

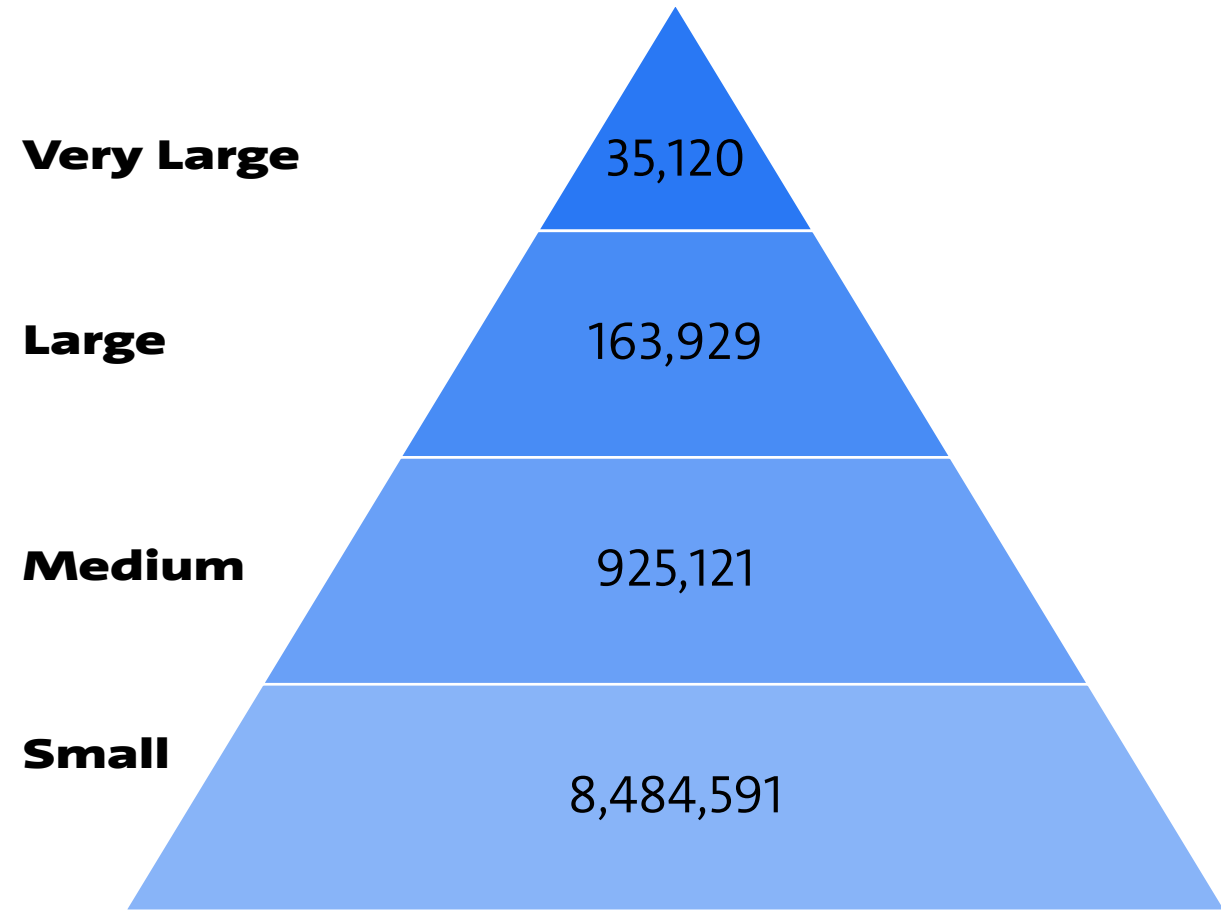
IND vertical license program

National Dealer Conference 2024

GRUNDFOS 

Possibility in every drop

Globally 10 M Factories can potentially push Growth Scenarios

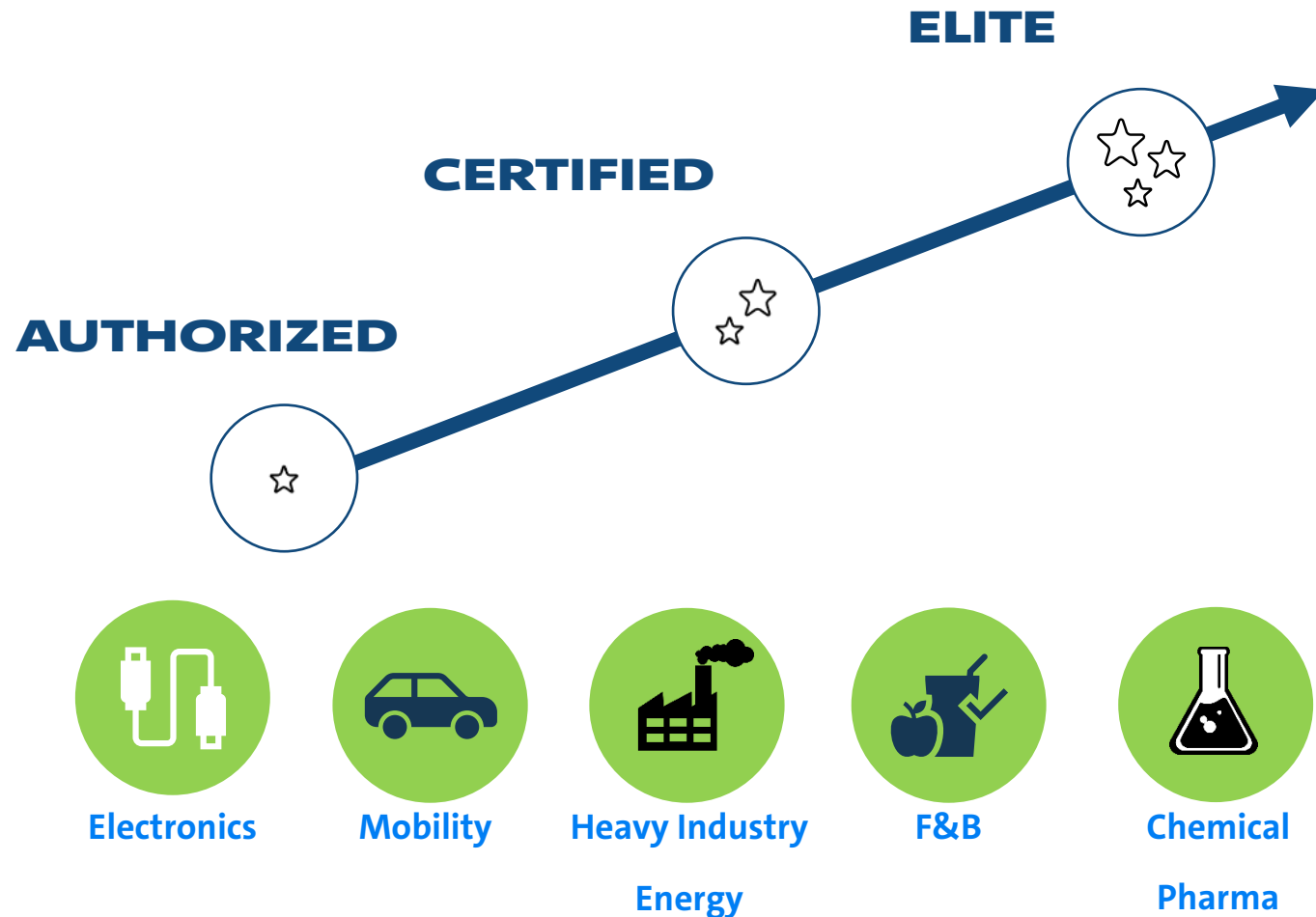


Data according to Orbis database as of 24/03/22 (Total End User No. = 9,608,761)

Vertical license program



The more market vertical-based focus,
the more compelling value proposition to the end-users



UNLEASH THE POWER TO CREATE
DIFFERENTIATED **VALUE** TO OUR
CUSTOMERS BY BECOMING A
TRUE CUSTOMER-SEGMENT

► **1**Vision

UNLEASH THE POWER
TO PROVIDE
INDUSTRY DECISION-
MAKERS THE MOST
**COMPELLING VALUE
PROPOSITION**
POSSIBLE



DIFFERENTIATION

Relentless pursuit of differentiation across
the value chain - **well beyond the product**

