



eHealth Report Germany

Statista Digital Market Outlook – Market Report

September 2018

statista 

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The WHO defines eHealth as the use of IT in healthcare

Definition: eHealth

According to the World Health Organization, the official definition of eHealth is as follows: **“eHealth is the secure use of information and communications technologies in support of health and health-related fields, including healthcare services and processes, prevention, health surveillance, treatment, health literature and health education, knowledge and research. eHealth can help cut costs and also includes a high sales potential.”**

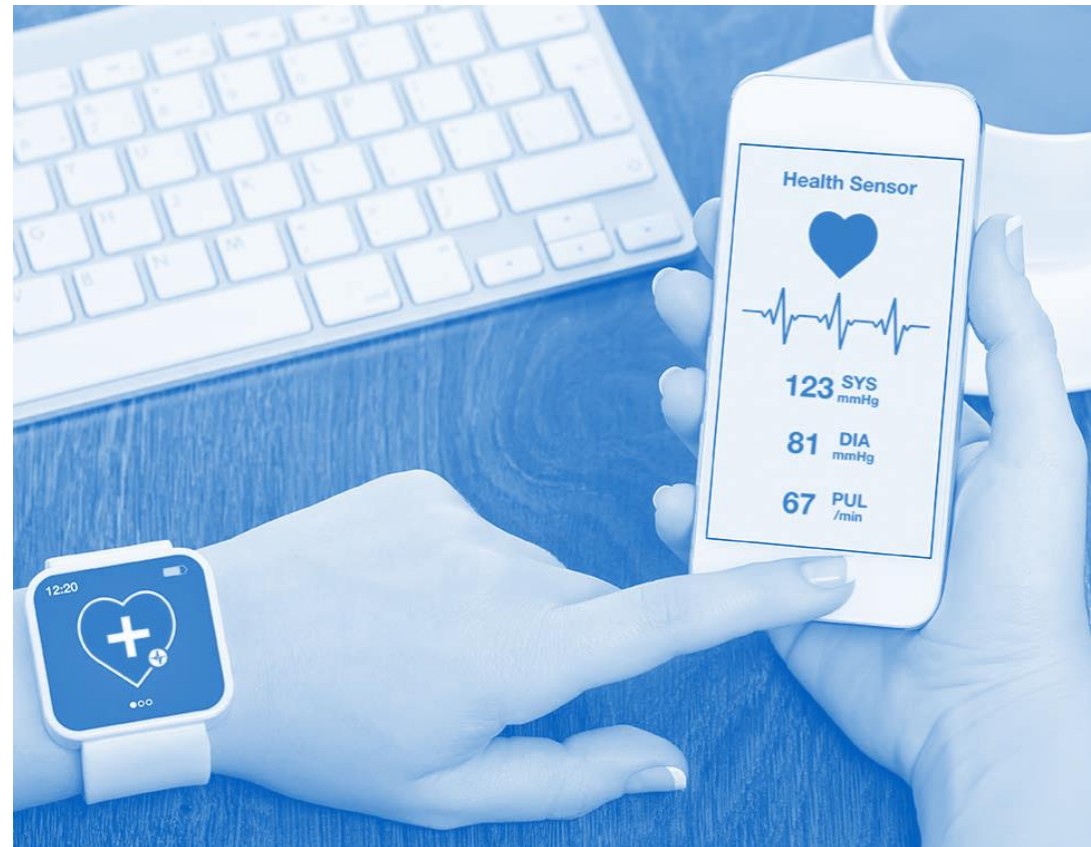
The field of eHealth is wide and it is not simply possible to cover all areas that represent the eHealth market in its entirety. Therefore, this report contains selected, most relevant eHealth areas with certain examples:

Health surveillance:

- Apps and devices for fitness and health
- Ambient Assisted Living

Treatment:

- Online medication
- Heart failure
- Diabetes
- Hypertension





COUNTRY OVERVIEW

The country overview provides a broader understanding of the country-specific healthcare system and the population's health status.

In this chapter, healthcare expenditure will be discussed and various health-related variables will be presented. Also, an overview of the state of digital infrastructure in the context of eHealth is given.

90% of Germans are covered by the statutory health insurance, the rest is privately insured

Healthcare system overview: introduction

Germany has a healthcare system in which health insurance is mandatory. As a consequence, **insurance coverage** among the population is almost **100%**. 90% of the population are insured via the **statutory health insurance scheme**, to which they contribute according to their **level of income**. The incurred costs are shared between employer and employee in equal parts.

This **contribution is taken directly out of the paycheck** and is used to cover the expenses for those in need, regardless of their previous contributions. The remaining **10% of the population** that are not part of the statutory insurance are **privately insured**, due to self-employment, a higher income level or a state employee status. Private insurances also offer **additional insurances**, available for different medical areas, e.g. dental supplementary insurances.

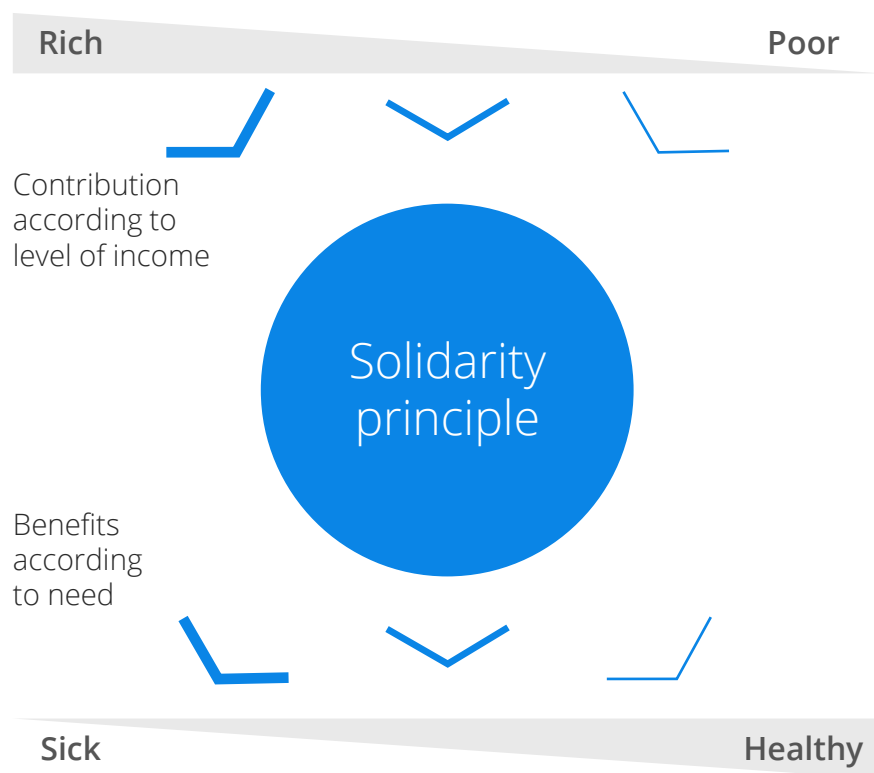
In 2016, Germany's **per-capita spending** on health issues was among the highest in Europe, with **€4,297**. In total, this corresponded to **11.3% of GDP**. As Germans contribute a fixed percentage of their wage to health insurance, 84.5% of health spending is publicly funded and the **out-of-pocket spending** is below most EU countries with only 12.5%.



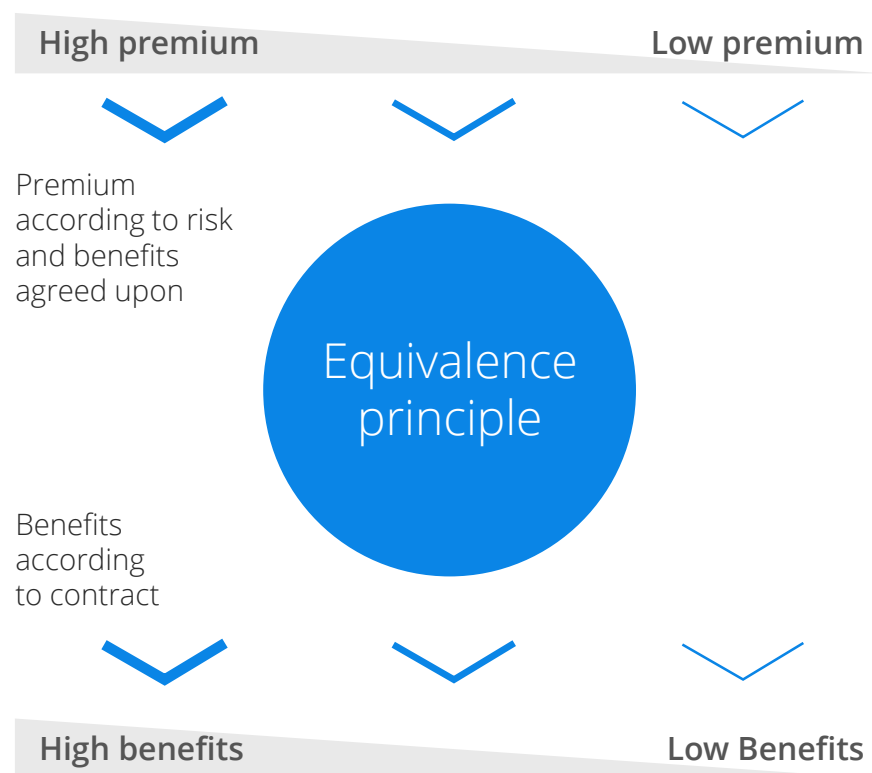
Benefits in private insurance rise with premiums, while statutory insurance is need based

Healthcare system overview: insurance schemes

Statutory health insurance



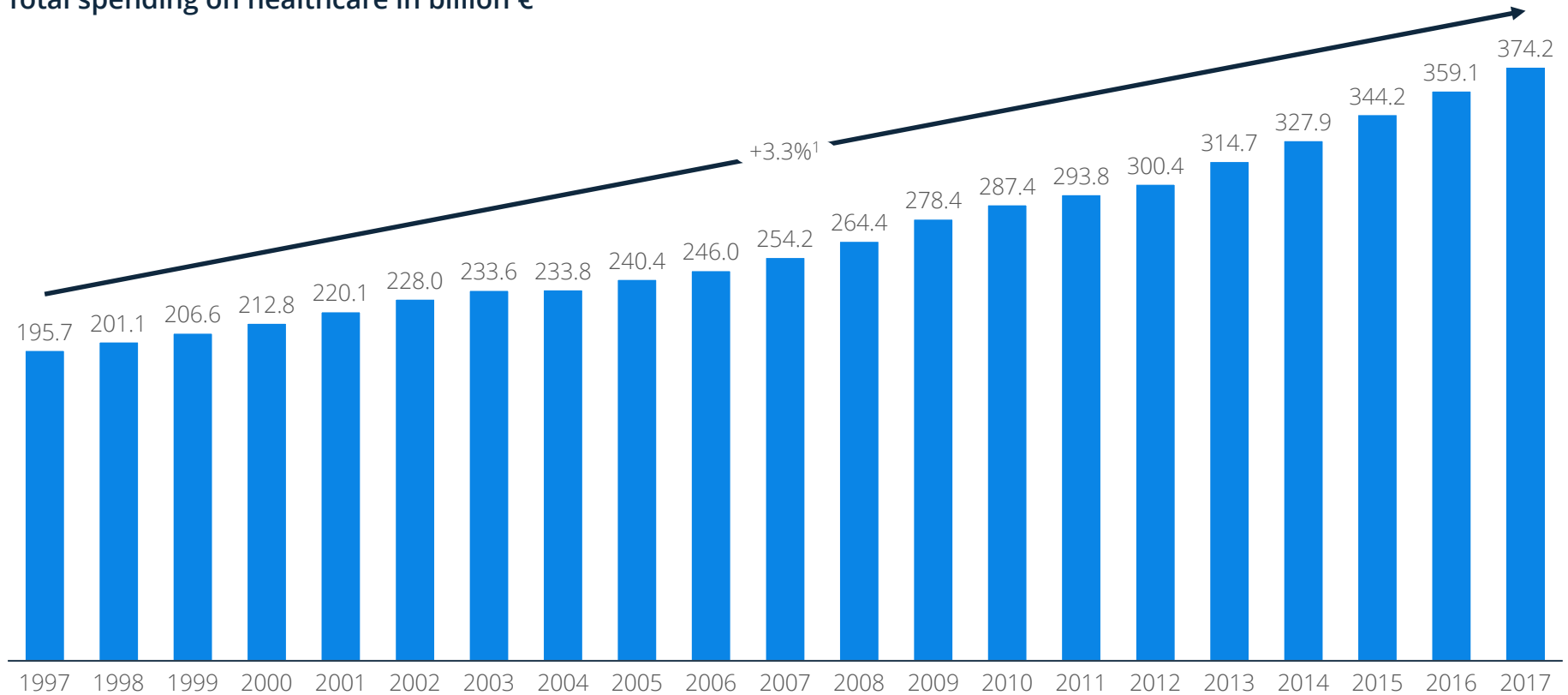
Private health insurance



Total spending on healthcare in Germany is constantly rising

Healthcare system overview: spending (1/4)

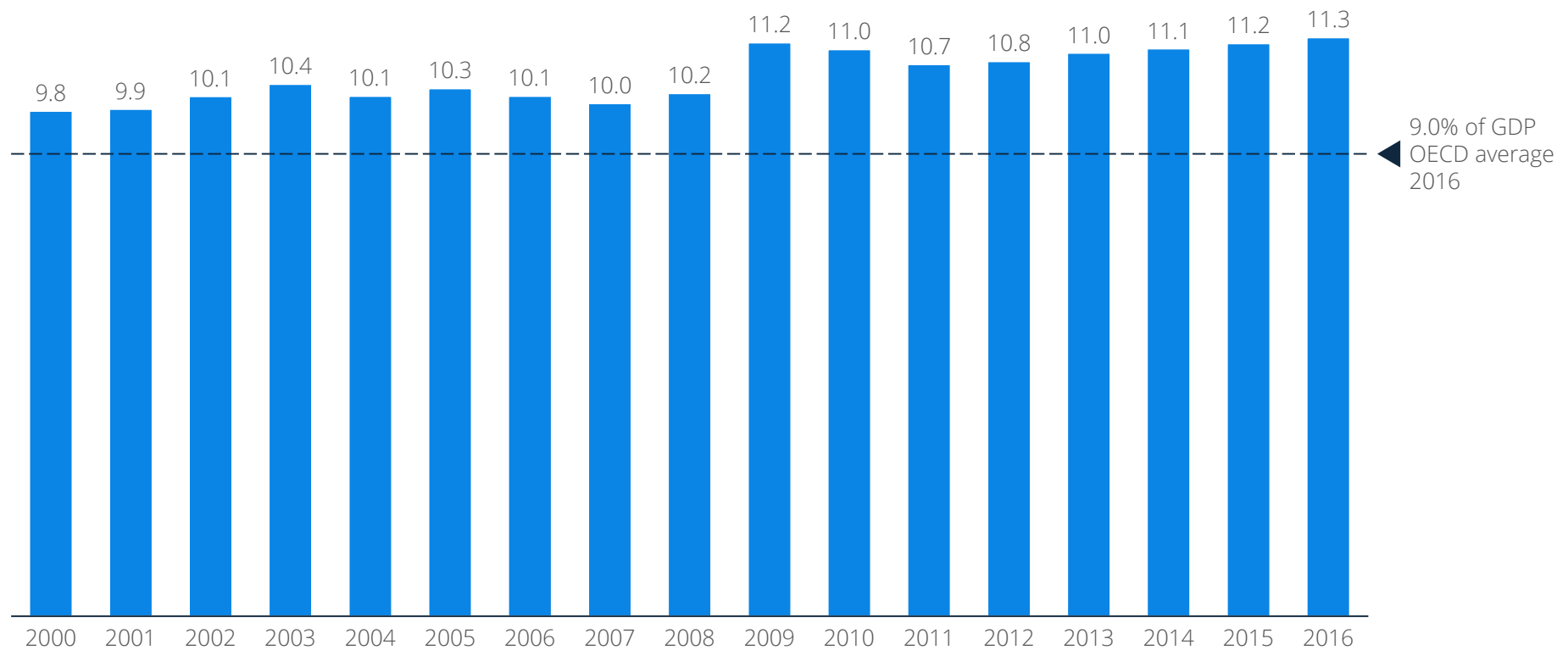
Total spending on healthcare in billion €



In 2016, Germany spent 11.3% of its GDP on healthcare

Healthcare system overview: spending (2/4)

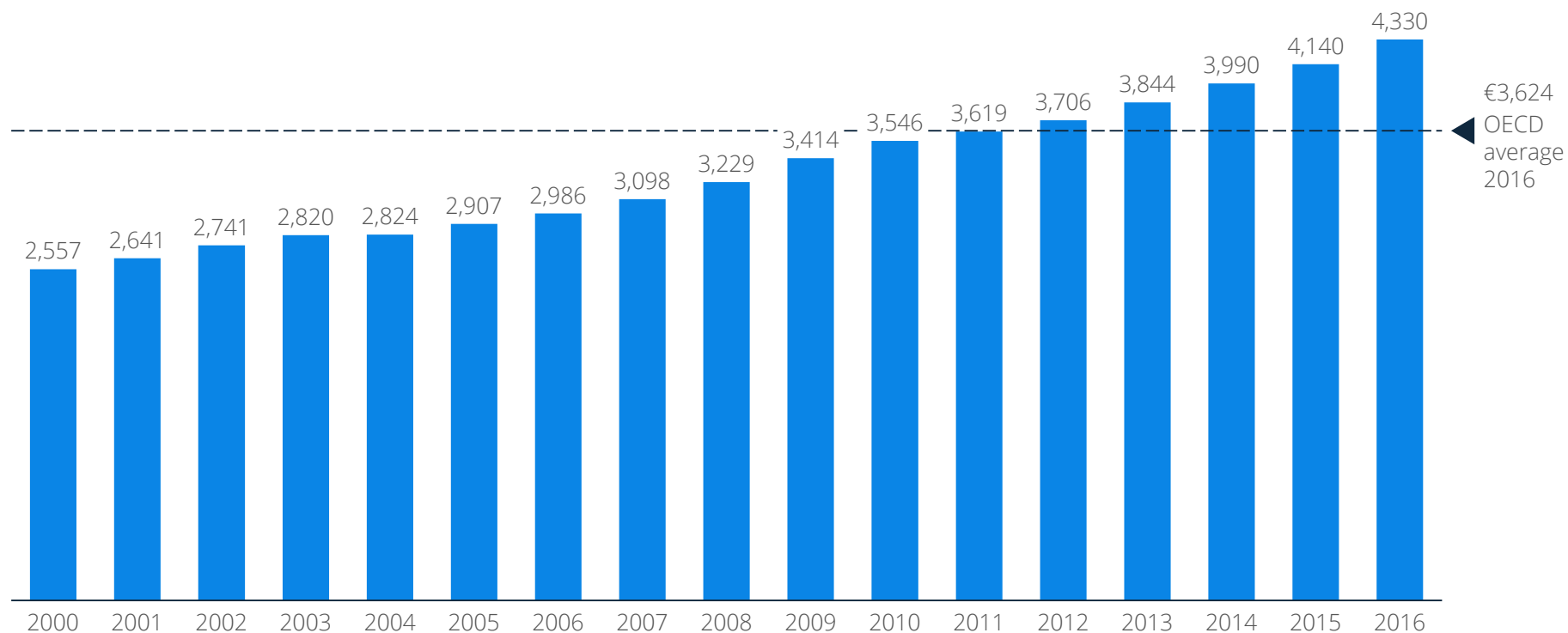
Spending on healthcare in % of GDP



Germany's healthcare spending per capita is above the OECD average

healthcare system overview: spending (3/4)

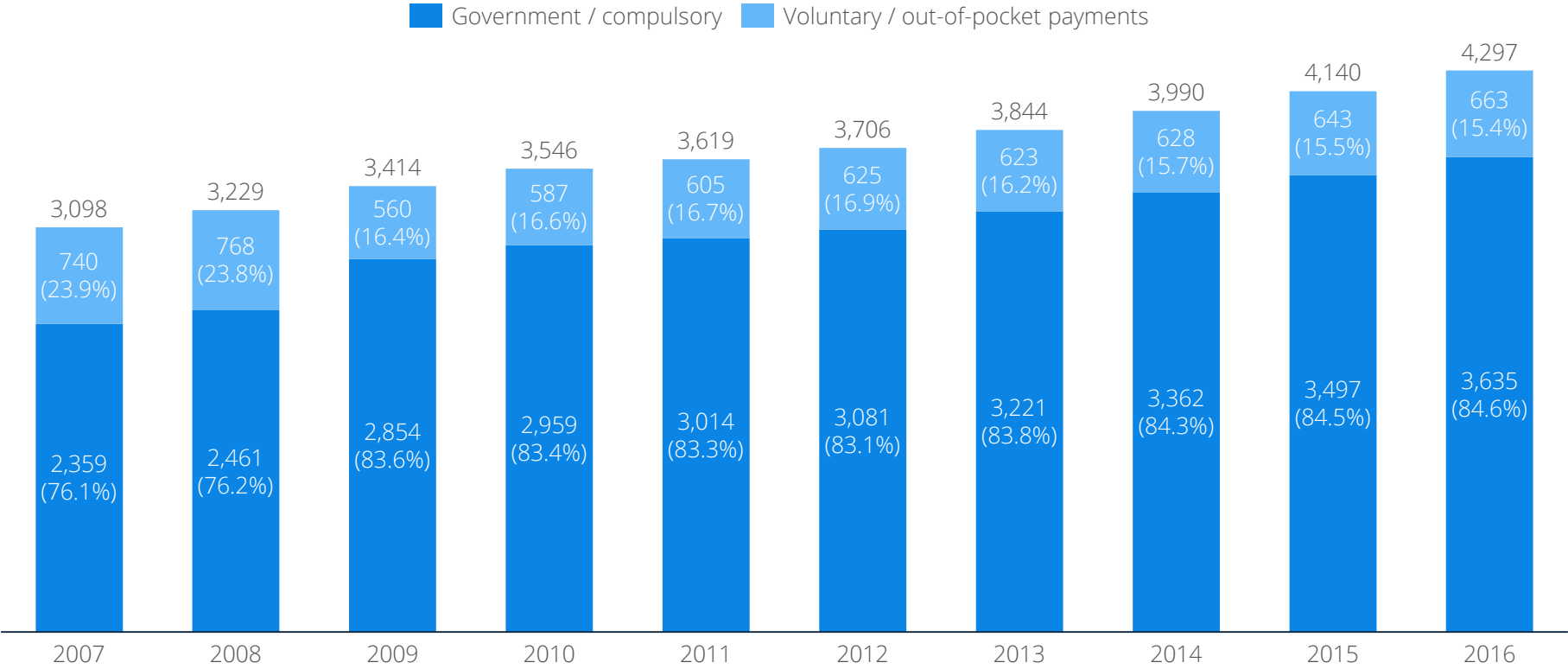
Healthcare spending per capita in €



84.6% of German per-capita spending comes from compulsory health insurance

Healthcare system overview: spending (4/4)

