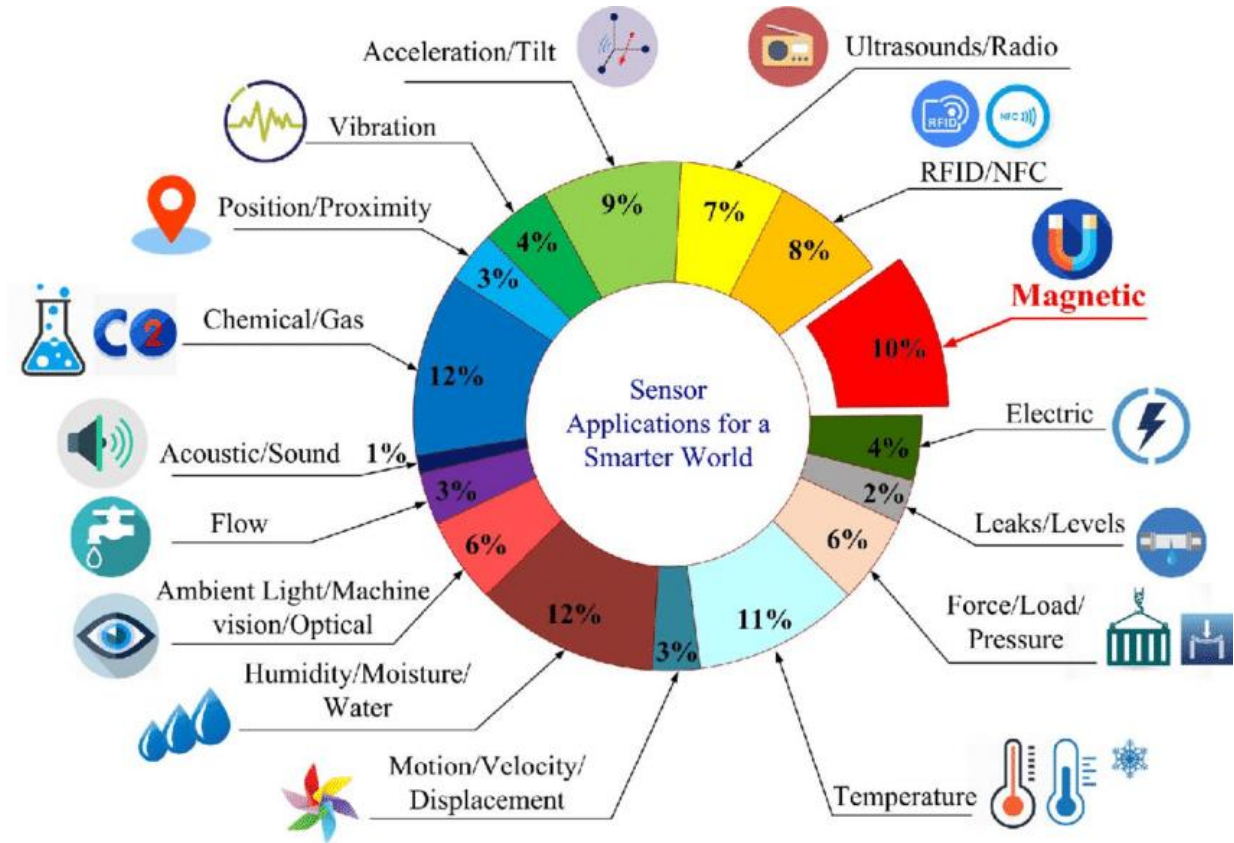
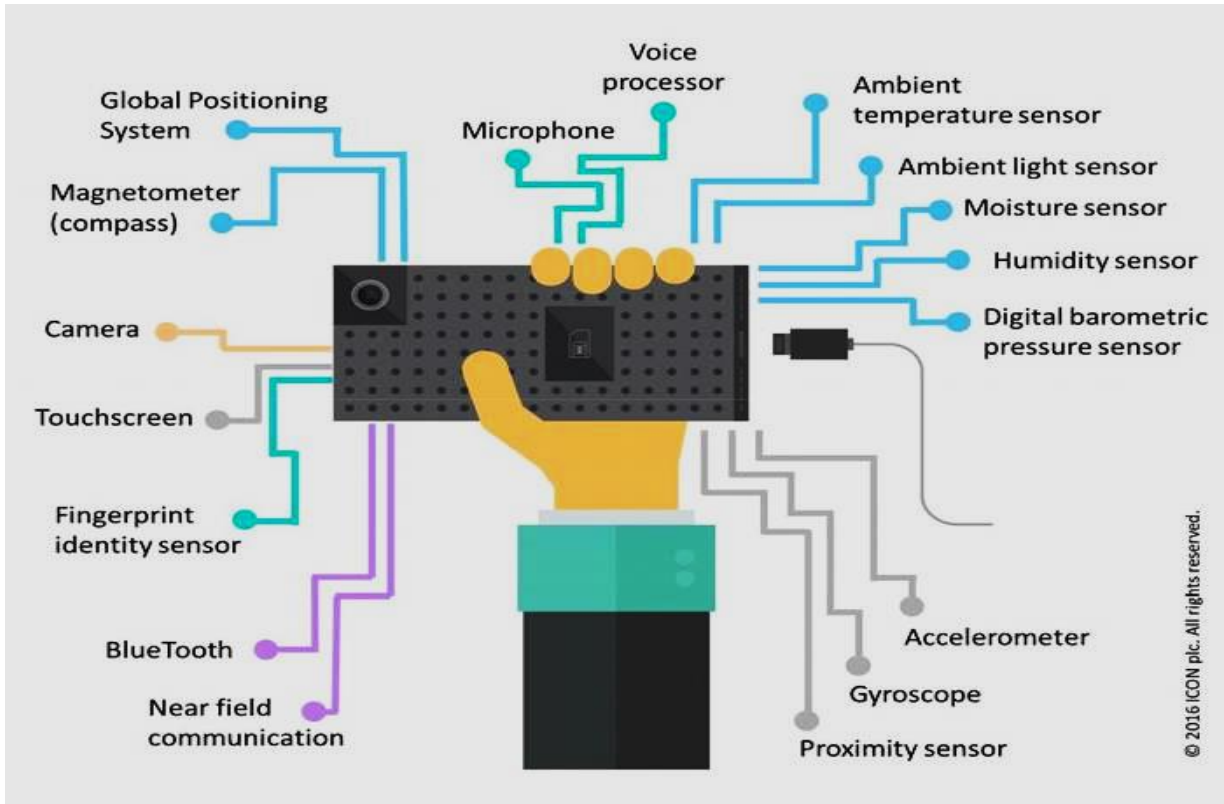