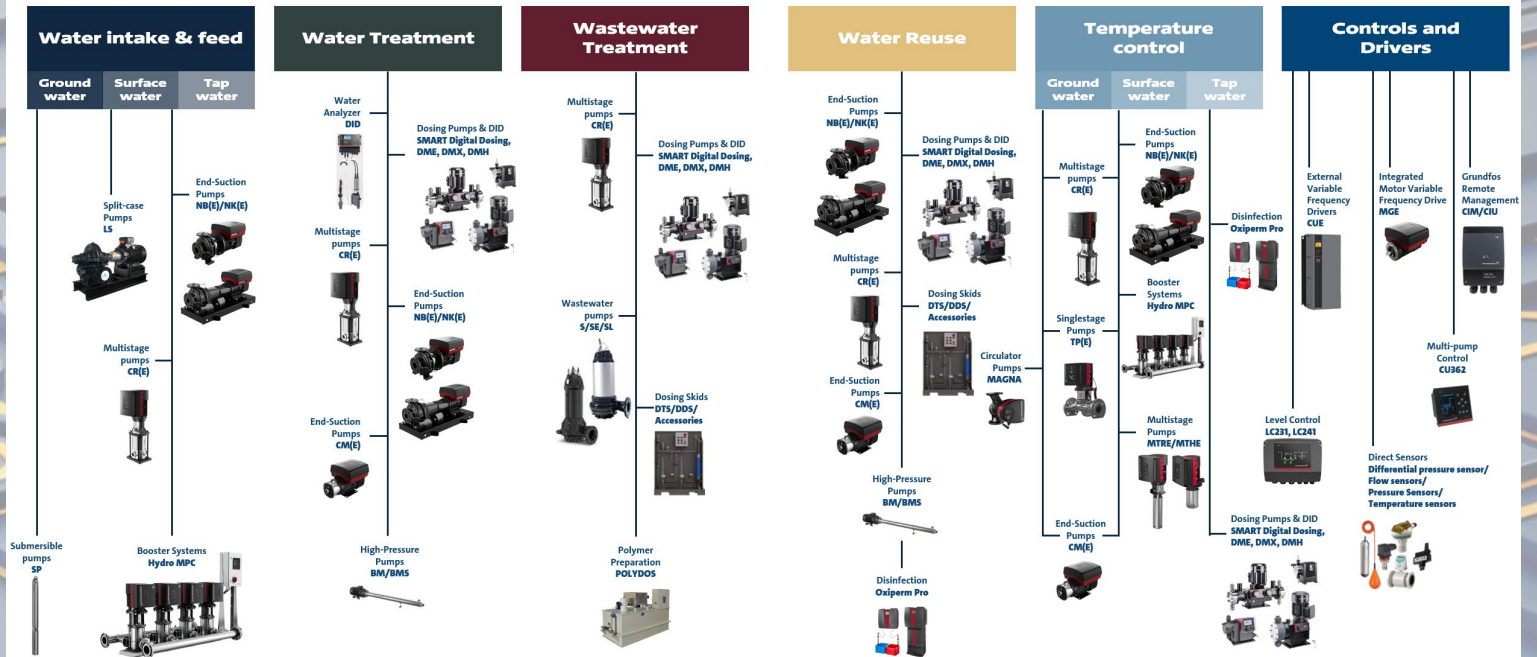
Electronics

5 Things you might not know about the semiconductor industry :

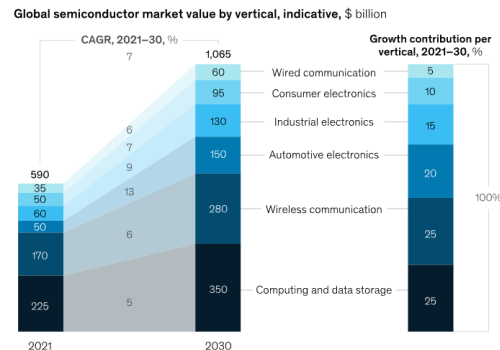
- It is expected to be a 1 Trillion USD business by 2030 with a 8% CAGR from 2020 to 2030
- It uses 1,3b m3 of water per year, enough to supply Johannesburg city with water for 3 years
- It needs extremely clean water, cleaner than ingredient water in medicine
- It cannot exist without an ambitious sustainability agenda, and Intel has a goal of being net water-positive in 2030
- US and EU has allocated 52b USD and 43b EUR to promote local production of semiconductor, equal to 90 Mars Exploration Rover missions

Next-level performance + Next generation sustainability

Products & Applications



The overall growth in the global semiconductor market is driven by the automotive, data storage, and wireless industries.



