in international supply chains.

From 2024 onwards, we forecast a continued increase of the market. Yearly market growth is averaged on 6,4%. This growth mainly stems from continued population growth, and a further increase in the number of MRI scans per inhabitant. In 2030, we forecast the market to be 12,369 billion euros. This is a percentual increase of 50,7% to 2023.

One of our key assumptions is the growth in MRI scans per inhabitant. This is a reasonable assumption since there is a significant disparity in the current distribution of MR units, with statistics indicating that countries such as China and the United Kingdom have only 6 MR units for every million inhabitants, a figure markedly lower than the United States' 40 per million. Moreover, Europe will experience a surge in equipment replacements in the forthcoming period.

Porter's Forces	Market Overview	Philips' Position
Competition within Industry	Increased pressure with subscription - based products. Competition similar as in DT market	Strong brand recognition, comprehensive software offerings. Constant pressure
Bargaining Power of Consumers	Healthcare institutions demand flexible and integrable software. Subscription models increase consumer power.	Philips CPAP recall has significantly worsened reputation. Also, ability of consumer to switch
Bargaining Power of Suppliers	Crucial role of cloud service providers and Standardization and multiple providers can moderate power.	Potential to leverage multiple suppliers for cloud services, mitigating risk.
Threat of New Entrants	Lower barriers of entry in digital solutions, especially with cloud-based models. Tech companies can enter market.	IT nature of market allows for disruptive and innovative start-ups.
Threat of Substitutes	High threat due to rapid technological advancements and easier switching in subscription models.	Integrated and comprehensive digital health solutions. However, need to constantly innovate

Table 3: Connected Care and Porter's Five Forces

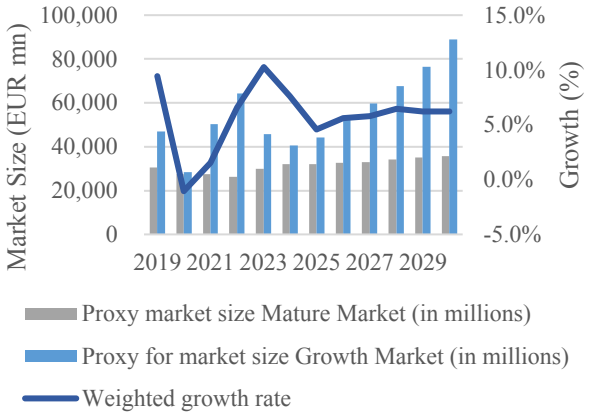
Market outlook Connected Care

Market explanation: the connected care sector in the healthcare market refers to the use of technology and digital solutions to enhance the delivery of healthcare services and improve patient outcomes. It encompasses a wide range of applications and services that leverage data, communication tools, and devices to connect patients, healthcare providers, and other stakeholders in the healthcare ecosystem. Phillips connects patients and caregivers in delivering clinical and therapeutic solutions with the ultimate goal of better health outcomes and increase ease of use of Philips products for patients and staff[xi].

Porter's Five Forces

Competition within the Industry: The Connected Care software market, characterized by intense competition among major players like Medtronic, GE Healthcare, Siemens, and Philips, is rapidly evolving with a push towards subscription models and a focus on customer retention. These companies are not only innovating technologically but are also strategically using AI-assisted analytics to enhance personalized care, a trend accelerated by significant industry mergers, such as Siemens' acquisition of Varian Medical Systems. Philips finds itself in a challenging position as it strives to navigate this competitive landscape, particularly as ResMed capitalizes on Philips' respiratory recall challenges by securing contracts that may hinder Philips' efforts to regain its foothold in the market.

Bargaining Power of Consumers: In the software-centric Connected Care market, consumers, primarily healthcare institutions, wield considerable power. They demand software solutions that offer flexibility, scalability, and integration with existing systems. The shift towards licensing and subscription models gives consumers more flexibility and bargaining power, as they can more easily switch providers if their needs are not met or if a better solution becomes available.



Bargaining Power of Suppliers: Suppliers of high-tech components, software, and cloud services have considerable power in this segment. Connected Care relies on advanced technologies, and suppliers providing unique or highly specialized components and services can exert significant influence. However, larger companies like Philips might mitigate this through strategic partnerships or developing in-house capabilities.

subscription model also enables customers to switch to alternative solutions when they offer better value or innovation

Growth projections

The graph presents the market development trends within the Connected Care sector. It depicts two distinct components of the whole market. The whole market is built upon the mature and developing markets. The weighted growth rate is plotted as a darkblue line, with its scale on the right vertical axis.

From the data, we can observe that the mature market experienced a notable contraction in 2022, which may suggest a response to external market pressures or a shift in industry dynamics. In contrast, the growth market appears to have maintained a more consistent upward trajectory, suggesting an expansion in emerging areas within the Connected Care sector. Looking ahead from 2023, both the mature and growth markets are projected to expand. The mature market shows a recovery and a gradual increase, while the growth market demonstrates a more robust climb. The weighted growth rate, after a dip in 2022, is forecasted to rise steadily year-on-year, with a notable increase in 2029 and 2030, reaching upwards of 10%. By 2030, the mature market is expected to surpass €80 billion, while the growth market is also anticipated to continue its upward trend. This positive outlook is fuelled by an increasing population and an increase in adoption of connected health technologies and digital health initiatives.

Porter's Forces	Industry Dynamics	Philips' Positioning
Competition within Industry	Highly competitive with brands like Colgate-Palmolive, P&G. Diverse range from oral care to personal grooming.	Holds significant market share, known for quality and innovation. But intense rivalry like Oral-B
Bargaining Power of Consumers	Consumers empowered by choice, influenced by recommendations and product quality.	Benefits from strong brand and professional endorsements. Must continuously innovate
Bargaining Power of Suppliers	Suppliers of specialized tech components have more power.	Long-term relationships which are well diversified.
Threat of New Entrants	Varied barriers to entry; lower for basic products, higher for AI-enabled devices.	Established brand with trust and innovation track record. Startups pose threats.
Threat of Substitutes	Significant threat with evolving technology and consumer preferences.	Stays ahead with AI-enabled devices and continual product development.

Market outlook Personal Health

Porter's Five Forces

Competition within the Industry: The industry is highly competitive, with key players like Colgate-Palmolive, Procter & Gamble, and Panasonic in oral healthcare, Medela and Chicco in mother & childcare, and Braun and Remington in personal care. Philips competes not only on product quality and innovation but also on brand reputation and market share. Oral healthcare, for instance, sees fierce competition, with Philips holding a 23% portion of the electric toothbrush market, though Oral-B dominates with 51%[xii]. In mother & childcare and personal care, Philips faces competition from both large multinationals and regional brands, necessitating strong marketing and brand loyalty strategies.

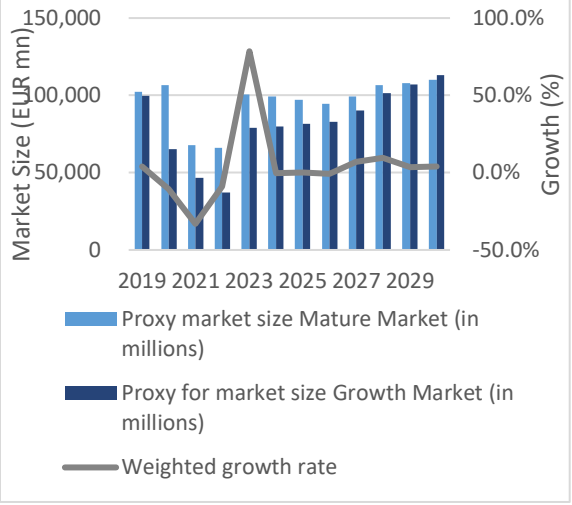
Bargaining Power of Consumers: Consumers have considerable power, given the wide array of choices available to them. Their decisions can be influenced by factors like product recommendations from professionals, such as dentists in the case of toothbrushes, and the quality and innovativeness of childcare products. Personal care consumers are becoming more discerning and are influenced by the efficacy of marketing campaigns and the allure of new technologies like AI-assisted devices.

Bargaining Power of Suppliers: Suppliers exert moderate power over companies like Philips in the Personal Health sector. While there may be numerous suppliers for common components, specialized technologies, particularly those involved in AI and advanced electronics, are sourced from a limited pool, giving those suppliers greater bargaining power.

Threat of New Entrants: Barriers to entry vary across the personal health categories. For simple products, barriers may be low, but for technologically advanced products, such as AI-enabled toothbrushes, the barriers are higher due to the need for significant investment in R&D and consumer trust. However, start-ups like Quip with innovative business models, like subscription services, can disrupt the market.

Threat of Substitutes: The threat of substitutes in the Personal Health sector is significant. Technological advancements and changing consumer preferences can quickly render existing products obsolete. For example, manual toothbrushes can be substituted with electric ones, and vice versa, based on consumer trends and perceptions. The rise of AI in personal health devices offers both a threat and an opportunity; companies that fail to innovate may lose market share to those that offer more advanced, personalized products.

Graph 9: Market Development Personal Health



Sources: IMF, Worldbank and Own Calculations

Growth Projections

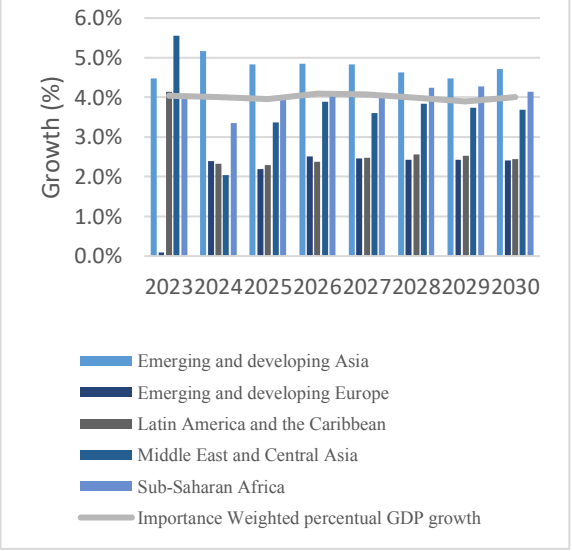
This graph represents the market development in the Personal Health sector, showcasing the mature market size in light blue bars (measured in millions), the growth market size in dark blue bars (measured in millions), and the weighted growth rate depicted by the grey line, with the percentage scale on the right.

From 2019 to 2023, the mature market appears relatively stable with slight fluctuations, indicating a consistent demand within established markets. The growth market, while smaller in absolute size, shows variability but maintains an overall upward trend, suggesting expansion in emerging markets or segments.

However, in 2023, there is a noticeable dip in the growth market, perhaps indicating supply chain disruptions or market saturation challenges. The weighted growth rate also experiences a sharp decline in the same year, reflecting this downturn.

Post-2023, the graph projects a recovery and a positive trajectory for both the mature and growth markets. The growth market is anticipated to rebound strongly, while the mature market shows steady incremental growth. The weighted growth rate line follows a similar pattern of recovery, with a pronounced upward trend. By 2030, the mature market's size is expected to have increased modestly, while the growth market is projected to have expanded significantly from its 2023 levels, indicating a positive long-term outlook for the Personal Health sector. The weighted growth rate's rebound and stabilization suggest that the market may be adjusting to new norms and potentially capitalizing on emerging opportunities within the sector. The upward trend is starting in 2024, peaking around 2027, and then stabilizing towards 2030.

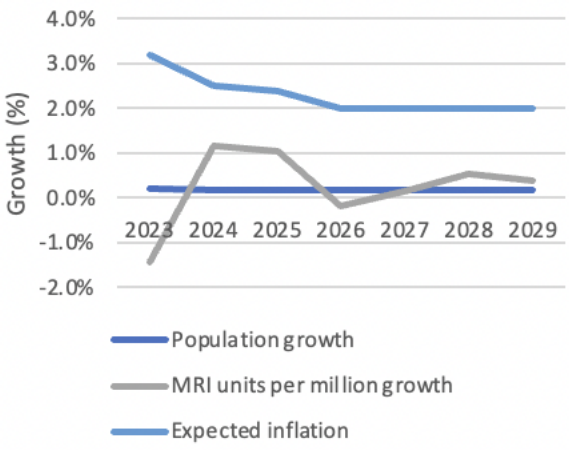
Graph 10: Key revenue driver in Growth Geographies



Sources: IMF, Worldbank and Own Calculations

Especially the electric toothbrush has lots of room for growth since in developing

Graph 11: Key revenue drivers in mature markets



markets yet have to switch to electric toothbrushes. In addition, the increasing focus of male consumers on skin care and grooming to enhance their physical appearance anticipated to offer strong opportunities for growth[xiii]. In North America, people are willing to pay large amounts of money for personal care products that strengthen their social appearance. This is a reaction to obesity in the region and consumers want to make up for it by using personal care products [xiv].

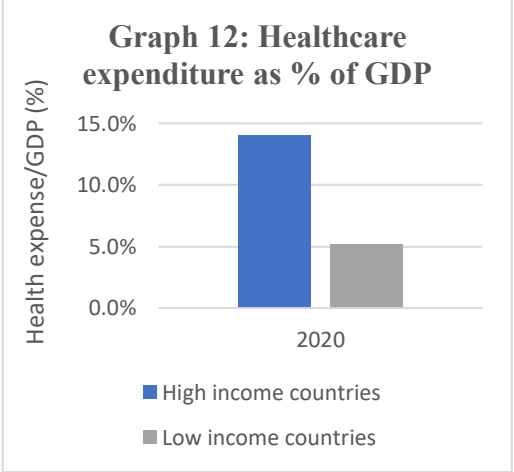
Method of our market size projection

In this equity report, we analyse the market size and its future forecast. Because data scarcity and vaguely defined lines of what the Diagnostics and Treatment, Connected Care and Personal Health markets are, we estimated these markets ourselves. Our method was as follows. First, we selected products which had sales data both available of Philips and national levels. For example, for Diagnostics and Treatment, we used Philips sales data of MRI scanners. Second, we calculated the ratio between this product and turnover of Philips department. Third, we used this ratio to scale from the specific Philips product to broader national levels. Following this line of reasoning, we can determine the current size and forecast each market in which Philips is active.

Main drivers in market sizing
1. *Population per geography*
2. *Ratio ICU units per inhabitant (product differs per market)*
3. *Price per ICU unit (product differs per market)*

For clarification, we numerically explain our method applied to the DT section. First, we sought a product which is available both on Philips and national level. MRI scans are both reported separately in Philips annual report and with WHO data. Second, we calculated the ratio between MRI scanners and turnover of Philips' DT department. Third, we used this ratio to scale from number of MRI scans sold on national levels to DT's market size of countries. The model of our market size is built upon several different drivers. Our market size uses a bottom to top approach taking multiple inputs into account.

Graph 12: Healthcare expenditure as % of GDP

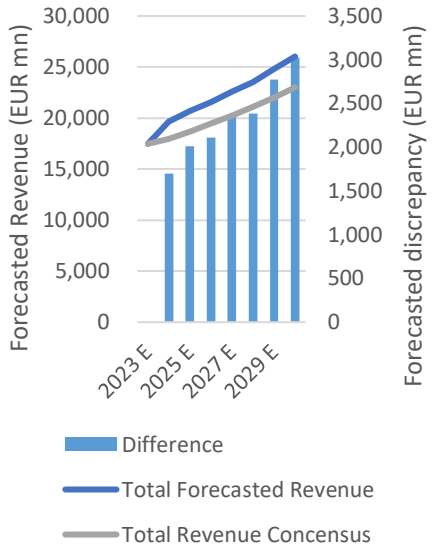


Sources: Worldbank

For example, the Connected Care market is firstly driven by the number of ICU units per geography. This can be decomposed by population and number of ICUs per million people. Secondly, the market is determined by the price per ICU unit. We take the average price of ICU units in 2023 with 50.000 dollars per unit. We convert this by an exchange rate of 0,92 dollar per euro. This is

the average exchange rate in 2023 and as simplification we continue the usage of this exchange rate for all other years. We assume the price of ICU increases with expected general inflation. Thirdly and lastly, to obtain the broader market, Philips ratio of revenue of ICU to CC revenue is taken. Ultimately, we obtain a market size for each year.

Graph 13: Discrepancy between own forecast and consensus



Sources: Precedence Research and Own Calculations

This bottom-up approach allows for very transparent forecasts. However, it is important to note that our model is based upon several simplifying assumptions. Each of these assumptions is further explained in the Excel. We aim to balance accuracy with reason. All market sizes were cross-checked with general consensus analyses. And the differences turn out to be minimal.

Due to data availability reasons, for growth geographies we had to conduct a different analysis. Because we do not know in which countries Philips is active, we use region wide GDP growth as a proxy of healthcare spending. Expenditure on healthcare increases with GDP (Graph 12). However, if one assumes that the only variable explaining the different consumption levels of healthcare between high and low-income countries is GDP, healthcare spending must grow disproportionate to GDP. Therefore, in our analysis, for Philips growth geographies, we assume a growth rate equal to the sum of the weighted GDP growth average and 3,5%.