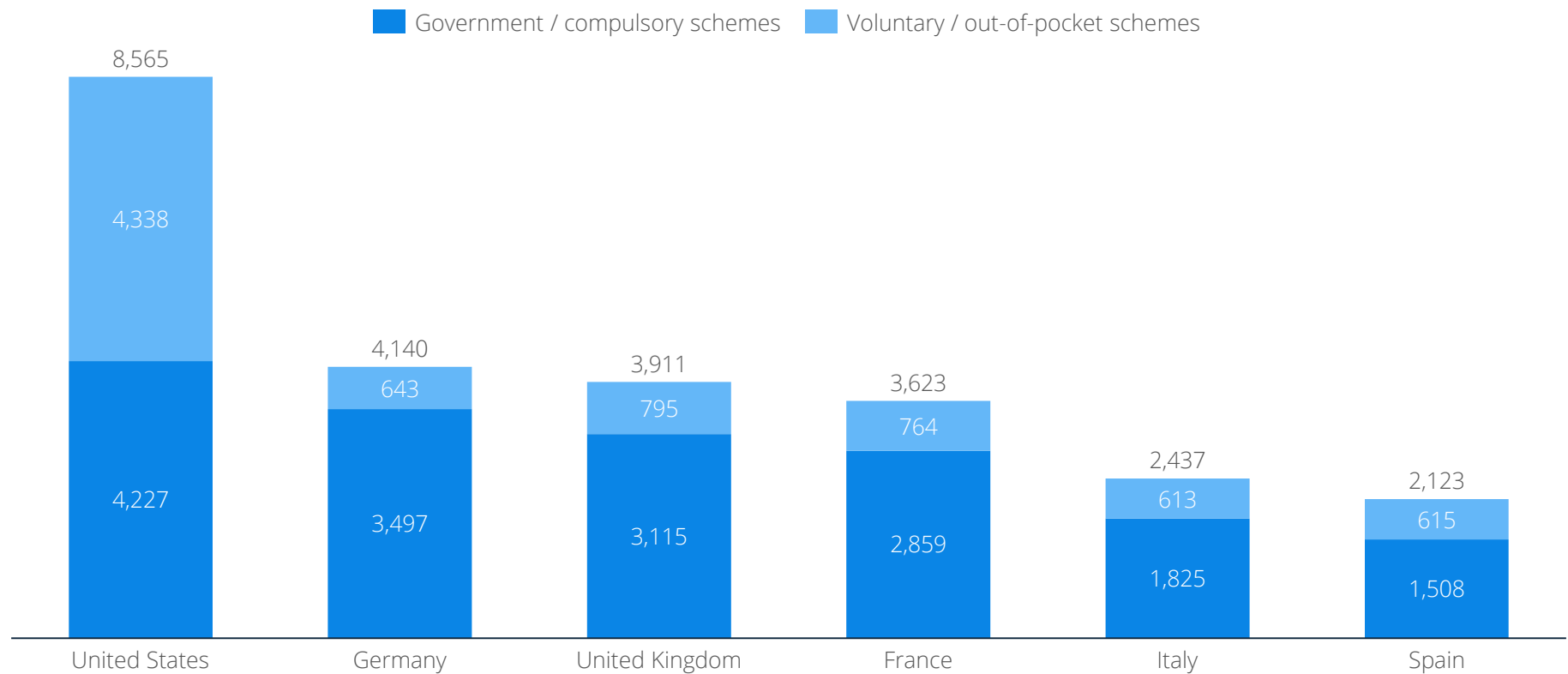
Healthcare spending per capita in €



Germany has a high spending per capita compared to other European countries

Healthcare system overview: country comparison (1/2)

Healthcare spending per capita in 2015 in €

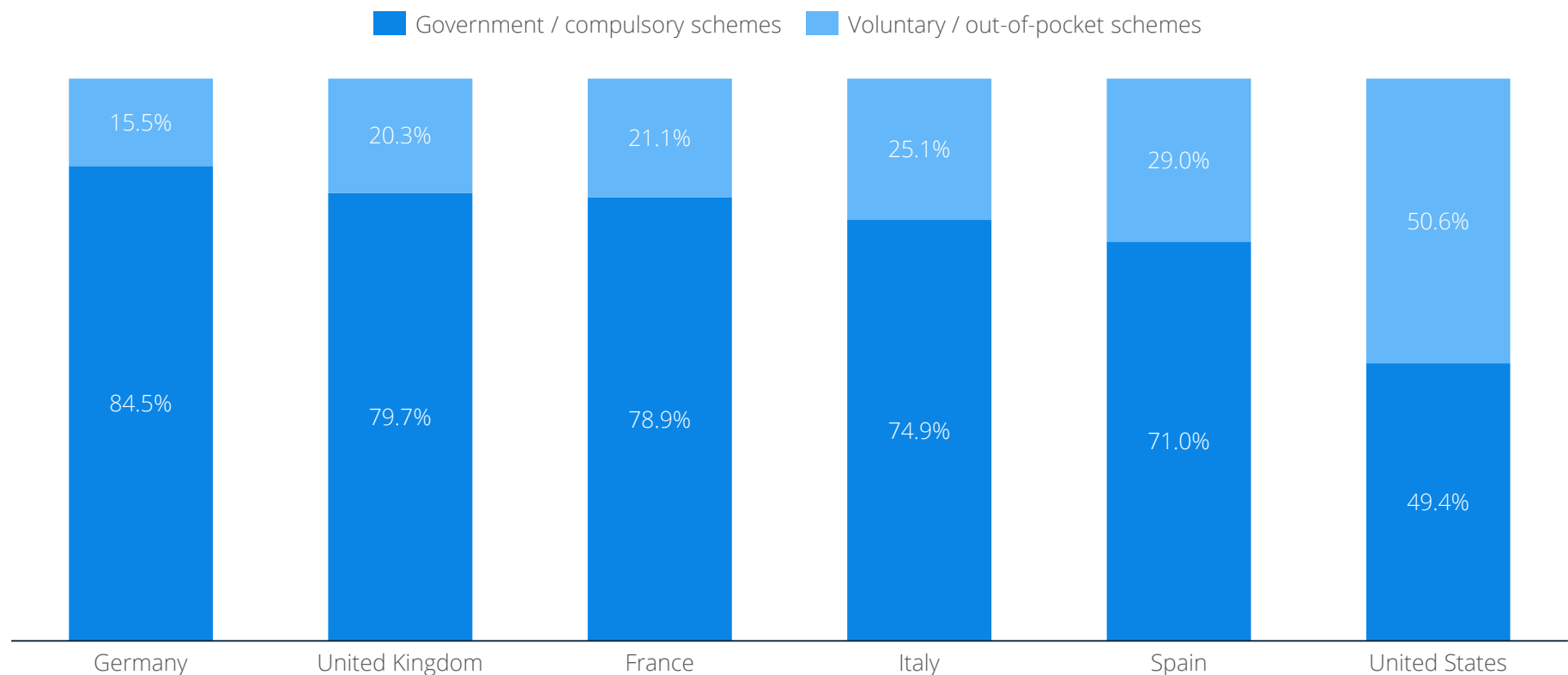


Note: Data for the UK (GBP/EUR 1.3771) and the U.S. (USD/EUR 0.9009) converted according to the average exchange rate for 2015
Source: OECD, Oanda

Compared to other countries, Germany has a high share of compulsory financing

Healthcare system overview: country comparison (2/2)

Share of healthcare spending per capita by source in 2015 in €



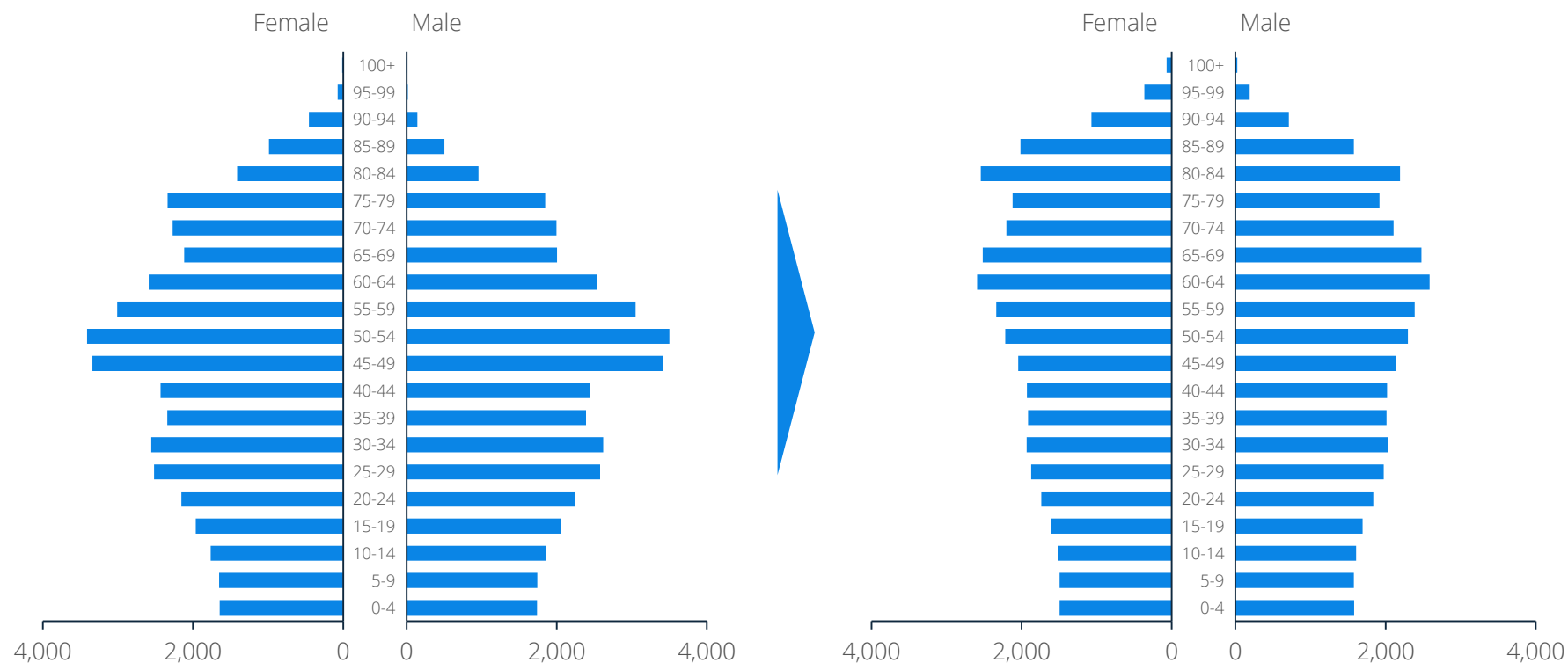
Note: Data for the UK (GBP/EUR 1.3771) and the U.S. (USD/EUR 0.9009) converted according to the average exchange rate for 2015
Source: OECD, Oanda

The German population will be increasingly older

Population health status: age demographics (1/2)

Population per age group in thousand in 2015

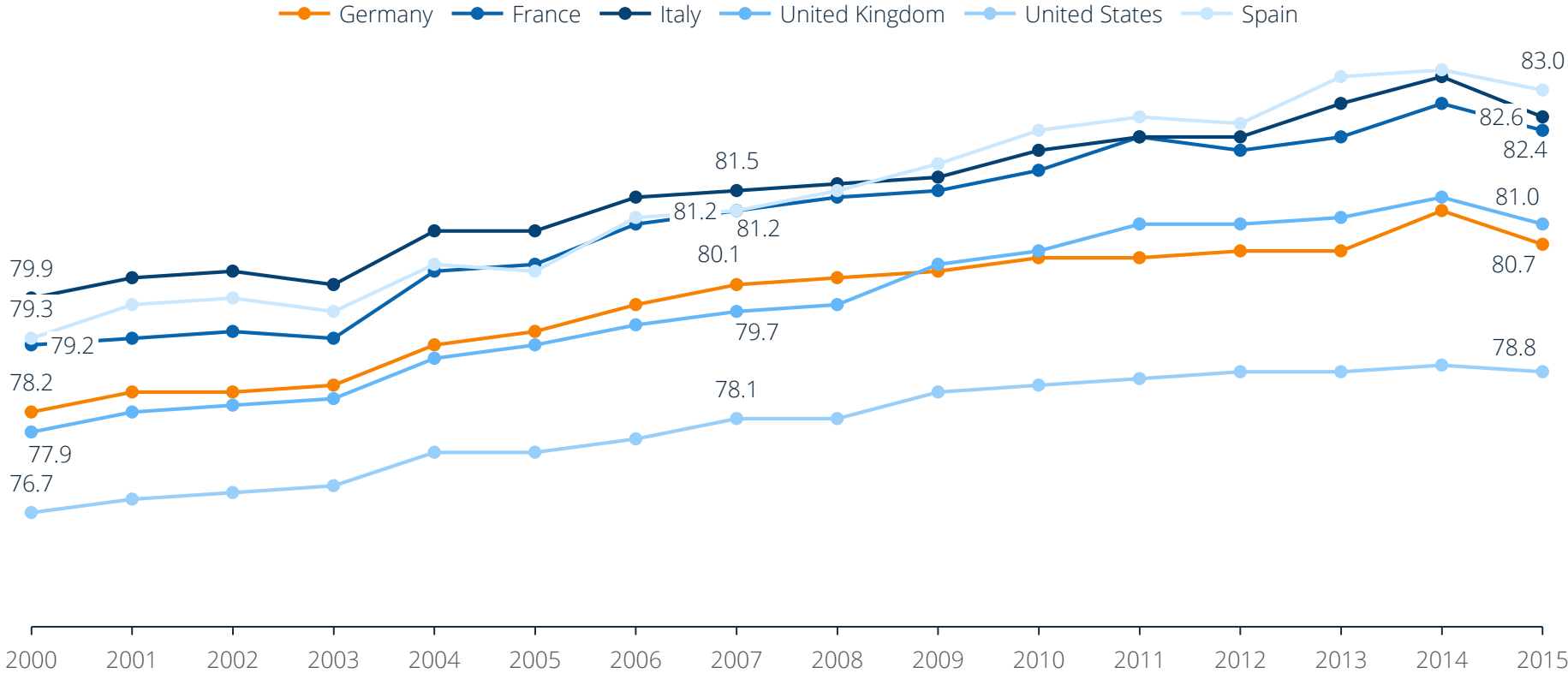
Population per age group in thousand in 2050



Life expectancy in Germany is low in European comparison, but higher than in the U.S.

Population health status: age demographics (2/2)

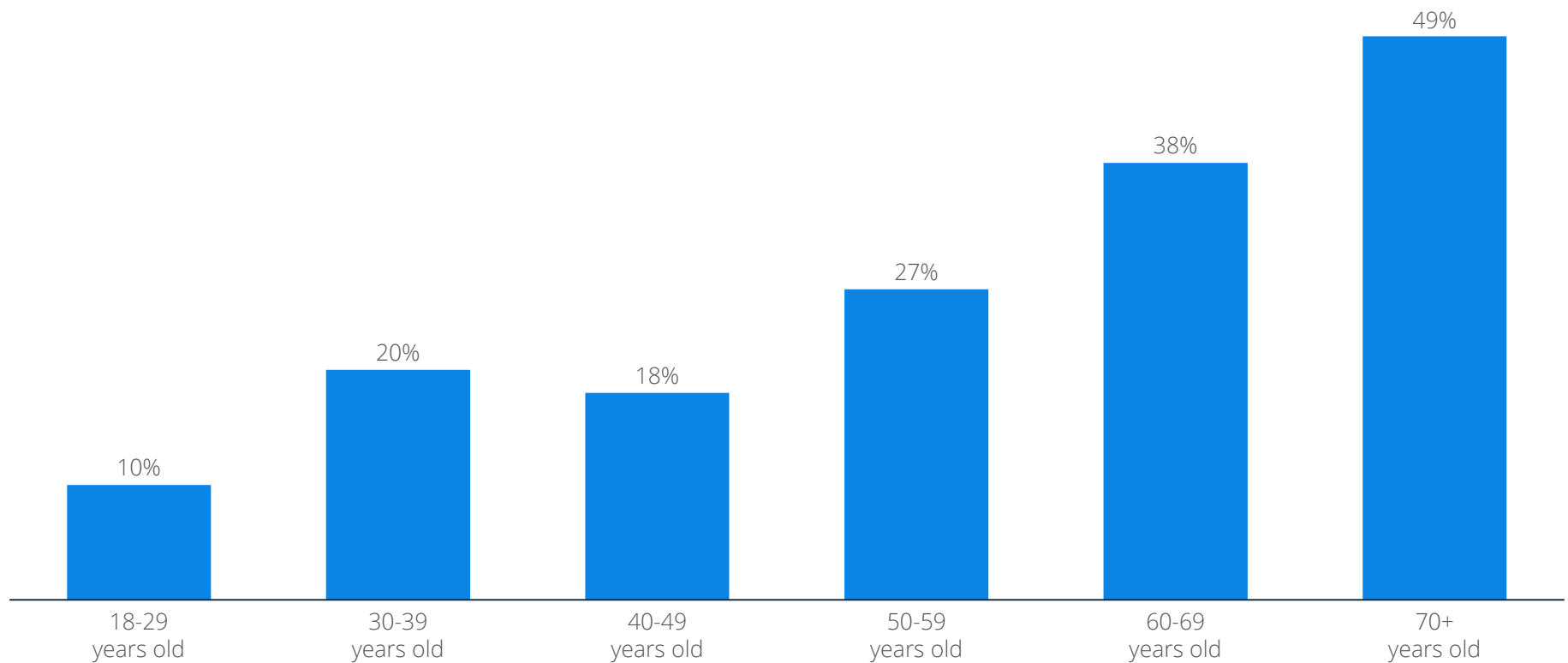
Life expectancy in years



Chronical illnesses are more prevalent among older generations

Population health status: illness & disease (1/2)

Share of citizens suffering from chronic diseases in 2016

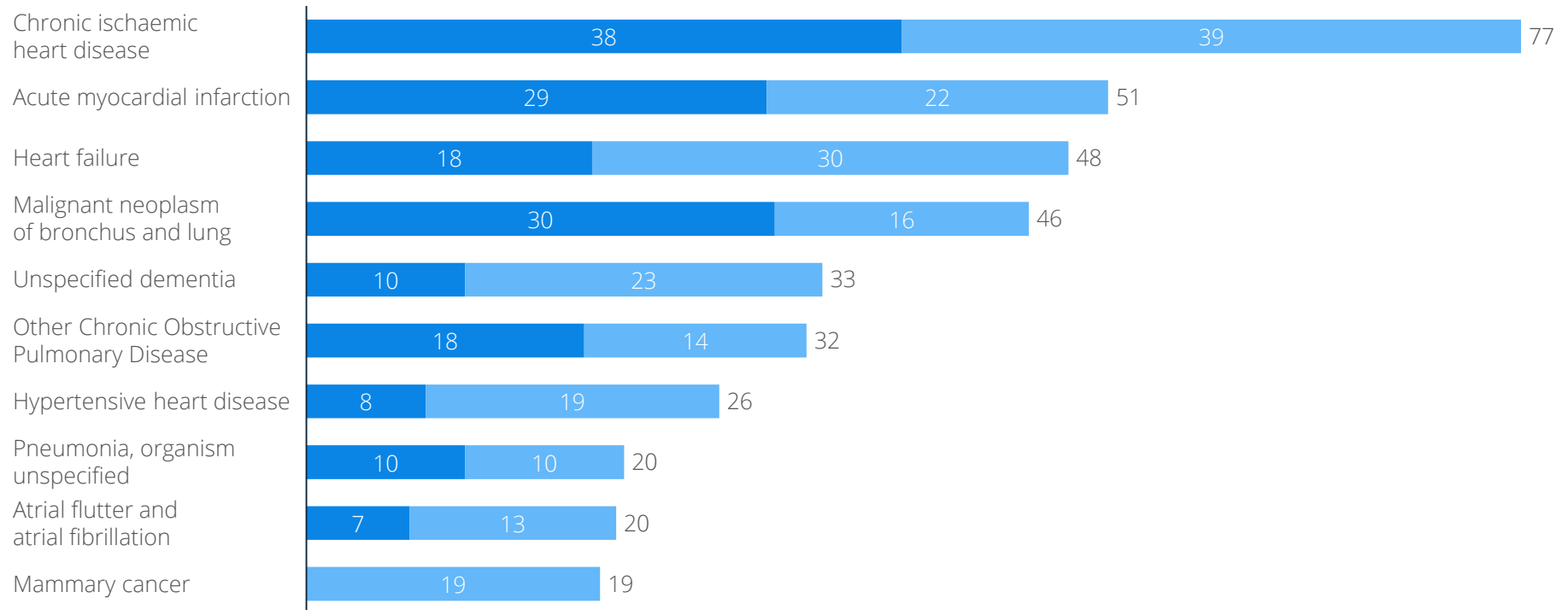


Heart disease is the by far most frequent cause of death in Germany

Population health status: illness & disease (2/2)