NECTEC-ACE 2024

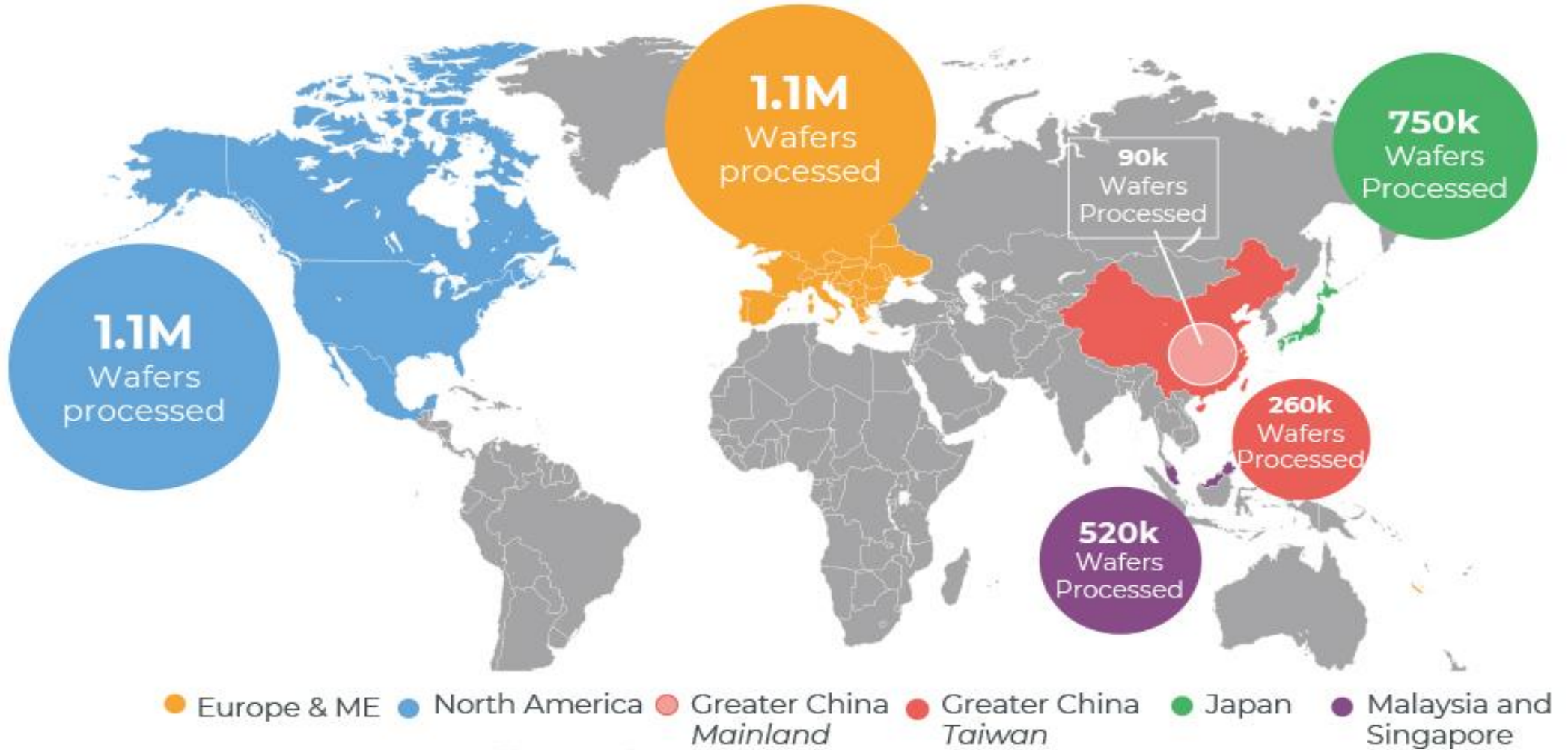
นิวัตน์ พันธุศิลปาคม สถาบันไฟฟ้าและอิเล็กทรอนิกส์
10 กันยายน 2567