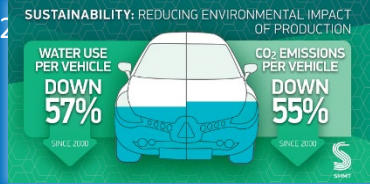
Note: Figures are approximate.

The semiconductor decade: A trillion-dollar industry | McKinsey

Mobility

Production Changes relevant to the Pumping Business :

- **Less energy (CO₂) and water consumption:** e.g. at Daimler, Volkswagen, BMW. Ford aims for zero drinking water usage for vehicle manufacturing by 2020. Water and CO₂ savings from automotive industry



- **Integration into IIoT platforms** (examples):

- **Adamos:** Industry 4.0 alliance for mechanical and plant engineering with equipment suppliers like Dürr, DMG Mori, oerlikon, ...
- **Volkswagen Industrial Cloud:** using AWS and MindSphere ->

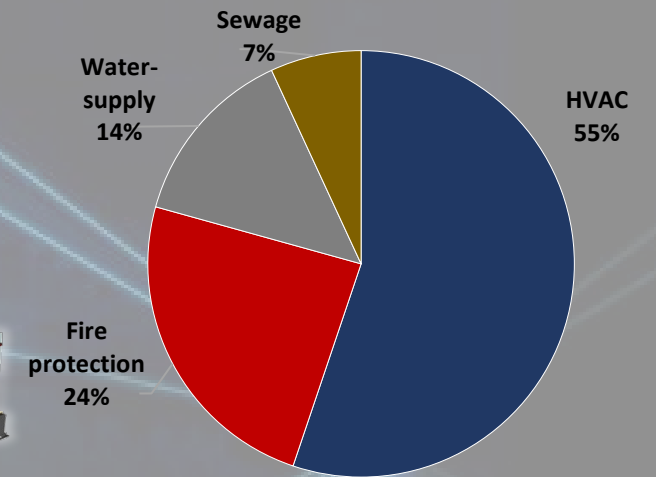
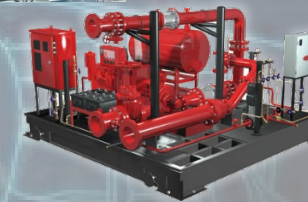


- **Electric cars**

When moving from combusting engines to electrical engines 50 % less metal casting and machining processes around the powertrain will be required (less cooling/lubrication). This will be reflected by lower machine tool sales predicted from 2027 onwards at the earliest.

The largest area of utility application are the control of the ambient air temperature & Fire fighting in the production plants.

- Heating /Cooling
- Fire protection
- Central water supply



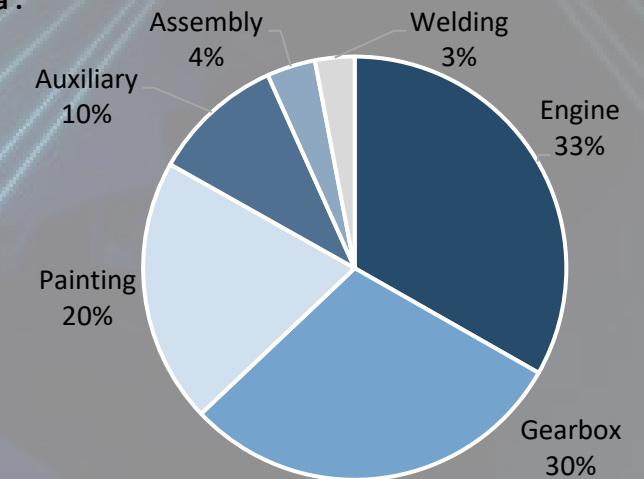
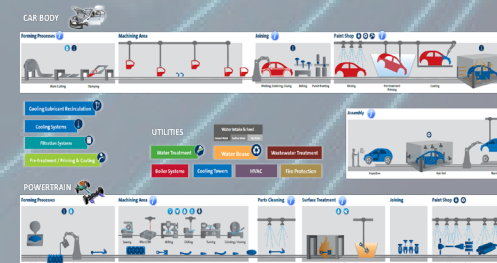
The automotive production process is divided into two main categories:

- **Car body**
- **Powertrain**

The main **applications** in the process area :

- Cooling (Welding, forging..)
- Lubrication (Process Machine..)
- Filtration (Water TX..)
- Cleaning (Car Washing..)
- Machining (engine block, gearbox...)
- Painting (pre-treatment..)