References

[i] https://www.philips.com/a-w/about/our-history.html
[ii] https://www.philips.com/a-w/about.html
[iii] https://www.reuters.com/world/china/chinas-hillhouse-capital-buy-philips-appliances-arm-37-bln-euros-2021-03-25/#:~:text=Philips%20sells%20appliances%20arm%20to%20China%27s%20Hillhouse%20for%203.7%20bln%20euros,-By%20Reuters%20and&text=AMSTERDAM%2C%20March%2025%20(Reuters),it%20focuses%20on%20healthcare%20equipment.
[iv] https://www.philips.com/a-w/about/news/archive/corpcomms/news/press/2023/philips-third-quarter-results-2023.html
[v] https://www.exor.com/press-releases/2023-08-14/exor-becomes-long-term-investor-philips-supporting-companys-strategy
[vi] https://www.philips.com/a-w/about/our-strategy.html
[vii] Philips Annual Report 2022
[viii] https://www.philips.com/a-w/about/investor-relations/governance/corporate-governance
[ix] https://www.philips.com/a-w/about/investor-relations/governance/corporate-governance.html
[x] The S&P Global BMI Health Care fact list
[xi] Philips Annual Report 2022
[xii] https://civicscience.com/oral-b-leads-the-electric-toothbrush-market-but-theres-room-for-brands-to-grow/
[xiii] https://www.grandviewresearch.com/industry-analysis/beauty-personal-care-products-market
[xiv] https://www.polarismarketresearch.com/industry-analysis/personal-care-products-market

KONINKLIJKE PHILIPS N.V.

HEALTHCARE TECHNOLOGY

STUDENT: BRAM HEESEN AND VICTOR JACOBS

COMPANY REPORT

DECEMBER 20TH 2023

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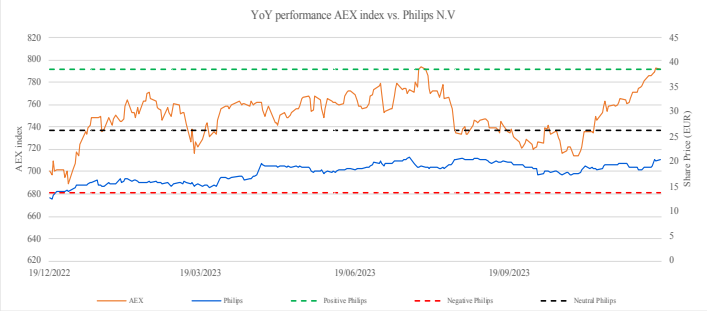
- Recently, Philips has focussed its operations on three main business units: **Diagnosis & Treatment**, **Connected Care** and **Personal health**.
- There is great uncertainty surrounding Philips' equity. Since 9 April 2021 the stock price decreased with **57,9%.** The **last 3y** were **atypical** because of COVID-19 caused supply chain issues and the Respironics sleep, and Respiratory Care devices recall, which was followed by a litigation case.
- In addition, Philips **sold its household appliances** business for **EUR 3.7b** in 2021. This has been part of Philips' strategy Philips of **concentrating on healthcare technology** after also spinning off its lighting and consumer electronics divisions in previous years.
- In 2023 Philips has been delivering **strong sales**, **profitability**, and **cash flow growth**. EBITDA is expected to increase with **128%**. So far Philips has **improved the lives** of **1.87b people** and is on track to improve the lives of 2.5b people per year in 2030.
- We foresee increased shareholder value by optimizing Philips' **debt ratio** from 27% to 30%. This value creation together with **ageing population** of mature markets and an increase in **disposable income in developing markets** will improve margins and total revenue. The **football field chart** on the right displays the result of our valuation methods.

Company description: Philips, a global diversified technology company, specializes in developing and manufacturing medical systems and consumer electronics. Their product range encompasses diagnostic imaging, ultrasound, analytics, sleep and respiratory care, population health management. Philips offers a variety of mother and childcare, personal care, and oral healthcare products.

Recommendation:	**BUY**
Vs Previous Recommendation	*HOLD*
Price Target FY24:	**26.41 €**
Vs Previous Price Target	*19.20 €*
Price (as of 20-Dec-23):	**21.10 €**
Expected Capital Gain:	*25,2%*

52-week range (€)	12.22-21.18
Market Cap (€m)	19,341
Outstanding Shares (m)	915.99m

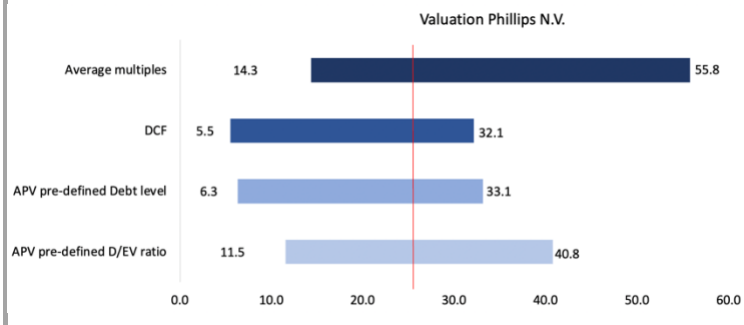
Source: Yahoo Finance



Source: Yahoo Finance & Own Calculations

(Values in € millions)	2022	2023E	2024F
Revenues	17,826	17,477	19,681
EBITDA	(2,273)	655	1,030
Net Profit	(1,625)	1,011	1,399
EPS	(1.73)	1.12	1.10
P/E	(8.61)	19.10	23.6

Source: Philips Annual Report & Own Calculations



THIS REPORT WAS PREPARED EXCLUSIVELY FOR ACADEMIC PURPOSES BY BRAM HEESEN AND VICTOR JACOBS, MASTER IN FINANCE STUDENTS OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS. THE REPORT WAS SUPERVISED BY A NOVA SBE FACULTY MEMBER, ACTING IN A MERE ACADEMIC CAPACITY, WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL. (PLEASE REFER TO THE DISCLOSURES AND DISCLAIMERS AT END OF THE DOCUMENT)

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Part 1

Company overview

The Company Overview section, is divided into four key parts, including Philips' History, which outlines Philips' journey and social responsibility initiatives. Philips Today highlights the company's current focus on healthcare technology. Additionally, the Shareholders Structure provides insights into ownership and governance. Lastly, the Business Model section covers, a breakdown of the business and future growth strategies.

Philips' History

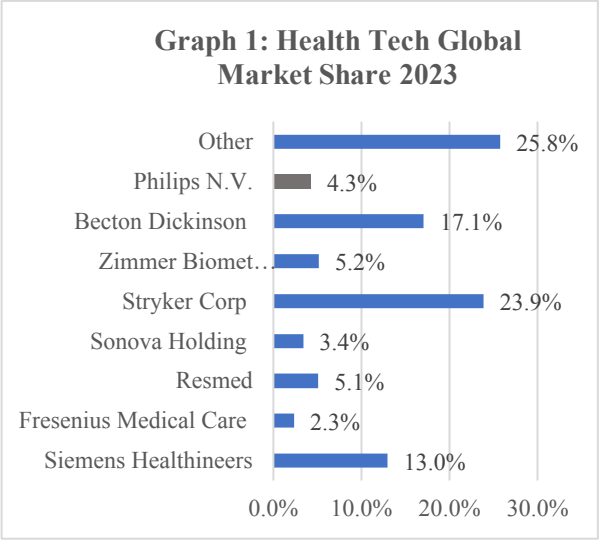
Frederik Philips, 1891

Philips was founded in 1891 in Eindhoven as Philips & Co by Frederik Philips and his son Gerard Philips. Philips began as a lighting company, but as the 20th century progressed it evolved into a conglomerate with social responsibility and innovation in various field such as electronics, healthcare and lighting. In the 1910s, they established their first research lab, 'Philips Nat Lab,' this lab stepped into the field of scientific research on visionary projects, such as investigating new lighting technologies for healthcare. The ultimate breakthrough of the lab were Philips X-ray tubes, which was the first innovation of Philips into healthcare technology. In the 30s Philips introduced its famous electric razor, called the Philishave. Ever since 1939, Philips has been selling an average of 700 electric razors per hour. [i] After World War II, Philips developed innovations to aid post-war recovery, but its most significant investment management companies, pension funds to individual investors. introduction was the mass-market television followed by continuing innovation in sound, data, and vision technologies.

Philips logo, 1891

In the 50s Philips established Philips Medical Systems, ever since, Philips has extended its presence in medical imaging, patient monitoring and healthcare informatics. In the 1980s Philips became a leader in the digital world by remaining at the forefront of emerging consumer digital technologies. A human-centred approach to product design followed in the 90s, this approach harmonized and integrated all aspect of improving patient experience. From the 00s onwards Philips further committed to a people-centric approach to deliver advanced health technology solutions, aiming to improve the lives of 2.5 billion people annually by 2030[ii]. For this reason, in 2021, Philips sold its home appliances business for 3,7 billion, emphasizing its focus on their healthcare technology products[iii].

Philips Today

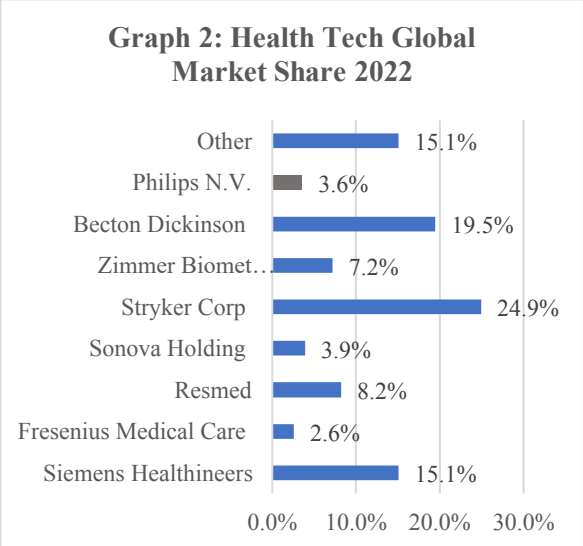


Source: globenewswire

Currently Philips is focused on healthcare and operates three main segments: the Diagnosis & Treatment department, Connected Care businesses and the Personal Health units. These three entities are responsible of more than 95% of Philips revenue worldwide. The market share displayed in the graphs portrays the global healthcare technology market of which Philips takes part in.

To this date Philips is known for its innovative solutions in the healthcare sector, some of which are medical imaging systems, patient monitoring solutions and healthcare informatics. Philips also maintains a presence in consumer health products, such as personal care and home appliances.

Moreover, Philips focuses on sustainability, invests in sustainable R&D, and continues to strive for meaningful innovation that improves people's lives and healthcare outcomes worldwide. In 2022 Philips' market share was 3.6% of the Global Healthcare Technology market and in 2023 Philips' global health technology market share is expected to grow slightly to 4.3%. Slow growth will be described more thoroughly throughout the report but is mainly caused by legal and geopolitical uncertainty. In the two Market Share graphs one can see that out of its comparable companies Philips was the only one that witnessed YOY market share growth from 2022 to 2023.



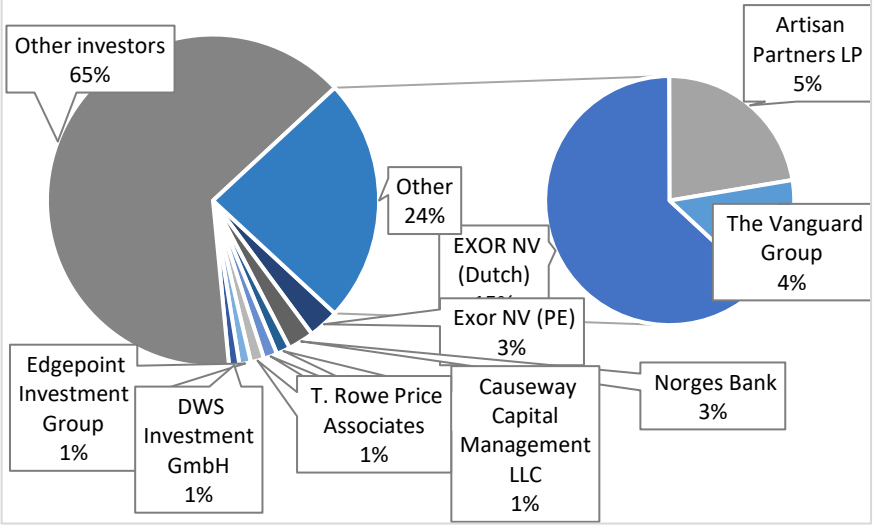
Source: globenewswire

Most recently, in Q3 2023 Philips has entered into a decade-long contract worth EUR 100 million for the provision of Enterprise Monitoring as a Service to one of the largest healthcare systems in the United States, spanning 20 hospitals with a collective capacity of over 3,000 beds[iv]. Even though, Philips improved performance year-to-date and has a strong order book, uncertainties still remain present because of the apnea machine court cases against the FDA. Already, Philips agreed to pay $479 million to resolve part of stretched out litigation, the recall of millions of machines in 2021 and the current courtcase still results in uncertainty about predicting the company's future performance. Moreover, Philips increasingly deals with a volatile geopolitical environment.

Shareholders Structure

Philips' shareholder structure includes a diverse group of shareholders, ranging from large institutional investors to small retail investors. The largest stake of Philips is held by Exor N.V., Exor bought a 15% shareholding in Philips in August 2023 and supports Philips' long-term company strategy[v]. Exor N.V. is a Dutch holding company incorporated in the Netherlands and controlled by the Italian Agnelli family, known for founding Fiat motor company. Exor has its focus on investing in health, technology, and luxury sectors. Artisan is the second largest shareholder of Philips and holds 5.3% of common stock. Their strategy involves targeting companies with the potential to outperform relevant benchmarks. The Vanguard Group, Philips' third largest shareholder, is an American investment management company with almost $7.7 trillion assets under management and currently one of the most well-known investment management companies around the world.

Graph 3: Largest Shareholders of Philips

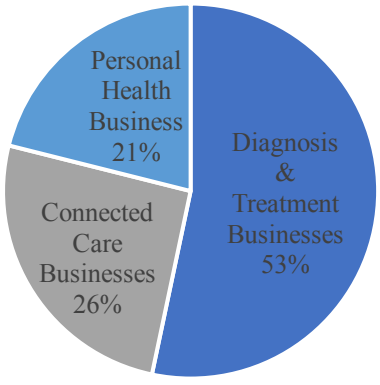


Sources: Market Screener

Business model

Over the past decade, Philips has pivoted from a broad-spectrum conglomerate to a focused high-tech health technology company. The company's transformative journey aims to tap into high-growth and high-margin sectors in the healthcare landscape. Philips aims to deliver high- quality, efficient and data driven solutions for the healthcare market worldwide[vi]. Several market dynamics underpin Philips' strategic direction. The world is witnessing an ever-growing and aging population, leading to an increased demand for healthcare. Coupled with this are the increasing cost of healthcare and staffing shortages, which presents both challenges and opportunities. These shifts necessitate innovations to make healthcare delivery more efficient, productive, and outcome driven.

Graph 4 : Sales split by businessunit, 2022



Sources: Philips Annual Report 2022

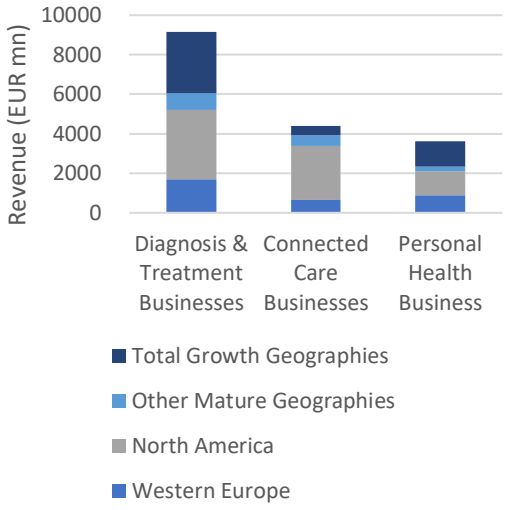
Philips' business can be divided into four different business units: Diagnosis and Treatment (DT), Connected Care (CC) and Personal Health (PH) and Other Business. In respective order, these business units count for 51, 25, 20 and 4

percent of revenue in 2022. As these units vary wildly in nature, we provide a strategic insight into the relative importance, products, and customers of each department.

Diagnosis and Treatment Business

The Diagnosis & Treatment division of Philips stands at the forefront of several pivotal product markets. Customers are exclusively healthcare providers. Therefore, DT is a business-to-business (B2B) department. Income is primarily generated from product sales, lease agreements, service charges, recurring fees for one-time-use devices, and licensing fees for software. It provides a mix of high-tech machinery and services.

