

# World Robotics

## Service Robots

### 2020



Statistics, Market Analysis and Forecasts

## Personal/Domestic Service Robots

### Value of Sales:

2019: USD 5.7bn, +20%

2020: USD 6.5bn, +15%

2023: USD 12.1bn, +23% (CAGR)

### Unit Sales:

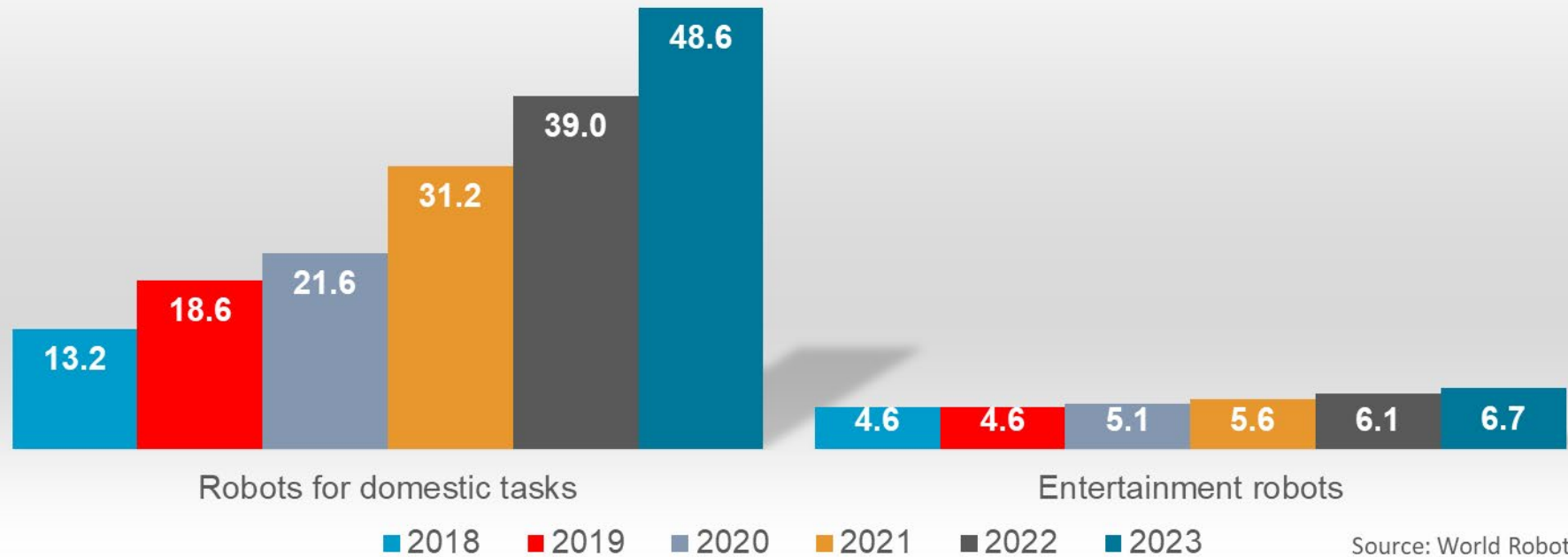
2019: 23.2 million units, +34%

2020: 26.7 million units, +15%

2023: 55.3 million units, +27% (CAGR)