Top 10 causes of death in 2015 in thousand

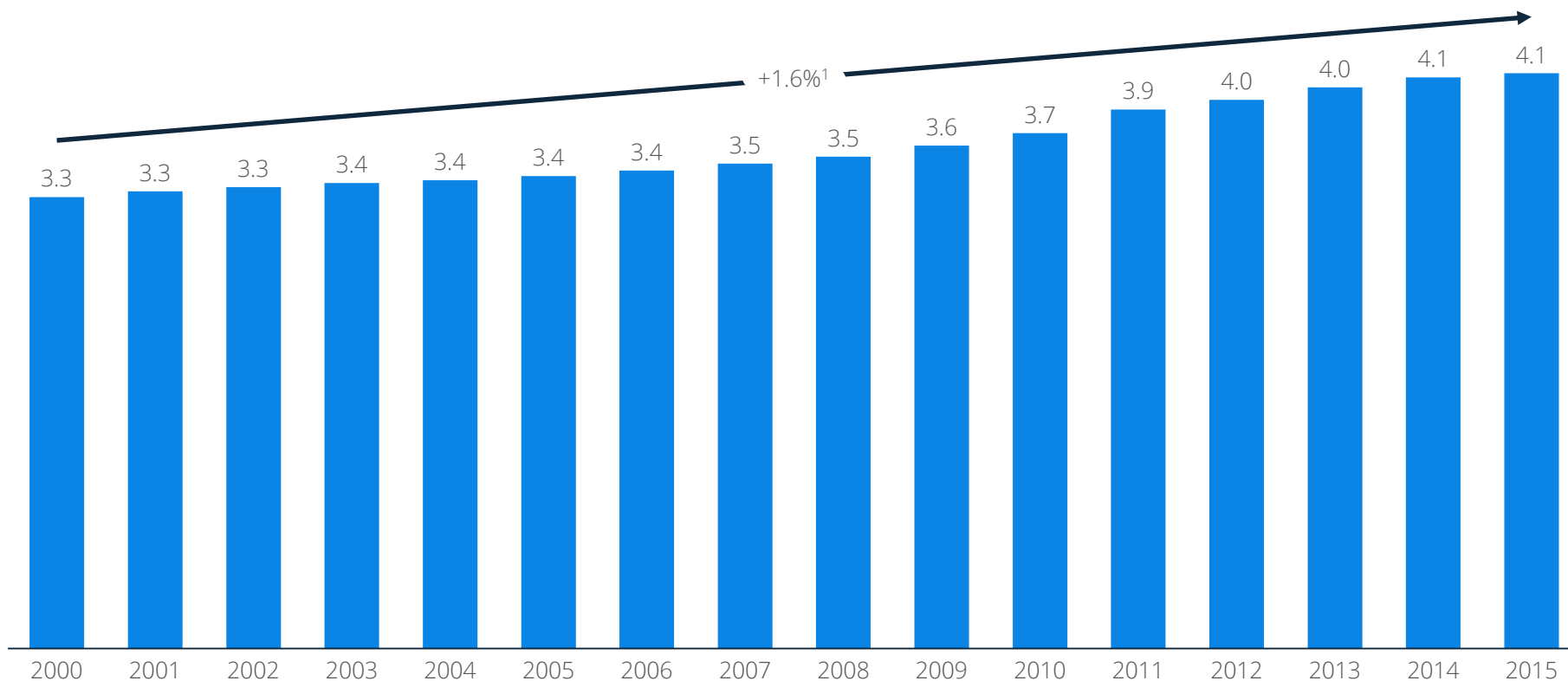
■ Male ■ Female



The number of physicians per 1,000 inhabitants is slowly rising in Germany

Population health status: healthcare resources (1/2)

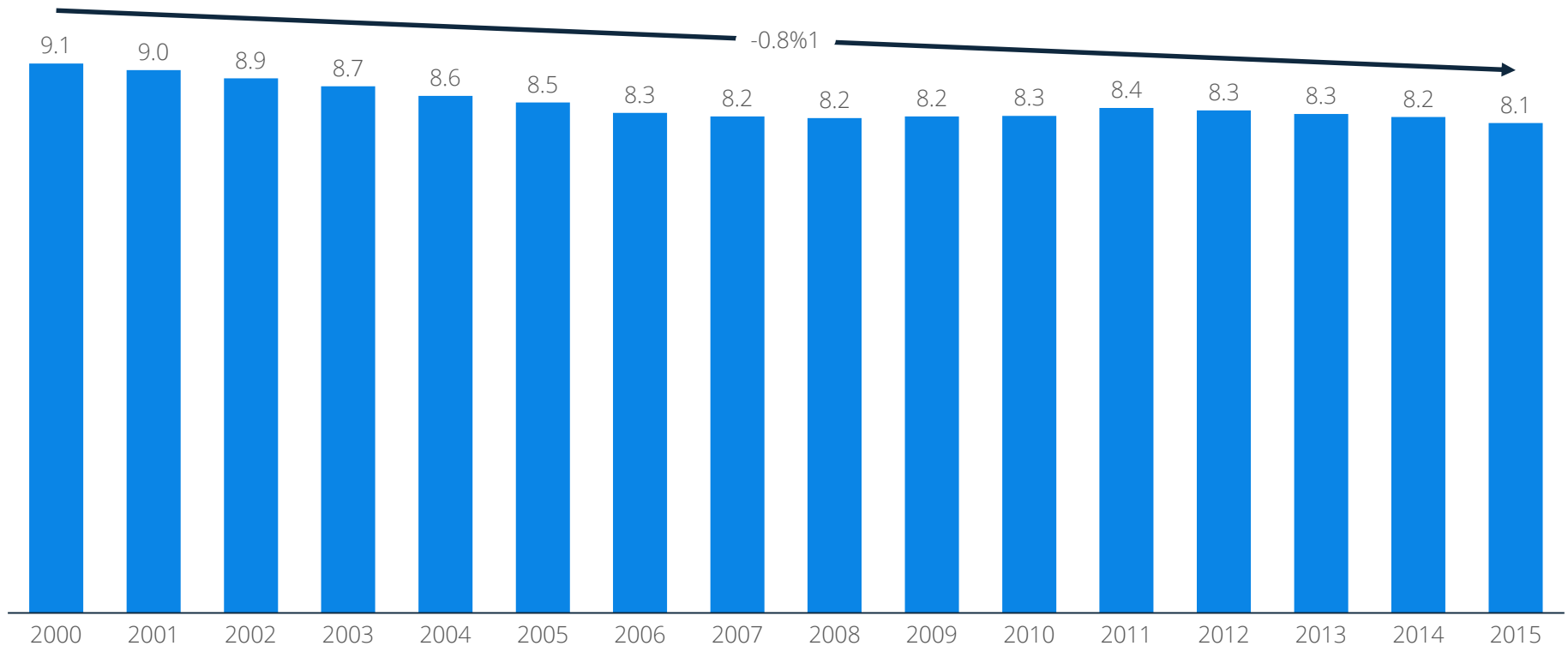
Physician density per 1,000 inhabitants in head counts



The number of hospital beds per 1,000 inhabitants is slowly decreasing in Germany

Population health status: healthcare resources (2/2)

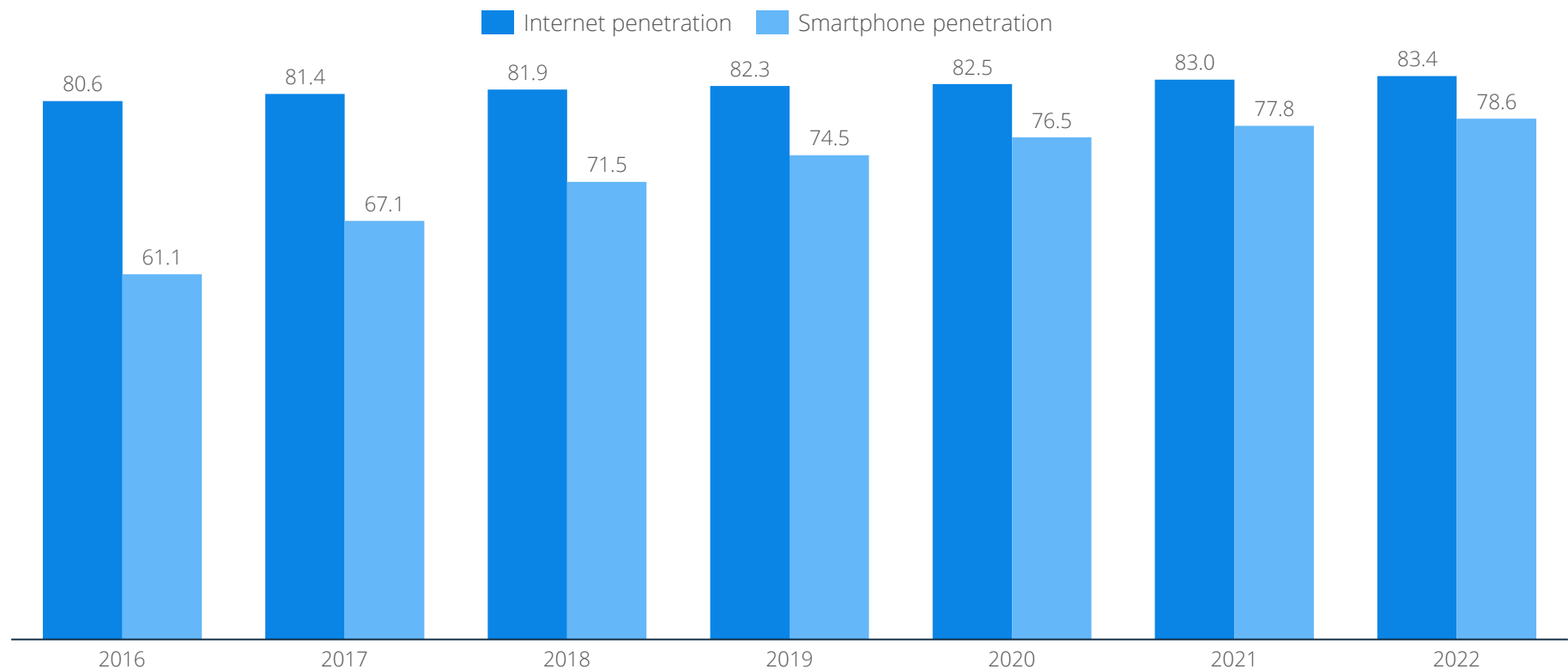
Number of hospital beds per 1,000 inhabitants in head counts



German internet penetration is expected to grow slowly, with smartphone penetration catching up

Digital infrastructure: technology penetration (1/2)

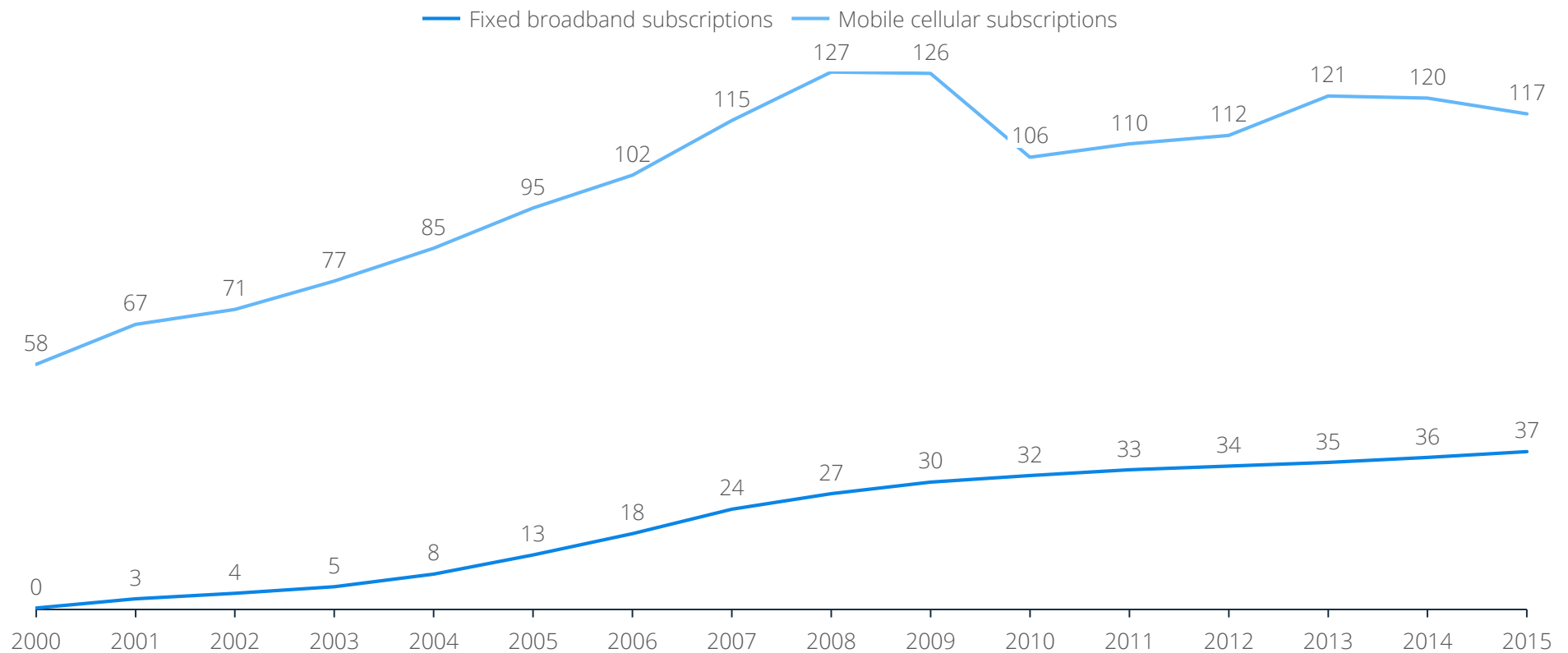
Internet and smartphone penetration in %



People in Germany have more than one cellular subscription

Digital infrastructure: technology penetration (2/2)

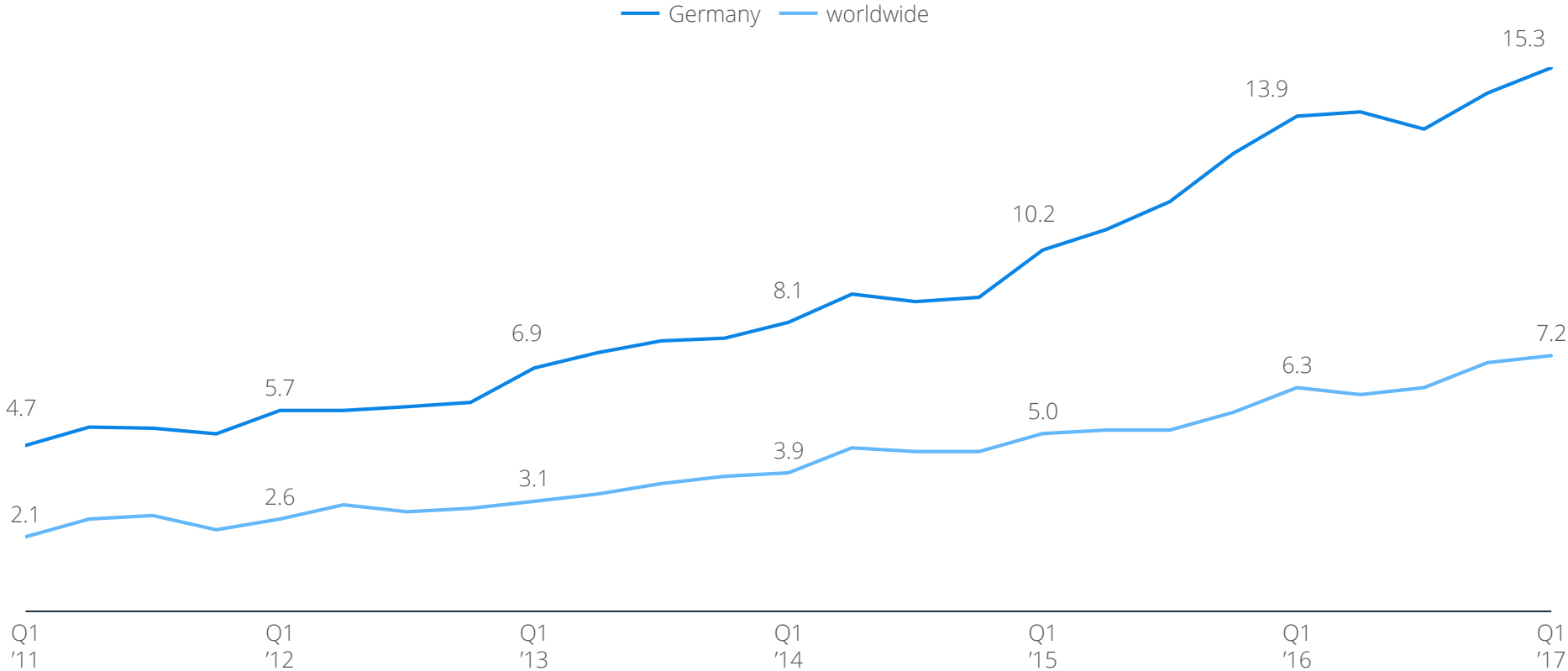
Mobile cellular subscriptions and fixed broadband subscriptions per 100 capita



German internet connection speed is constantly rising and approaching 16 Mbit/s

Digital infrastructure: connectivity

Average transmission speed of internet connections in Mbit/s





FITNESS

The Fitness segment includes apps and wearables that measure and analyze physical activity or body functions.

In this chapter, the current market size, trends and expected developments of the Fitness market will be discussed. Also, an overview of selected wearables will be presented.

Customers benefit from information about their bodies to reach fitness goals

Fitness: segment overview

There are different ways in which customers can benefit from Fitness wearables/trackers and Fitness apps. Fitness **wearables measure and analyze physical activity** or body functions. They are usually combined with an app to give valuable insights into an individual's fitness. These insights can help users to understand their body better and support them in reaching specific fitness goals, for example losing weight, by tracking calories or calculating burned calories with a tracker.

An activity tracker that counts steps can also **motivate** people of average fitness to reach a certain target (e.g. 10,000 steps a day). It can also help **increase everyday activities** by **encouraging** the user to take the stairs instead of the lift, for example.

In the end, everyone who exercises can benefit. Wearables are **handy** and give an **overview of current vital signs**. It is thus more practical and less bulky to use wristwear to get real-time insights into current health data while exercising, than to carry a smartphone. Apps and wearables have features that allow for **tracking progress and setting fitness achievements**. This keeps users motivated and helps them enjoy exercising even more.

Wearable tech is not only appealing to athletes, in fact it is also beneficial for people **with health concerns**, since it gives valuable medical information (e.g. heartrate) and improves **clinical knowledge**.

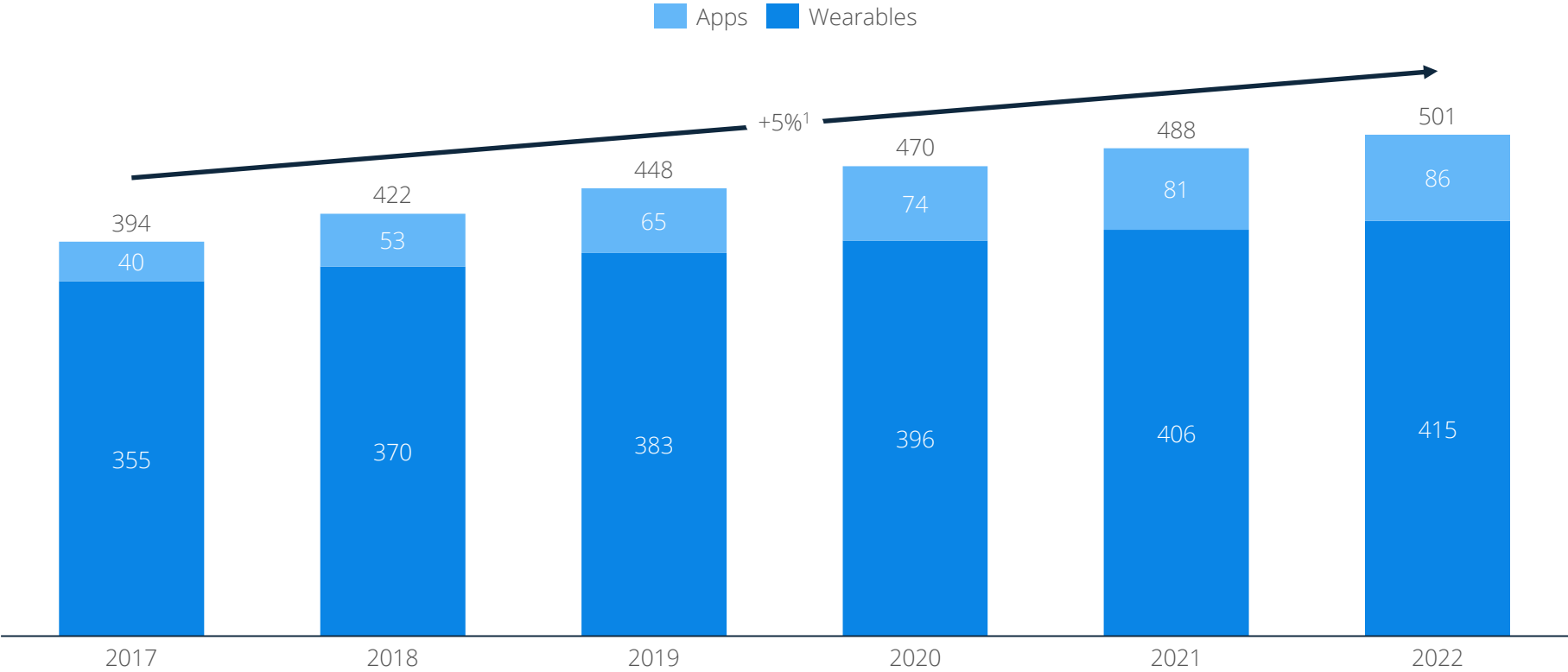
Key takeaways

- Revenue in the Fitness segment amounts to €394 million in 2017
- Revenue is expected to show an annual growth rate (CAGR¹ 2017-2022) of 4.9%, resulting in a market volume of €501 million by 2022
- The average revenue per user amounts to €29 in 2017
- From an international perspective, most revenue will be generated in the U.S. (€3,907 million by 2022)