Graph 5: Revenue split by BU and location



Source: Philips' Annual Report 2022

Within the DT department, we can distinguish four different markets. First, Philips delivers products in the 'Diagnostic Imaging market' (41% of revenue DT). It specializes in helium-free MRI technologies, Philips offers enhanced workflow software for both MRI and X-ray systems. Second, Philips serves the 'Ultrasound market' (18% of revenue DT): Philips delivers echography solutions for various medical fields like cardiology and gynaecology. Third, Philips is active within the so-called 'Enterprise Diagnostic Informatics' market (8% of DT). Philips' comprehensive services bridge clinical data, optimizing workflows across diagnostics. Fourth and last, Philips sells products in 'Image Guided Therapy' (33% of DT): This includes integrated systems combining imaging data, devices, and patient records for efficient interventions.

Connected Care

The Connected Care (CC) division of Philips is designed to improve and enhance care universally by providing data-driven insights. Philips establishes a link between patients and healthcare providers across different care environments, offering solutions that are clinical, operational, and therapeutic in nature. As sales also happen directly to healthcare providers, the CC is also B2B focussed. Revenues are generated by product sales, licenses, and support.

Philips CC department can be divided into four sub-parts. First, 'Hospital Patient Monitoring' (47% of CC's revenue): Philips offers acute patient management and monitoring solutions for in the hospital. Second, 'Emergency Care' (5% of CC's revenue): Philips provides emergency tools like AEDs and other emergency care devices. Third, the 'Sleep & Respiratory Care' department (28% of CC's revenue). Philips Respironics is responsible for delivering sleep and respiratory solutions, ranging from care for obstructive sleep apnea to ventilators for

hospitals. Important to note, the products made in the CC department have caused the CPAP litigation. Fourth and last, Connected Care Informatics (20% of CC revenues): Philips focuses on clinical analytics solutions to enhance patient data insights and suggest future treatments.

Personal Health

The Personal Health (PH) department within Philips provides essential tools for consumers to healthy living, prevention, and home care. It is Philips' only department which has a direct consumer focus (B2C). Philips' products enable individuals to embrace and actively manage a vibrant and healthy lifestyle.

The PH department can be divided in three different sub-departments. First, Personal Care (51% of PH revenues) specializes in grooming and beauty products, e.g. OneBlade. Second, Oral Healthcare (37% of PH revenues) primarily sells power toothbrushes across various price categories. Third, Mother & Childcare (11% of PH revenues) focuses on selling products supporting parents and babies during the initial 1,000 days.

Other business

The remainder of Philips business consists of all other departments. Noteworthy are Innovation & Strategy and IP Royalties. These departments focus on R&D and royalties from newly made innovations. At year-end 2022, around 18,000 people were working for Philips' 'Other Business' and the department accounted for 3.5% of world-wide revenues[vii].

Strategy for future growth

Philips wants to increase its business performance through the following three pillars. First, it targets 'focused organic growth'. After already having solidified its identity as a health technology leader, Philips aims to unlock the full potential of its portfolio, especially in sectors where it holds leadership positions like Image Guided Therapy, Ultrasound, and Personal Health.

Second, Philips aims at 'Scalable and People-centric Innovation'. The company believes that true innovation should be driven by the needs of patients and consumers, making care more accessible, convenient, and sustainable. With its global reach and comprehensive informatics platforms, Philips is in a good position to provide solutions that span the entire spectrum of care. Philips provides care for both consumers at home and patients in hospitals.

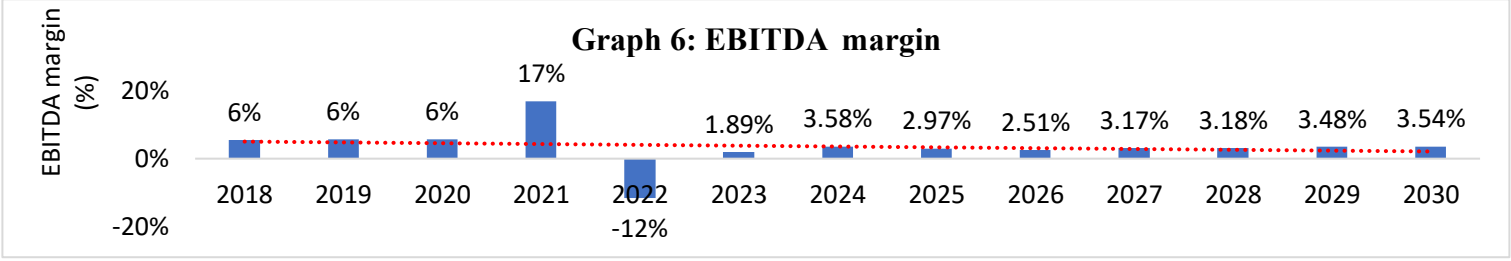
Third, for Philips, improved performance hinges on operational excellence. Especially after the CPAP-recall, Philips is taking concerted actions to enhance

patient safety, bolster supply chain reliability, and adopt a streamlined operating model, where accountability, agility, and patient-centricity are paramount.

For the year 2023, management anticipated a modest single digit increase in comparable sales. The Philips' management adjusted EBITDA margin is projected to be in the upper range of the single digits. Noteworthy is an update made in July 2023, elevating the forecast to a medium single-digit elevation in comparable sales, positioning the adjusted EBITA margin at the higher end of the single-digit spectrum. The organization projects an adjusted EBITDA margin in the lower teens, coupled with a free cash flow ranging from EUR 1.4 to 1.6 billion. Beyond 2025, Philips expects a steady mid-single digit rise in comparable sales.

The forecast reveals an adjusted EBITA margin fluctuating between the middle to upper teens. Our EBITDA margin forecast is not adjusted and that is why it is lower than what Philips' management expects. Philips uses an adjusted EBITDA that assess non-recurring items and restructuring costs differently than our analysts do. In our forecasted share price, the positive scenario resonates with Philips adjusted EBITDA and the neutral with the analyst's views.

Graph 6: EBITDA margin



Sources: Philips Annual Reports and Own Calculations

Corporate governance

Royal Philips adheres to a two-tier board structure consisting of a Board of Management and a Supervisory Board. These entities are accountable to the General Meeting of Shareholders, with governance grounded in Dutch corporate and securities laws, Articles of Association, and Rules of Procedure[viii]. The framework also aligns with the Dutch Corporate Governance Code and relevant US laws for Foreign Private Issuers. Philips places strategic importance on increasing workforce diversity in alignment with stakeholder and market diversity, therefore the Supervisory Board has adopted a Diversity Policy. To maintain market integrity, members of the Board of Management, the Executive Committee, and the Supervisory Board are restricted to trading Philips securities during specific 'windows' post-annual and quarterly. Long-term investment is encouraged, while short-term transactions are prohibited. There are also restrictions on trading in securities of peer companies during certain periods[ix]. Philips' shareholders are relatively activistic and closely monitor Philips corporate

behaviour. For example, in 2022 the shareholders voted against Philips' executive compensation plan because of the company's poor performance.

Table 1: Philips' acquisitions

Company acquired	Year	Sector	Deal size in millions	Country
DiA imaging analyssis	*2023*	AI	$100	Israel
Cardiologs Technologies SAS,	*2022*	AI cardiac diagnostics	$275	France
Vesper Medical	*2022*	Medical technology	$244	USA
BioTelemetry Inc.	*2021*	Remote cardiac diagnostics	$2,800	USA
Capsule technologies	*2021*	Data management	$635	USA
Carestream Health Inc.'s Healthcare Information Systems	*2019*	Healthcare information systems	$275	USA
Blue Willow Systems	*2018*	Senior care solutions	$100	USA

Sources: Philips Annual Reports

Acquisitions

When we look at Philips' acquisitions over the last 5 years, we can see that they have been acquiring companies which possess AI and data technology expertise. With acquisitions of senior-care and remote solutions, Philips has been following the trend of aging population in mature geographies together with the digitalization of the healthcare industry.

Healthcare market

In this section we explain the market in which Philips is active. First, we start with a broad overview of the market. Second, we apply Porter's Five forces and state our market size forecasts for each of the submarkets. Third, we provide a forecast of each of the market sizes. Fourth and last, we explain the methodology underlying the market forecasts.

Broader healthcare market

Philips current business is only active within the healthcare market. We regard the healthcare market to be an attractive investment area because of several reasons. As of October 31st, the S&P BMI healthcare index outperformed the market proxy, S&P BMI, on various metrics. First, the 10-year return of BMI healthcare index is higher. The healthcare sector increased with 8,14% whilst the general market grew with 7,02%. Second, because the nature of the industry, the sector is relatively well protected for economic downturns and therefore categorizes as a safe equity investment[x].

Also, when we zoom in on our company, Philips' beta of 0.95, benchmarked against the MSCI World Index in euros, indicates that its shares have a lower volatility relative to the market. A beta under 1 suggests that Philips is a more stable investment, less susceptible to broad market swings. We use MSCI world as proxy for CAPM's market. In doing so, we assume internationally integrated financial markets for investors.

The Healthcare market in which Philips is operating can be divided in line with Philip's three business departments. Making this division adds nuance to the analysis. These three markets vary extensively in nature. First, the Diagnostics

Table 2: Diagnostics and Treatment and Porter's Five Forces

Porter's Forces	Market Overview	Philips' Position
Competition within Industry	Highly competitive with major players like GE Healthcare, Siemens Healthineers, Canon Medical.	Strong brand reputation, significant R&D investment, global distribution network. Intense competition
Bargaining Power of Consumers	Large entities have significant power; smaller entities less so.	Established relationships with large networks and government entities.
Bargaining Power of Suppliers	Reliance on high-quality suppliers; limited number of suppliers for specialized components.	Dependence on specific suppliers for advanced components could pose risks.
Threat of New Entrants	High barriers due to capital requirements and regulatory compliance.	Established brand, significant market experience, and customer trust. Agile startups can disrupt
Threat of Substitutes	Varies by product; lower for complex equipment, higher where rapid tech advancements occur.	Strong in healthcare areas, where hospitals rely on proven well-functioning machinery

and Treatment market. This market consists mostly of machinery which is used within hospitals. Second, the connected care market. This market bridges the gap between software and healthcare. And third, the personal health market. Products within this market are mostly focused on the consumer health goods.

Market outlook Diagnostics and Treatment

Market introduction: This submarket captures a broad spectrum of equipment and services used for diagnosing and treating medical conditions. It typically includes imaging devices like MRI and CT scanners, ultrasound equipment, and X-ray systems, as well as therapeutic devices and solutions. In this segment, we analyse Philips its innovation in imaging technology, advancements in precision diagnostics, and the integration of AI and machine learning in treatment solutions. Market trends, regulatory environments, and competitive landscapes in this category are critical for understanding Philips' market position and growth potential.

Porter's Five Forces:

Competition: The Diagnostics and Treatment market is highly competitive, with several established players like GE Healthcare, Siemens Healthineers, Canon Medical, and Philips competing for market share. The competition is intense due to the rapid technological advancements, the need for continual innovation, and the significant capital investment required for R&D. Companies compete on factors such as technological superiority, distribution networks, customer relationships, and pricing.

Power of consumers: The power of consumers in this market varies. In the case of large hospital networks and government health agencies, the power is significant due to their large purchasing volumes and ability to negotiate lower prices or demand enhanced service levels. However, smaller medical facilities and private clinics have less negotiating power due to their lower purchase volumes. The decision-making process is influenced by factors such as the technology's effectiveness, price, brand reputation, and after-sales service.

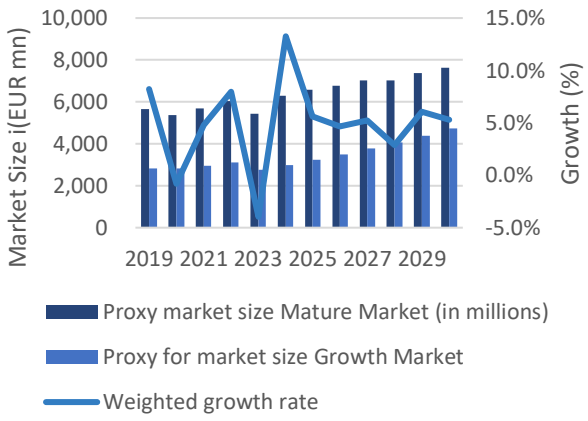
Bargaining Power of Suppliers: The suppliers in the Diagnostics and Treatment market, especially those

providing specialized components and technology, hold considerable power. The market depends on high-quality and reliable components, often sourced from a limited number of suppliers, which can give these suppliers substantial leverage in pricing and terms. However, larger companies in this sector may mitigate this through long-term contracts, vertical integration, or developing alternative supply sources.

Threat of New Entrants: The barrier to entry in this market is relatively high due to the significant capital investment needed for R&D, manufacturing infrastructure, regulatory compliance, and establishing distribution networks. Furthermore, the industry requires specialized knowledge and expertise. Also, the established trust and brand recognition of existing players can be obstacles for new entrants. However, health-tech start-ups focusing on niche innovations or emerging technologies could disrupt specific segments of the market.

Threat of Substitutes: In the Diagnostics and Treatment market, the threat of substitutes varies by product segment. For some equipment like MRI or CT scanners, the threat is lower due to the lack of direct alternatives offering the same level of diagnostic capability. However, in other areas, rapid technological advancements could lead to the development of new, more effective, or cheaper diagnostic and treatment methods, which could replace existing technologies. Continuous innovation is therefore key to staying relevant in this market.

Graph 7: Market development Diagnostics & Treatment



Sources: Philips Annual Reports and Own Calculations

Growth projections:

In the specific sectors of ultrasound and image-assisted therapy, our projections predict a sustained growth trajectory, with annual increases possibly ranging from high to mid-single digits over an extended period. However, in 2023, we see a decrease in the market. This can mainly be ascribed to increased difficulties in international supply chains.

From 2024 onwards, we forecast a continued increase of the market. Yearly market growth is averaged on 6,4%. This growth mainly stems from continued population growth, and a further increase in the number of MRI scans per inhabitant. In 2030, we forecast the market to be 12,369 billion euros. This is a percentual increase of 50,7% to 2023.

One of our key assumptions is the growth in MRI scans per inhabitant. This is a reasonable assumption since there is a significant disparity in the current distribution of MR units, with statistics indicating that countries such as China and the United Kingdom have only 6 MR units for every million inhabitants, a figure

markedly lower than the United States' 40 per million. Moreover, Europe will experience a surge in equipment replacements in the forthcoming period.

Market outlook Connected Care

Market explanation: the connected care sector in the healthcare market refers to the use of technology and digital solutions to enhance the delivery of healthcare services and improve patient outcomes. It encompasses a wide range of applications and services that leverage data, communication tools, and devices to connect patients, healthcare providers, and other stakeholders in the healthcare ecosystem. Phillips connects patients and caregivers in delivering clinical and therapeutic solutions with the ultimate goal of better health outcomes and increase ease of use of Philips products for patients and staff[xi].

Porter's Five Forces

Competition within the Industry: The Connected Care software market, characterized by intense competition among major players like Medtronic, GE Healthcare, Siemens, and Philips, is rapidly evolving with a push towards subscription models and a focus on customer retention. These companies are not only innovating technologically but are also strategically using AI-assisted analytics to enhance personalized care, a trend accelerated by significant industry mergers, such as Siemens' acquisition of Varian Medical Systems. Philips finds itself in a challenging position as it strives to navigate this competitive landscape, particularly as ResMed capitalizes on Philips' respiratory recall challenges by securing contracts that may hinder Philips' efforts to regain its foothold in the market.

Table 3: Connected Care and Porter's Five Forces

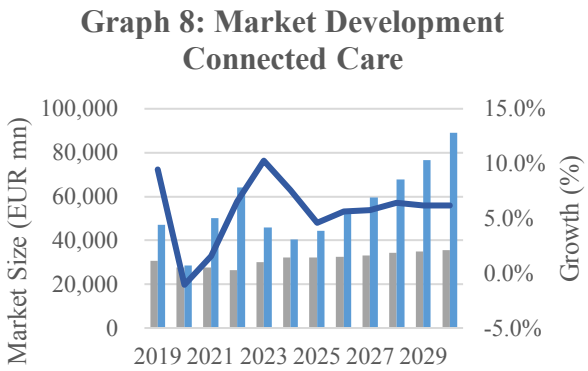
Porter's Forces	Market Overview	Philips' Position
Competition within Industry	Increased pressure with subscription - based products. Competition similar as in DT market	Strong brand recognition, comprehensive software offerings. Constant pressure
Bargaining Power of Consumers	Healthcare institutions demand flexible and integrable software. Subscription models increase consumer power.	Philips CPAP recall has significantly worsened reputation. Also, ability of consumer to switch
Bargaining Power of Suppliers	Crucial role of cloud service providers and Standardization and multiple providers can moderate power.	Potential to leverage multiple suppliers for cloud services, mitigating risk.
Threat of New Entrants	Lower barriers of entry in digital solutions, especially with cloud-based models. Tech companies can enter market.	IT nature of market allows for disruptive and innovative start-ups.
Threat of Substitutes	High threat due to rapid technological advancements and easier switching in subscription models.	Integrated and comprehensive digital health solutions. However, need to constantly innovate

Bargaining Power of Consumers: In the software-centric Connected Care market, consumers, primarily healthcare institutions, wield considerable power. They demand software solutions that offer flexibility, scalability, and integration with existing systems. The shift towards licensing and subscription models gives consumers more flexibility and bargaining power, as they can more easily switch providers if their needs are not met or if a better solution becomes available.

