

Money Spinning Sensors

**Revenue trends by sensor
type 2021-2023**

INSIGHTS FOR SUCCESS | IDEAS TO EXECUTE

January 2021

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KEY TAKEAWAYS

Basic sensors just comprise of four sensors viz. pressure, temperature, flow and level which alone contribute 18% of the total revenue amounting to \$30.4B in 2020. **Basic sensors have the largest installed base in the industrial manufacturing space.**



The trend of integration of sensors is on the rise. Its biggest advantage is of facilitating sensors communication with each other to maintain system integrity.

With the emergence of increasing number of integrated systems most sensor types are embedded with memory nodes to enabling it to store data which can be pulled out any time when required.



Most of the basic sensors are wired. These are growing at a low annual growth rate of 4-6% depending on the sensor. **Upgradation and replacement is the key driver for revenue growth of basic sensors.**

Applied sensors are the largest class of revenue generators contributing 79.7% of total revenue in 2020 and are estimated to increase its revenue share to 81.2% in forecast year 2023.

Most sensors which are part of integrated systems have analytical capability which enables them to generate actionable data.



Sensors are change in every possible way from sensor materials to high efficiency, level of intelligence, quality of analytics, interactivity, and real time two way/ multiway communication.



79.7%
total revenue
in 2020

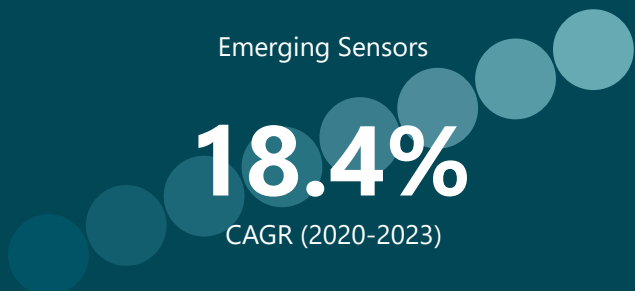


Sensors is the most dynamic market space and most attractive option for both hardware and software investors.

Innovation is a continuous process in sensors with the development of new sensors addressing different unmet needs. **This class of emerging sensors is fastest growing with an estimated CAGR of 18.4% during 2020-2023.** Emerging sensors have the lowest installed base in the sensor market.

Emerging Sensors

18.4%
CAGR (2020-2023)