Revenues of Fitness products are increasing at a CAGR¹ of 5%

Fitness: market size and future developments (1/3)

Revenue in million €



Germany shows a high user growth in Fitness Apps

Fitness: market size and future developments (2/3)

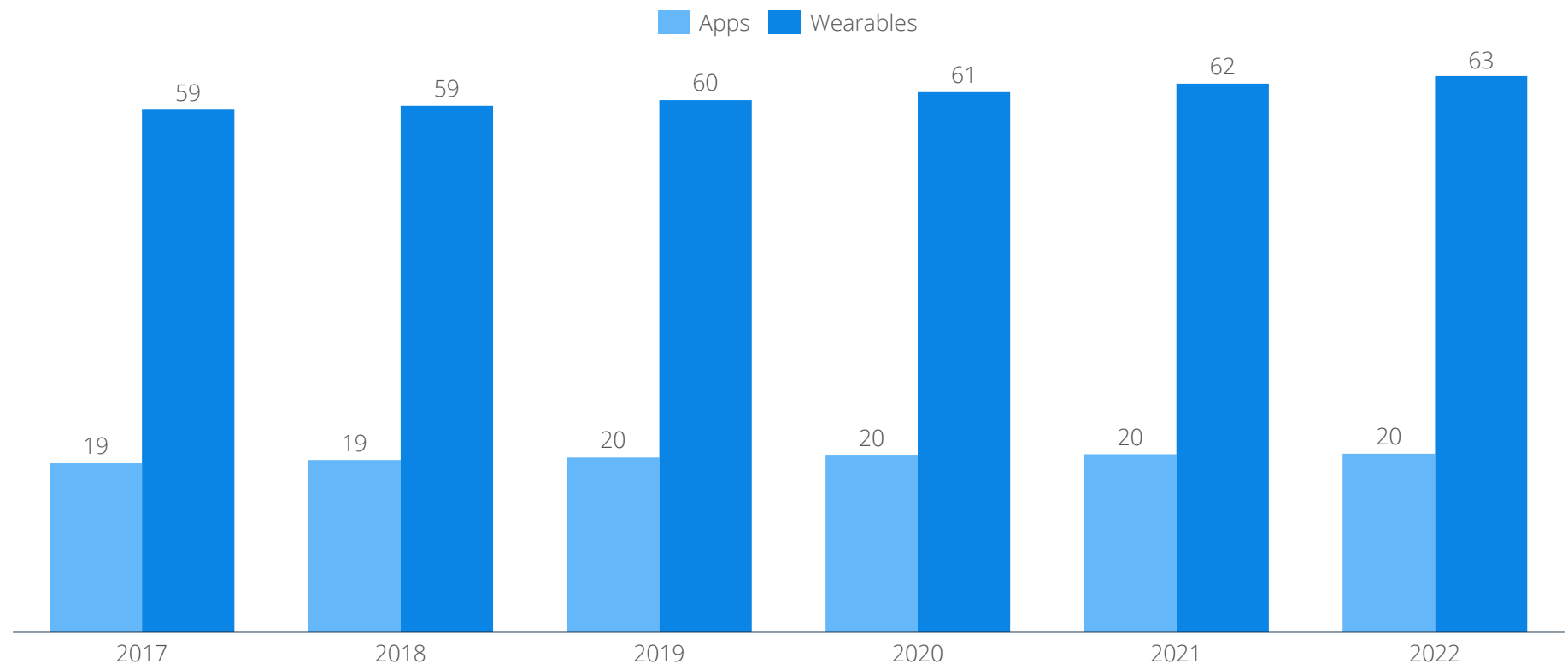
Users in million

| Segment | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | CAGR ¹ 17 - 22 |
|-----------|------|------|------|------|------|------|------------------------------|
| Wearables | 6.0 | 6.2 | 6.4 | 6.5 | 6.6 | 6.6 | 1.9% |
| Apps | 2.1 | 2.7 | 3.3 | 3.7 | 4.1 | 4.3 | 15.5% |

Wearables show a significantly higher average revenue per user than Apps

Fitness: market size and future developments (3/3)

Average revenue per user in €



Athos designs workout apparel that measures body functions and muscle activity

Deep dive: fitness wearables (1/2)



Athos - smart clothes

Athos designs training clothes that are woven with micro-EMG sensors. They detect which muscles are working and transfer this workout data to a smartphone via a Bluetooth core. The clothes use machine learning to provide insights specific to every athlete's muscle composition and strength, called muscle-activity-based feedback.



Under Armour - smart shoes

Via a sensor these shoes track, analyze & store running metrics and synchronize with Under Armour's MapMyRun App. Additionally to measuring the distance covered, speed or time, the shoes can measure muscle fatigue by a so called "jump test". Based on this information, the runner receives recommendations on how to train that day.

Wearable X launches mobile-connected yoga pants that guide users through yoga exercises

Deep dive: fitness wearables (2/2)



Sensoria – running socks

Sensoria launched smart running socks in order to help analyze and improve people's running behavior. Pressure sensors integrated in the plantar area of the socks record cadence, foot-landing, pace as well as distance, and transmit this data to the electronic anklet which is attached to the sock. As the anklets are connected to a mobile app, the runner is able to track, store and analyze the gathered data.



Wearable X - Nadi X yoga pants

The Nadi X yoga pants are Bluetooth-enabled fitness clothes with pulse sensors on the hips, knees and ankles. The embedded sensors release soft vibrations to guide, instruct and facilitate yoga exercises. The yoga practitioner can use the Nadi X mobile app, which is connected to the sensors via Bluetooth to adjust impulse frequency and intensity in order to optimize movements and hold yoga postures. The mobile app offers 30 different yoga exercises that are connected with the smart pants.



AMBIENT ASSISTED LIVING

The Ambient Assisted Living segment includes products and devices that help care-dependent people to manage their household activities on their own.

In this chapter, the current market size, trends and expected developments of the Ambient Assisted Living market will be discussed. Also, the further impact of robotics and artificial intelligence will be presented.

Germany's sales potential of AAL products is forecast to be €122 million by 2022

Ambient Assisted Living: segment overview

Ambient Assisted Living (AAL) helps elderly people, but also people with special needs, to **manage their household activities** better on their own. It is ideal for people who require monitoring in general, including e.g. children and chronically ill people. The trend is part of the eHealth sector since the respective devices track the user's health data at home. Furthermore, it can be seen as the **smart home part of eHealth**, as AAL products usually aim at providing assistance in a domestic context.

For the depicted calculations the following elements were considered: Devices include **pressure mats** that detect if a person has fallen and check whether he or she gets up again, as well as **emergency buttons** that are either attached to walls or worn on the body. With these buttons, users can notify emergency services whenever needed without having to dial a telephone number. In addition to these hardware devices, the **underlying services for elderly monitoring** and on-demand contacts are also part of the market. Devices not connected to the internet are not part of AAL.

Driven by the rising number of elderly people in society and an ever higher adaption of smart home devices, **AAL becomes increasingly important**. While in the current stage of the AAL market products focus on help in case of emergency, integrated home automatization and robotics, which aim to enable an independent life as long as possible, will become more relevant in the future.

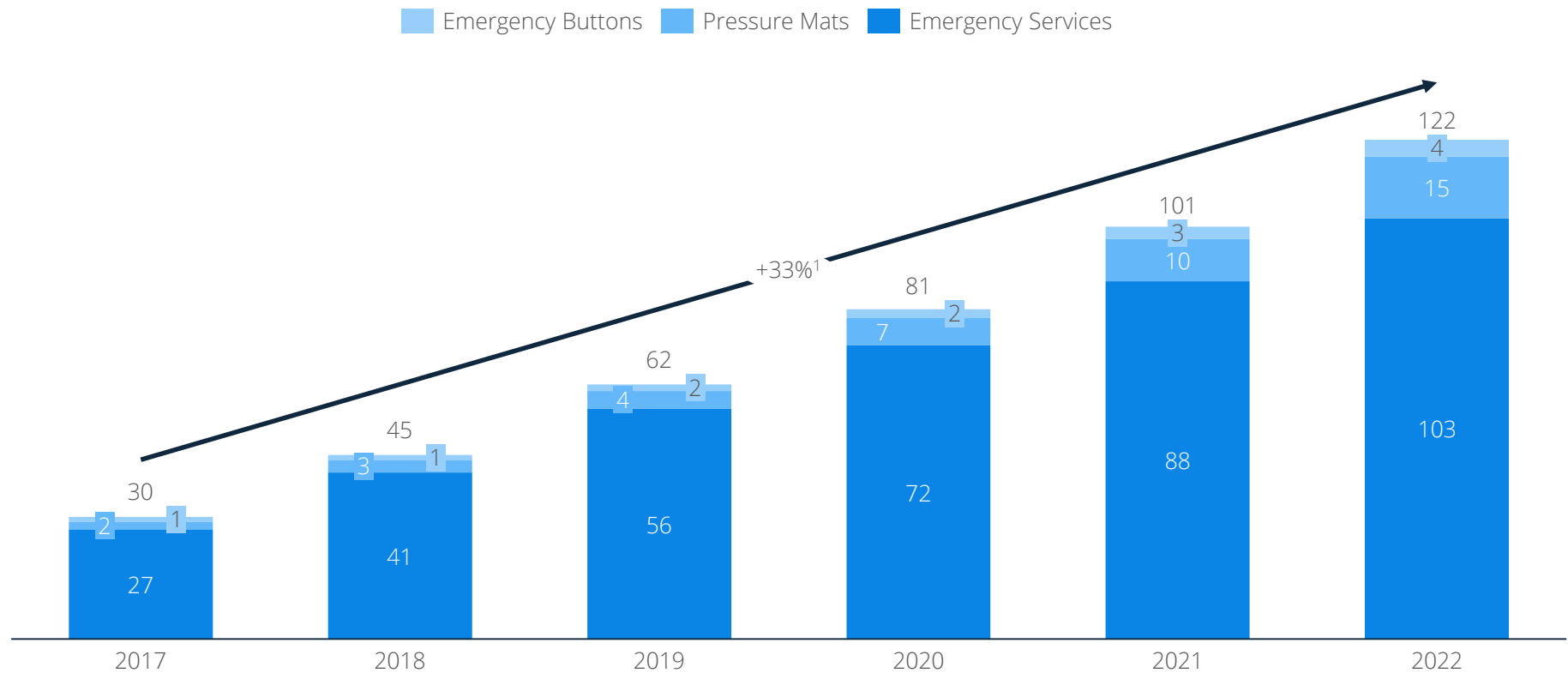
Key takeaways

- Revenue in the Ambient Assisted Living (AAL) segment amounts to €30 million in 2017
- Revenue is expected to show an annual growth rate (CAGR¹ 2017-2022) of 32.6%, resulting in a market volume of €122 million by 2022
- The average revenue per Smart Home is the highest for Emergency Services with €1,074 in 2017
- From an international perspective, most revenue will be generated in the U.S. (€1,800 million by 2022)

Revenues of AAL products will significantly increase at a CAGR¹ of 33%

Ambient Assisted Living: market size and future developments (1/3)

Revenue in million €



1: CAGR: Compound Annual Growth Rate / average growth rate per year
Source: Statista Digital Market Outlook 2018

Ambient Assisted Living is expected to experience high growth

Ambient Assisted Living: market size and future developments (2/3)

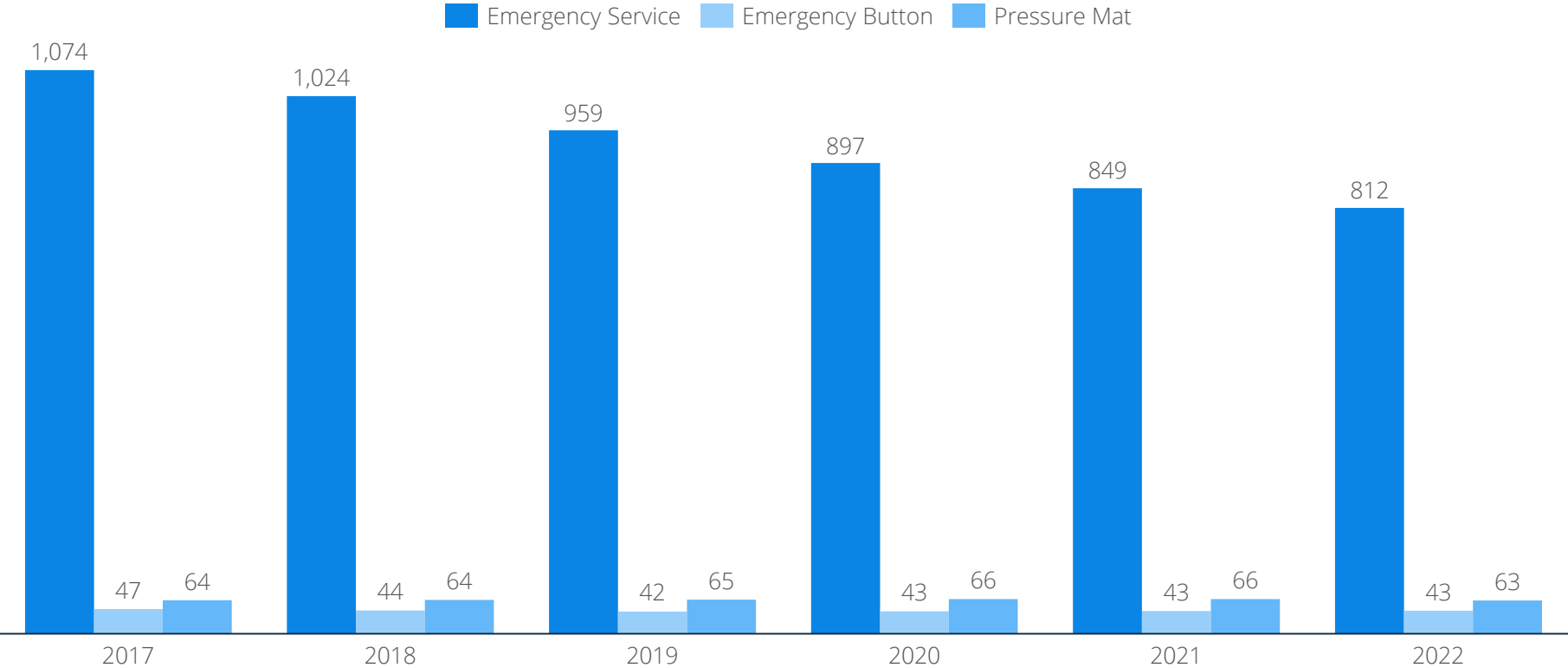
Homes with AAL functionalities in thousand

| Segment | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | CAGR ¹ 17 - 22 |
|--------------------|------|------|------|-------|-------|-------|------------------------------|
| Pressure Mats | 31.8 | 45.9 | 67.7 | 102.6 | 157.9 | 238.1 | 49.6% |
| Emergency Buttons | 23.6 | 30.1 | 38.5 | 50.7 | 69.2 | 96.6 | 32.6% |
| Emergency Services | 24.9 | 39.8 | 58.8 | 80.2 | 103.2 | 127.0 | 38.5% |

Emergency Services generate the highest revenue per home due to regular fees

Ambient Assisted Living: market size and future developments (3/3)

Average revenue per home with AAL functionalities in €



Robotics will play an important role in the future AAL market

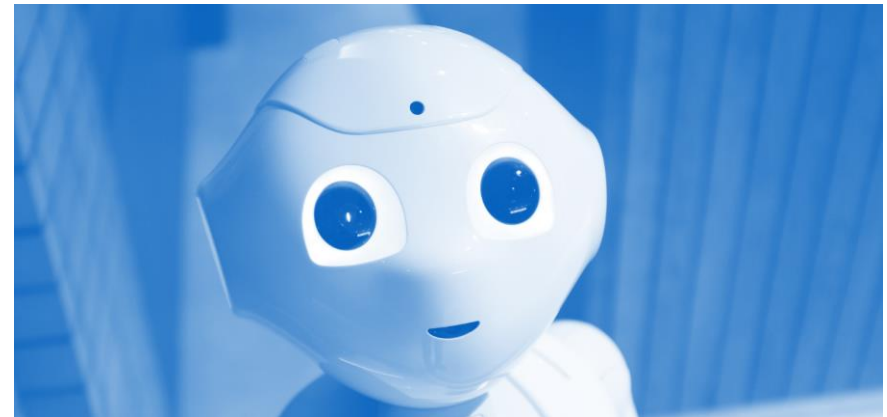
Deep dive: robotics and artificial intelligence in elderly care

While at the moment the focus in the AAL market lies with advanced home automation and emergency concepts, **robotic technology** will play an important role in the lives of elderly people in the near future. Robotic devices already exist in the broader smart home context and are also applied within **elderly care**, for example in the form of electrically powered mobility aids that automatically slow down when walking downhill, or household appliances like robotic vacuum cleaners. These technologies are going to be **more advanced** to satisfy a variety of needs in the future.

The concept of **Artificial Intelligence (AI)** is closely linked to the topic of robotics. The potential of AI within healthcare is huge. There is already an increasing amount of start-ups using AI. In future times, these systems might be used in **population health management**, for the reduction of drug discovery times and also for digital smart avatars capable of answering questions.

Chatbots are also part of AI. Patients in need of a quick diagnosis can ask chatbots, which are able to automate conversations. Hence, patients may use chatbots to check symptoms as well as treatment options, remind their owners about appointments, arrange transport like cabs or remind them to take their medicine.

Serious advancements have been observed in the development of complex **robotic devices to fulfill the needs of elderly people**. With „Pillo“, one of the first home health robots is being developed. He helps people of all ages to better manage their health. He can answer



health and wellness questions, connect directly with healthcare professionals, and securely manage vitamins and medication; storing, dispensing, and ordering refills when needed. His functionalities grow as he learns about the user and other household members. The robot is still in funding phase.

In view of the ageing population, robotics could fill the gap in the nursing workforce in the long run. Japan, for example, is planning to spread acceptance of robotic aid among care recipients and the German Fraunhofer-Institut is developing and testing the Care-O-bot – a mobile robotic assistant that is designed to **assist people in domestic environments or support healthcare staff**.

A blue-tinted photograph of a hand holding a small white pill. The hand is positioned over a tablet displaying a medical chart with various data points and bar graphs. In the background, there is a glass of water and a small white container on a wooden surface.

ONLINE PHARMACY & PERSONAL CARE

The Online Pharmacy & Personal Care segment includes the sale of medical, pharmaceutical and cosmetic products via a digital channel, for example via online pharmacies.

In this chapter, the current market size, trends and expected developments of the market will be discussed. Also, shop profiles of relevant online pharmacies will be presented.

eCommerce revenues from pharmaceutical and personal care products are rising

Online Pharmacy and Personal Care: segment overview

The ePharmacy and Personal Care segment contains the online sale of **medicine, cosmetics, and pharmaceutical and personal care** products (inclusive of prescription drugs for the private end user (B2C)). The market segment also includes **medical products for private use** (e.g. blood pressure monitors, disinfectants, dressings).

Alongside medicines, this market segment also includes cosmetic, cleaning and care products, and nutrition. All monetary figures refer to the annual gross revenue and do not factor in shipping costs. Major sales channels are **online pharmacies** or **online shops** of drugstores and other individual traders (e.g. cvs.com, walmart.com).

Online sales of medication become **increasingly relevant** within the eHealth market. Consumers are able to buy medication and personal care products at lower prices, for instance **from abroad**. Retailers often offer discounts since they profit from higher margins. For older patients or people suffering from chronic diseases, who need their medicine regularly, it is more **convenient** to order it online.