Bargaining Power of Suppliers: Suppliers of high-tech components, software, and cloud services have considerable power in this segment. Connected Care relies on advanced technologies, and suppliers providing unique or highly specialized components and services can exert significant influence. However, larger companies like Philips might mitigate this through strategic partnerships or developing in-house capabilities.

Threat of New Entrants: The barriers to entry are comparatively lower for software-focused Connected Care solutions, especially with cloud-based deployment models. New entrants can emerge rapidly in this space, leveraging innovations in cloud computing, AI, and data analytics. Start-ups and tech companies can enter the market with niche offerings or disruptive subscription models, challenging established players.

Threat of Substitutes: The threat of substitutes is higher. In software and digital solutions, rapid technological advancements mean that new, more advanced, or cost-effective solutions can quickly make existing products redundant. The subscription model also enables customers to switch to alternative solutions when they offer better value or innovation.



Growth projections

The graph presents the market development trends within the Connected Care sector. It depicts two distinct components of the whole market. The whole market is built upon the mature and developing markets. The weighted growth rate is plotted as a darkblue line, with its scale on the right vertical axis.

From the data, we can observe that the mature market experienced a notable contraction in 2022, which may suggest a response to external market pressures or a shift in industry dynamics. In contrast, the growth market appears to have maintained a more consistent upward trajectory, suggesting an expansion in emerging areas within the Connected Care sector. Looking ahead from 2023, both the mature and growth markets are projected to expand. The mature market shows a recovery and a gradual increase, while the growth market demonstrates a more robust climb. The weighted growth rate, after a dip in 2022, is forecasted to rise steadily year-on-year, with a notable increase in 2029 and 2030, reaching upwards of 10%. By 2030, the mature market is expected to surpass €80 billion, while the growth market is also anticipated to continue its upward trend. This positive outlook is fuelled by an increasing population and an increase in adoption of connected health technologies and digital health initiatives.

Market outlook Personal Health

Market explanation: The "personal health" business in the healthcare market is a broad and multifaceted sector that focuses on empowering individuals to take greater control of their own health and well-being. It encompasses various products and services designed to help people manage their health, make informed decisions, and improve their overall quality of life. The personal health segment consists of the following three categories: oral healthcare (toothbrushes), mother & childcare (products supporting parenting) and personal care (grooming and beauty products)

Table 4: Personal Health and Porter's Five Forces

Porter's Forces	Industry Dynamics	Philips' Positioning
Competition within Industry	Highly competitive with brands like Colgate-Palmolive, P&G. Diverse range from oral care to personal grooming.	Holds significant market share, known for quality and innovation. But intense rivalry like Oral-B
Bargaining Power of Consumers	Consumers empowered by choice, influenced by recommendations and product quality.	Benefits from strong brand and professional endorsements. Must continuously innovate
Bargaining Power of Suppliers	Suppliers of specialized tech components have more power.	Long-term relationships which are well diversified.
Threat of New Entrants	Varied barriers to entry; lower for basic products, higher for AI-enabled devices.	Established brand with trust and innovation track record. Startups pose threats.
Threat of Substitutes	Significant threat with evolving technology and consumer preferences.	Stays ahead with AI-enabled devices and continual product development.

Porter's Five Forces

Competition within the Industry: The industry is highly competitive, with key players like Colgate-Palmolive, Procter & Gamble, and Panasonic in oral healthcare, Medela and Chicco in mother & childcare, and Braun and Remington in personal care. Philips competes not only on product quality and innovation but also on brand reputation and market share. Oral healthcare, for instance, sees fierce competition, with Philips holding a 23% portion of the electric toothbrush market, though Oral-B dominates with 51%[xii]. In mother & childcare and personal care, Philips faces competition from both large multinationals and regional brands, necessitating strong marketing and brand loyalty strategies.

Bargaining Power of Consumers: Consumers have considerable power, given the wide array of choices available to them. Their decisions can be influenced by factors like product recommendations from professionals, such as dentists in the case of toothbrushes, and the quality and innovativeness of childcare products. Personal care consumers are becoming more discerning and are influenced by the efficacy of marketing campaigns and the allure of new technologies like AI-assisted devices.

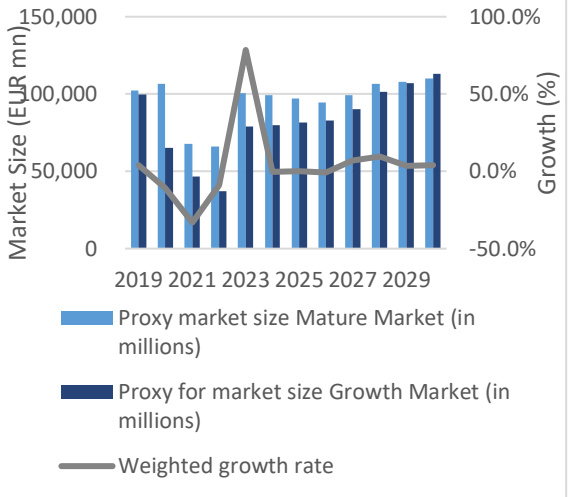
Bargaining Power of Suppliers: Suppliers exert moderate power over companies like Philips in the Personal Health sector. While there may be numerous suppliers for common components, specialized technologies, particularly those involved in AI and advanced electronics, are sourced from a limited pool, giving those suppliers greater bargaining power.

Threat of New Entrants: Barriers to entry vary across the personal health categories. For simple products, barriers may be low, but for technologically advanced products, such as AI-enabled toothbrushes, the barriers are higher due to the need for significant investment in R&D and consumer trust. However, start-ups like Quip with innovative business models, like subscription services, can disrupt the market.

Threat of Substitutes: The threat of substitutes in the Personal Health sector is significant. Technological advancements and changing consumer preferences can quickly render existing products obsolete. For example, manual toothbrushes can be substituted with electric ones, and vice versa, based on consumer trends and perceptions. The rise of AI in personal health devices offers both a threat

and an opportunity; companies that fail to innovate may lose market share to those that offer more advanced, personalized products.

Graph 9: Market Development Personal Health



Sources: IMF, Worldbank and Own Calculations

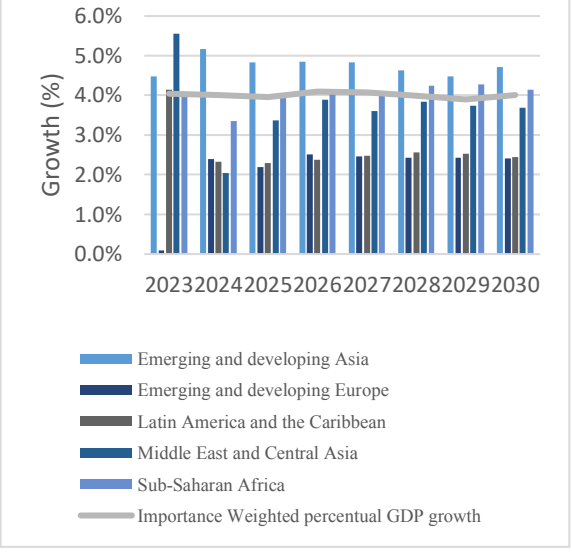
Growth Projections

This graph represents the market development in the Personal Health sector, showcasing the mature market size in light blue bars (measured in millions), the growth market size in dark blue bars (measured in millions), and the weighted growth rate depicted by the grey line, with the percentage scale on the right.

From 2019 to 2023, the mature market appears relatively stable with slight fluctuations, indicating a consistent demand within established markets. The growth market, while smaller in absolute size, shows variability but maintains an overall upward trend, suggesting expansion in emerging markets or segments.

However, in 2023, there is a noticeable dip in the growth market, perhaps indicating supply chain disruptions or market saturation challenges. The weighted growth rate also experiences a sharp decline in the same year, reflecting this downturn.

Graph 10: Key revenue driver in Growth Geographies



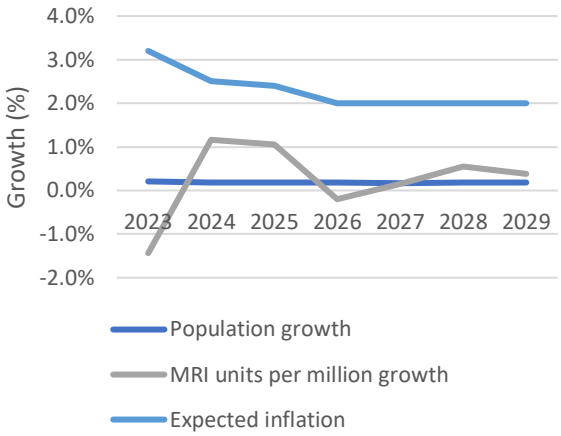
Sources: IMF, Worldbank and Own Calculations

Post-2023, the graph projects a recovery and a positive trajectory for both the mature and growth markets. The growth market is anticipated to rebound strongly, while the mature market shows steady incremental growth. The weighted growth rate line follows a similar pattern of recovery, with a pronounced upward trend. By 2030, the mature market's size is expected to have increased modestly, while the growth market is projected to have expanded significantly from its 2023 levels, indicating a positive long-term outlook for the Personal Health sector. The weighted growth rate's rebound and stabilization suggest that the market may be adjusting to new norms and potentially capitalizing on emerging opportunities within the sector. The upward trend is starting in 2024, peaking around 2027, and then stabilizing towards 2030.

Especially the electric toothbrush has lots of room for growth since in developing markets yet have to switch to electric toothbrushes. In addition, the increasing focus of male consumers on skin care and grooming to enhance their physical appearance anticipated to offer strong opportunities for growth[xiii]. In North America, people are willing to pay large amounts of money for personal care products that strengthen their social

appearance. This is a reaction to obesity in the region and consumers want to make up for it by using personal care products [xiv].

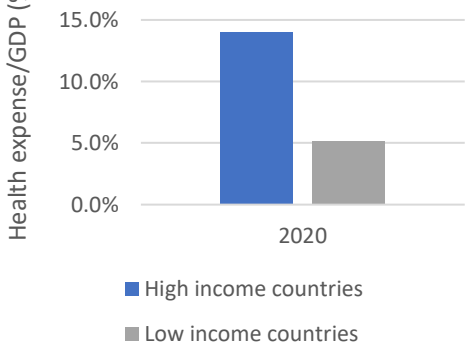
Graph 11: Key revenue drivers in mature markets



Sources: IMF, Worldbank and Own Calculations

Main drivers in market sizing
1. *Population per geography*
2. *Ratio ICU units per inhabitant (product differs per market)*
3. *Price per ICU unit (product differs per market)*

Graph 12 Healthcare expenditure as % of GDP



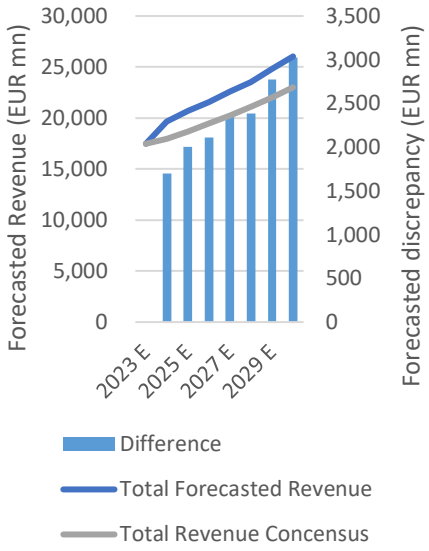
Sources: Worldbank

Method of our market size projection

In this equity report, we analyse the market size and its future forecast. Because data scarcity and vaguely defined lines of what the Diagnostics and Treatment, Connected Care and Personal Health markets are, we estimated these markets ourselves. Our method was as follows. First, we selected products which had sales data both available of Philips and national levels. For example, for Diagnostics and Treatment, we used Philips sales data of MRI scanners. Second, we calculated the ratio between this product and turnover of Philips department. Third, we used this ratio to scale from the specific Philips product to broader national levels. Following this line of reasoning, we can determine the current size and forecast each market in which Philips is active.

For clarification, we numerically explain our method applied to the DT section. First, we sought a product which is available both on Philips and national level. MRI scans are both reported separately in Philips annual report and with WHO data. Second, we calculated the ratio between MRI scanners and turnover of Philips' DT department. Third, we used this ratio to scale from number of MRI scans sold on national levels to DT's market size of countries. The model of our market size is built upon several different drivers. Our market size uses a bottom to top approach taking multiple inputs into account.

For example, the Connected Care market is firstly driven by the number of ICU units per geography. This can be decomposed by population and number of ICUs per million people. Secondly, the market is determined by the price per ICU unit. We take the average price of ICU units in 2023 with 50.000 dollars per unit. We convert this by an exchange rate of 0,92 dollar per euro. This is the average exchange rate in 2023 and as simplification we continue the usage of this exchange rate for all other years. We assume the price of ICU increases with expected general inflation. Thirdly and lastly, to obtain the broader market, Philips ratio of revenue of ICU to CC revenue is taken. Ultimately, we obtain a market size for each year.



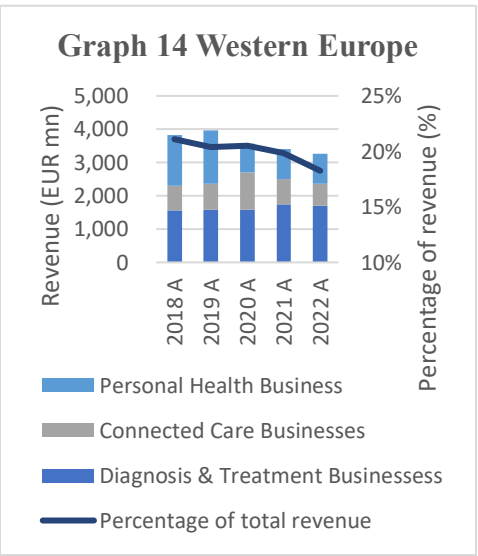
Sources: Precedence Research and Own Calculations

This bottom-up approach allows for very transparent forecasts. However, it is important to note that our model is based upon several simplifying assumptions. Each of these assumptions is further explained in the Excel. We aim to balance accuracy with reason. All market sizes were cross-checked with general consensus analyses. And the differences turn out to be minimal.

Due to data availability reasons, for growth geographies we had to conduct a different analysis. Because we do not know in which countries Philips is active, we use region wide GDP growth as a proxy of healthcare spending. Expenditure on healthcare increases with GDP (Graph 12). However, if one assumes that the only variable explaining the different consumption levels of healthcare between high and low-income countries is GDP, healthcare spending must grow disproportionate to GDP. Therefore, in our analysis, for Philips growth geographies, we assume a growth rate equal to the sum of the weighted GDP growth average and 3,5%.

Part 2

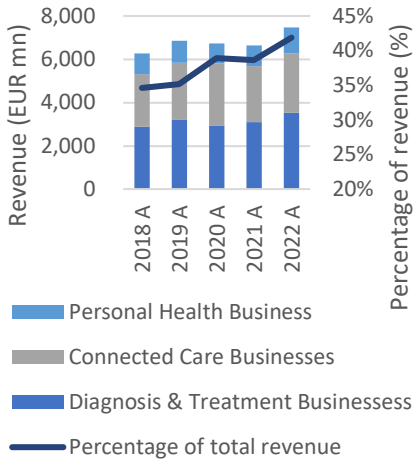
Historical Financial Analysis:



Western Europe: In the past five years, Philips experienced a 15% decline in revenue in its Western European market. In 2021, the global and Western European economy faced a slowdown due to COVID-19, this attributed to disruptions in global supply chains, inflationary pressures, and aggressive monetary policy tightening initiated by central banks. Additionally, the high energy costs in Europe, resulting from the war in Ukraine, raised operational costs for Philips. The Personal Health Business witnessed a decrease due to high inflation, elevated energy costs, and increased labor costs. In contrast, the Diagnostic & Treatment business saw a 9.6% revenue increase in eastern Europe over the last five years, driven by the growing population aged 60 and older seeking medical attention and diagnostic equipment. This is a long-term trend for the D&T business since demographic aging in Western Europe has led to increased reliance on healthcare equipment produced by Philips.