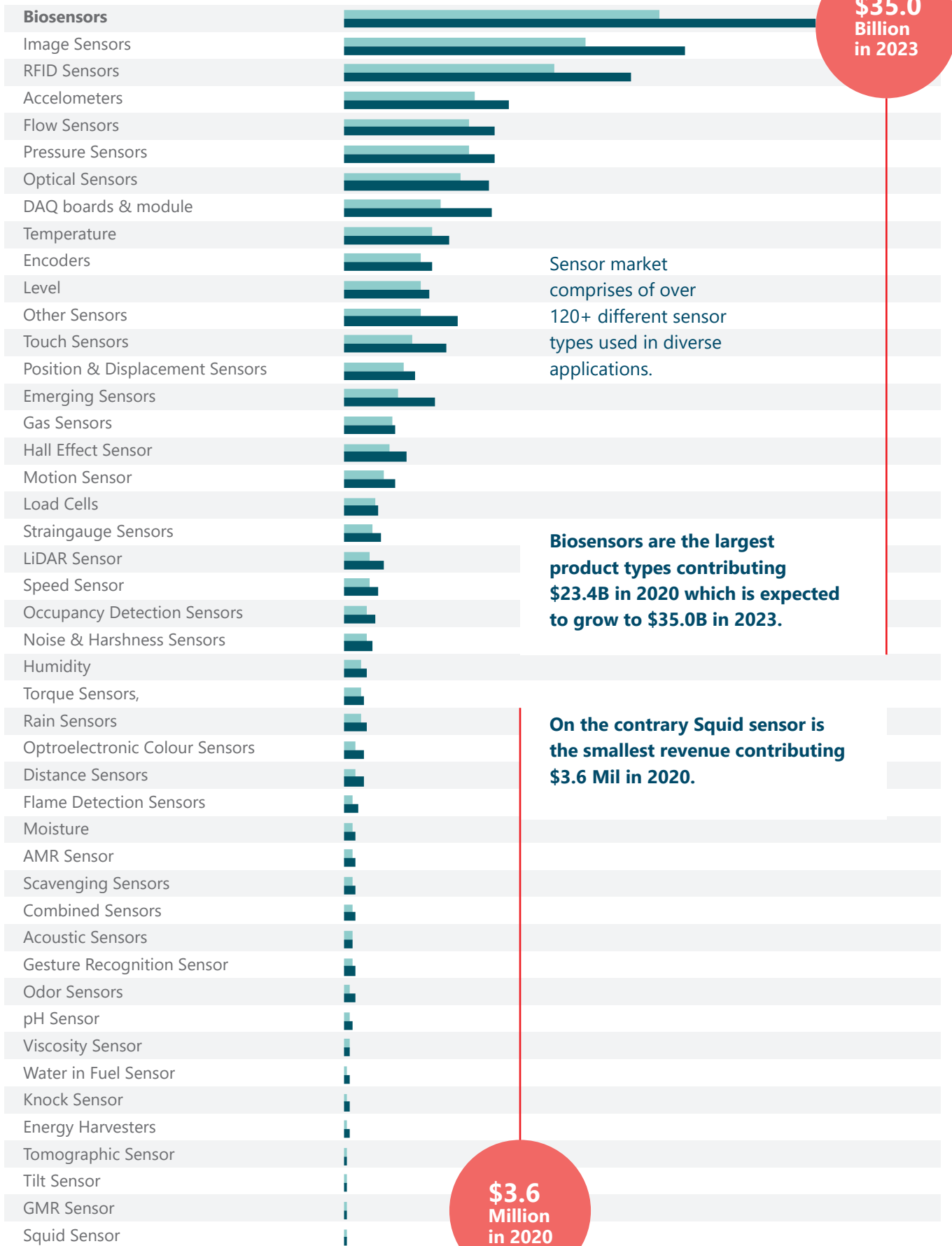


Revenue Analysis

Trends in Revenues by Sensor Types

2020 2023

Chart 2.1: Global Sensors Market, Revenue by Product Type, US\$mill 2020 and 2023



\$35.0 Billion in 2023

Sensor market comprises of over 120+ different sensor types used in diverse applications.

Biosensors are the largest product types contributing \$23.4B in 2020 which is expected to grow to \$35.0B in 2023.

On the contrary Squid sensor is the smallest revenue contributing \$3.6 Mil in 2020.