# Vacuuming and floor cleaning: a task for robots

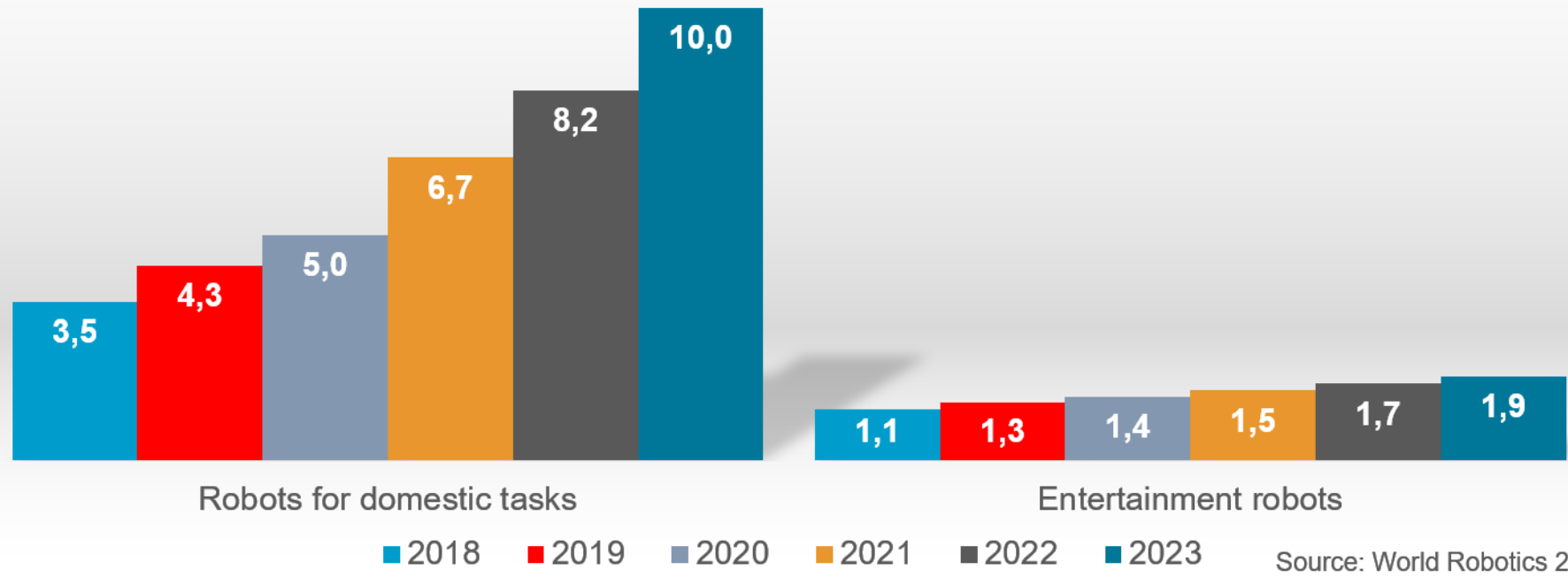
Service robots for personal/domestic use.  
Unit sales 2018 and 2019, potential development 2020-2023  
millions of units



Source: World Robotics 2020

# Steady growth of turnover expected

**Service robots for personal/domestic use.**  
Value of sales 2018 and 2019, potential development 2020-2023  
billions of USD



Source: World Robotics 2020

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## Professional Service Robots

### Value of Sales:

2019: USD 11.2bn, +32%

2020: USD 13.9bn, +24%

2023: USD 27.7bn, +26% (CAGR)