North America: In North America, Philips has strengthened its position through strategic collaborations with renown healthcare institutions, including a significant seven-year agreement with Northwell Health. For illustration, Northwell Health had in 2022 gross income of 15,4 billion dollars[xv]. The company expanded virtual

Graph 15: North America

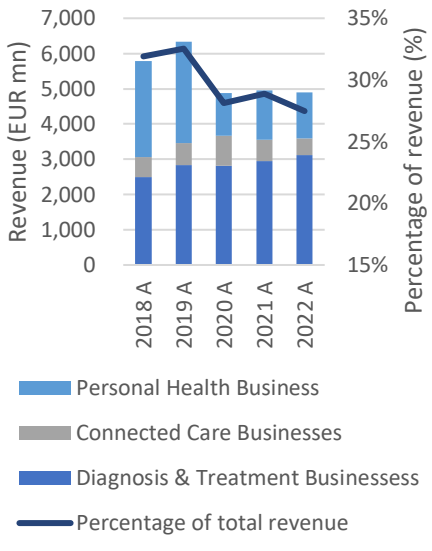


Sources: Philips Annual Reports and Own Calculations

monitoring and care services for the US Department of Defense. In the Personal Health business, there was a 28% revenue increase over five years, driven by sales in toothbrushes and mother & childcare products. The Connected Care Business experienced a 12% growth, partly attributed to innovation and digitization trends in Silicon Valley. The Diagnostic & Treatment business in North America saw an 11% increase over five years, influenced by demographic aging and consumer habits.

Other mature markets: Philips' "Other mature markets" contribute almost 9% to total revenues, excluding North American and European countries, including Japan, South Korea, Israel, Australia, and New Zealand. Clients in these markets face similar macro-economic challenges as European and American counterparts, such as disrupted global supply chains and an aging population. In the last five years, the Personal Health Business segment in these markets remained relatively stable with slight fluctuations. Connected Care Business saw an increase until 2020, reaching 722 million in revenue, but faced a setback in 2022 due to the CPAP debacle, resulting in a 24.6% decline over three years. Diagnosis & Treatment Businesses demonstrated stability with a slight upward trend in 2019, followed by stabilization in subsequent years.

Graph 16: Growth Geographies

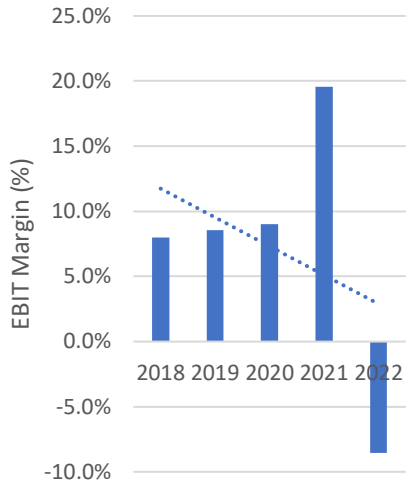


Sources: Philips Annual Report and Own Calculations

Growth geographies: In 2022, "growth geographies" accounted for 27.5% of Philips' total revenue, encompassing non-mature markets like China, Turkey, Vietnam, and Brazil. Over the past five years, this segment experienced a 15.3% negative growth rate, mainly due to a decline in the Personal Health Business and the impact of the CPAP recall. Additionally, the fiscal year 2022 saw a 1% decrease in sales within growth geographies, notably in the Connected Care and Personal Health segments, with a more moderate retraction in Diagnosis & Treatment.

China stands out as the main growth market, contributing significantly to Philips' revenue in both healthcare and consumer sectors. Despite the challenges, the company strengthened its position in the Chinese healthcare market through strategic partnerships, maintaining its recognition as a leading brand in the region. Philips continues to focus on local innovation, with 20% of revenue in 2022 attributed to Chinese initiated products.

Graph 17: EBIT margin



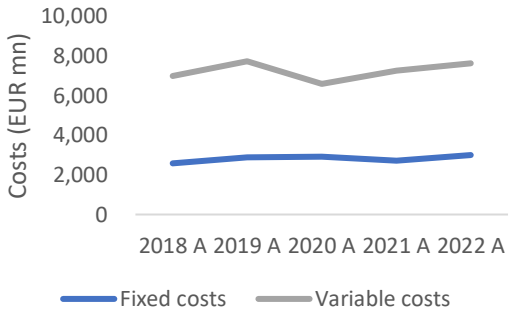
Sources: Philips Annual Reports and Own Calculations

Margin development

Philips' gross, operating, and net margin all witnessed a negative trend in the last 5 years. This was caused by significant costs increases between 2020 and 2022. Especially variable costs increased which had to do with inflationary pressure by COVID-19 and the war in Ukraine. YoY gross margin was flat due to cost inflation and decrease in sales. The decrease in sales was offset by favourable foreign currency impact, decrease in restructuring and acquisitions related charges, as well as productivity and pricing measures.

The EBIT margin increases between 2018 and 2021 shows an improvement in operating profitability. Between 2018-2021 D&A increased with 7%, but between 2021 and 2022 D&A increased with 12% in just 1 year. The increase in 2022 was caused by an unfavourable foreign currency impact. In 2022 EBIT decreased because of a charge of EUR 1.5 billion related to goodwill and R&D impairments. In addition, because of the sale of the Domestic Appliances business to Hillhouse investments in 2021 there was an extra gain of EUR 2.5 billion. In 2022 we see a negative EBIT margin mainly because of the goodwill impairment charges related to the CPAP recall of EUR 1.331 billion.

Graph 18: Fixed and Variable Cost Development

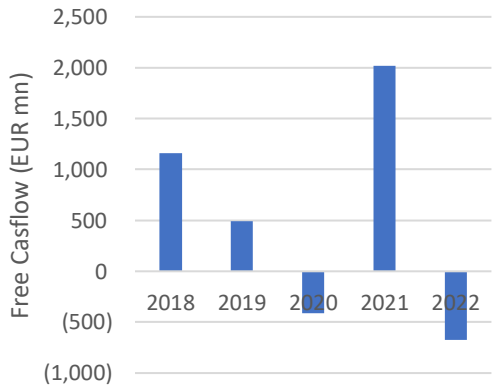


Sources: Philips Annual Reports and Own Calculations

Costs

Between 2021 and 2022 variable costs such as costs of materials used, and other manufacturing costs increased with EUR 178 million. This happened because of a combination of unfavourable foreign currency impact and cost inflation, which was partly offset by reduced field action provision and productivity measures. Cost of sales increased in 2022 because of increased expenses, such as fixed costs like salaries and wages. This increase in fixed costs was caused by wage inflation and therefore also partly offset by productivity measures.

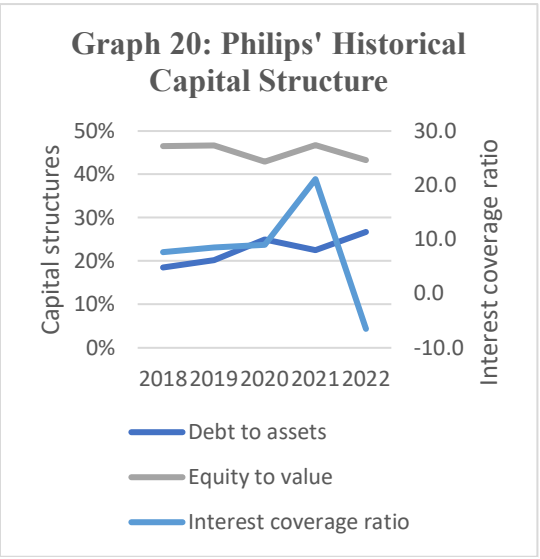
Graph 19: Total Free Cash Flow to the Firm



Sources: Philips Annual Reports and Own

Free Cash Flow evolution

The Cashflows of Philips have been varying substantially. In 2020 a negative free cash flow to the firm was caused by a large negative change in securities carried by currency translation differences. In 2022 free cash flow was also negative because of lower cash earnings, increased working capital and cash caused related to Respironics recall.



Sources: Philips Annual Reports and Own Calculations

Philips' identifies an organic ROIC instead of a regular ROIC in their annual reports. We calculated ROIC by dividing comprehensive income by total invested capital. ROIC and ROE both dropped in 2022 because of a negative net income caused by lower sales, cost inflation and impairments.

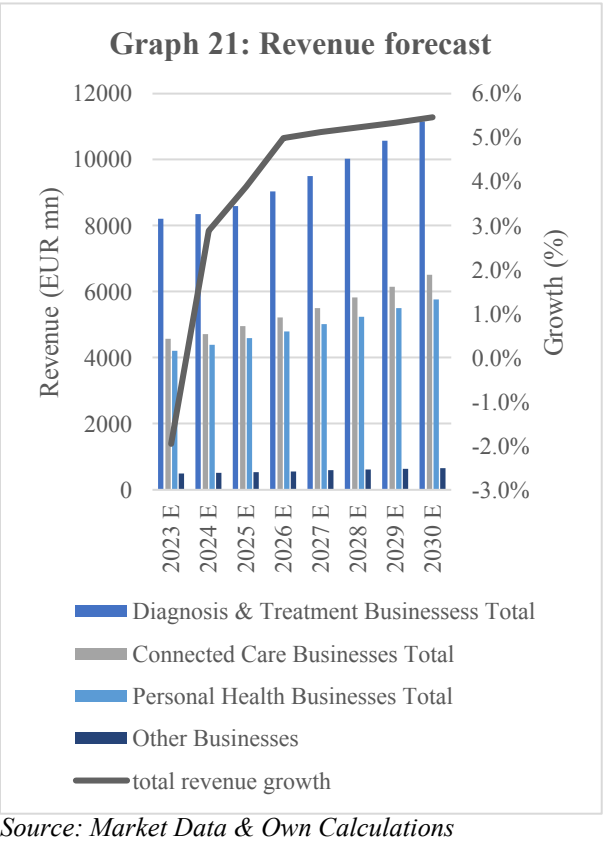
Debt to assets has increased in the last 5 years because Philips' total debt increased with 70% and assets increased with 18%. The increase in debt between 2021 and 2022 partially comes from the issuance of EUR 2 billion notes in April 2022. The interest coverage was healthy till 2021 but dipped in 2022 because of a negative EBIT caused by R&D impairments and charges related to goodwill.

Future Financial Analysis

Revenue Forecast

FY 2023

When this equity report is written, we are still before the release of Philips' annual report of 2023. However, we do have data of 75% of 2023. Therefore we treat this year differently than all the other following years in our forecast. In our report, we have included Philips revenue figures of the first three quarters of the year.



Source: Market Data & Own Calculations

Next, we have forecasted the total revenue of 2023 by taking the average of the first three quarters and then extending this number to a yearly timeframe. Numerically, this means we multiply the quarterly average by 4. Implicitly, we assume that Q4 performance will be the average of Q1-Q3. Given the nature of the quarters' performance, this seems a logical assumption. For 2023, we predict Philips' revenue to be 17,5 billion euros.

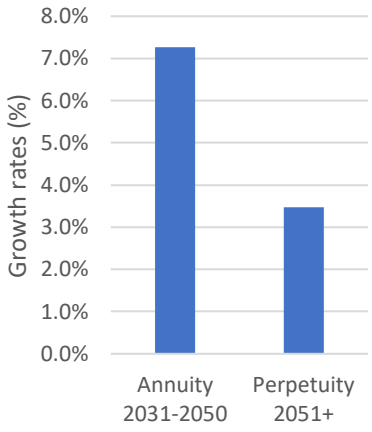
Forecast 2024-2030

From 2024 to 2030, we assume that Philips experiences the same growth as the sector for each business unit. Implicitly, this means that Philips market share will stay equal within the market. Since market share has been relatively stable, we think this is a fair assumption. We observe different growth rates along two different axes. First, growth rates differ by departments. The Connected Care department has the highest growth rates. This is aligned with the tremendous potential for IT and healthcare. The expected lower growth rate for Personal Health is aligned with the high competition which the sector sees. Moreover, for consumers, the PH market

has relatively low boundary of switching compared to the other two sectors. Second, growth rates differ highly per geography. We see that in general, the growth areas are expected to grow at higher rates. In the CC, the growth market is set to increase with a CAGR of 8% until 2031.

For Philips other business department, because of the lack of a proper counterfactual, we assume the revenue grows proportionally to the other revenue streams of the company. Given the size of other business (3,5% in 2022), this is a reasonable simplifying assumption without affecting outcomes.

Graph 22: Future growth rates



Sources: Own Calculations

Annuity forecast 2031-2050

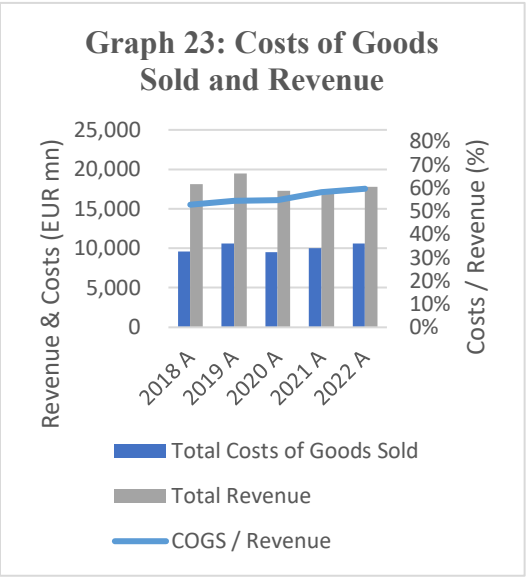
In our financial model, we project 2031 to 2050 using an annuity approach to account for expected market growth due to an aging population, which should benefit Philips. We assume that Philips will keep pace with its competitors during this time. Over the years 2031 to 2050 we predict an average weighted growth rate of 7,3%. This is the weighted average growth rate of each of the PH, DT and CC market. By 2050, we anticipate that the boost from the aging demographic will have fully impacted the market, and Philips's growth in its established markets will level off as these changes are absorbed into the baseline assumptions of our model.

Perpetuity forecast 2051+

For the perpetuity forecast beyond 2051, our model takes a neutral stance, anticipating that Philips's overall top-line growth will align with the overall economic expansion rate. This implies that the company's growth will match the sum of real economic growth plus inflation. It's a grounded assumption that suggests the healthcare sector, and Philips by extension, will not outpace the broader economic growth rates in the long term. Taking the average world GDP growth from 1961 to 2022, gives us an eternal growth rate of 3,47%

Cost forecast

The basis of our costs forecast is the ratio between revenue and the specific cost item. However, since Philips had an atypically chaotic past few years with the CPAP recall, consequent firing of management and reorganization, we critically assess each cost item and see to what an extent historical averages are a valid predictor.



Source: Market Data & Own Calculations

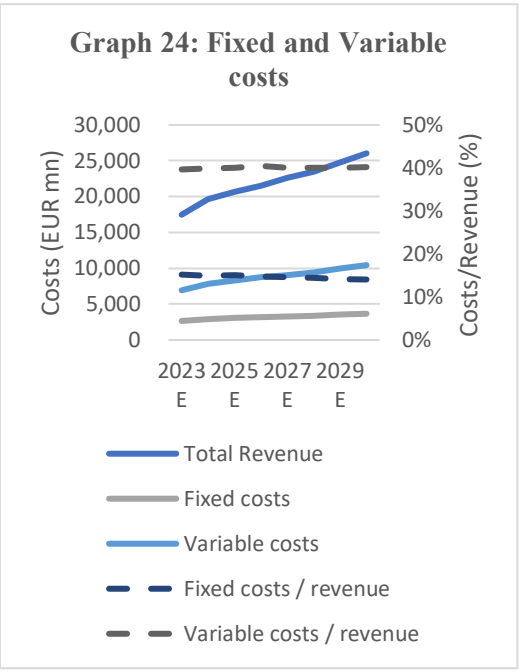
Restructuring 2020

Since 2018, cost-to-revenue ratio has steadily increased. Whilst in 2018, gross margins were 51%, in 2022, the same ratio was 59%. Moreover, the CPAP recall required Philips to drastically change its business practices. The uncertain but potential billions of costs concerning the CPAP forced Philips to take severe measures.

Philips made changes in the MT. On Augustus 16th 2022, Philips announced the departure of CEO Frans van Houten, scheduled for October. This can be seen as a direct consequence of the CPAP recall. Roy Jakobs, who previously led the Connected Care division, has taken over. Jakobs has actively managing the extensive recall of the company's ventilators and sleep apnea treatment devices. Also, Willem Appelo, formerly active within Private Equity industry, was installed as new COO. The new team was appointed with the aim of severe cost-cutting operations.

Cost projections

For most cost items, in the 2023-2030 financial projections, we have determined future costs by utilizing the trailing five-year average of the cost-to-revenue ratio. When this ratio holds, the forecasted costs are a valid predictor actual value. This historical average serves as a benchmark, aligning with our substantiated revenue projections.



Sources: Own Forecasts & Calculations

Since the instalment of Jakobs and Appelo, the company has announced multiple layoffs. Within his reign, Roy Jakobs' plans have amounted to 10,000 job cuts in total. This figure represents approximately 13% of the firm's current workforce, marking a decisive effort by the executive team to streamline operations.