\$3.6 Million in 2020

Classification of Sensors

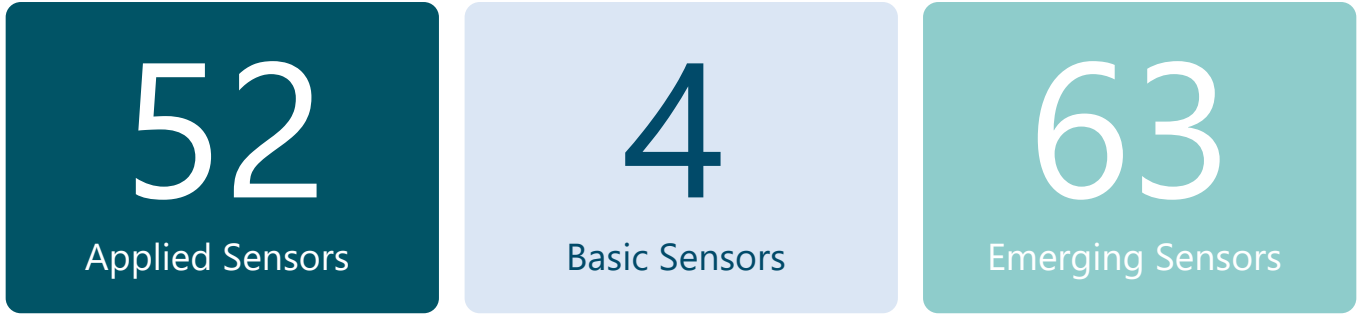
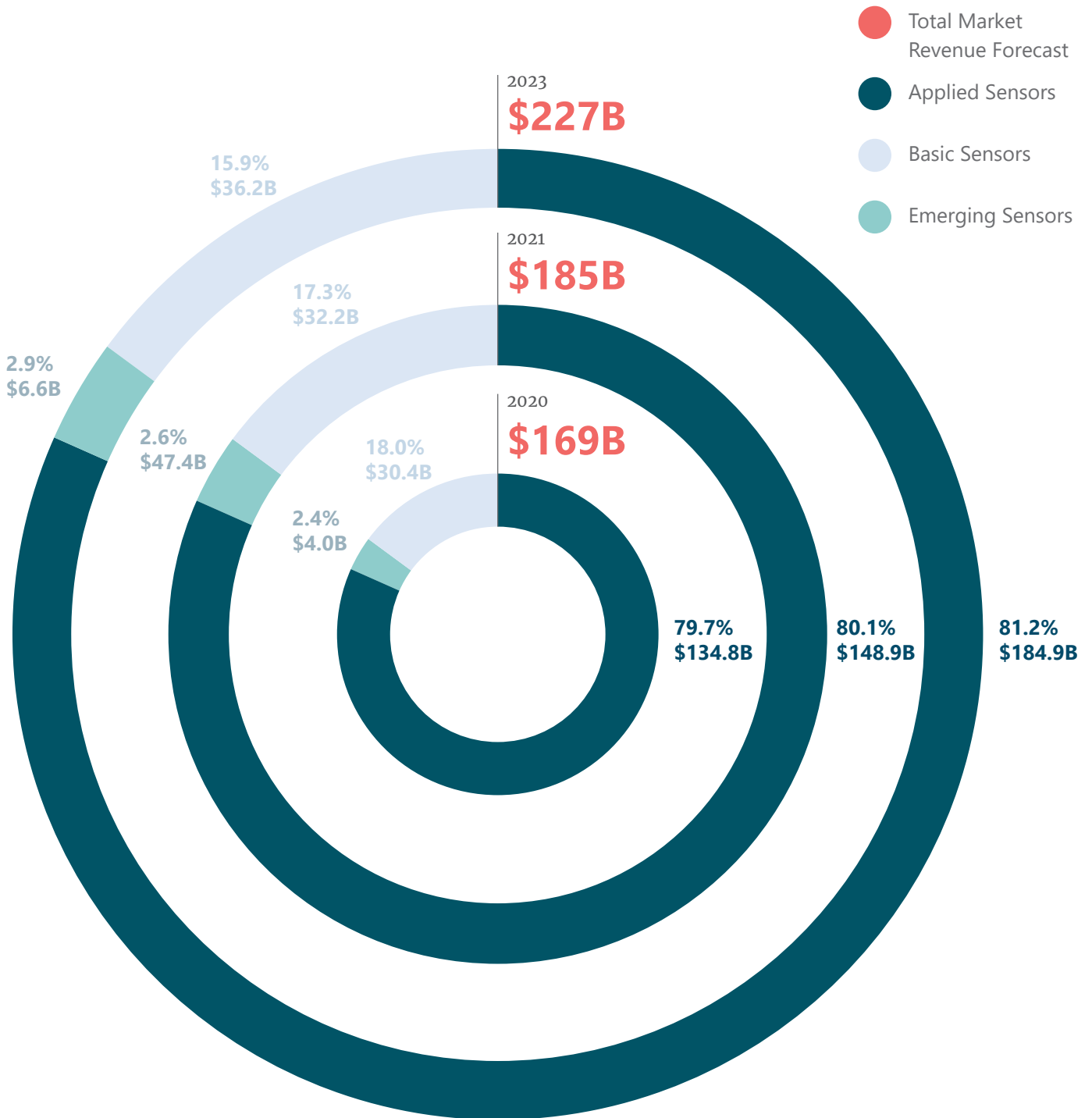