### Unit Sales:

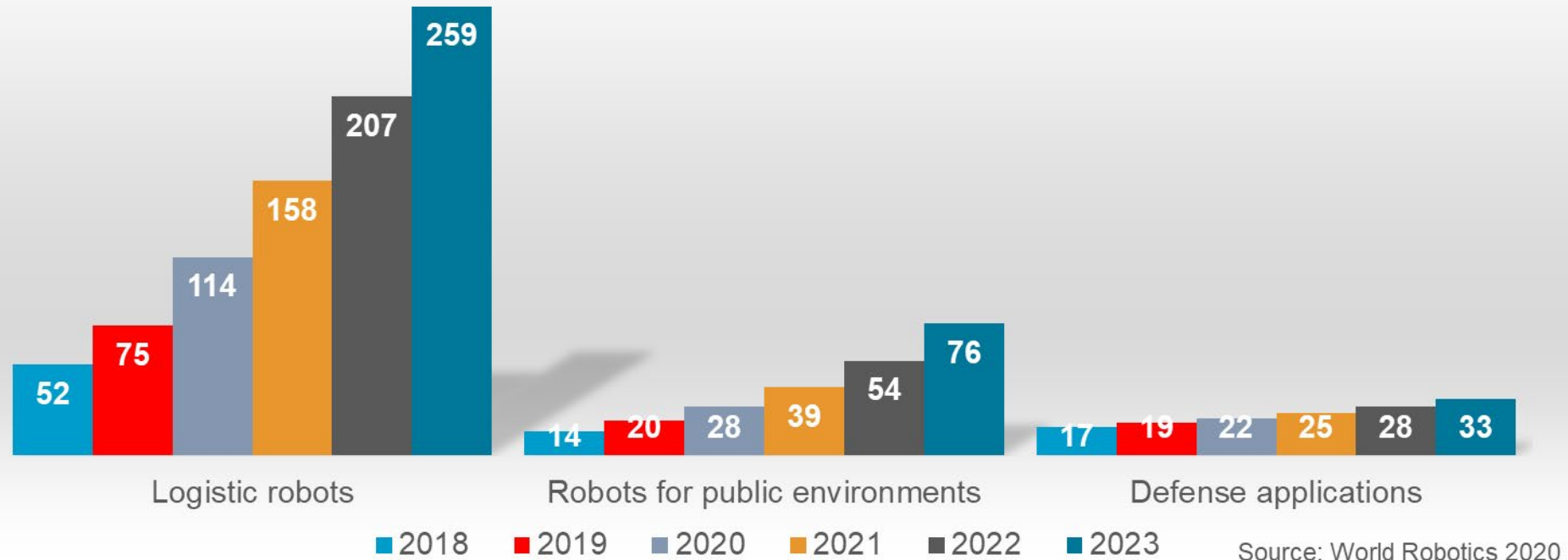
2019: 173,000 units, +32%

2020: 240,000 units, +38%

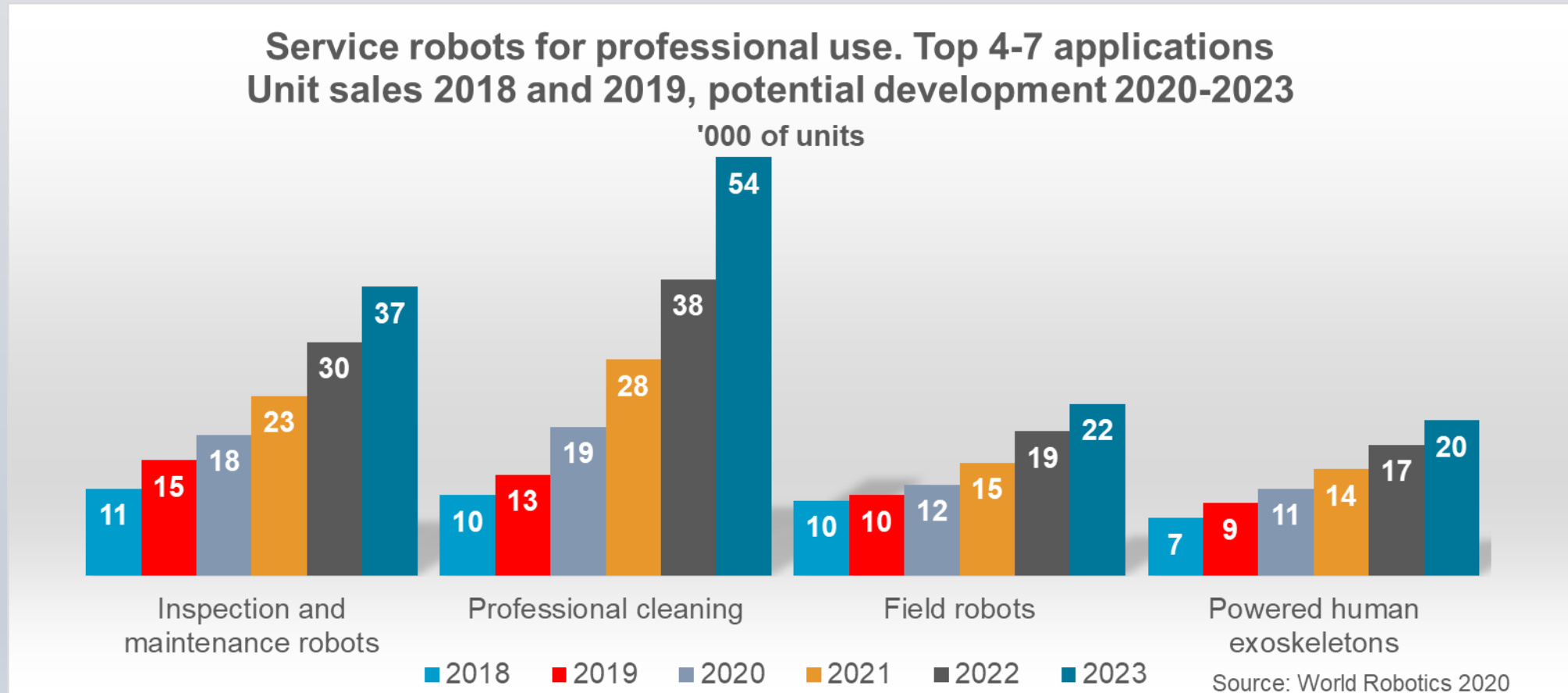
2023: 537,000 units, +31% (CAGR)