Process Chart | Grundfos Products in the Automotive Industry



Heavy Industry

The Clean Energy Market: Four Sub-Verticals structure the market, all connected with each other

Applications areas in the Clean Energy Vertical :

- Wind turbines
- Battery manufacturing
- Power-to-X

**Heavy Industry Market :
Categorized for several basic sector of market End user**

- Pulp & Paper
- Palm Oil refinery
- Textile
- Power Plant
- Mining
- Rubber base manufacture
- Cement

Energy

Vestas



SIEMENS Gamesa
RENEWABLE ENERGY



Orsted

Panasonic

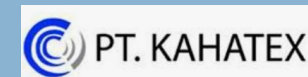


**Annual
Installation
Capacity**
33.14 GW



**Market
Value**
> 17 USD
Billion

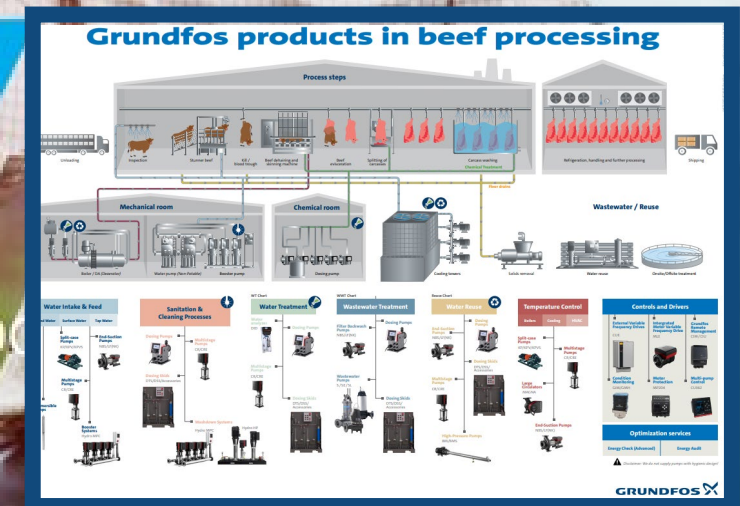
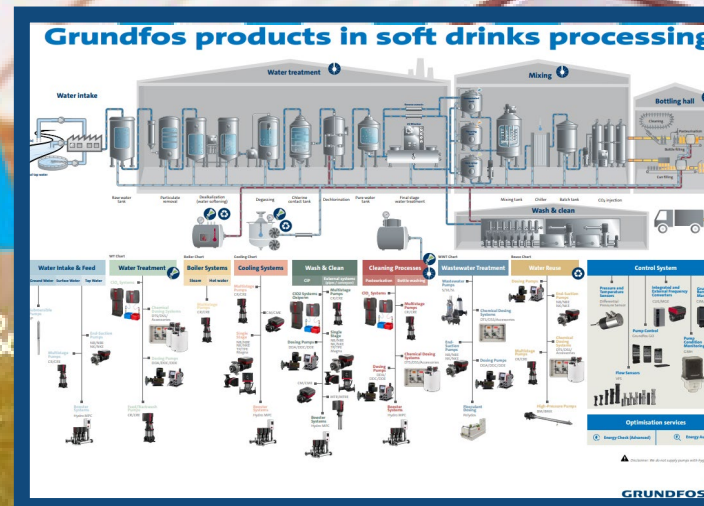
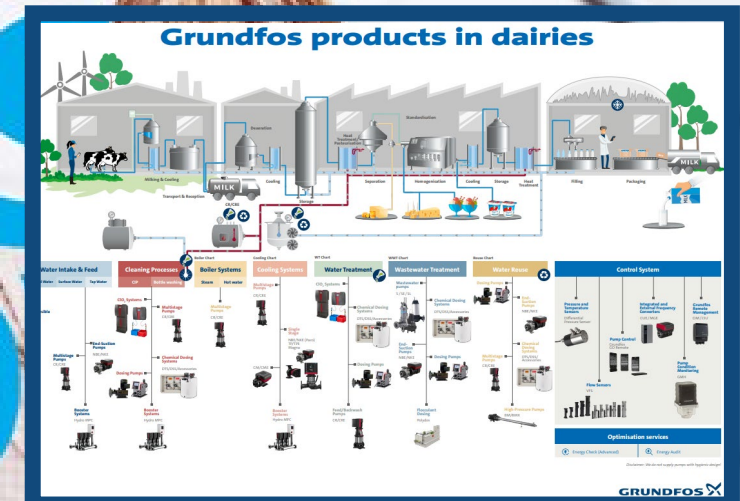
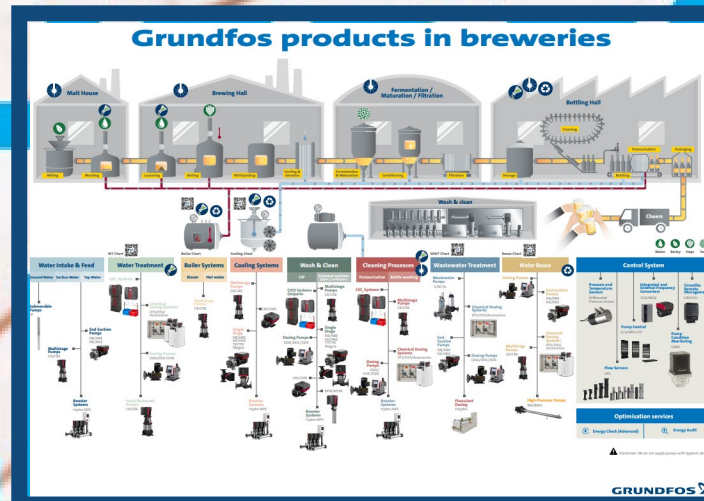
Heavy Industry