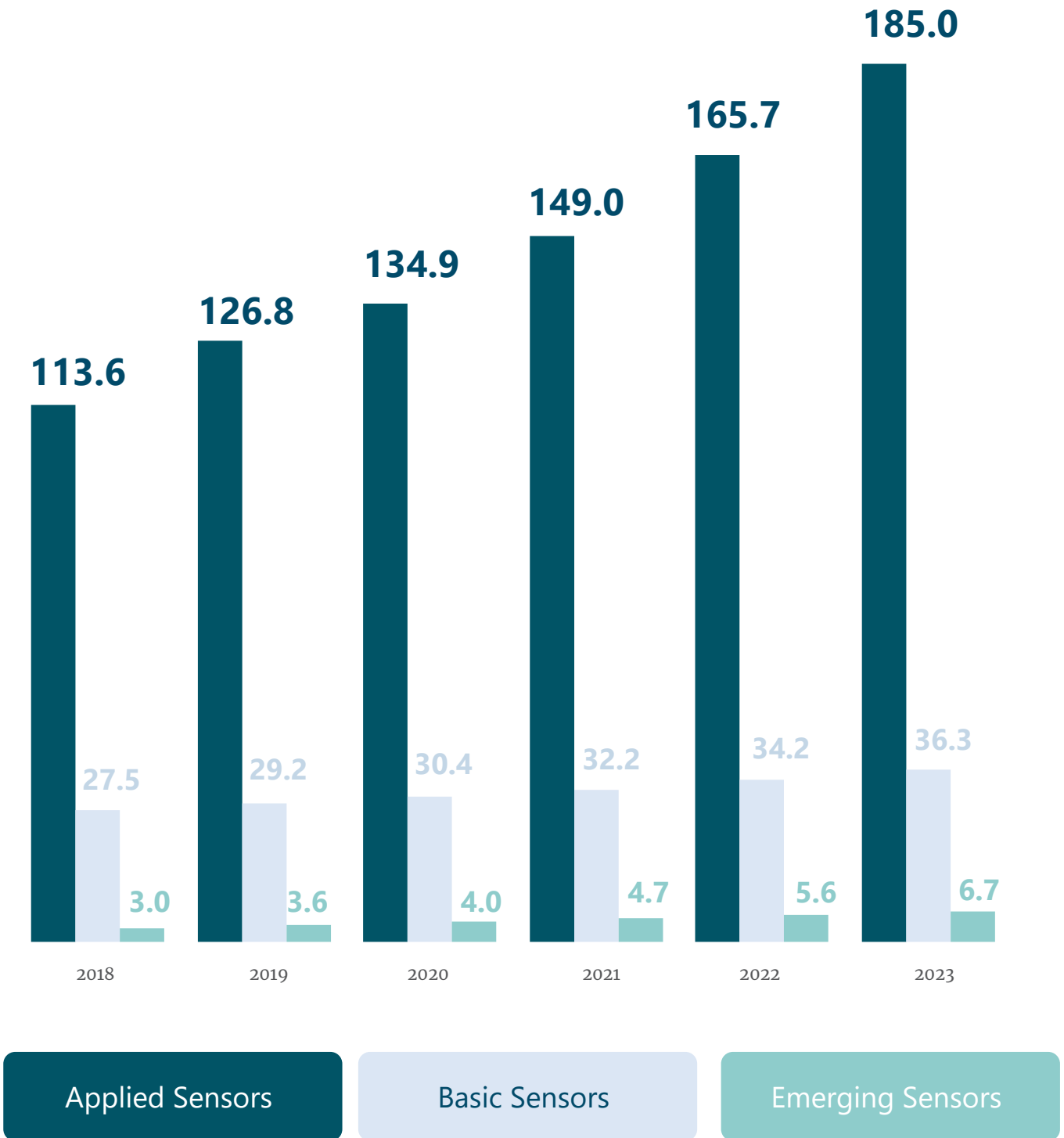
Chart 2.2: Total Global Sensors, Market Revenue Forecast by Sensor Class, US\$bn 2020, 2021 and 2023