# Robots in logistics are still the growth drivers

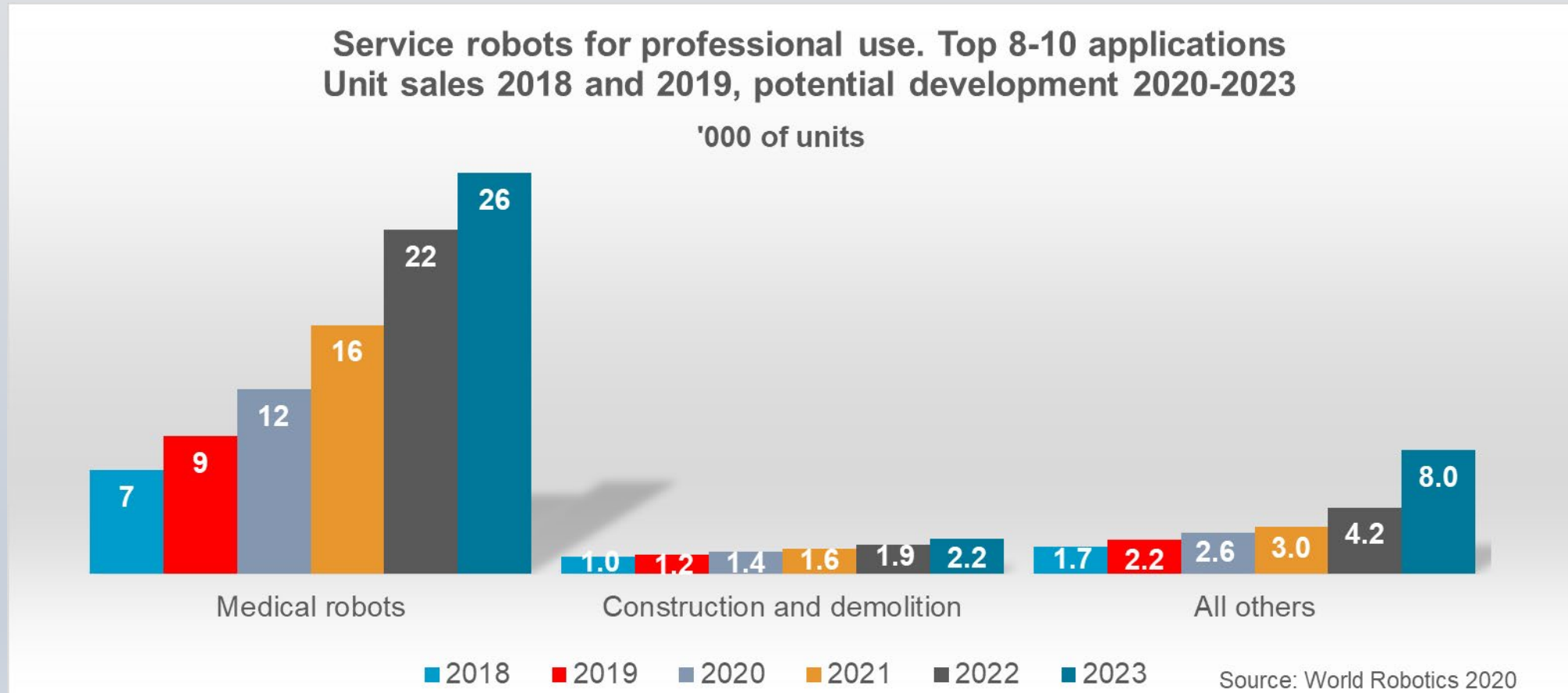
Service robots for professional use. Top 3 applications  
Unit sales 2018 and 2019, potential development 2020-2023  
'000 of units