Towards the future we forecast a decrease in 13 % in salaries. We make two critical assumptions: there will be no additional rounds of layoffs and the sample of employees who have been fired had an average wage equal to the mean wage of Philips. Important to note, the effects of layoffs are felt financially gradually. Consequently, we project that the full reduction of 13% will only be felt in 2030.

Fixed costs are defined as depreciation, amortization, and salaries. We project that, due to the increased efficiency because of the reorganization, there will be a decrease in the fixed costs / revenue ratio. In 2023, fixed costs are 15,2% of revenue and in 2030 only 14,1%.

The variable costs, which are defined as COGS and other manufacturing costs will grow proportionally with revenue. The ratio stays roughly the same between 2023 and 2030. We forecast a stabilization of the variable cost and revenue ratio.

We acknowledge that extensive reorganization within the company may lead to deviations in this cost ratio over time. For instance, if only Philips products were to increase in prices, taking costs as percentage of EBITDA would lead to an overestimation of costs. Important to note, this does not count for economy-wide inflation as this both increases the prices of Philips' produce and all cost items. As we do not expect sudden price increases in only Philips' products, it is a valid measure for future cost estimations. Moreover, our model presumes its continued relevance, as the ratio has been stable over the last years. Consequently, we forecast relatively constant margins.

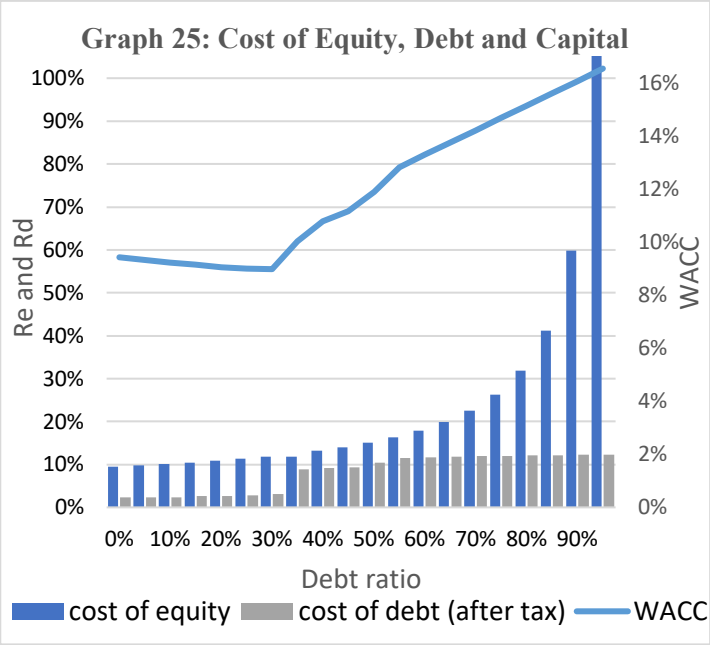
For some specific income statement items, we had to exclude certain years from the sample. These anomalies would lead to unrealistic future predictions. For example, we have excluded the COGS revenue relationship our trailing average. This was because the fiscal year of 2022 was characterized by major reorganizations. Moreover, for the 'discontinued operations' we have excluded year 2021. In this specific year, Philips sold the home appliances business which would lead to an overly optimistic view.

For perpetuity and annuity, we implicitly make equal assumptions. Costs are taken as a constant percent of revenue. Because we have estimated revenue thoroughly, using the cost-to-revenue ratio, we obtain a reliable estimate.

Other items

Depreciation and interest expense are the only two items which are not calculated directly with the cost-to-revenue ratio. Depreciation is calculated as a percentage of gross PPE. Since Philips does not have any public data concerning its product factors nor there is any reliable third-party information, we estimate gross PPE, the number of factories, machines etc, as percentage of revenue. The interest expense is calculated by using the forecasted debt levels multiplied with the pre-tax cost of debt (3,2%).

Balance sheet forecast:



Sources: Damodovan, Yahoo Finance, Philips Annual Report & Own

Most future balance sheet items are also based on historical relationships with revenue. For each balance sheet item, we use the five-year trailing relationship with the size of the balance sheet item and the revenue in that specific year. Taking the historical average should be a valid predictor of future years. The exceptions to this method are described below.

Debt, however, is forecasted after computing the optimal debt-to-enterprise (D/EV) ratio with Damodaran's framework. We conclude that an optimal D/EV ratio for Philips is 30%. This is significantly lower than to the industry standard of 36.5%. With a post-tax cost of debt at a relatively low 3.1%, adopting this optimal ratio would enable Philips to achieve a cost-effective balance in its capital structure, reflected in a weighted average cost of capital (WACC) of 8.24%. To align with this optimal ratio, Philips would need to elevate its debt from €8.2 billion to €10.3 billion, a move that suggests a strategic alignment with broader industry financing practices, while also pursuing the advantages of leveraging debt's tax shield and lower cost relative to equity.

Valuation DCF / APV

Philips altered its reporting methods for the Personal Health, Connected Care, and Diagnosis & Treatment segments in the last few years. Therefore, crucial details such as the distribution of costs, capital expenditures, and especially depreciation and amortization among these segments remain undisclosed. Consequently, we opted for a straightforward discounted cash flow (DCF) valuation model, foregoing a sum-of-the-parts approach as it did not seem to contribute significant value to our assessment.

We used a DCF valuation as the main valuation method to assess the attractiveness of an investment opportunity in Philips. Using a DCF we were able to compute the fair value of Philips' company stock by starting to explicitly calculate eight free future cash flows from 2023E till 2030E. Afterwards, we use the annuity and perpetuity formula.

We calculate the cost of capital by using CAPM. First, we calculate the cost of equity. The market risk premium was estimated by taking the historical yield of AAA European Bonds (1.92%) and subtracting it from the historical annualized yield of MSCI world (10.5%). This resulted in a market risk premium of 8.57%. For this we made the assumptions that: MSCI world's ETF replicates returns of the market portfolio, MSCI's 10-year historical average predicts coming 10 years in future.

Table 5: WACC inputs

WACC components	
Philips: Adjusted Beta	0.95
Estimated MRP	8,57%
Post tax Rd	3,09%
Ru	8,63%
Re	10,44%
WACC	8,24%

Subsequently, we conducted a linear regression between Philips' stock return and the market index. After making the Bloomberg adjustment, we obtained a forward-looking Beta of 0,95. Then we calculated the cost of unlevered equity with CAPM, which was 8.63%. Lastly, we re-levered with Philips' optimal capital structure. Consequently, we reached the Cost of Levered equity with CAPM, which was 9.88%.

Following this we did an industry check with peer companies, and we made two key assumptions: all comparables face same statutory tax rate as Philips and for peer comps, we assume the equity Beta of five years back to be a good proxy for the forward-looking equity Beta's. We assume that the tax rate going forward equals the tax rate in 2022.

To obtain the cost of equity, we started off by calculating Philips' equity beta using stock data from yahoo finance. To understand how sensitive a stock is to market changes, while understanding the impact of Philips' borrowings, we calculated the re-levered equity beta. Following this we did an industry check with peer companies, and we made two key assumptions: all comparables face same statutory tax rate as Philips and for peer comps, we assume the equity Beta of five years back to be a good proxy for the forward-looking equity Beta's. Then we calculated the cost of unlevered equity with CAPM, which was 8.19%. For this we made the assumptions that: MSCI world's ETF replicates returns of the market portfolio, MSCI's 10-year historical average predicts coming 10 years in future and that the tax rate going forward equals the tax rate in 2022. Lastly, we calculated the Cost of Levered equity with CAPM, which was 9.88%.

For the cash flows we made assumptions that revenue will grow conservatively till 2025E, because of backlash from the Philips' Respironics recall and the

corresponding legal case. Between 2026E and 2030E we expect revenue growth to be higher, around 5% per year. To obtain enterprise value we discounted all the cash flows 2023E-2030E (include costs of litigation case in 2027E), the annuity 2031E-2050E and the perpetuity for 2051+. After that 2023E net debt was subtracted from enterprise and from the equity value we derived a share price of €19.22.

To separate the capital structure's financial value added and operational business cashflows, we also applied the APV valuation method. We calculated the present value of the tax shields separately from the free cash flows before we add them back together for Enterprise Value. This provides a share price of €20,01 and €26,14 depending on the assumption with regards to the debt levels. If we assume the debt to EV ratio stays constant, the outcome should be the same as DCF. However, we observe a 4% difference which indicates a small incoherency within our model.

Table 6: Comparables

Peer companies
Siemens Healthineers (Germany)
Fresenius Medical Care (Germany)
Sonova Holding (Switzerland)
Stryker Corp (USA)
Zimmer Biomet Holdings Inc. (USA)
Becton Dickinson (USA)
Resmed (USA)

Valuation multiples

We also completed a multiple valuation of Philips in which we compared financial metrics to seven similar companies in the healthcare industry. The peer companies were selected carefully after looking at who Philips sees as its peers in its 2022 annual report and consensus from equity analysts at Morningstar Inc. and CFRA. The multiples we used to obtain Philips' share price are P/E, EV/EBITDA, EV/REVENUE and PRICE/SALES. All multiples are used with data from Yahoo Finance.

Table 7: Averages Peers

Multiples	Average ratios peers
P/E	27.09
EV/EBITDA	17.02
PRICE/SALES	3.54

P/E multiple

As you can see in the table it is important to note that the multiples give different kind of share prices. We calculated the P/E multiple by dividing the current stock price by EPS. Philips P/E ratio is 19.10, which implies that the company is fairly valued and has room to outperform earnings forecasts. The share price derived from the P/E ratio is EUR 27.16, which is close to our recommended share price. To not have too many peers in use for this multiple we left out Becton Dickinson since they are not as much of a diversified technology company as Philips and are possibly overvalued because of their P/E ratio of 48.36.

EV/EBITDA multiple

This multiple was calculated by dividing Enterprise Value by EBITDA and gives Philips the highest multiple of 45.63. This is partially caused by a low EBITDA that Philips has. Again, for this multiple we selected companies that were more pertinent with Philips in terms of EV/EBITDA multiple. Both Zimmer Biomet Holdings Inc and

Table 8: Implied Shareprice Philips

Multiples	Philips Share Price
P/E	27.15
EV/EBITDA	8.28
EV/REVENUE	53.36
PRICE/SALES	47.25

Fresenius Medical Care had such low EBITDA multiples that they were left out this calculation. The share price that this multiple gives for Philips is EUR 8.28. This is by far the lowest out of all multiples because the EBITDA multiple receives negative input from Philips operating expenses and revenue multiples are not as sensitive to this.

EV/Revenue

We calculated this multiple by dividing enterprise value by revenue. Out of all EV/Revenue multiples Philips has the lowest multiple. For this reason, we only included more pertinent peers to this multiple. The peers we included were Siemens Healthineers, Fresenius Medical Care and Zimmer Biomet Holdings Inc, because their EV/Revenue multiples were closest to Philips'. Philips' share price derived from this multiple gives the highest share price of EUR 53.36 out of all multiples. These multiple focuses more on Philips' top line and does not consider expenses or profitability measures.

Price/Sales

This multiple was calculated by multiplying shares outstanding with the current stock price and then dividing it by revenue. Philips' Price/Sales multiple is second lowest after Fresenius Medical Care. To again be more pertinent we considered the following three multiples with a similar Price/Sales multiple: Zimmer Biomet Holdings Inc, Fresenius Medical Care and Siemens Healthineers. This multiple gives the second highest share price of EUR 47.25. But again, this multiple gives a very broad perspective of Philips' size and market presence. Because this multiple does not take into consideration how Philips generates cash from its operations and the expenses that take place, this multiple gives a very positive share price.

Table 9: Multiples Overview

Peer companies	P/E	EV/EBITDA	EV/REVENUE	Price/SALES
Siemens Healthineers	3.25	15.34	3.01	2.39
Fresenius M.C.	2.08	10.62	2.15	0.64
Sonova Holding	20.70	17.82	4.35	3.58
Stryker Corp	41.27	25.41	6.25	5.75
Zimmer Biomet	50.36	13.04	4.28	3.54
B. Dickinson	48.36	19.08	4.88	4.01
Resmed	23.59	17.84	5.34	4.88
Philips N.V.	19.10	45.63	1.71	1.12

ESG

Philips first Environmental Annual Report was published in 1999 and ever since Philips has been publishing integrated financial, social, and environmental reports. Philips values engaging with different types of ESG stakeholders such as the World Economic Forum, World Business Council for Sustainable Development and Greenpeace. Philips itself mentions their 'Quadruple Aim': better health outcomes, improved patient and staff experience, and lower cost of care[xvi]. Implicitly, Philip's business performance is positively correlated with positive societal impact.

Environmental

Philips focuses on fighting climate change, circular economy, and energy efficiency; therefore, they focus on the UN SDG 12 and 13. Philips aims to use 75% renewable energy in their operations by 2025 and generate 25% of their revenue from circular products and solutions. Philips works with suppliers to reduce the environmental footprint of the supply chain in line with the 1.5 Celcius global warming scenario[xvii].

Social

Philips want to improve people's health and wellbeing through innovation that is in line with UN SDG 3. The goal is that by 2025 the health and well-being of 2 billion people needs to be improved, including 300 million people in underserved communities. For employees, Philips wants to provide the best place to work and provide emerging opportunities also in terms of diversity and inclusion. In addition Philips pays a fair wage to its employees and engage with communities in which they operate through volunteering and internships. Tax payments are seen as a contribution to communities in which Philips operates and therefore is part of Philips social value creation.

Governance

Philips lives up to the highest standard of ethics and governance that is recognized by responsible leadership and independent supervision. Philips remuneration policy is designed to encourage employees to deliver purpose and strategy which creates stakeholder value. In addition, Philips risk management is designed to provide reasonable assurance to make sure that operational and legal objectives are met. Philips is transparent about their plans, activities, results, and contributions to society.

Risks

Macro-economic risks

In our analysis, we have identified five macro-economic key risks that Philips faces, each with varying degrees of likelihood and broader economic impact. Technological disruption and increasing competition are valid concerns in the health-tech sector, carrying a high likelihood and a moderate impact on the broader economy due to their influence on market dynamics and innovation. Regulatory changes are a high likelihood factor, given the frequent shifts in global healthcare and technology markets, posing a significant impact on industry operations and strategies. Economic downturns, have a medium likelihood but a high economic impact, directly influencing consumer spending and overall

Table 9: Key Macro Risks

Key Risks	Likelihood (Explanation)	Broader Impact on the Economy
Technological Disruption / Increased Competition	High: oftentimes, new innovations in tech-sector	High: can reshape market dynamics and employment
Regulatory Changes	High: frequent changes in global markets	High: affects industry compliance and operational strategies
Economic Downturns	Medium: current outlook is stable	High: affects consumer spending and overall economic health
Supply Chain Vulnerabilities	Medium: Philips' global dependencies increase risks	Medium: critical for trade & economic stability

economic health. Lastly, supply chain vulnerabilities are increasingly probable in our interconnected global economy, presenting a high risk with substantial repercussions for trade, production, and economic stability. These risks are crucial considerations for investors and stakeholders in Philips, reflecting both the company's specific challenges and its role in the broader economic landscape.

Company specific risk: "Phillips' Respironics Recall"

In June 2021, Philips Respironics initiated a recall of specific ventilators, including BPAP and CPAP machines, due to health risks identified by the FDA. The recall was related to the deterioration of the PE-PUR foam used in these devices for noise reduction. This foam was found to potentially disintegrate, posing a risk of users inhaling or ingesting harmful particles or chemicals. [xviii] Factors such as high temperatures, humidity, and improper cleaning methods were cited as accelerating the foam's breakdown. Notably, the FDA reported 385 death reports linked to the malfunctioning devices, underscoring the severity of the issue.

This incident has significantly impacted Philips' business operations, encompassing legal and reputational costs. This section of the report focuses on quantifying Philips' expected future litigation costs by breaking down the legal case into three distinct yet collectively exhaustive components. This analysis is critical in understanding the financial implications and the broader business risks Philips faces due to this significant recall event.

Settlement 1: economic costs

In a recent economic-damages agreement, Philips has consented to a payment of at least $479 million to individuals who purchased, leased, or were provided with one of their recalled CPAP or BiPAP devices.

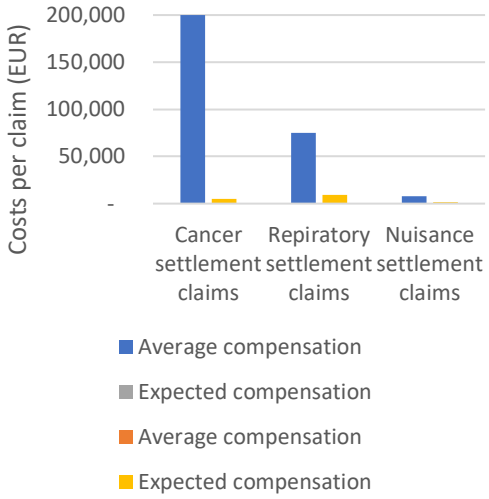
The economic damages settlement represents the initial and most straightforward hurdle in a series of legal challenges that the medical technology company Philips faces in the United States. The settlement addresses claims from individuals who state a loss of income due to their use of the apnea device, those who incurred medical expenses for additional consultations with general practitioners or hospital visits, or for the purchase of an alternative apnea device.