Source: Twimbit

Note: All figures are rounded. The base year is 2020

Chart 2.3: Total Global Sensors, Market Revenue Forecast by Sensor Class, US\$bn 2018–2023



Source: Twimbit

Note: All figures are rounded. The base year is 2020

Basic Sensors

Basic sensors comprise of sensing four most widely measured parameters like pressure, temperature, flow, and level which generated 18% of total revenue which amounts to \$30.4bill in 2020. Upgradation and replacements due to technology developments are the key drivers for revenue and revenue growth. In 2020 due to COVID, impact of pressure, flow and level sensors revenue growth declined by almost half. Only temperature sensors were able to limit this decline in annual growth to 6.2% in 2020.

This marginal decline was restricted due to spurt in demand of non-contact infrared sensors for detection of initial symptoms of COVID. The use of temperature sensors is likely to increase due to its deployment in cold chain for temperature regulations in storing and transporting billions of vials of COVID vaccines in all geographic regions. In the base year 2020 basic sensors generated \$30,422.47mil in global revenue which is estimated to increase to \$36,267.37mil in 2023 growing at a CAGR of at 6.0% during 2020-2023.

Chart 2.4: Total Global Basic Sensors, Revenue Share by Product Type, US\$bn 2020 and 2023

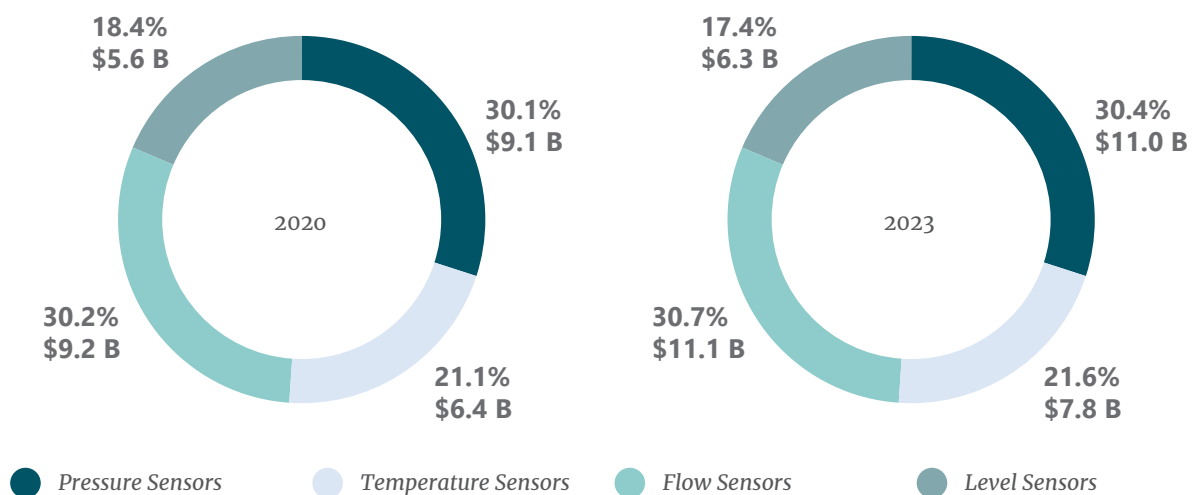
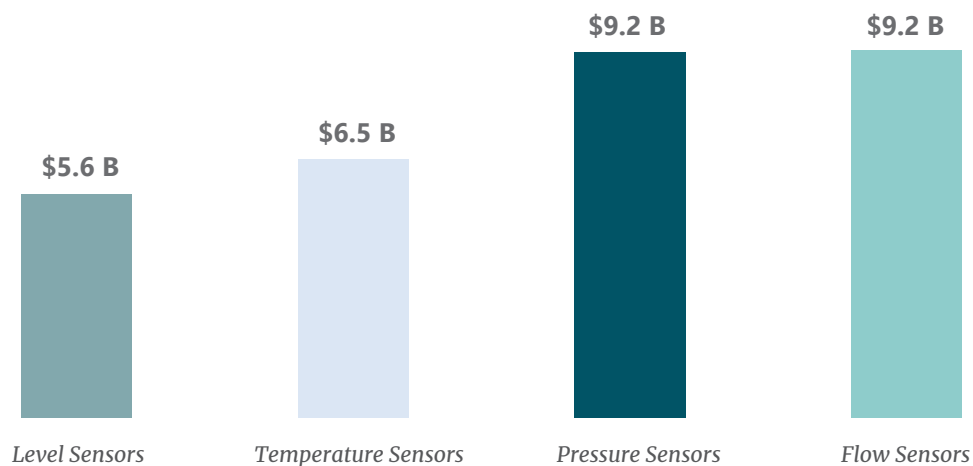