Type of Sensors



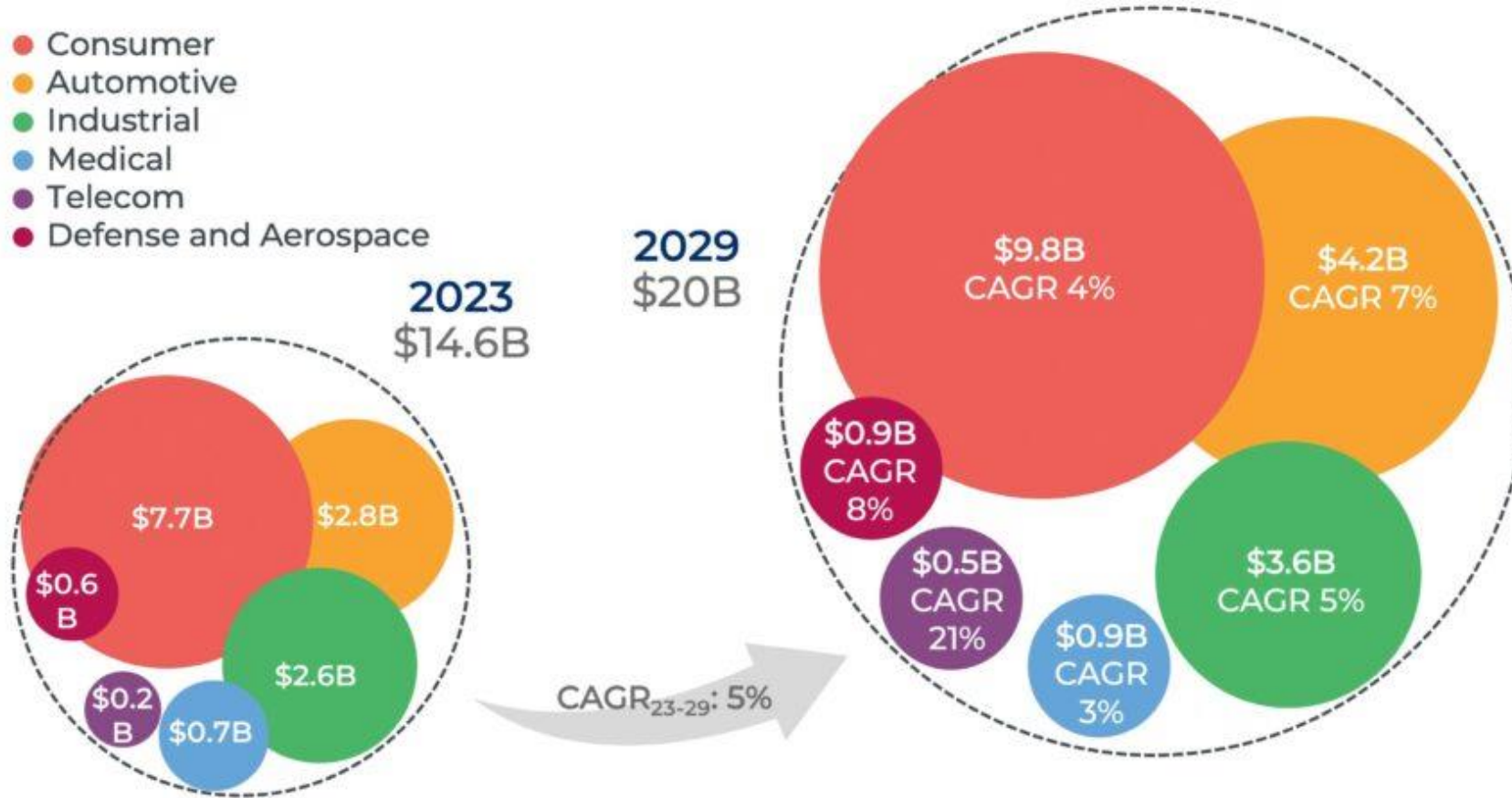
2023 geographic production forces

(Source: Status of the MEMS Industry 2024, Yole Intelligence, June 2024)