Settlement 2: compensation for physical and mental health

The second part of the legal costs is related to individuals asserting physical or emotional harm resulting from the recall. This may include physical injuries as well as psychological or emotional distress.

Philips, based on its internal investigations, maintains that the recalled apnea devices have not caused medical harm. The company has not yet accounted for provisions for these last two categories of claims. Analysts' estimates of Philips' total settlements costs vary widely, ranging from $2 billion to $10 billion.

Graph 26: Average compensation vs expected compensation

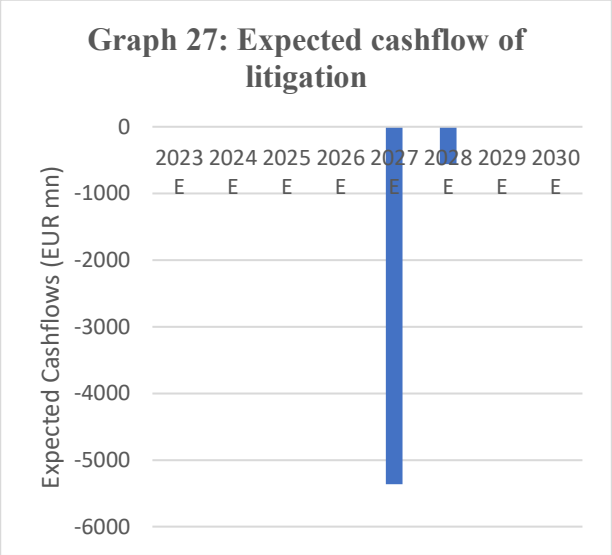


Sources: Legal Experts US and Own Calculations

In our financial assessment of Philips' legal exposure stemming from the CPAP recall, we conduct a tri-scenario analysis. Our estimate relies upon a bottom-up approach. Each scenario was tailored with distinct inputs and assumptions to reflect a spectrum of potential outcomes. The driving factors incorporated into this analysis included the different claim types, the expected cost per claim type, the total number of patients affected, and the probability of litigation success for these patients.

Since data is scarcely available and many aspects are unknown to this litigation case, we make several assumptions. To begin with, we estimate the number of patients impacted, we assume this number to be roughly 950 million people. Acknowledging the complex nature of the legal case, the second important assumption we make surrounds the various types of claims and the number of patients in each claim category. We make the distinction between three categories. First, negative consequences related to the development of cancer. Second, complaints related to respiratory issues. Third, related to noise nuisance claims. These different claim categories vary wildly in the size of impact and success rate in case of a legal prosecution. Also, one must make assumptions with regards to financial compensation per claim. For example, 'a cancer case' is compensated at higher rates than 'a respiratory claim'. Therefore, the expected compensation is also different.

By distributing equal probabilistic weight to each scenario, essentially a 33% likelihood for each scenario, we have reached a projected estimate of the financial implications for Philips. Our calculated forecast for the legal costs associated this part of the CPAP recall stands at approximately €5.37 billion. This estimate is aligned with other experts' views. Important to note, however, is the fact that also for our analysis, there is a very broad range of potential values. Our



Source: Legal Documents, FDA and Own Estimations

maximum costs are estimated at €12,9 billion whilst the minimal value is €124 million. This shows the great uncertainty associated with Philips trial.

Settlement 3: compensation for future treatments

Lastly, there are claims from Apnea patients who state they have required regular medical check-ups since 2021 and seek compensation for these extra treatments. Using a similar structure as utilized for part 2, we expect that Philips has to pay 558 million to victims.

We expect that part two of the legal case will be paid out in 2027. Part three is projected to be finalized in 2028. Consequently, the uncertainty around Philips persists.

Scenario analysis

Within the framework of our scenario analysis for Philips' equity valuation, we have articulated three divergent financial futures, each informed by specific changes to the company's financial model inputs. The assumption set for each scenario varies, affecting the Equity Beta, the projected revenue growth rate from 2026 to 2050, and the terminal growth rate from 2051 onwards, along with the financial resolution of the CPAP recall. Important to note, valuation multiples are held constant and are not affected by the different scenarios.

Scenario 1

The Management Case represents the most positive scenario, where a lower Equity Beta (0,840) reflects a lower structural risk. This leads to a cost of equity of 9,42. The unlevered cost of equity of 7,82% and a WACC of 7,50%.

In this scenario, we project an aggressive growth trajectory for revenues through 2026-2050 of 8,3% and a robust terminal growth rate of 4,0%, indicative of sustained expansion and market leadership beyond the forecast period. The CPAP recall is assumed to resolve with minimal fiscal impact of 697,2 million, reinforcing the positive sentiment. Consequently, the share valuation under this scenario reaches €38.61, suggesting a strong investment thesis for Philips based on these favourable conditions.

Scenario 2

Conversely, the Neutral scenario offers a balanced view, anchoring the Equity Beta closer to industry (0,954). This leads to a cost of equity of 10,44%. The

unlevered cost of equity becomes 8,63%. This is within a 5% difference range with relevant multiples. The WACC is equal to 8,24%.

	Shareprice (EUR)	Upside to Base case	Upside to Current Shareprice
Management	38,61	**46%**	91%
Flat case	26,41	**0%**	31%
Conservative	13,82	**-48%**	-32%
Current Shareprice (EUR)	**20,18**		

Revenue growth over the medium to long term is estimated to follow sector averages and accumulates to 7,3%. The terminal growth rate is set to move in line with long-term economic growth rates, incorporating inflationary trends and real growth (3,5%). The CPAP recall is anticipated to have a manageable impact on financials. Therefore, Philips' share price under this median scenario is calculated at €26.41, reflecting a tempered yet stable outlook.

Scenario 3

The Conservative Case sketches out a challenging landscape. Here, a higher Equity Beta (1,07) indicates elevated risk and potential volatility in Philips' stock. This results in a cost of equity of 11,47%, an unlevered cost of equity of 9,43% and a WACC of 8,99%.

The projected revenue growth rate between of the annuity is tempered at 6,3%, acknowledging possible market challenges such as saturation or competitive pressure. The terminal growth rate is restrained in similar fashion, to 3,0%. The CPAP recall is expected to result in a significant financial setback, accounting for extensive legal costs and potential reputational harm. Costs are estimated at 14,5 billion. This results in a conservative share price valuation of €13.82, embodying a cautious stance on Philips' market prospects and resilience.

Table 10: Valuations overview

Different Valuation method Philips	Shareprice (EUR)	Weights
1. Adjusted Present Value assuming pre-defined Debt level	€ 26.14	30%
2. Adjusted Present Value assuming pre-defined D/EV ratio	€ 20.01	30%
3. Discounted Cash Flows	€ 19.22	30%
4. Multiples	€ 34.01	20%
Recommendation price per share		**€ 26.41**

Final Valuation Recommendation

To provide a final recommendation, we must weigh our different valuations methods. Therefore, we create a weighted average of all suggested stock prices. The more reliable the valuation method, the higher the weight attached. We attach an 80% weight to fundamental cashflows models. The weight between DCF and two APV methods is equally distributed. The multiple valuation is given a weight of 20%. Despite its difficulties, multiple analysis gives a proper view of the actual potential of Philips. This leads to a true share price of **€ 26.41**.

Appendix

Financial Statements

Table 11: Forecasted Income statement

$ Forecast	2018 A	2019 A	2020 A	2021 A	2022 A	2023 Q1	2023 Q2	2023 Q3	2023 Q4 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E	2029 E	2030 E
Total Revenue		**18.123**	**19.472**	**17.313**	**17.155**	**17.826**	*4.167*	*4.470*	*4.471*	**4.369**	**17.477**	**19.681**	**20.689**	**21.540**	**22.611**	**23.483**	**24.795**	**26.038**
Cost of Goods Sold:																		
Costs of materials used		-4.826	-5.321	-4.221	-4.142	-4.320	*-1.126*	*-1.171*	*-1.185*	*-995*	-4.478	-4.993	-5.147	-5.386	-5.702	-5.922	-6.233	-6.533
Salaries and wages		-2.132	-2.311	-2.316	-2.245	-2.462	*-535*	*-556*	*-563*	*-473*	-2.126	-2.395	-2.521	-2.563	-2.634	-2.693	-2.808	-2.905
Depreciation and amortization		-447	-572	-591	-479	-535	*20%*	*7%*	*0*	*0*	-531	-536	-608	-623	-660	-688	-717	-757
Other manufacturing costs		-2.162	-2.403	-2.364	-3.123	-3.316	*-617*	*-642*	*-649*	*-545*	-2.452	-2.865	-3.127	-3.334	-3.345	-3.474	-3.706	-3.912
Fixed costs		**-2.579**	**-2.883**	**-2.907**	**-2.724**	**-2.997**	*-334*	*-356*	*-583*	*-473*	**-2.658**	**-2.931**	**-3.129**	**-3.185**	**-3.295**	**-3.381**	**-3.525**	**-3.661**
Variable costs		**-6.988**	**-7.724**	**-6.585**	**-7.265**	**-7.636**	*-1.743*	*-1.813*	*-1.834*	*-1.540*	**-6.930**	**-7.858**	**-8.274**	**-8.719**	**-9.047**	**-9.396**	**-9.939**	**-10.445**
Total Cost of Goods Sold		**-9.567**	**-10.607**	**-9.492**	**-9.989**	**-10.633**	*-2.411*	*-2.508*	*-2.538*	*-2.131*	**-9.588**	**-10.789**	**-11.402**	**-11.904**	**-12.342**	**-12.777**	**-13.464**	**-14.107**
growth rate		-	*10,9%*	*-10,5%*	*5,2%*	*6,4%*	-	*4,0%*	*1,2%*	*-16,0%*	*-9,8%*	*12,5%*	*5,7%*	*4,4%*	*3,7%*	*3,5%*	*5,4%*	*4,8%*
COGS in relation to revenue		47,2%	45,5%	45,2%	41,8%	40,4%	*0,0%*	*0,0%*	*0,0%*	*0,0%*	45,1%	45,2%	44,9%	44,7%	45,4%	45,6%	45,7%	45,8%
Gross Profit		**8.556**	**8.865**	**7.821**	**7.166**	**7.193**	*1.756*	*1.962*	*1.933*	*2.238*	**7.889**	**8.892**	**9.286**	**9.636**	**10.269**	**10.706**	**11.331**	**11.931**
Gross margin		47,21%	45,53%	45,17%	41,77%	40,35%	*42%*	*44%*	*43%*	*51%*	45,14%	45,18%	44,89%	44,73%	45,42%	45,59%	45,70%	45,82%
Selling Expenses		**-4.500**	**-4.682**	**-4.054**	**-4.258**	**-4.609**	*-1.079*	*-1.112*	*-1.114*	*-938*	**-4.243**	**-4.751**	**-4.999**	**-5.245**	**-5.479**	**-5.691**	**-6.006**	**-6.312**
General and administrative expenses		**-631**	**-631**	**-630**	**-599**	**-671**	*-158*	*-157*	*-150*	*-140*	**-605**	**-681**	**-727**	**-750**	**-787**	**-817**	**-863**	**-908**
Research and development expenses:																		
Diagnosis & Treatment Businesses		-801	-928	-891	-910	-1.124	*-227*	*-227*	*-216*	*-158*	-858	-990	-1.055	-1.095	-1.138	-1.181	-1.253	-1.318
Connected Care Businesses		-424	-465	-547	-543	-637	*-128*	*-128*	*-122*	*-89*	-483	-565	-618	-635	-654	-679	-723	-762
Personal Health Business		-300	-302	-190	-190	-200	*-63*	*-63*	*-60*	*-44*	-236	-251	-250	-266	-287	-298	-310	-325
Other Businesses		-235	-189	-194	-163	-142	*-50*	*-50*	*-48*	*-35*	-190	-203	-217	-221	-237	-246	-258	-271
Total research and development expenses		**-1.760**	**-1.884**	**-1.822**	**-1.806**	**-2.103**	*-528*	*-468*	*-445*	*-326*	**-1.767**	**-2.009**	**-2.140**	**-2.218**	**-2.315**	**-2.405**	**-2.545**	**-2.676**
Impairment of goodwill	-	-	-	**-144**	**-15**	**-1.357**	-	-	-	-	**-40**	**-57**	**-74**	**-52**	**-63**	**-66**	**-72**	**-75**
Other business income		**88**	**155**	**122**	**186**	**127**	*14*	*9*	*38*	*73*	**134**	**165**	**176**	**191**	**189**	**196**	**210**	**221**
Other business expenses		**-33**	**-188**	**-29**	**-123**	**-109**	*-588*	*-12*	*-39*	*550*	**-89**	**-116**	**-103**	**-124**	**-123**	**-127**	**-136**	**-141**
Income from operations		**1.720**	**1.635**	**1.264**	**551**	**-1.529**	*-583*	*222*	*223*	*1.458*	**1.279**	**1.444**	**1.419**	**1.437**	**1.691**	**1.797**	**1.918**	**2.041**
Operating Margin		**9,5%**	**8,4%**	**7,3%**	**3,2%**	**-8,6%**	*-14,0%*	*5,0%*	*5,0%*	*33,4%*	**7,3%**	**7,3%**	**6,9%**	**6,7%**	**7,5%**	**7,7%**	**7,7%**	**7,8%**
Other financial income:																		
Dividend income from financial assets		2	52	3	2	3	*2,8*	*3,2*	*3,0*	*3,0*	12	18	10	12	15	15	16	15
Net gains from disposal of financial assets		6	2	2	0	0	*0,5*	*0,6*	*0,6*	*0,6*	2	2	2	2	2	2	2	2
Net change in fair value of financial assets through profit or loss		0	17	129	95	9	*7,1*	*8,1*	*7,6*	*7,6*	30	77	96	85	81	84	97	102
Residual financial income		12	17	12	33	20	*3,6*	*4,1*	*3,9*	*3,9*	15	22	24	27	25	26	28	30
Total other financial income		**20**	**88**	**146**	**130**	**32**	*14*	*16*	*15*	*15*	**60**	**118**	**132**	**126**	**122**	**127**	**144**	**150**
Other Financial expenses:																		
Provision-related accretion expenses		-15	-22	-10	-5	-9	*na*	*na*	*na*	*na*	-12	-13	-12	-12	-14	-15	-15	-15
Net foreign exchange gains (losses)		-2	-2	-4	0	-9	*na*	*na*	*na*	*na*	-3	-3	-3	-3	-3	-3	-3	-4
Other financial expenses		-58	-13	-23	-24	-24	*na*	*na*	*na*	*na*	-28	-25	-29	-31	-32	-33	-34	-37
Total other financial expenses		**-75**	**-37**	**-37**	**-29**	**-42**	*na*	*na*	*na*	*na*	**-44**	**-41**	**-43**	**-45**	**-50**	**-52**	**-53**	**-56**
Investments in associates, net of income taxes		**-2**	**1**	**-9**	**-4**	**-2**	*-16*	*-37*	*-19*	*-24*	**-96**	**-31**	**-40**	**-50**	**-64**	**-67**	**-57**	**-64**
Discontinued operations, net of income taxes		**-213**	**-19**	**196**	**2.711**	**13**	*-3*	-	*-7*	*-3*	**-13**	**76**	**99**	**57**	**59**	**62**	**82**	**83**
EBIT of all operations		**1.450**	**1.668**	**1.560**	**3.359**	**-1.528**	*-588*	*201*	*212*	*1.445*	**1.186**	**1.566**	**1.566**	**1.524**	**1.759**	**1.867**	**2.034**	**2.154**
Net interest income:																		
Interest income		31	27	13	18	25	*n.a*	*n.a*	*n.a*	*n.a*	-6	0	8	6	2	2	4	5
Interest expense		-188	-196	-173	-159	-235	*n.a*	*n.a*	*n.a*	*n.a*	-319	-325	-352	-366	-383	-434	-458	-482
Total net interest income		**-157**	**-169**	**-160**	**-141**	**-210**	*n.a*	*n.a*	*n.a*	*n.a*	**-325**	**-324**	**-344**	**-360**	**-381**	**-432**	**-453**	**-476**
EBT of all operations		**1.293**	**1.499**	**1.400**	**3.218**	**-1.738**	*n.a*	*n.a*	*n.a*	*n.a*	**862**	**1.241**	**1.222**	**1.164**	**1.378**	**1.436**	**1.581**	**1.678**
Income taxes expenses		-193	-337	-212	103	113	*n.a*	*n.a*	*n.a*	*n.a*	149	158	118	88	149	155	154	152
Net income		**1.100**	**1.162**	**1.188**	**3.321**	**-1.625**	*n.a*	*n.a*	*n.a*	*n.a*	**1.011**	**1.399**	**1.340**	**1.252**	**1.527**	**1.590**	**1.734**	**1.830**
Net margin		**6,1%**	**6,0%**	**6,9%**	**19,4%**	**-9,1%**	*n.a*	*n.a*	*n.a*	*n.a*	**5,8%**	**7,1%**	**6,5%**	**5,8%**	**6,8%**	**6,8%**	**7,0%**	**7,0%**