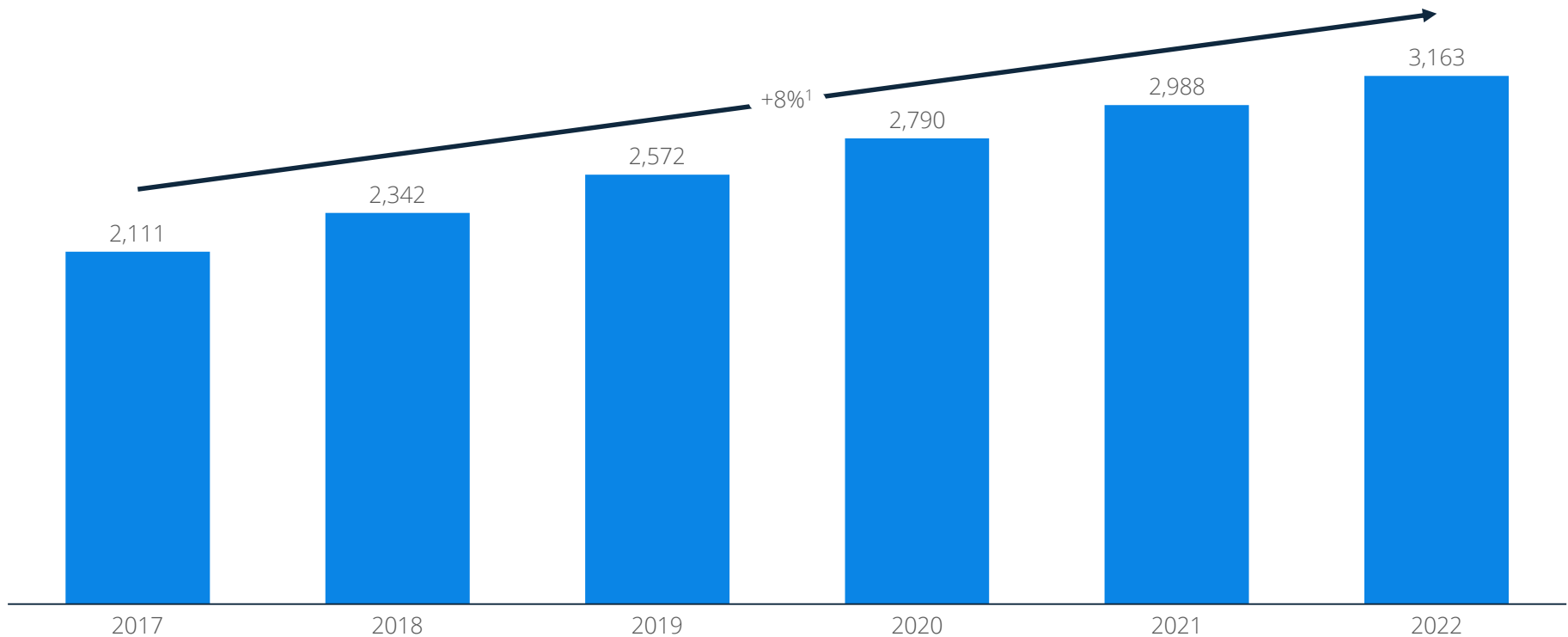
Key takeaways

- Revenues in the segment ePharmacy & Personal Care amount to €2,111 million in 2017
- Revenue is expected to show an annual growth rate (CAGR¹ 2017-2022) of 8.4%
- The average revenue per user is €137 in 2017
- From an international perspective most revenue is generated in the United States (€31,682 million in 2017)

With a CAGR¹ of 8% up to 2022, Medication and Personal Care is a fast-growing eCommerce category

Online Pharmacy and Personal Care: market size and future developments (1/2)

Revenues of the ePharmacy and Personal Care Segment in million €

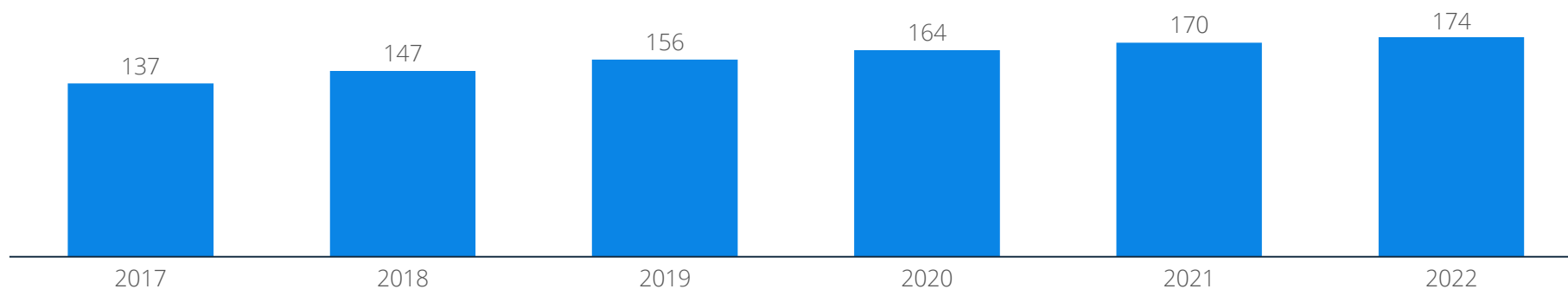


1: CAGR: Compound Annual Growth Rate / average growth rate per year
Source: Statista Digital Market Outlook 2018

The amount of people buying medication online is going to increase continuously

Online Pharmacy and Personal Care: market size and future developments (2/2)

Revenue per user in €



Users in million

| Segment | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | CAGR ¹ 17 - 22 |
|---------|------|------|------|------|------|------|------------------------------|
| Total | 15.4 | 15.9 | 16.4 | 17.0 | 17.6 | 18.2 | 3.4% |

1: CAGR: Compound Annual Growth Rate / average growth rate per year
Source: Statista Digital Market Outlook 2018

docmorris.de is the biggest online player specialized in pharmaceuticals in the German market

Shop profile: docmorris.de (1/2)

Find out more on:
ecommerceDB.com

Key Facts

Headquarters: [Heerlen, Netherlands](#)

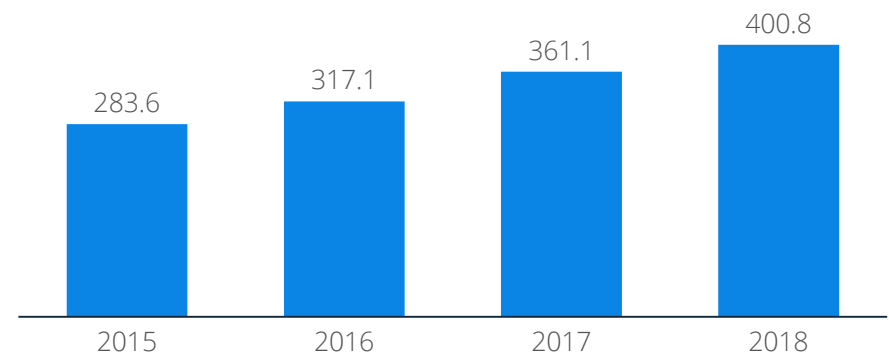
Launch: [2000](#)

Global eCommerce net sales '17: [€0.36 billion](#)

Main category: [Food & Personal Care](#)



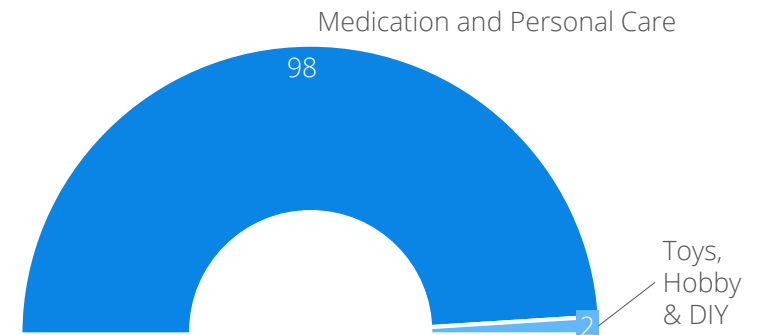
Global eCommerce net sales in million €



Background

docmorris.de, operated by DocMorris N.V., is an online store with nationally-focused sales. Its eCommerce net sales are generated almost entirely in Germany. With regards to the product range, docmorris.de achieves the greatest part of its eCommerce net sales in the ePharmacy & Personal Care category. The online store was launched in 2000.

Revenue split by categories in %



shop-apotheke.com is the biggest online store only selling medical products and cosmetics

Shop profile: shop-apotheke.com (2/2)

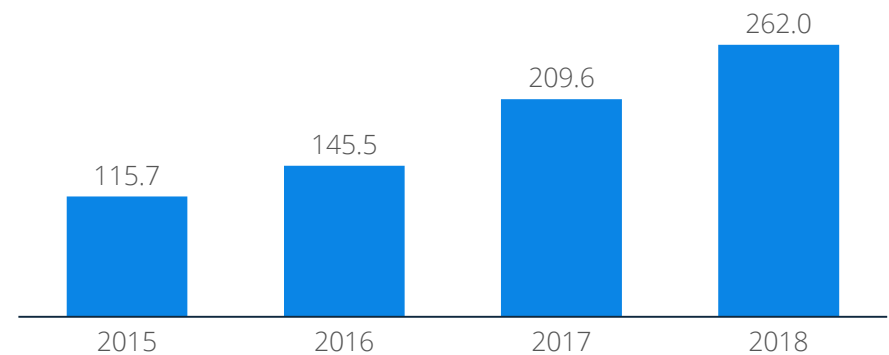
Find out more on:
ecommerceDB.com

Key Facts

- Headquarters: [Venlo, Netherlands](#)
- Launch: [2002](#)
- Global eCommerce net sales '17: [€0.20 billion](#)
- Main category: [Food & Personal Care](#)



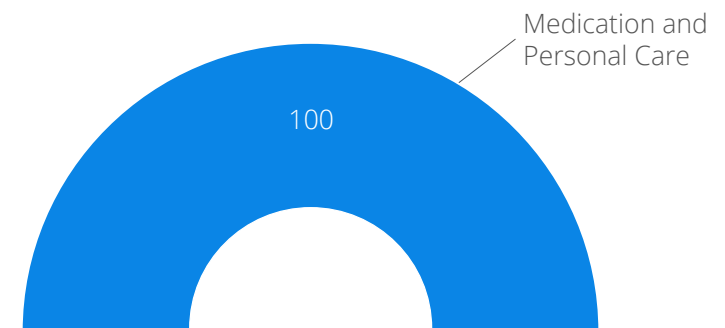
Global eCommerce net sales in million €



Background

shop-apotheke.com, operated by Shop-Apotheke B.V., is an online store with nationally-focused sales. Its eCommerce net sales are generated almost entirely in Germany. With regards to the product range, shop-apotheke.com achieves all its eCommerce net sales in the Medication and Personal Care category. The online store was launched in 2002.

Revenue split by categories in %





HEART FAILURE

The Heart Failure segment includes connected medical devices designed for patients suffering from heart failure to use at home (smart devices) as well as digital applications for smartphones and tablets.

In this chapter, the current market size, trends and expected developments of the market will be discussed. Also, the trend of telemonitoring in eHealth will be presented.

eHealth Heart Failure products are projected to reach a market volume of €38 million by 2022

Heart Failure: segment overview

The Heart Failure segment covers the user and revenue development of two eHealth product categories for people with **chronic heart failure**. Hardware and software solutions for healthcare professionals, e.g. medical equipment for hospitals and doctors' surgeries, are not included.

Smart Devices covers medical devices (hardware) which are equipped with dedicated interfaces or SIM cards that transmit measurement data across a **wireless connection** (e.g. via mobile networks, WiFi, Bluetooth, etc). In the context of heart failure therapy, there are various devices that can be used, for example connected weighing scales and Tele-ECG-cards or even **connected pacemakers and defibrillators**. The selection of suitable equipment is dependent on the **severity** of the heart failure and the presence of **other medical conditions**. Connected devices for heart patients are often used in combination with a telemedical monitoring service.

Apps contains heart function monitoring apps for instance for the collection of data and **self-management** of heart conditions. The user base covers paying customers only, i.e. users who pay for app downloads, premium/full versions and in-app purchases. The revenue figures only include revenues generated by paid app downloads, premium/full versions and in-app purchases. Furthermore, apps that come together with connected devices are excluded.

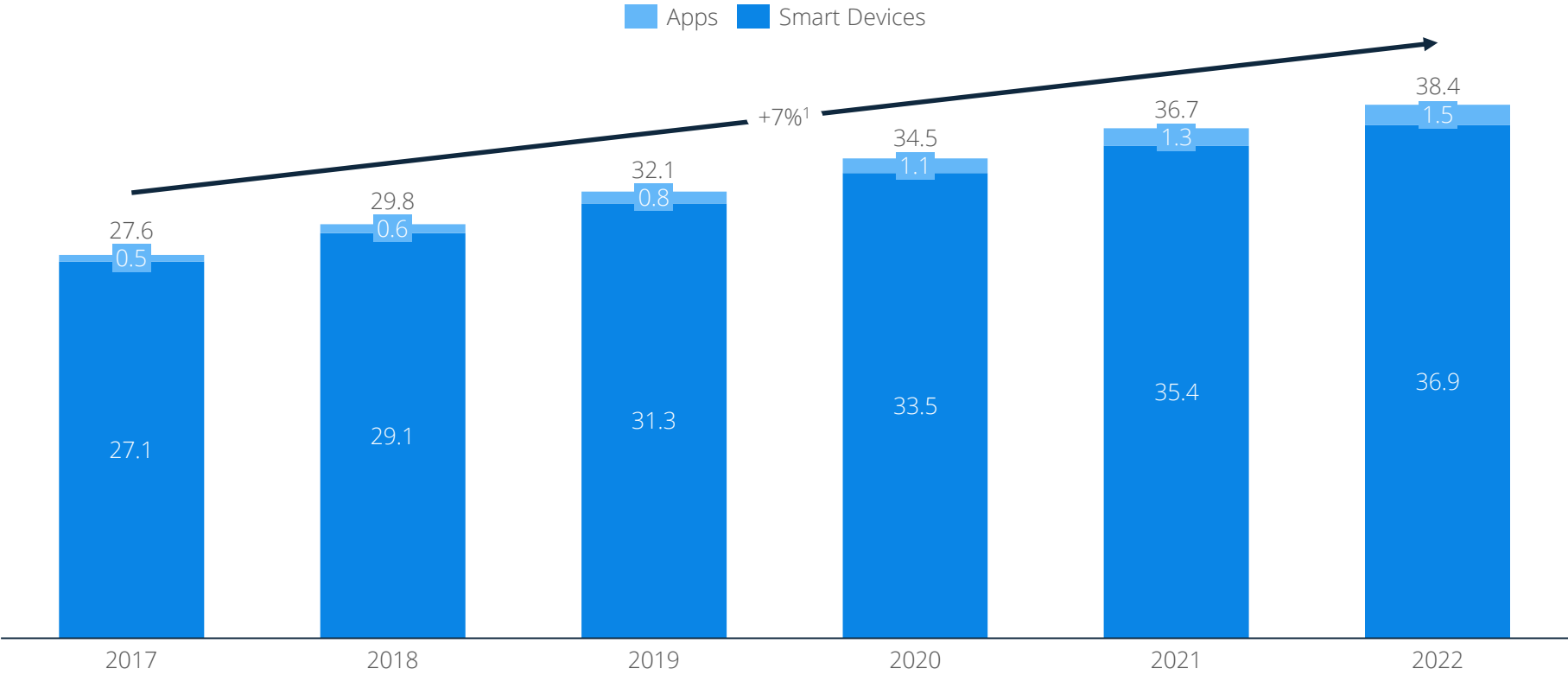
Key takeaways

- Revenues in the segment eHealth solutions for Heart Failure amount to €28 million in 2017
- Revenue is expected to show an annual growth rate (CAGR¹ 2017-2022) of 6.8%, resulting in a market volume of €38 million by 2022
- The average revenue per user (ARPU) currently amounts to €18 in Apps and €189 in Devices
- From an international perspective, most revenue is generated in the United States (€104 million in 2017)

Revenues of Apps are increasing at a CAGR¹ of 26%

Heart Failure: market size and future developments (1/3)

Revenue in million €



The amount of App users is increasing at a CAGR¹ of 27 from 2017 to 2022

Heart Failure: market size and future developments (2/3)

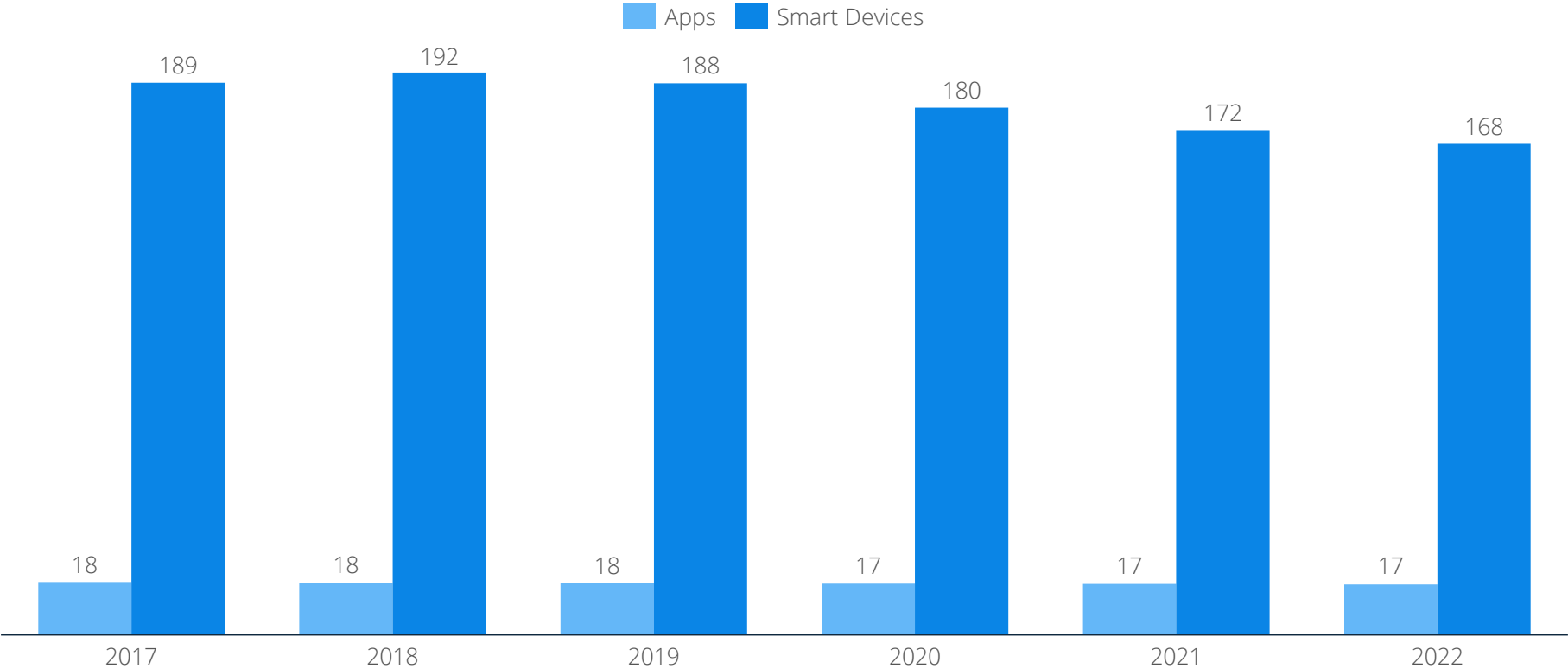
Paying users in thousand

| Segment | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | CAGR ¹ 17 - 22 |
|---------|------|------|------|------|------|------|------------------------------|
| App | 26 | 36 | 48 | 60 | 73 | 85 | 27.2% |
| Device | 144 | 152 | 166 | 186 | 205 | 220 | 8.9% |

Due to rising competition, prices are projected to decline in the future

Heart Failure: market size and future developments (3/3)

Average revenue per user in €



Telemonitoring significantly improves monitoring of patients with heart failure

Deep dive: telemonitoring

Telemonitoring is one of the latest trends in eHealth. It is defined by the remote exchange of data between clinicians and their patients, using electronic information and telecommunications technologies. This definition includes among other things video-consultation, store-and-forward imaging, streaming media as well as terrestrial and wireless communications. These services lead to a higher **time efficiency** and **more convenience** at **lower costs**.

In addition, the innovations 'activity monitoring' as well as 'remote medication monitoring' are especially used to support patients with **long-term conditions** by exchanging data between them and their doctors to assist in diagnosis and monitoring. Data can for instance be measured by wearables or smart clothes.

Assuring a reliable monitoring practice between patients and doctors can also reduce emergencies and death rates by up to 45% according to a UK Department of Health study.

When it comes to **heart failure**, telemonitoring is particularly relevant, since patients are able to make measurements at home and send their **health information**, like heart rate, weight and blood pressure, to a doctor's office or a clinic where healthcare professionals read out the data and intervene if necessary.

This offers various **advantages**. From a patient's perspective, the frequent information and additional insights offers greater control over their own health. Plus, if the monitoring system provides the necessary communication channels, care providers can send further information like educational videos or motivational messages, leading to a higher degree of **self care and awareness**.





DIABETES

The Diabetes segment includes connected medical devices designed for diabetes patients to use at home (smart devices) as well as digital diabetes applications for smartphones and tablets.

In this chapter, the current market size, trends and expected developments of the market will be discussed. Also, a best practice example will be presented.

eHealth Diabetes products will generate an estimated revenue of €18 million in 2018

Diabetes: segment overview

The Diabetes segment includes the user and revenue development of two eHealth product categories for people with diabetes. Hardware and software solutions for healthcare professionals, e.g. medical equipment for hospitals and doctors' surgeries, as well as professional health services like telemedical monitoring are not included.

The Smart Devices segment covers medical diabetes devices (hardware), which are equipped with **dedicated interfaces or SIM cards** that transmit measurement data across a wireless connection (e.g. via mobile networks, WiFi, Bluetooth): e. g. **connected** glucose meters or connected insulin injection devices. The measurement data can be sent to a **smartphone** and be synchronized with an **app**. Revenues from non-connected supplies, e.g. test strips, are excluded.

The Apps segment contains diabetes apps, e.g. diabetes diaries that assist in **self-management**, and **service-oriented** apps, which not only collect but also analyze health data, and make recommendations based on this analysis. The user base covers paying customers only, i.e. users who pay for app downloads, premium/full versions and in-app purchases. Users of **advertising-funded** apps or apps that come with a smart device are not included. The revenue figures only include revenues generated by paid app downloads, premium/full versions and in-app purchases. Furthermore, apps that come together with connected devices are excluded.