Chart 2.5: Total Global Basic Sensors, Revenue Share by Product Type, US\$bn 2020



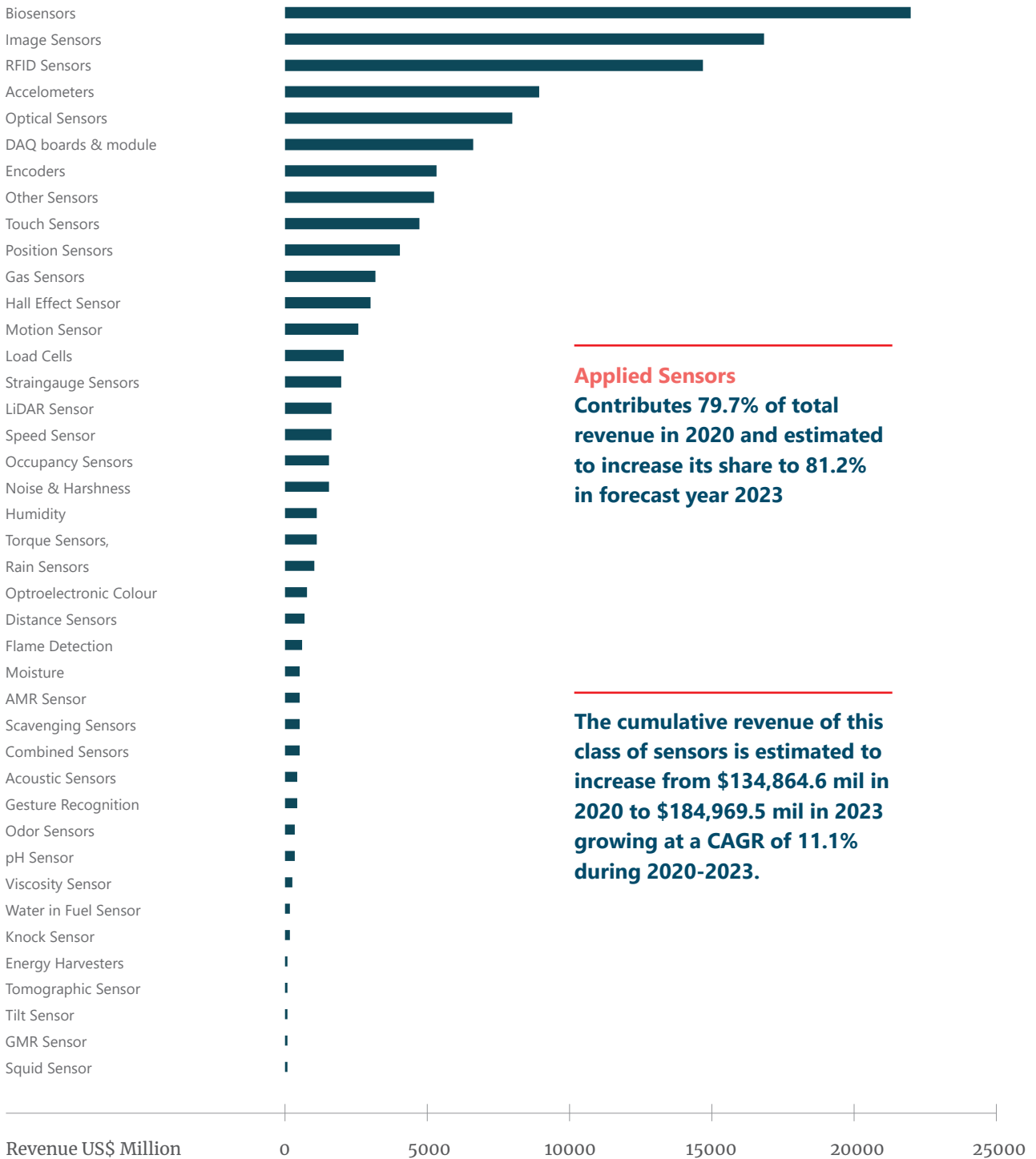
Source: Twimbit

Note: All figures are rounded. The base year is 2020

Applied Sensors

Applied sensors are the largest group of sensors used in diverse applications. This class of sensors constitute of about 45 frequently used sensors that detect motion, acceleration, image, position, touch, distance, noise, weight, harshness, impact, acidity/ alkalinity, tilt, speed, moisture, humidity, acoustics, sound waves, radio frequency and presence of biomolecules.

Chart 2.6: Total Global Applied Sensors, Revenue Share by Product Type, US\$mill 2020



Applied Sensors
 Contributes 79.7% of total revenue in 2020 and estimated to increase its share to 81.2% in forecast year 2023

The cumulative revenue of this class of sensors is estimated to increase from \$134,864.6 mil in 2020 to \$184,969.5 mil in 2023 growing at a CAGR of 11.1% during 2020-2023.