Table 13: Balance Sheet

Forecasted BS	2018 A	2019 A	2020 A	2021 A	2022 A	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E	2029 E	2030 E
Fixed Assets (Non-current assets)													
Property, plant and equipment													
Land and Buildings		1.193	2.231	2.223	2.429	2.500	2.106	2.247	2.586	2.731	2.802	2.895	3.053	3.231
Machinery and installations		1.669	1.782	1.705	1.761	1.779	1.727	1.711	1.951	2.054	2.124	2.224	2.317	2.450
Other equipment		1.523	1.781	1.785	1.598	1.660	1.657	1.656	1.878	1.942	2.026	2.130	2.218	2.341
Assets under construction		203	324	262	208	309	258	265	292	306	330	337	352	371
Gross PPE		**4.588**	**6.118**	**5.975**	**5.996**	**6.248**	**5.749**	**5.879**	**6.707**	**7.033**	**7.281**	**7.587**	**7.940**	**8.393**
Accumulated depreciation		-2.876	-3.252	-3.292	-3.298	-3.609	2105,74727	535,8255454	587,3153465	590,1202465	568,3097271	2237,666412	2558,808876	2695,700879
Net Property, plant and equipment		**1.712**	**2.866**	**2.683**	**2.698**	**2.639**	2.503	2.614	2.953	3.084	3.176	3.331	3.491	3.682
Goodwill		8.503	8.654	8.014	10.637	10.238	10.836	11.469	12.138	12.847	13.598	14.392	15.232	16.122
Intangible assets excluding goodwill		3.589	3.466	2.997	3.650	3.526	3.355	3.754	3.998	4.250	4.391	4.544	4.805	5.062
Non-current receivables		162	178	230	224	279	164	186	196	203	214	222	234	246
Investments in associates		244	233	240	426	537	329	392	445	497	513	498	538	574
Other non-current financial assets		360	248	430	630	660	459	541	630	681	691	687	741	790
Non-current derivative financial assets		1	1	6	2	4	3	4	4	4	4	4	5	5
Net Fixed Assets (Total non-current assets)		**14.571**	**15.646**	**14.600**	**18.267**	**17.883**	**17.648**	**18.960**	**20.366**	**21.565**	**22.587**	**23.677**	**25.046**	**26.481**
Working Capital (Operating current assets)														
Inventories		2.674	2.773	2.993	3.450	4.049	3.115	3.628	3.987	4.237	4.428	4.452	4.757	5.034
Income tax receivable		147	177	150	180	222	149	169	178	184	194	201	213	223
Current receivables		4.035	4.554	4.156	3.787	4.115	4.081	4.639	4.883	5.052	5.338	5.522	5.839	6.131
Cash and cash equivalents		1.688	1.425	3.226	2.303	1.172	1.932	2.244	2.528	2.355	2.360	2.632	2.787	2.918
Total Net Working Capital (total operating current assets)		**8.544**	**8.929**	**10.525**	**9.720**	**9.558**	**9.277**	**10.680**	**11.576**	**11.828**	**12.320**	**12.807**	**13.595**	**14.306**
Securities (Non-operating assets)														
Deferred tax assets		1.828	1.865	1.820	2.216	2.449	1.987	2.287	2.489	2.657	2.763	2.798	2.981	3.152
Other non-current assets		47	47	66	129	98	76	93	107	118	114	116	126	134
Other current financial assets		436	1	0	2	11	87	23	28	35	44	52	41	46
Other current assets		469	476	424	493	490	458	517	551	583	605	624	661	696
Current derivative financial assets		36	38	105	61	123	72	89	104	104	115	110	120	127
Asset classified as held for sale		87	13	173	71	77	84	94	116	102	109	116	123	131
Total securities		**2.903**	**2.440**	**2.588**	**2.972**	**3.248**	**2.763**	**3.103**	**3.396**	**3.599**	**3.750**	**3.817**	**4.053**	**4.286**
Total assets		**26.018**	**27.015**	**27.713**	**30.959**	**30.689**	**29.687**	**32.743**	**35.337**	**36.992**	**38.656**	**40.302**	**42.694**	**45.073**
Net Debt, other claims & financial														
Working capital (liabilities)														
Accounts payable		2.303	2.089	2.119	1.872	1.968	2.014	2.222	2.359	2.420	2.555	2.665	2.805	2.947
Total Working Capital liabilities		**2.303**	**2.089**	**2.119**	**1.872**	**1.968**	**2.014**	**2.222**	**2.359**	**2.420**	**2.555**	**2.665**	**2.805**	**2.947**
Non-operating liabilities:														
Longterm provisions		1.788	1.603	1.458	1.315	1.097	1.410	1.517	1.573	1.603	1.672	1.795	1.874	1.960
Deferred tax liabilities		152	143	59	83	91	102	104	101	112	119	124	129	135
Non-current contract liabilities		226	348	403	446	515	379	463	511	538	560	562	604	639
Non-current tax liabilities		0	186	291	544	435	288	390	452	492	477	479	526	559
Other non-current liabilities		253	71	74	56	60	100	80	85	88	97	105	104	110
Current derivative financial liabilities		176	67	77	83	207	119	123	140	156	175	164	173	186
Income tax payable		118	100	57	128	40	86	91	93	102	95	108	112	118
Accrued liabilities		1.537	1.632	1.678	1.784	1.626	1.611	1.843	1.977	2.053	2.116	2.209	2.341	2.463
Current contract liabilities		1.303	1.170	1.239	1.491	1.696	1.348	1.538	1.692	1.806	1.881	1.898	2.022	2.141
Short-term provisions		363	556	522	998	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018	1.018
Liabilities directly associated with assets held for sale		12	0	30	1	0	9	9	11	7	8	10	10	11
Other current liabilities		737	856	785	587	448	662	734	744	734	770	842	879	914
Non-current derivative financial liabilities		114	124	86	119	4	87	92	90	91	83	103	106	109
Total non-operating liabilities		**6.779**	**6.856**	**6.759**	**7.635**	**7.237**	**7.217**	**8.002**	**8.489**	**8.800**	**9.071**	**9.416**	**9.900**	**10.363**
Financial Debt:														
Short-term debt		1.394	508	1.229	506	931	2.607	2.384	2.621	2.512	2.836	3.001	3.063	3.229
Long-term debt		3.427	4.939	5.705	6.473	7.270	8.768	17.297	18.067	19.029	19.775	20.482	21.732	22.809
Total Financial Debt		**4.821**	**5.447**	**6.934**	**6.979**	**8.201**	**10.304**	**10.495**	**11.380**	**11.834**	**12.378**	**14.018**	**14.789**	**15.566**
total debt growth		2,23%	12,98%	27,30%	0,65%	17,51%	25,65%	1,85%	8,44%	3,98%	4,60%	13,25%	5,50%	5,25%
Total liabilities		**13.903**	**14.392**	**15.812**	**16.486**	**17.406**	**19.536**	**20.719**	**22.228**	**23.054**	**24.004**	**26.099**	**27.494**	**28.875**
Equity:														
Shareholders' equity		12.088	12.597	11.870	14.438	13.249	10.120	11.989	13.070	13.897	14.611	14.160	15.154	16.149
Non-controlling interest		29	28	31	36	34	31	35	39	41	42	43	46	48
Group equity		**12.117**	**12.625**	**11.901**	**14.474**	**13.283**	**10.151**	**12.024**	**13.109**	**13.938**	**14.653**	**14.203**	**15.200**	**16.198**
Current liabilities		***7.943***	***6.978***	***7.736***	***7.450***	***7.934***	***9.473***	***9.961***	***10.657***	***10.808***	***11.454***	***11.915***	***12.425***	***13.027***
Current liabilities		***47***	***39***	***45***	***40***	***41***	***42***	***42***	***42***	***41***	***42***	***42***	***42***	***42***
Total liabilities and group equity		**26.020**	**27.017**	**27.713**	**30.960**	**30.689**	**29.687**	**32.743**	**35.337**	**36.992**	**38.656**	**40.302**	**42.694**	**45.073**

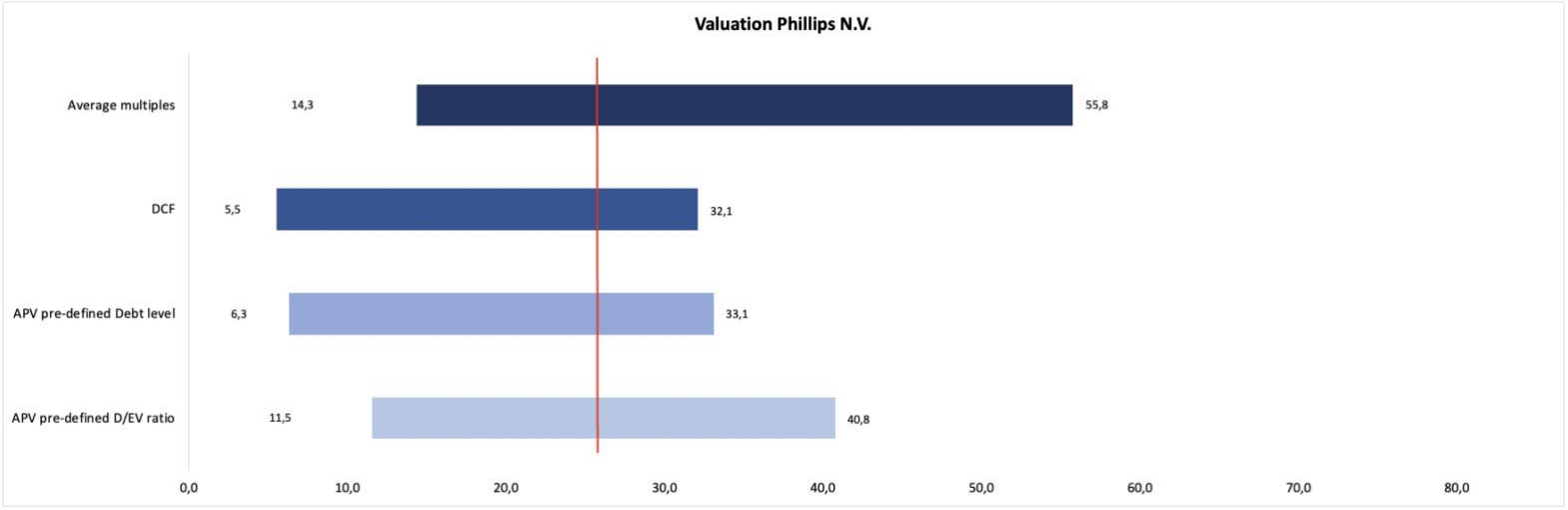
Table 14: Free Cash Flow Map

Free Cash Flow Map	2018 A	2019 A	2020 A	2021 A	2022 A	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E	2029 E	2030 E
Net Operating Income (EBIT)	1.450	1.668	1.560	3.359	-1.528	1.186	1.566	1.566	1.524	1.759	1.867	2.034	2.154
Notional Income Tax	-361	-420	-393	-762	361	-280	-370	-370	-360	-415	-441	-480	-508
Tax Adjustments	129	41	141	833	-297	353	451	406	362	474	493	527	548
(=) NOPLAT	**1.218**	**1.288**	**1.308**	**3.430**	**-1.465**	**1.259**	**1.647**	**1.603**	**1.527**	**1.818**	**1.920**	**2.080**	**2.194**
(+) Depreciation & Amortization	447	572	591	479	535	531	536	608	623	660	688	717	757
Operating Gross Cash Flow Cash	**1.665**	**1.860**	**1.899**	**3.909**	**-930**	**1.790**	**2.183**	**2.211**	**2.150**	**2.478**	**2.608**	**2.798**	**2.950**
(-) Change in NWC	21	599	1.566	-558	-258	-328	1.196	759	192	356	377	648	569
(-) Net Capex	1.494	1.647	-455	4.146	151	296	1.848	2.014	1.822	1.683	1.778	2.086	2.191
(=) Total Investments	1.515	2.246	1.111	3.588	-107	-32	3.044	2.772	2.013	2.039	2.155	2.734	2.761
(=) Operating free cash flow	150	-386	788	321	-823	1.822	-861	-562	136	439	453	64	190
(+) Change in securities	745	769	-1.141	708	467	885	298	382	324	527	638	551	596
(+) Change in non-operating liabilities	267	110	-58	989	-317	-2	824	525	345	310	385	530	511
Non-operating free cash flow	**1.012**	**879**	**-1.199**	**1.697**	**150**	**883**	**1.122**	**907**	**669**	**837**	**1.023**	**1.081**	**1.107**
Total Free Cash Flow to the Firm	**1.162**	**493**	**-411**	**2.018**	**-673**	**2.705**	**261**	**346**	**805**	**1.276**	**1.476**	**1.145**	**1.297**
Net interest expense	-157	-169	-160	-141	-210	-325	-324	-344	-360	-381	-432	-453	-476
Tax Shield	39	43	40	32	50	77	77	81	85	90	102	107	112
Change in Financial Debt	105	626	1.487	45	1.222	2.103	191	886	453	544	1.640	771	777
Change in Shareowners Funds (in cash)	-1.147	-993	-958	-1.953	-390	-4.560	-204	-968	-984	-1.529	-2.786	-1.570	-1.710
Financing Cash Flow	**-1.160**	**-493**	**409**	**-2.017**	**672**	**-2.705**	**-261**	**-346**	**-805**	**-1.276**	**-1.476**	**-1.145**	**-1.297**
Check	*2*	*0*	*-2*	*1*	*-1*	*0*	*-0*	*0*	*-0*	*0*	*0*	*-0*	*0*

Table 15: Valuation weights

Different Valuation method Philips	Weights	
1. Adjusted Present Value assuming pre-defined Debt level	€ 26,14	30%
2. Adjusted Present Value assuming pre-defined D/EV ratio	€ 20,01	30%
3. Discounted Cash Flows	€ 19,22	30%
4. Multiples	€ 34,01	20%
Recommendation price per share		**€ 26,41**

Graph 28: Football field chart



Disclosures and Disclaimers

Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

This report was prepared by Bram Heesen and Victor Jacobs, Master in Finance students of Nova School of Business and Economics ("Nova SBE"), within the context of the Field Lab – Equity Research.

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References

[i] https://www.philips.com/a-w/about/our-history.html
[ii] https://www.philips.com/a-w/about.html
[iii] https://www.reuters.com/world/china/chinas-hillhouse-capital-buy-philips-appliances-arm-37-bln-euros-2021-03-25/#:~:text=Philips%20sells%20appliances%20arm%20to%20China%27s%20Hillhouse%20for%203.7%20bln%20euros,-By%20Reuters%20and&text=AMSTERDAM%2C%20March%2025%20(Reuters),it%20focuses%20on%20healthcare%20equipment.
[iv] https://www.philips.com/a-w/about/news/archive/corpcomms/news/press/2023/philips-third-quarter-results-2023.html
[v] https://www.exor.com/press-releases/2023-08-14/exor-becomes-long-term-investor-philips-supporting-companys-strategy
[vi] https://www.philips.com/a-w/about/our-strategy.html
[vii] Philips Annual Report 2022
[viii] https://www.philips.com/a-w/about/investor-relations/governance/corporate-governance
[ix] https://www.philips.com/a-w/about/investor-relations/governance/corporate-governance.html
[x] The S&P Global BMI Health Care fact list
[xi] Philips Annual Report 2022
[xii] https://civicscience.com/oral-b-leads-the-electric-toothbrush-market-but-theres-room-for-brands-to-grow/
[xiii] https://www.grandviewresearch.com/industry-analysis/beauty-personal-care-products-market
[xiv] https://www.polarismarketresearch.com/industry-analysis/personal-care-products-market
[xv] https://www.northwell.edu/about-northwell/financial-health-annual-reports
[xvi] Philips Annual Report 2022, 2021, 2020
[xvii] https://www.ipcc.ch/
[xviii] https://www.fda.gov/medical-devices/respiratory-devices/recalled-philips-ventilators-bipap-machines-and-cpap-machines#:~:text=Recalled%20Philips%20Ventilators%2C%20BiPAP%20Machines%2C%20and%20CPAP%20Machines,-Share&text=In%20June%202021%2C%20Philips%20Respironics,because%20of%20potential%20health%20risks.