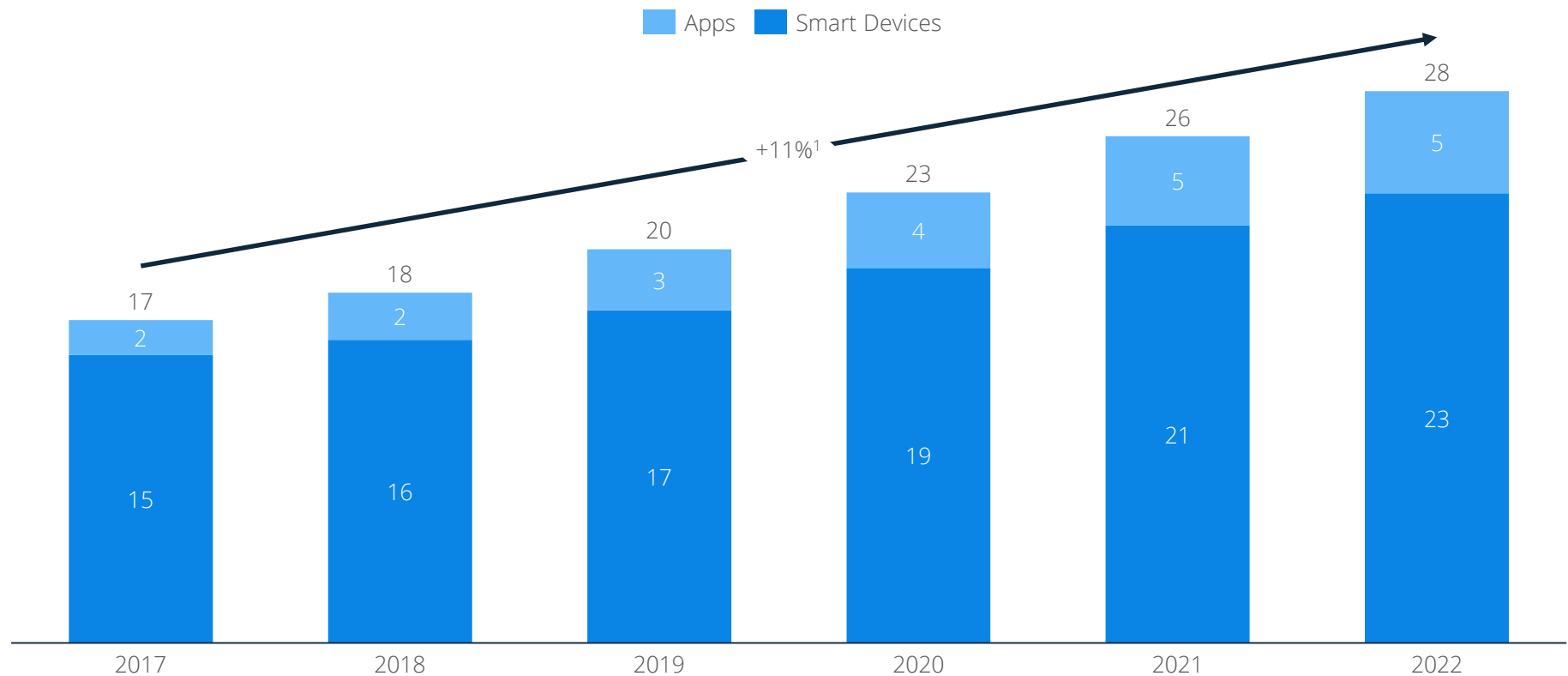
Key takeaways

- Revenue in the segment eHealth solutions for Diabetes amounts to €17 million in 2017
- Revenue is expected to show an annual growth rate (CAGR¹ 2017-2022) of 11.3%, resulting in a market volume of €28 million by 2022
- The average revenue per user (ARPU) currently amounts to €20 in apps and €61 in devices
- From an international perspective most revenue is generated in the United States (€109 million in 2017)

Revenues of Smart Devices for diabetes are projected to rise at a CAGR¹ of 11%

Diabetes: market size and future developments (1/3)

Revenue in million €



1: CAGR: Compound Annual Growth Rate / average growth rate per year
Source: Statista Digital Market Outlook 2018

0.4 million Device users are expected by 2022

Diabetes: market size and future developments (2/3)

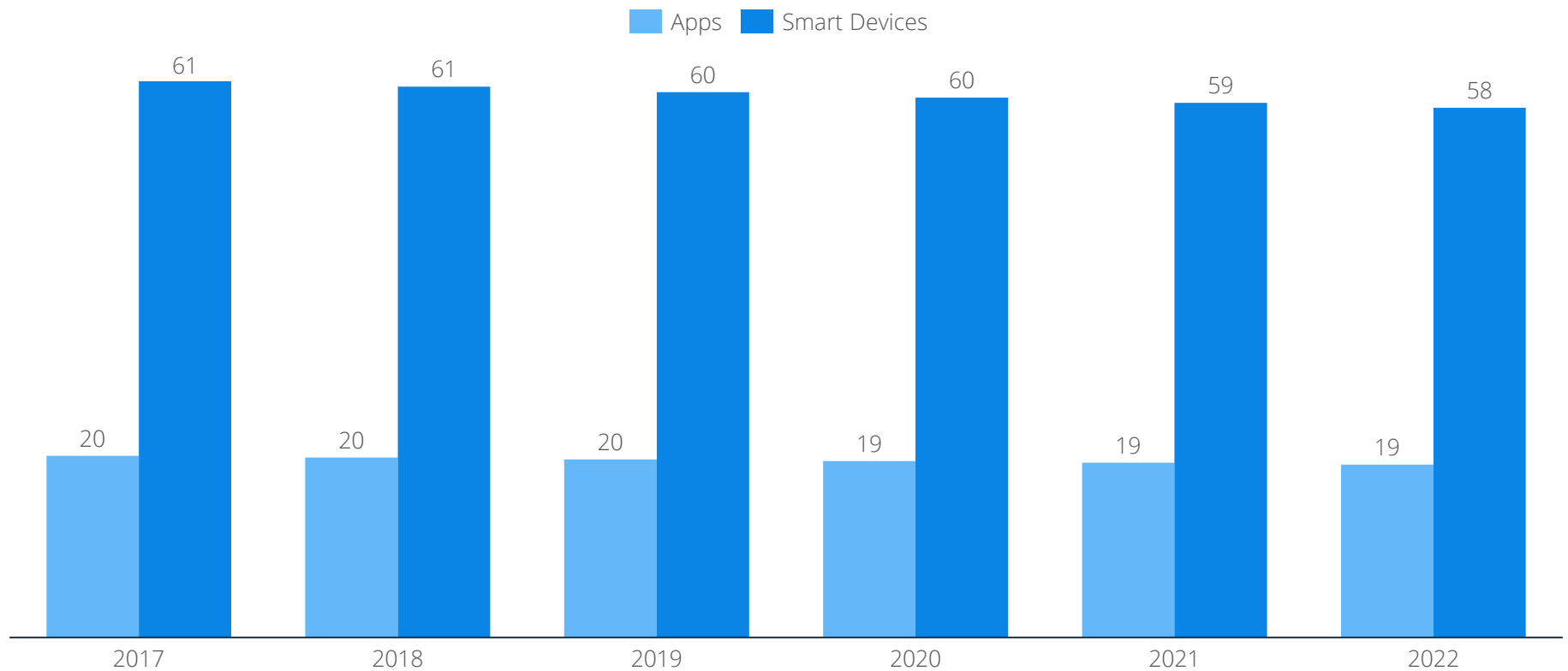
Paying users in thousand

| Segment | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | CAGR ¹ 17 - 22 |
|---------|------|------|------|------|------|------|------------------------------|
| App | 90 | 123 | 160 | 199 | 238 | 275 | 25.1% |
| Device | 241 | 256 | 284 | 323 | 364 | 395 | 10.4% |

Smart Devices for Diabetes will constantly generate the highest average revenue per user

Diabetes: market size and future developments (3/3)

Average revenue per user



The mySugr diabetes app reached over one million users in May 2017

Best practice: mySugr



Headquarters



Overview

- Headquarters: Vienna, Austria
- Total mySugr accounts: >1,000,000 (2017)
- Employees: >11.500 (2017)
- Active countries: >52 (2017)
- Founded: 2012

Background

mySugr is one of the leading providers in the field of digital diabetes management. The start-up started with the mySugr app and offers a monthly subscription bundle for e. g. around US\$40 in the U.S. They are also in cooperation with various health insurance providers so that costumers can get there subscription fees refunded.

The bundle contains:

- The full version of the app plus a coaching service
- A glucometer that can be connected via Bluetooth
- Unlimited test stipes and lancets

Analyst opinion

mySugr is a good example of how digital services can help people with chronic conditions to manage their lives. The full version of the app does not only record therapy data such as blood sugar values, but it also helps its users to interpret the data and evaluate different scenarios. With the optional coaching service via the app, it also offers the possibility to find advice by diabetes educators anytime needed.

Altogether, the young company offers a comprehensive set of products and services for diabetes management. Its huge market potential and fast growth was also recognized by swiss pharmaceutical giant Roche, who bought the company for an estimated nine-figure sum in 2017.

HYPER-TENSION

The Hypertension segment includes connected medical devices designed for hypertension patients to use at home (smart devices) as well as digital applications for smartphones and tablets.

In this chapter, the current market size, trends and expected developments of the market will be discussed. Also, the benefits of mHealth will be presented.

DAILY REPORT SCHEDULE

| PATIENT NAME | 7AM | 11AM | 3PM | 7PM | 7AM | 11AM | 3PM | 7PM | 7AM | 11AM | 3PM | 7PM |
|--------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| BP | | | | | | | | | | | | |
| HR | | | | | | | | | | | | |
| PR | | | | | | | | | | | | |
| CO SAT | | | | | | | | | | | | |
| TEMP | | | | | | | | | | | | |
| GLUCOSE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PAIN | | | | | | | | | | | | |
| PAIN IV MEDS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CHECKS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MSC CHECKS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| PATIENT TIME | 0700 | 0800 | 0900 | 1000 | 1200 | 1300 | 1400 |
|--------------|------|------|------|------|------|------|------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |



eHealth Hypertension products are projected to generate a revenue of €47 million by 2022

Hypertension: segment overview

The Hypertension segment covers the user and revenue development of eHealth products for people with hypertension.

Smart Devices cover medical hypertension devices (hardware) which are equipped with dedicated **interfaces** or SIM cards that transmit measurement data across a **wireless connection** (e.g. via mobile networks, WiFi, Bluetooth, M2M technologies, NFC, BLE): for example connected blood pressure monitors, which are able to send measurement data to a smartphone. If there is a higher **monitoring** need, the data can also be sent to a telemedical service center. Revenues from **non-connected supplies** of hypertension devices, e.g. electrodes, are excluded. Hardware and software solutions for healthcare professionals, e.g. medical equipment for hospitals and doctors' surgeries, as well as professional health services like telemedical monitoring are not included, either.

The Apps segment contains **blood pressure monitoring apps**. The user base covers **paying customers** only, i.e. users who pay for app downloads, premium/full versions, and in-app purchases. Users of advertising-funded apps are not included. The revenue figures only include revenues generated by paid app downloads, premium/full versions and in-app purchases. Furthermore, apps that come together with connected devices are excluded.

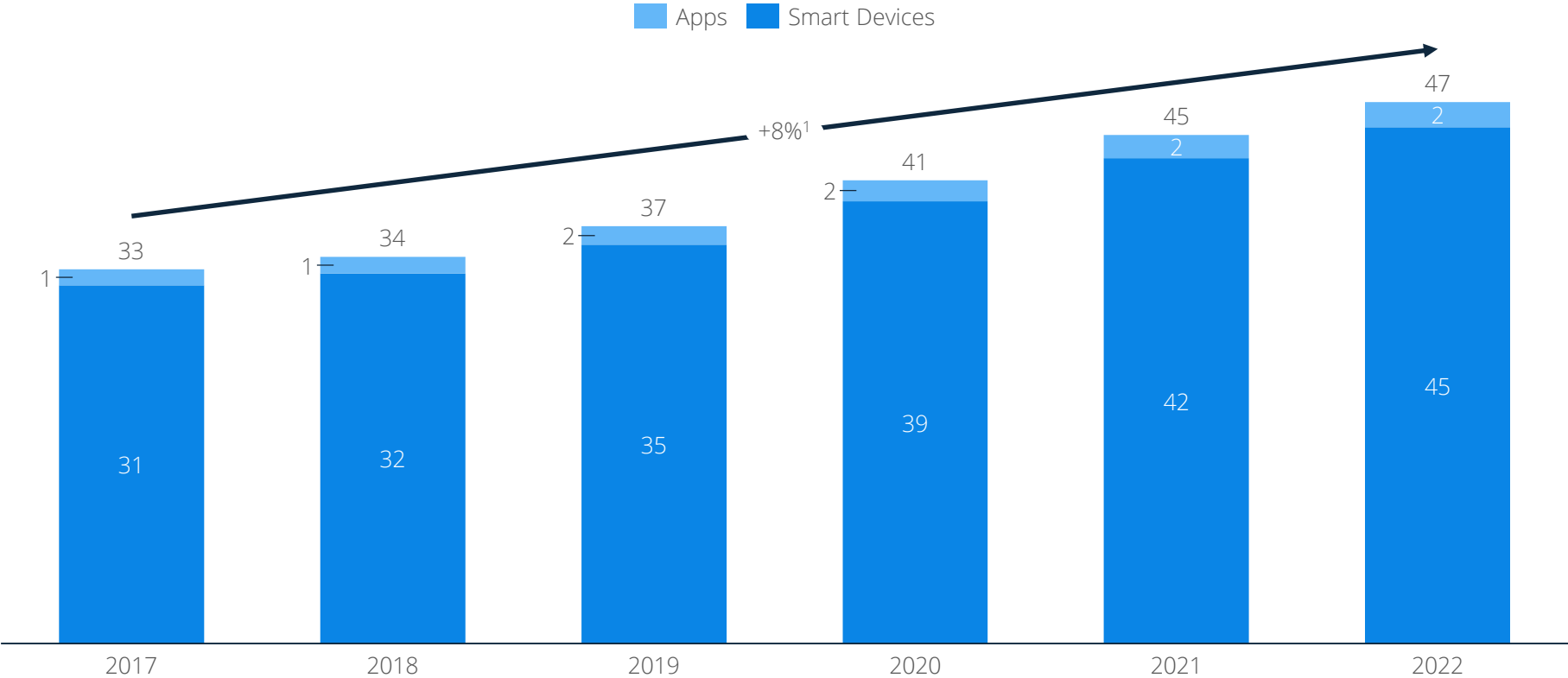
Key takeaways

- Revenues in the segment eHealth solutions for Hypertension amount to €33 million in 2017
- Revenue is expected to show an annual growth rate (CAGR¹ 2017-2022) of 7.7%, resulting in a market volume of €47 million by 2022
- The average revenue per user (ARPU) currently amounts to €2 in Apps and €29 in Devices
- From an international perspective, most revenue is generated in the United States (€74 million in 2017)

Revenues of Smart Devices are increasing at a CAGR¹ of 8%

Hypertension: market size and future developments (1/3)

Revenue in million €



55 1: CAGR: Compound Annual Growth Rate / average growth rate per year
Source: Statista Digital Market Outlook 2018

Hypertension Devices will constantly generate the highest average revenue per user

Hypertension: market size and future developments (2/3)

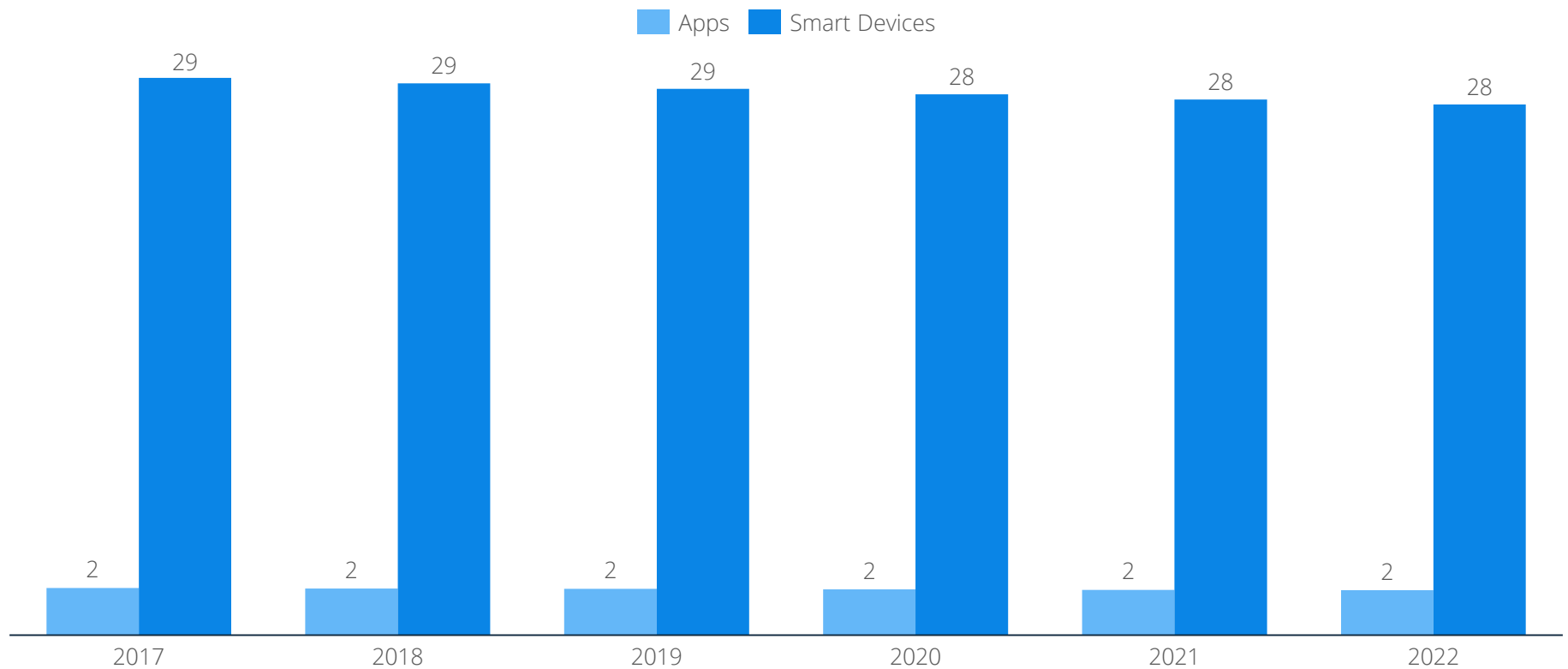
Paying users in million

| Segment | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | CAGR ¹ 17 - 22 |
|---------|------|------|------|------|------|------|------------------------------|
| App | 0.6 | 0.6 | 0.7 | 0.8 | 0.9 | 0.9 | 10.6% |
| Device | 1.1 | 1.1 | 1.2 | 1.4 | 1.5 | 1.6 | 8.6% |

Due to low prices for Apps, Hypertension Devices will generate a higher average revenue per user

Hypertension: market size and future developments (3/3)

Average revenue per user in €



mHealth wearables offer constant monitoring for people with high blood pressure

Deep dive: mHealth

mHealth is an important subsegment of eHealth. It is the term to describe the usage of **wireless smart electronic devices** in the context of medical care. mHealth includes tablets and smartphones as well as all forms of wearables which work app-based. Due to the rise of both wearables and sensors, tracking of physical activities and health indicators is becoming **omnipresent**.

Since an increasing number of people use such devices, mHealth remains a driving force for the eHealth market. In terms of apps, the market offers fitness as well as **mobile medical apps**, which are mainly used to analyze, assess, store and transmit health data. As far as wearables are concerned, there is a wide range of potential applications, such as: **BP Monitoring**, Glucose Meters, Pulse Oximeters, Sleep Apnea Monitors and Neurological Monitors. There is even a patent for a diagnosis system on a wrist-mounted device which is capable of detecting cancer.

mHealth is also part of **teleHealth** since wearables and mobile home units are used for health and activity monitoring and to transfer health data to clinicians.

When it comes **to high blood pressure monitoring**, there are various mHealth wearables available. The **Nokia BPM+** or **Omron Evloiv** for example, are smart blood pressure monitors with Bluetooth connectivity that send the data to a corresponding app, which not only saves and evaluates the data but also lets users insert additional information. Furthermore, data can be shared with doctors.

With its upcoming device, **Omron** is trying to take mobile blood pressure meters to the next level. The new **HeartGuide** is designed like a watch and promises to be the most **discreet** blood pressure device of the Omron family while retaining high **accuracy**. The device is furthermore also able to track sleeping quality, daily activity and heart rate, to provide a holistic overview.





CONSUMER INSIGHTS

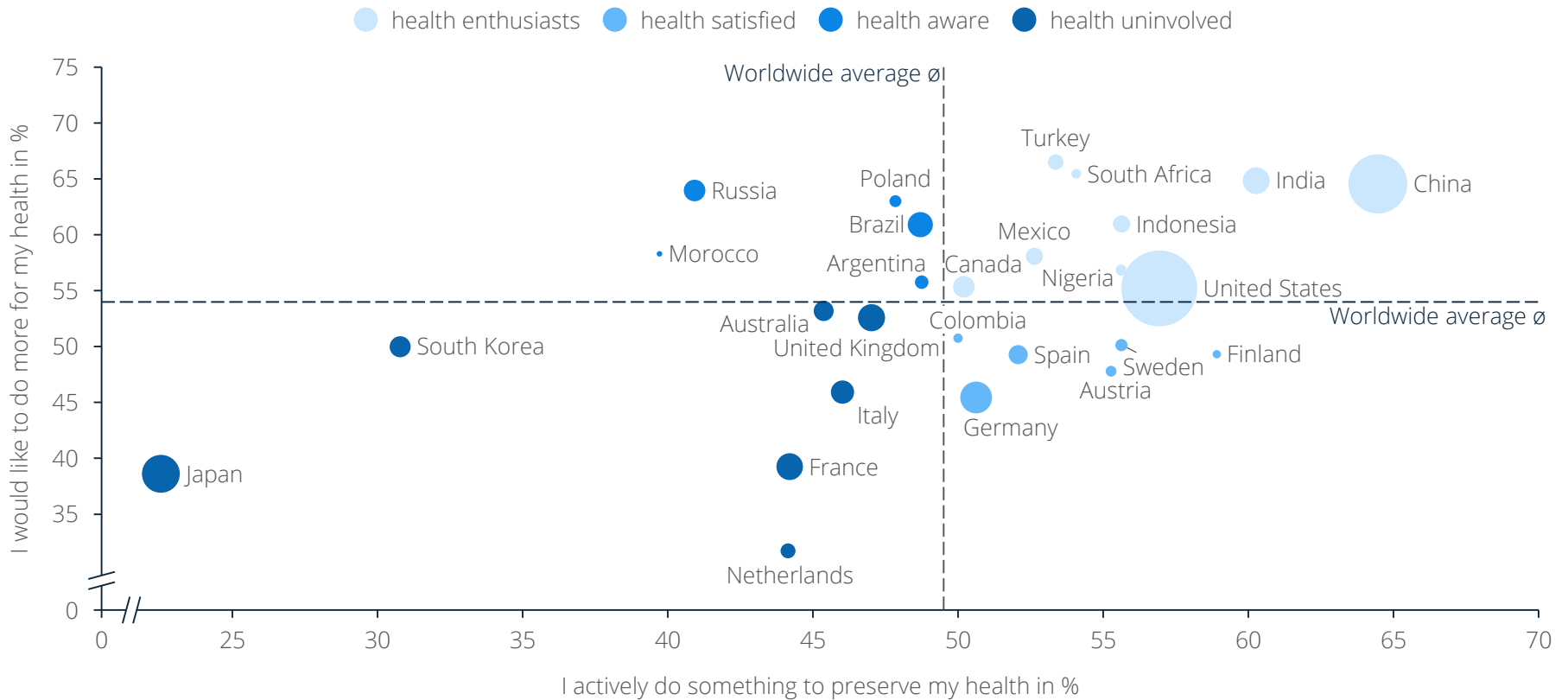
The Consumer Insights provide a broad overview and understanding of the country-specific consumer behavior in the context of eHealth.