# Professional cleaning on the way to a top 3 application



# Medical robots: growth expected as patents expire



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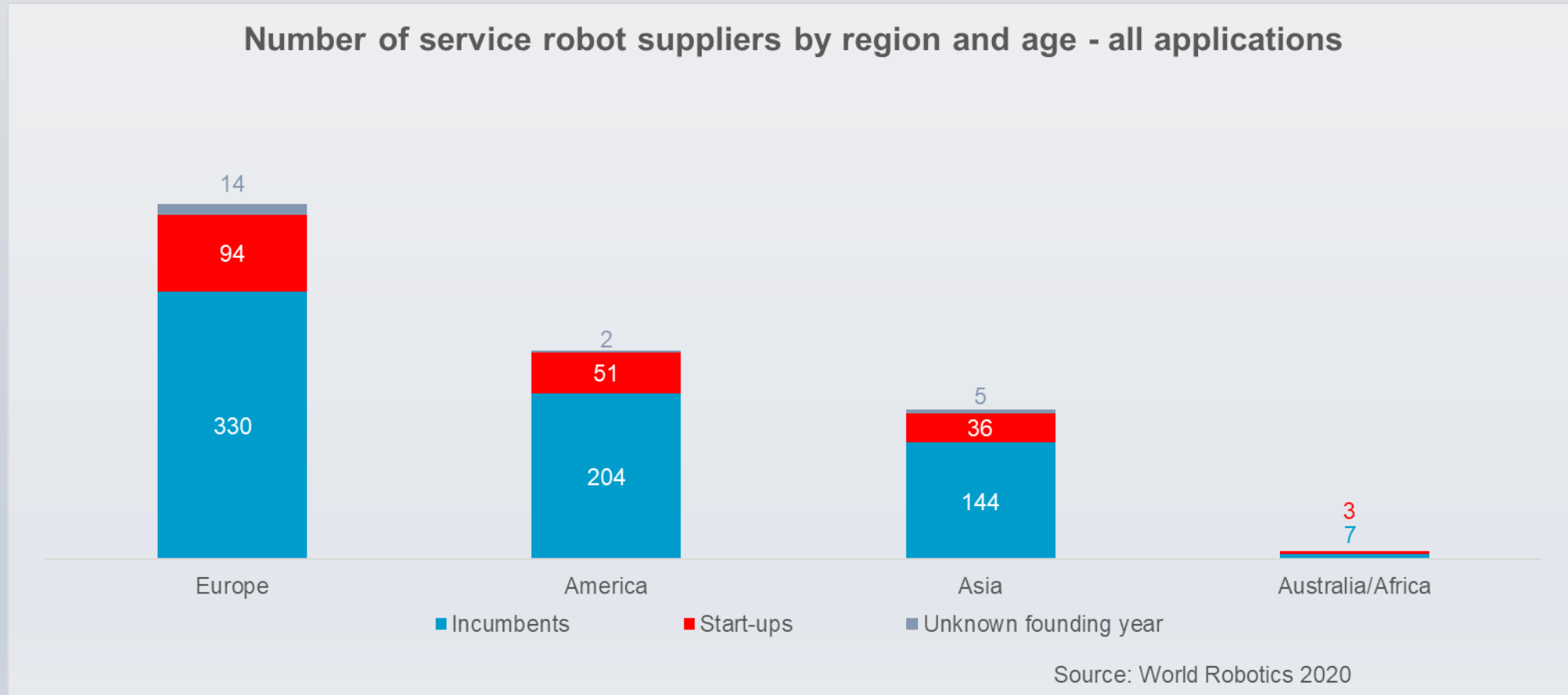
Statistics, Market Analysis and Forecasts

## Every 5<sup>th</sup> service robot supplier is a start-up

- 889 **service robot** suppliers
- 183 start-ups (est. 2015 or later)
  
- 728 **professional service robot** suppliers
- 155 start-ups
  
- 237 **personal/domestic service robot** suppliers
- 39 start-ups



# Global distribution of service robot suppliers



# Technology & application trends in service robotics

## Important markets to watch out:

- Unbroken scale-up of logistic systems (AGV, AMR)
- Mergers & acquisitions activities, e.g. in medical robotics
- Heavy construction machinery become robotized allowing multi-machine operation by one single person
- Information interaction (telepresence, advisory); >30 new disinfection robot models in 2020
- Covid-19 raised attention on healthcare robots

## Major Technology Accelerators

- Cloud technologies and 5G: e.g., remote procedures using surgical robots and 5G in China
- Business models like Robot-as-a-Service lower the entrance level, especially in new markets
- Standardization & “platformization”: e.g. for peripherals (app store), sales platform, plug& play

## Long-run perspectives for robotics remain excellent

- ✓ There are still many “4d” (*dull, dirty, dangerous and/or delicate*) tasks that could be done by robots, improving worker health, safety and job satisfaction.
- ✓ Ageing societies will feel additional need to relieve employees from physical tasks.
- ✓ Technological development will further increase the ROI in robots.
- ✓ Matrix production layouts use robots for automatic workpiece transportation.
- ✓ Modern robots support a smaller carbon footprint.
- ✓ Human-robot collaborative applications will complement traditional robotics.
- ✓ “Plug and play” system integration makes deployment easier (e.g. through OPC-UA).
- ✓ Ease of programming (e.g. through demonstration) makes redeployment easier.