Source: Twimbit

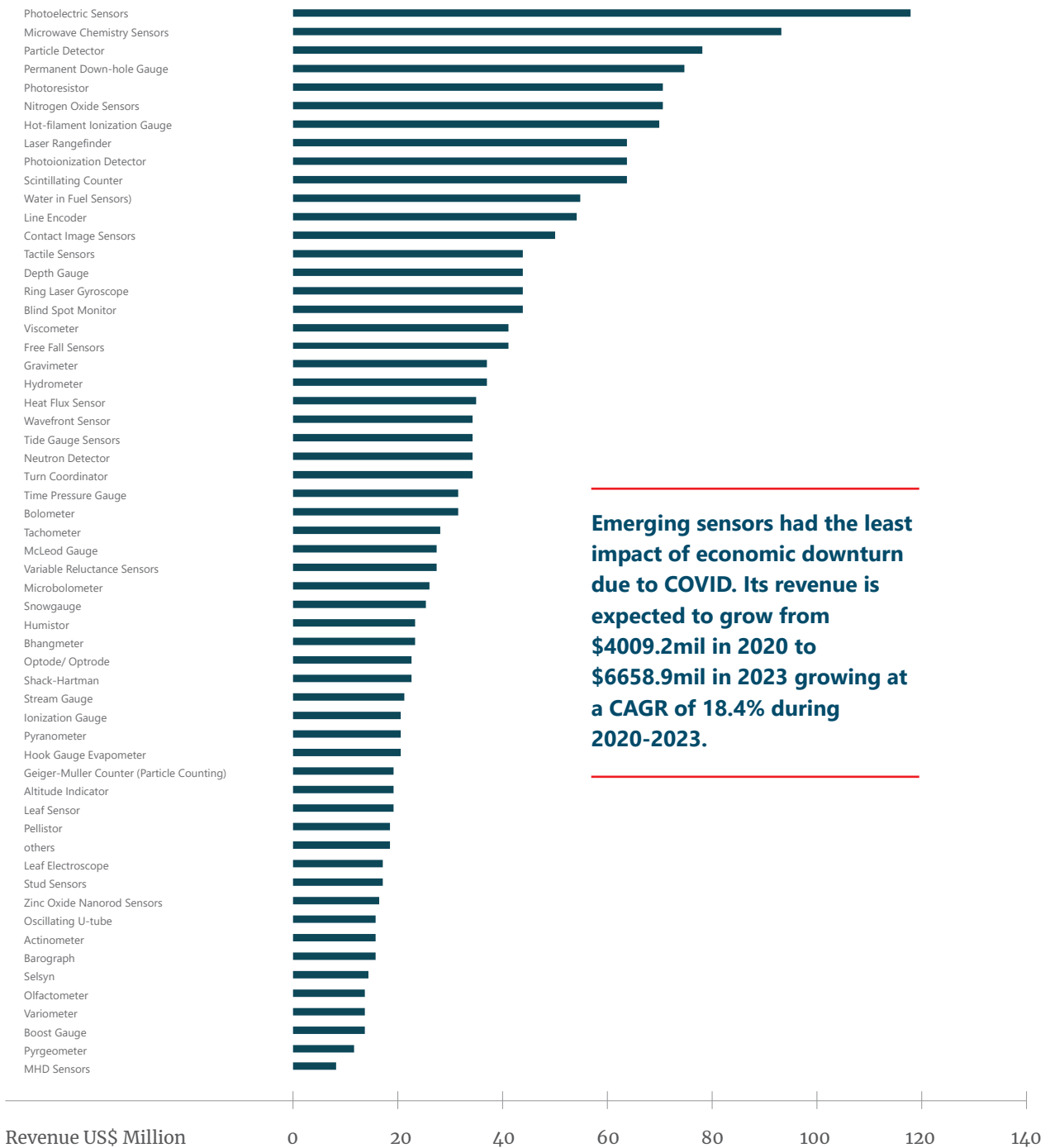
Note: All figures are rounded. The base year is 2020

Emerging Sensors

Emerging sensors is a class of sensors comprising of newer sensors developed in the last some years and has the lowest installed base in the sensor market. There are over 61 sensors grouped in this class. Some of these newly developed sensors include water in fuel sensor, leaf sensor, contact image sensors, wavefront sensor, MHD sensors, time pressure gauge, optode/ optrode, tide gauge sensor, Pyrgeometer, stream gauge, turn coordinator, ring laser gyroscope, free fall sensor, microbolometer, humistor, bhangmeter and actinometer.

This is the fastest growing class of sensors making strong penetration into multiple applications.

Chart 2.7: Total Global Emerging Sensors, Revenue Share by Product Type, US\$mill 2020



Emerging sensors had the least impact of economic downturn due to COVID. Its revenue is expected to grow from \$4009.2mil in 2020 to \$6658.9mil in 2023 growing at a CAGR of 18.4% during 2020-2023.

Source: Twimbit

Note: All figures are rounded. The base year is 2020

Conclusion

Top growth opportunities in the sensors market



- ✓ Embedded AI revolutionizes control paradigm.
- ✓ IOT opens large growth opportunities for connected sensors and devices.
- ✓ COVID Impacted markets both negatively and positively.
- ✓ COVID boosted markets like virus detection biosensors, personal protection equipment, temperature sensors like infrared, food processing and beverages, energy and power, pharmaceuticals, preventive healthcare, point of care facilities and agriculture.
- ✓ Use of sense making sensors facilitates actionable data and real-time course correction.
- ✓ Deploying non-contact technology platforms like optical, acoustic and laser to develop new sensors to address unmet needs.
- ✓ The impact of all these trends is estimated to result in creating additional global opportunity of \$58.6 billion between 2020 -2023.



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