In this chapter, results of consumer surveys regarding attitudes to and usage of eHealth-related products and services are presented. Also, an international overview of healthcare attitudes is given.

More than half of onliners around the globe wish to do (even) more for their health

Consumer attitudes: global consumer lifestyles (1/2)

Global comparison of attitudes towards personal health behavior



Note: Dot size depicts GDP

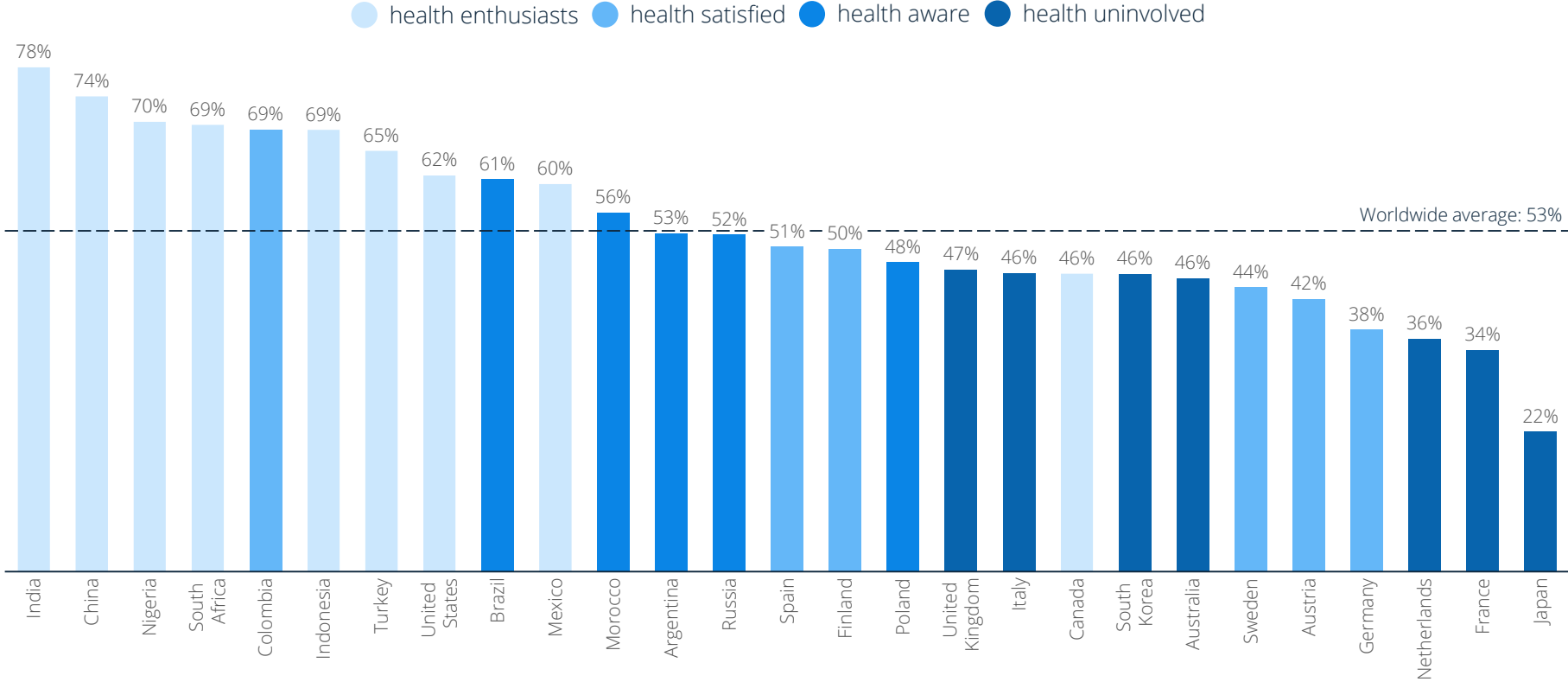
"Which of these statements do you agree with?"; n=31,779

Source: Statista Global Consumer Survey, data from June 2018

eHealth is used mostly by those who wish to do (even) more for their personal health

Consumer attitudes: global consumer lifestyles (2/2)

Share of respondents who use eHealth apps and/or devices

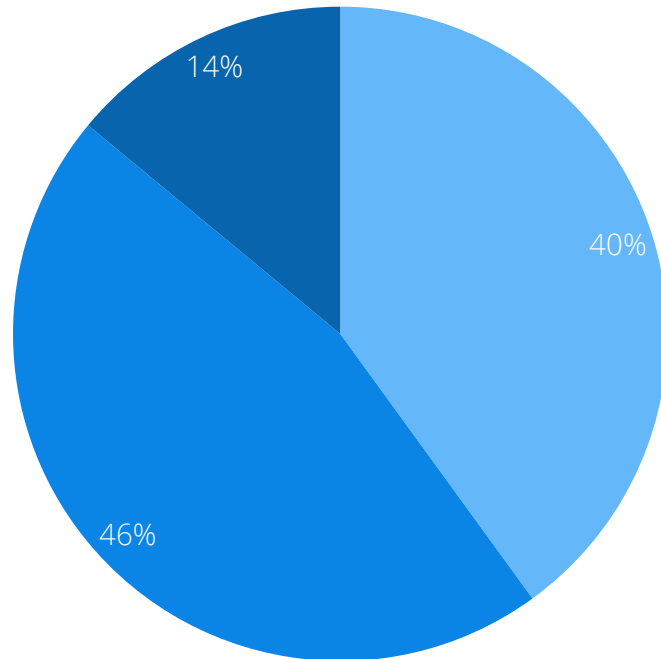


More than 86% of German citizens have heard or are familiar with the term “eHealth”

Consumer attitudes: knowledge of eHealth

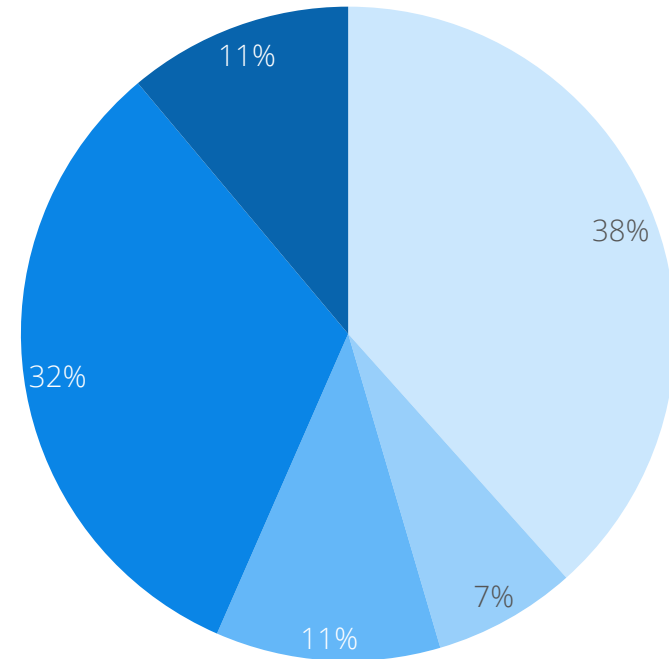
Have you ever heard about eHealth?

■ No ■ Yes, but not sure what it is ■ Yes



How much are you interested in the topic of eHealth?

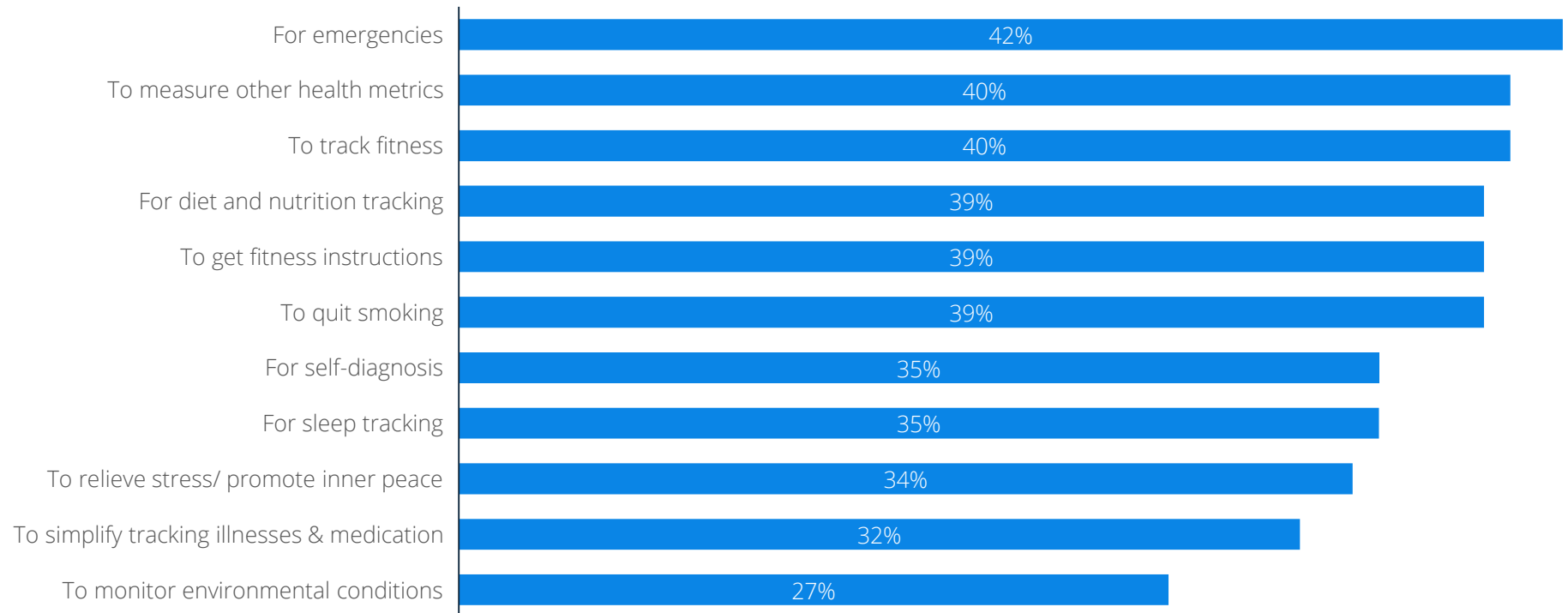
■ I don't care ■ Rather uninterested ■ Very interested
■ Very uninterested ■ Rather interested



Germans are especially interested in apps for emergencies or health data measuring

Consumer attitudes: willingness to pay for eHealth products and services

Likelihood (very likely or rather likely) to pay for an app

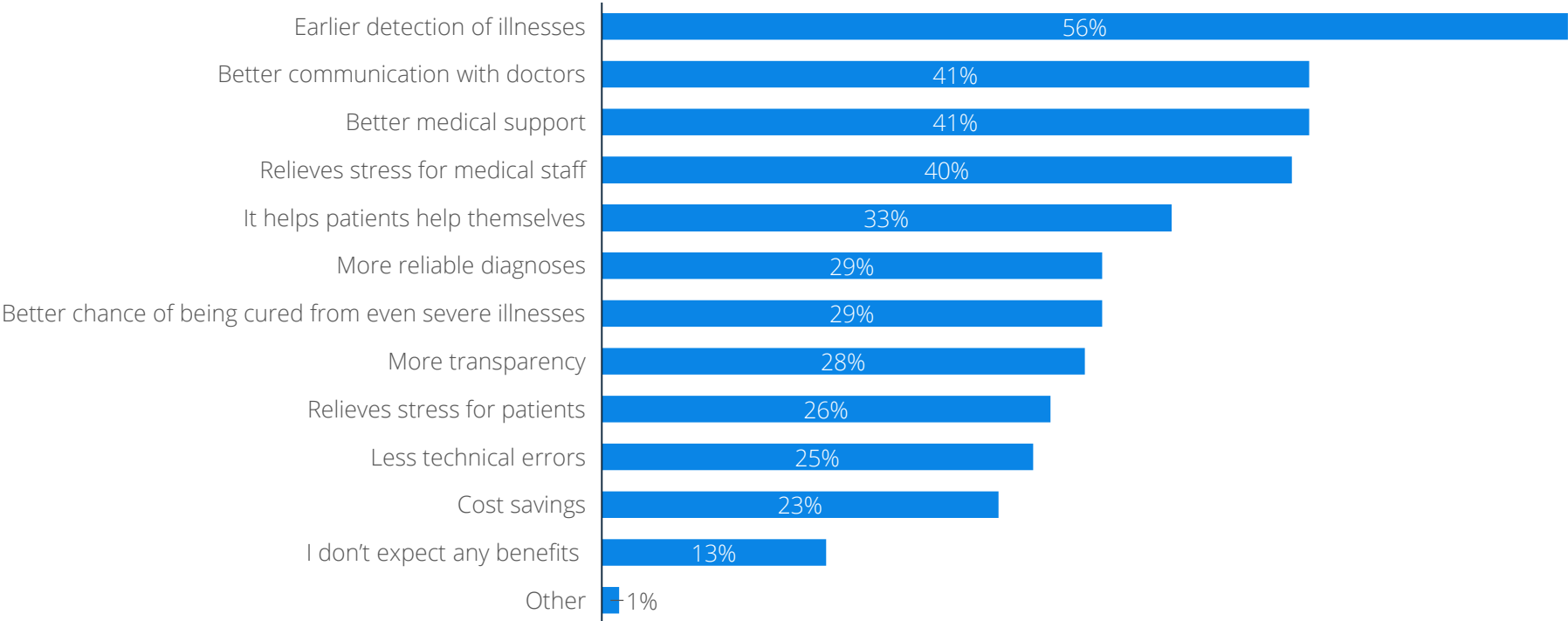


"How likely is it that you would pay for any app from these categories?"; Multiple response; n= 1051
Source: Statista Survey Digital Health 2017

Germans expect to detect illnesses earlier with the help of eHealth applications

Consumer attitudes: expectations in eHealth products and services

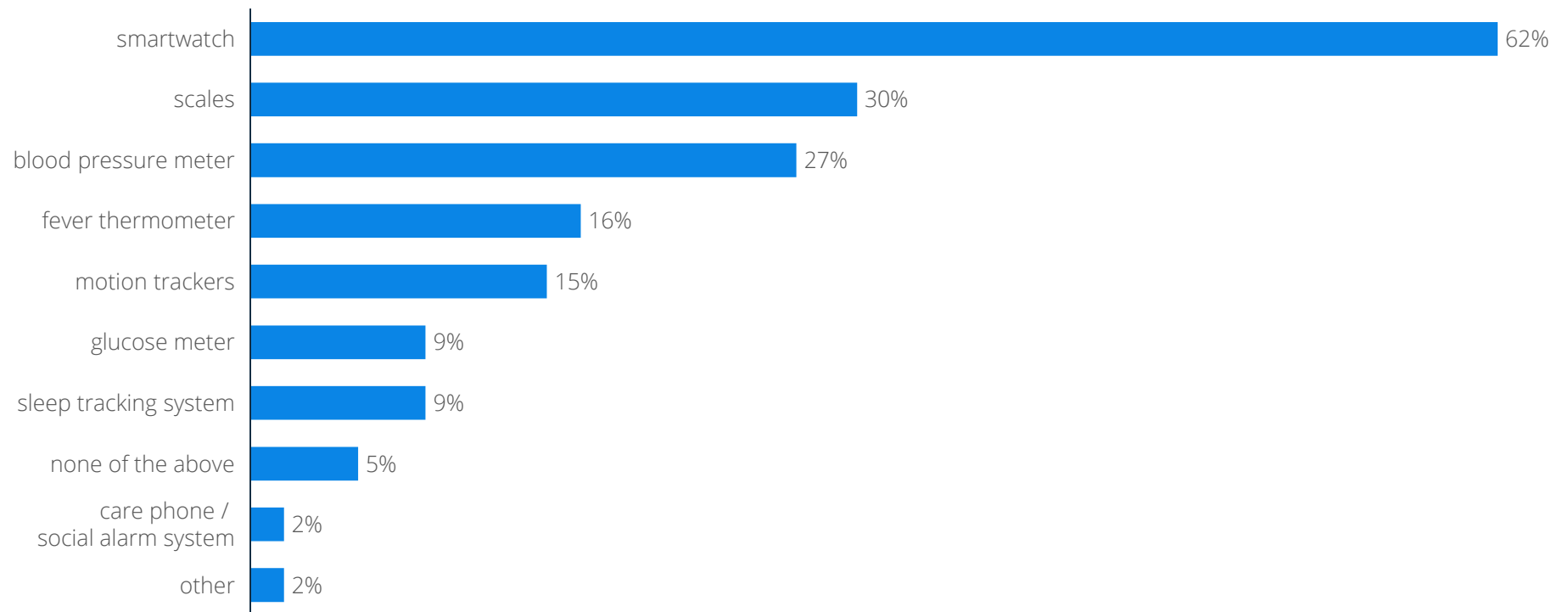
Expected benefits from the use of digital technology in healthcare



Smartwatches are by far the most frequently used smart health devices in Germany

Usage of eHealth products: preferred services and devices (1/4)

Use of smart health devices in the past 12 months



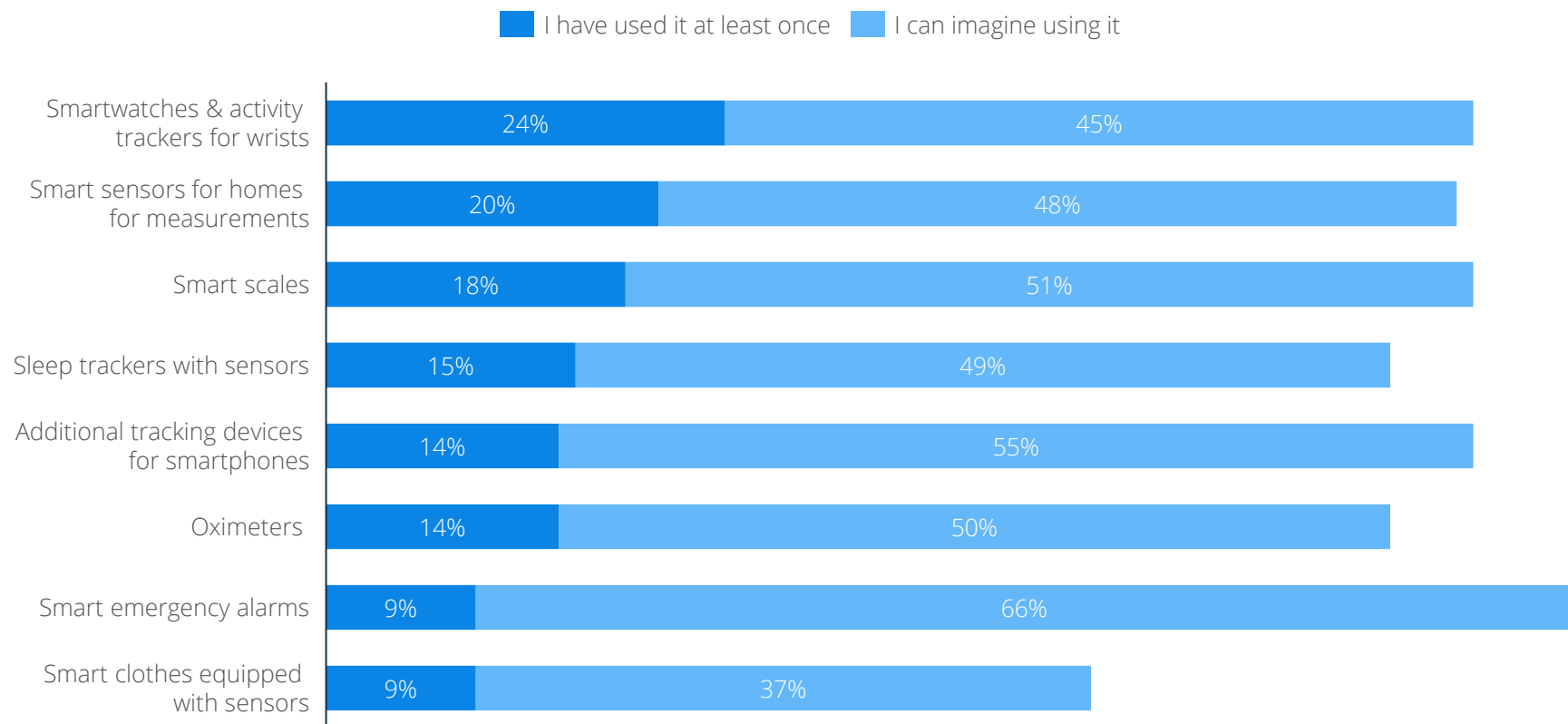
"Which of these smart health devices have you used in the past 12 months?" Multiple response; n= 298, respondents who used connected health devices in the past 12 months

Source: Statista Global Consumer Survey, data from June 2018

Smartwatches are most common in Germany, but smart emergency alarms are appealing

Usage of eHealth products: preferred services and devices (2/4)