F&B

Why the Food & Beverage industry?

- Large market size and CAGR of ~ 7.5% to 2030
- Strong Sustainability drivers for water & CO2 reductions
- Increasing adoption of new and digital technologies
- A strong fit with our intelligent solutions & portfolio

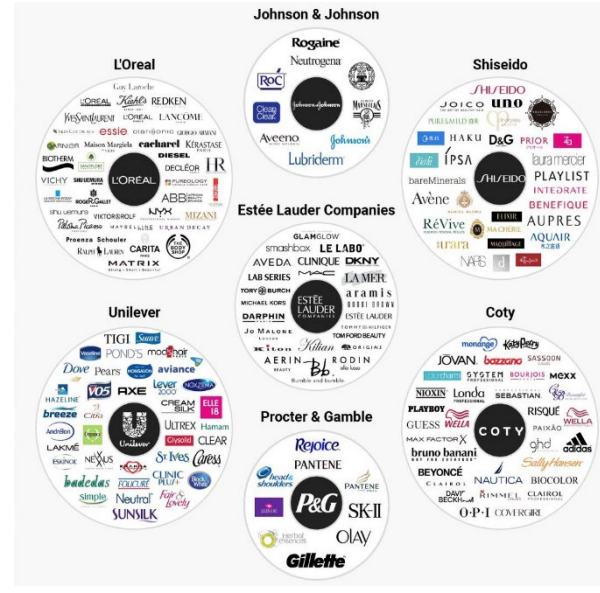


Chemical

Pharmaceutical Market Size and Growth

- The **total pump market** (served) in pharmaceutical manufacturing is estimated 400 – 500 m€/year (Grundfos Market Intelligence).
- The largest markets for **prescription medicines** are: USA, Japan and soon China (CAGR 23.2 %).
- Today, the greatest concentrations of **API** (Active Pharmaceutical Ingredients) **manufacturers** are located around Asia, specifically in India and China.
- Market Growth rate (2020-2030) : 6.2%

182 beauty companies are owned by 7 major leaders:

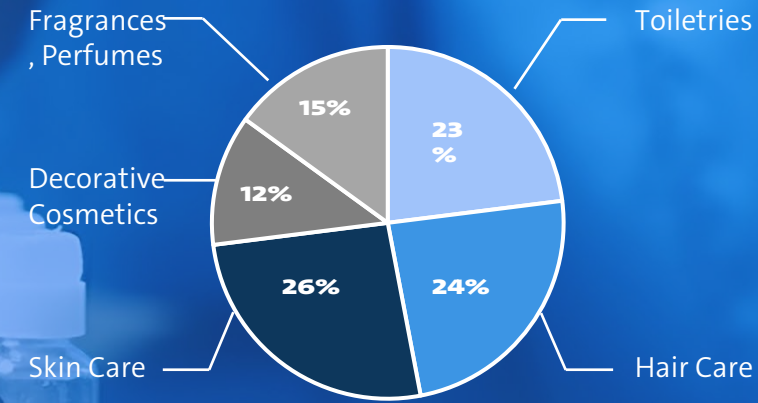


Market Size
US\$ 429.8 billion by
2022

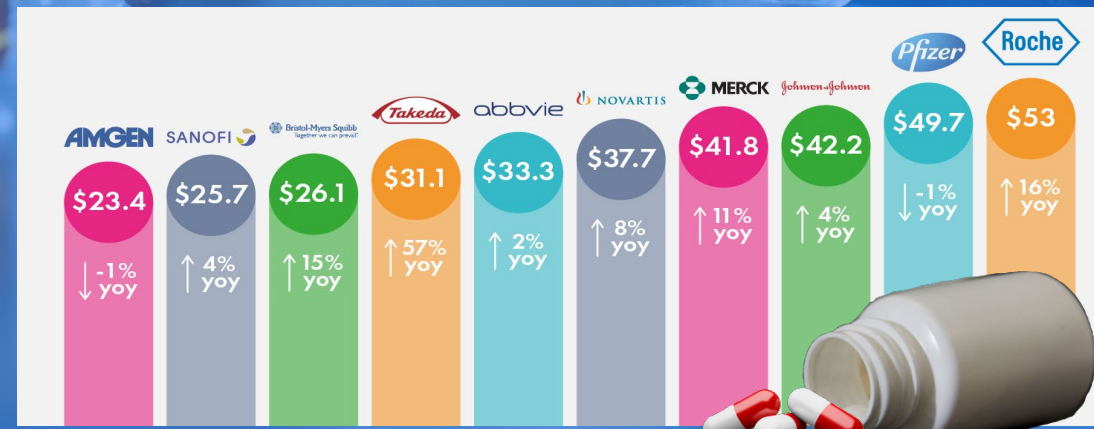
CAGR*
4.3 %
(2016 – 2022)

Market Shares by Product Category (Western Europe Sales, 2006)

Similar for other regions, exception: in Japan and China the share in skin care (~40 %) is much higher and in fragrances almost non-existent (2 %).



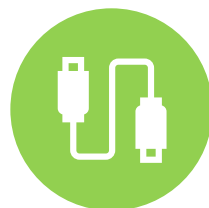
Top 10 pharmaceutical companies in 2020 (total revenue from pharmaceutical segment in bn US\$):



Focus Vertical business - Country View



F&B



Electronics



Mobility



Heavy Industry

Energy



Chemical

Pharma

Country	F&B		Electronics		Mobility		Energy		Pharma	
	Factory	Project	Factory	Project	Factory	Project	Factory	Project	Factory	Project
GSI	115	14	17	3	1	-	-	2	57	37
GPM	235	174	153	86	80	41	97	72	129	130
GTH	293	22	97	5	425	14	36	9	141	66
GTI	976	131	25	10	120	26	304	91	33	64
GPV	275	119	126	8	66	1	80	3	28	32
Total	1.894	460	418	112	692	82	517	177	388	329

Filter : Semiconductor & Computer

Filter : Automotive & Fabricated metal product

Filter : Textile and Pulp & paper, palm oil
No access for smelter and mining

Filter : Pharma & Biotech and Chemical process

Source : IIR (1/5/24)

Why do we focus on End-users?

- *To better understand their needs & challenges*
- *To communicate Grundfos solutions & technologies*
- *To become an influencer, and secure pull through our sales channels and partners (create leads & pipeline)*
- *To help develop a portfolio for the future*
- *Vertical License can create demand of Energy Efficiency Product, and help our customer's Net Zero journey*