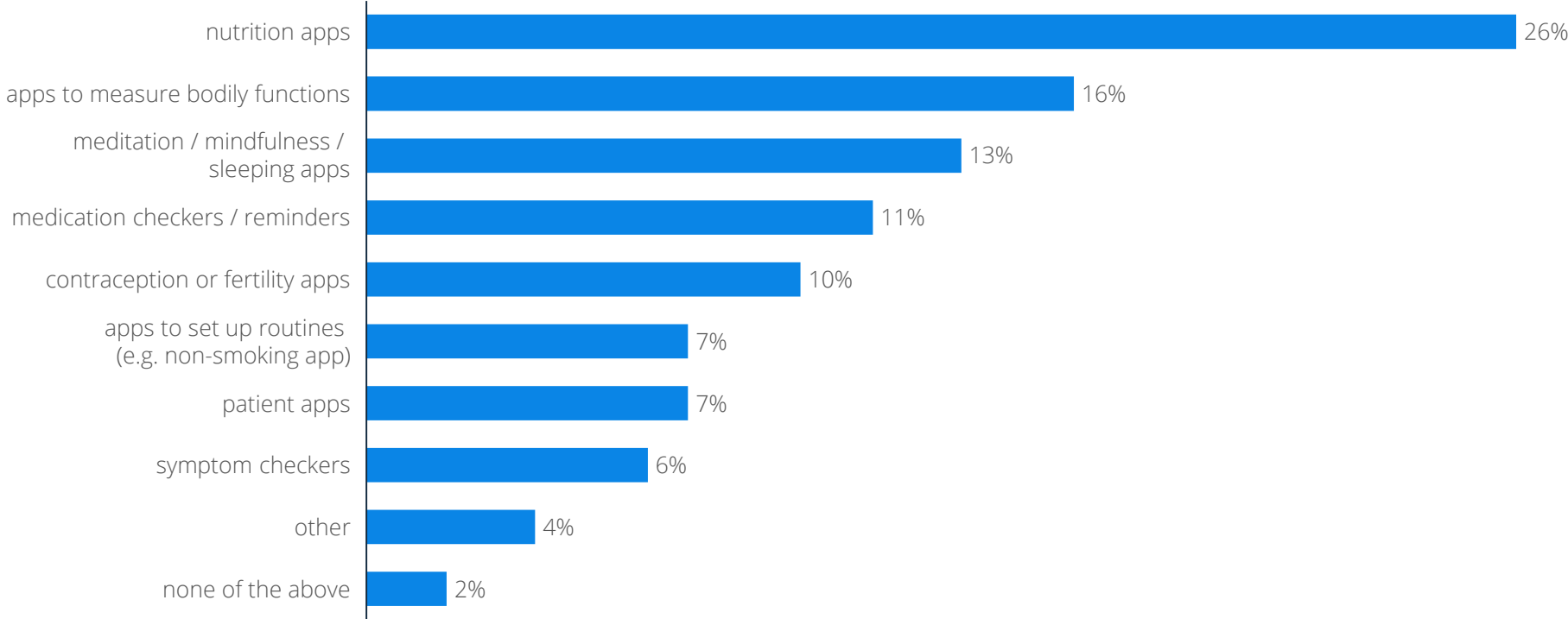
Usage and willingness to use selected devices



Nutrition apps are the most popular eHealth apps in Germany

Usage of eHealth products: preferred services and devices (3/4)

Use of eHealth apps in the past 12 months



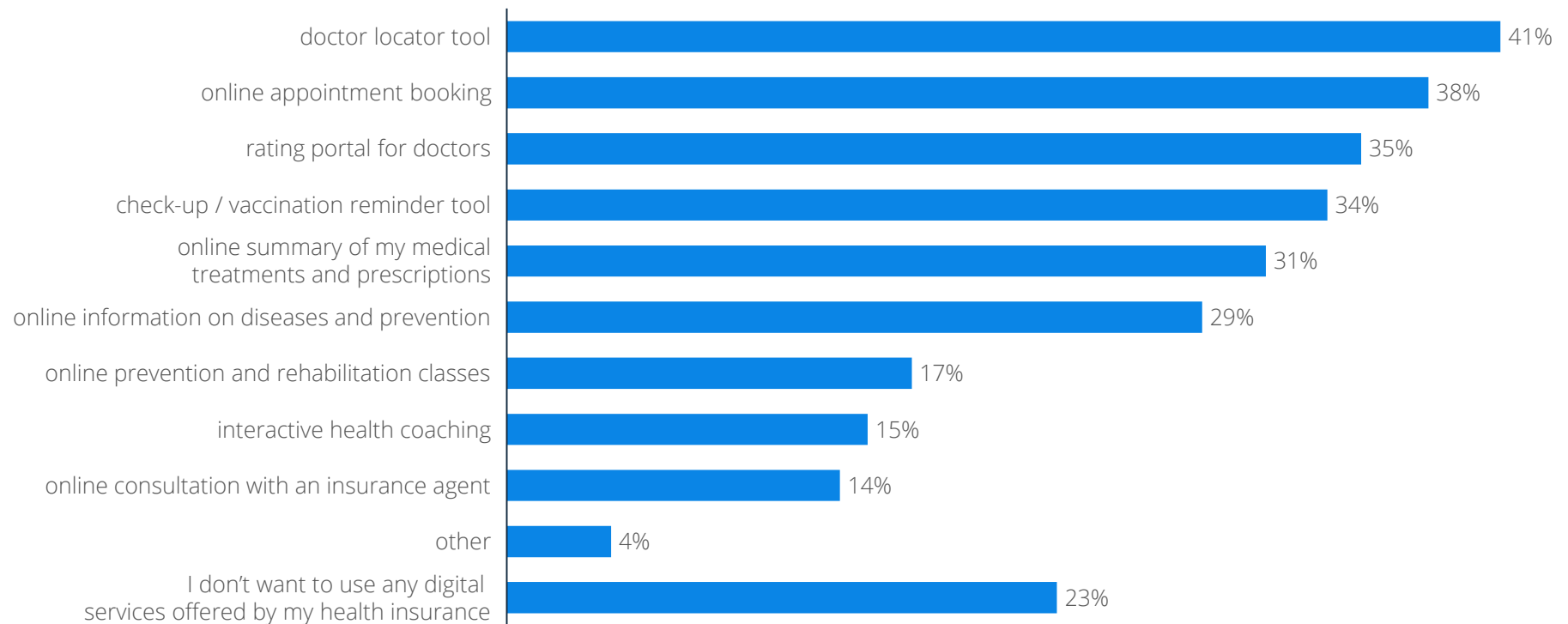
"Which of these health apps have you used in the past 12 months?"; Multiple response; n= 553, respondents who used health and/ or fitness apps in the past 12 months

Source: Statista Global Consumer Survey, data from June 2018

38% of Germans are willing to book their doctor appointments online

Usage of eHealth products: preferred services and devices (4/4)

Use and willingness to use digital services offered by the health insurance provider



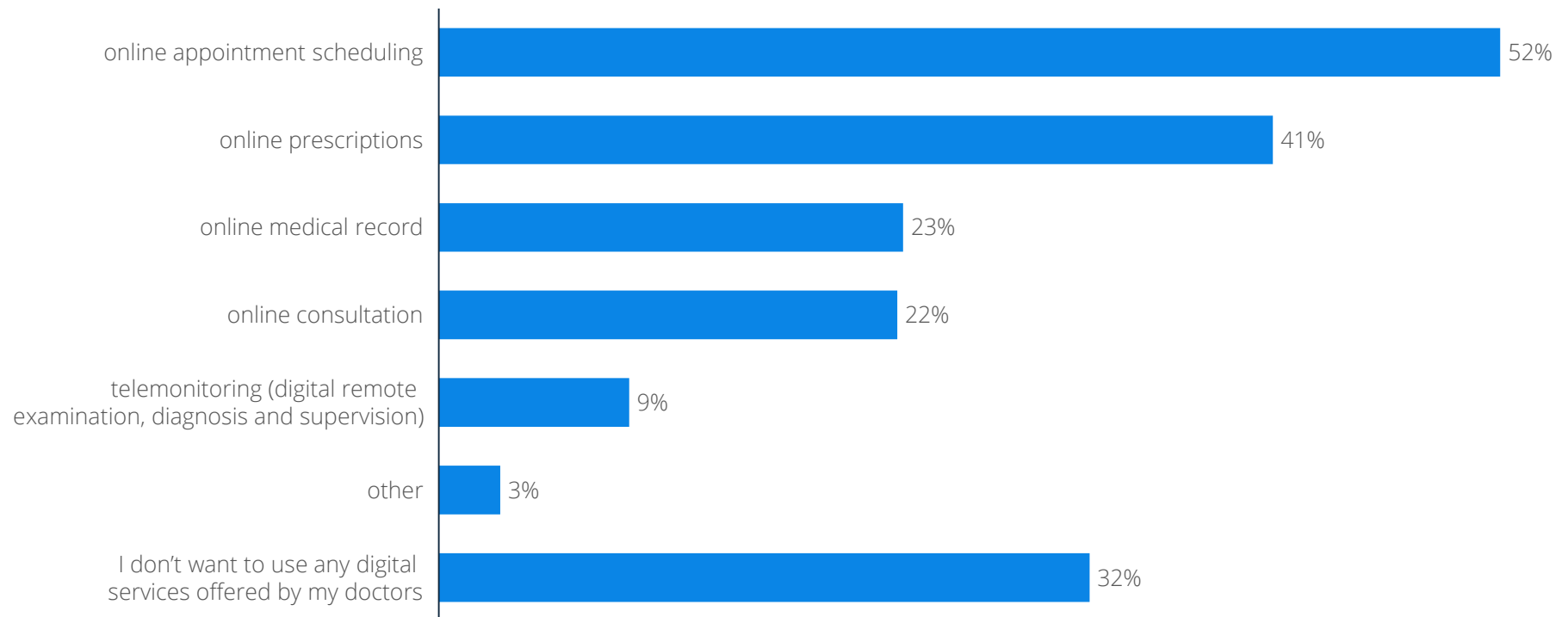
"Which of these digital services offered by your health insurance provider would you like to use or do you already use regularly?"; Multiple response; n= 2092

Source: Statista Global Consumer Survey, data from June 2018

32% of Germans do not want to use any digital services offered by their doctor

Limitations of the eHealth market: consumer refusal

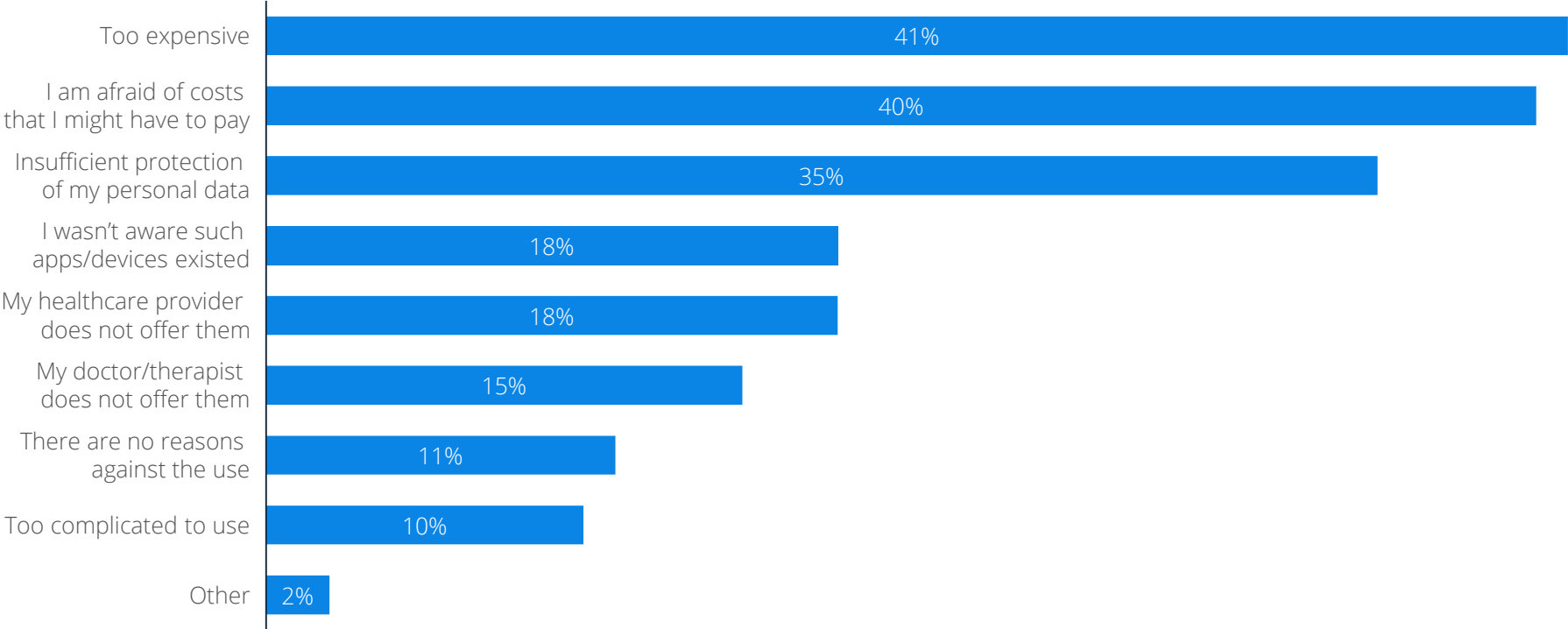
Use and willingness to use digital services offered by the doctor



High prices and personal data concerns are the main reasons not to use eHealth privately in Germany

Limitations of the eHealth market: reasons for refusal (1/3)

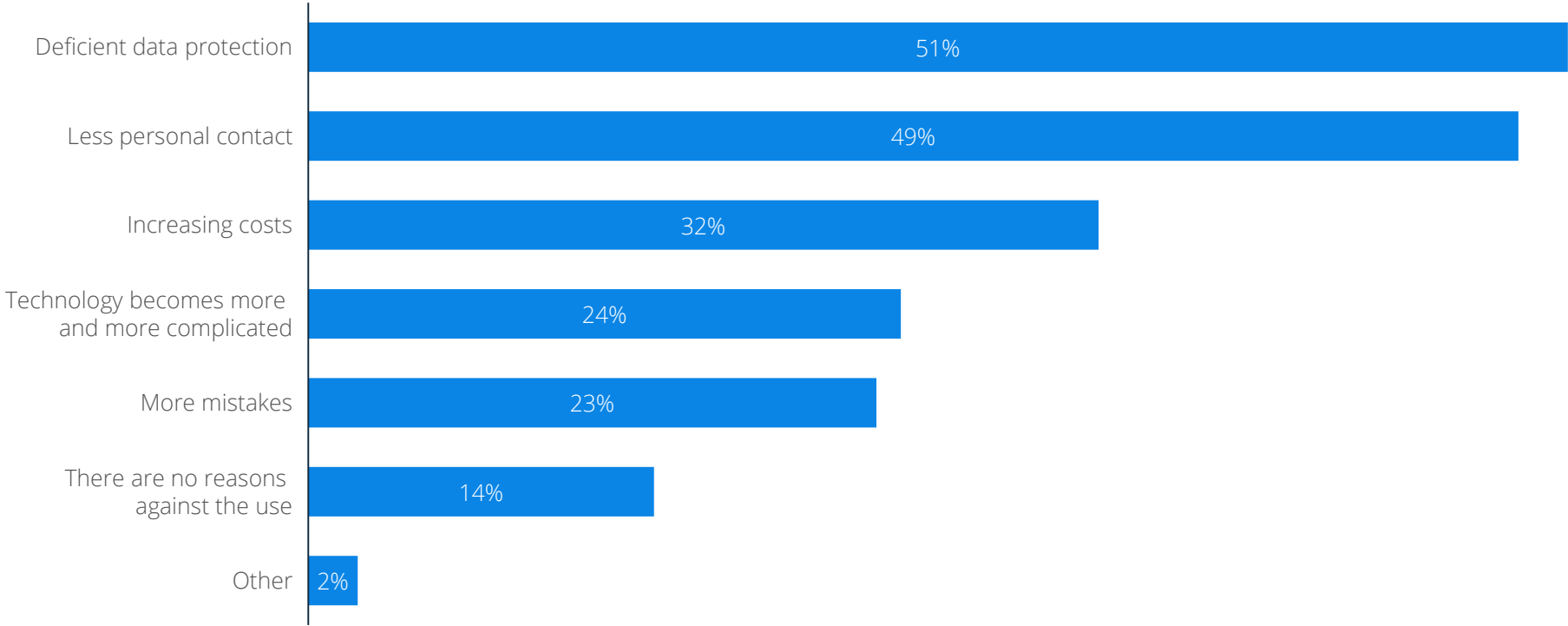
Reasons for not using eHealth apps and devices



Germans have concerns about insufficient data protection within eHealth

Limitations of the eHealth market: reasons for refusal (2/3)

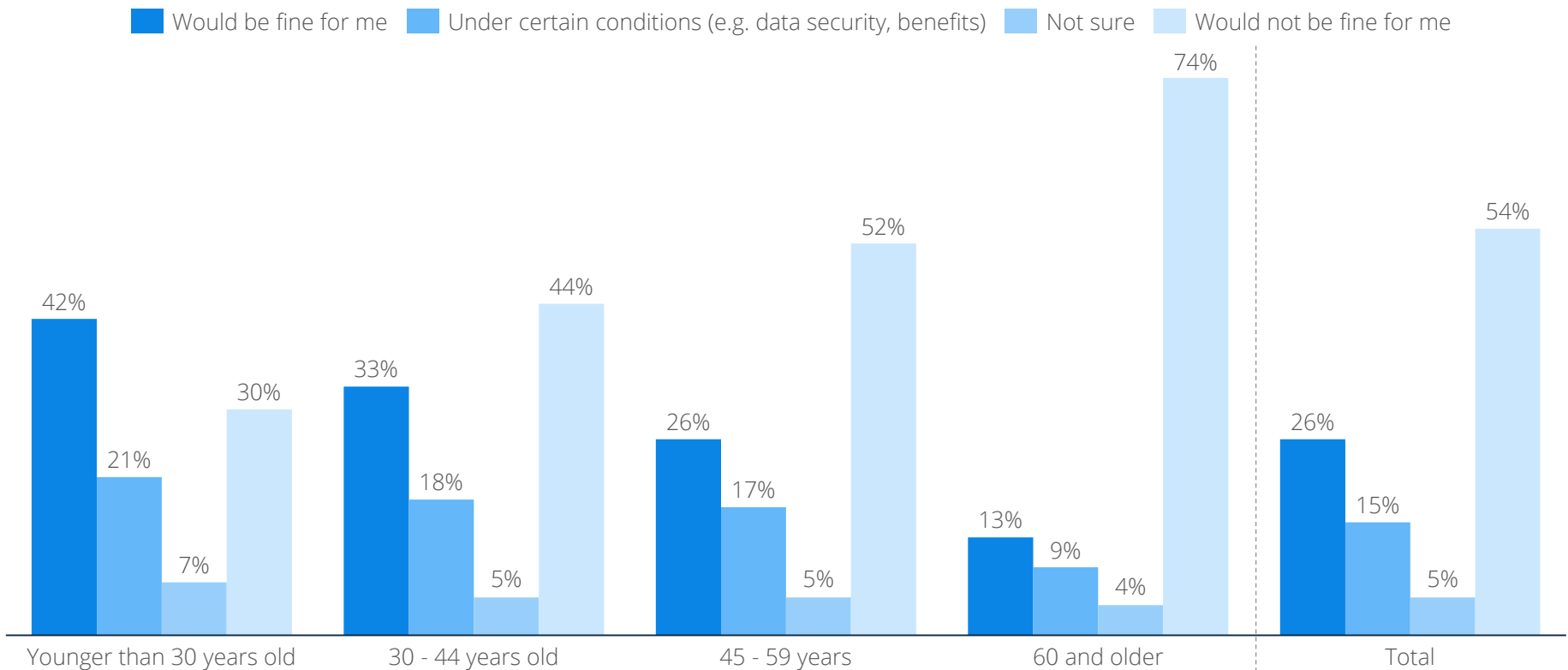
Reasons not to use digital technology in healthcare



Especially older Germans are not willing to share self-tracked health data with their provider

Limitations of the eHealth market: reasons for refusal (3/3)

Willingness to share self-tracked health-related data with healthcare providers in order to lower monthly dues



About the Statista Digital Market Outlook

9 markets, 35 segments & 85 sub-segments



Digital Media

Video-on-Demand, Digital Music, Video Games, ePubublishing



FinTech

Digital Payments, Alternative Financing, Alternative Lending, Personal Finance



eTravel

Online Travel Booking, Mobility Services



eServices

Event Tickets, Fitness, Dating Services, Food Delivery



eHealth

Fitness, AAL, ePharmacy, Heart Failure, Diabetes, Hypertension



Connected Car

Connected Hardware, Vehicle Services, Infotainment Services



Smart Home

Control and Connectivity, Comfort and Lighting, Security, Home Entertainment, Energy Management, Smart Appliances



eCommerce

Fashion, Electronics & Media, Food & Personal Care, Furniture & Appliances, Toys, Hobby & DIY



Digital Advertising

Banner Ads, Video Ads, Search Ads, Social Media Ads, Classifieds

Details

- 50+ countries & regions
- Direct access & downloads
- 7-Year coverage: 2016 – 2022
- Revenue forecasts



- User count & penetration



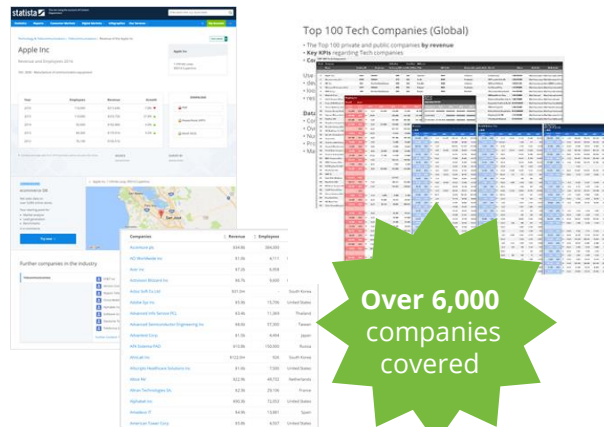
- Comparable data



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- Automotive
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Most important company key figures

- Address information
- Revenue
- Growth rates
- Number of employees

... in a given region

- Global
- Germany
- U.S.
- Southeast Asia
- ... and many more!

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Author, Imprint, and Disclaimer



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