2023-2029 MEMS MARKET FORECAST BY END-MARKET

Source: Status of the MEMS Industry report, Yole Intelligence, 2024



www.yolegroup.com | ©Yole Intelligence 2024

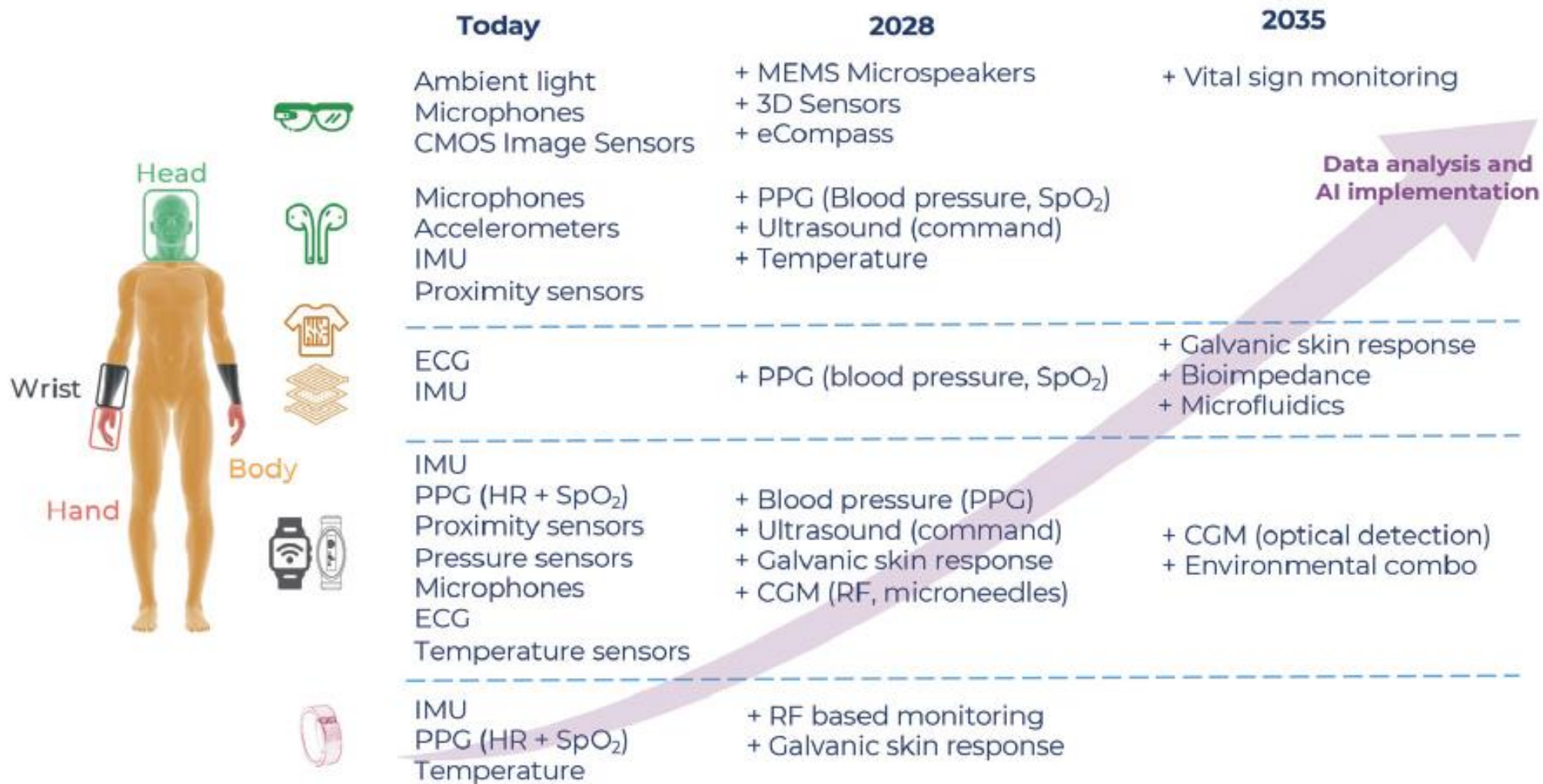
ADAS and safety ecosystem expected in the long-term

(Source: Semiconductor Sensors for Automotive 2024, Yole Intelligence, March 2024)

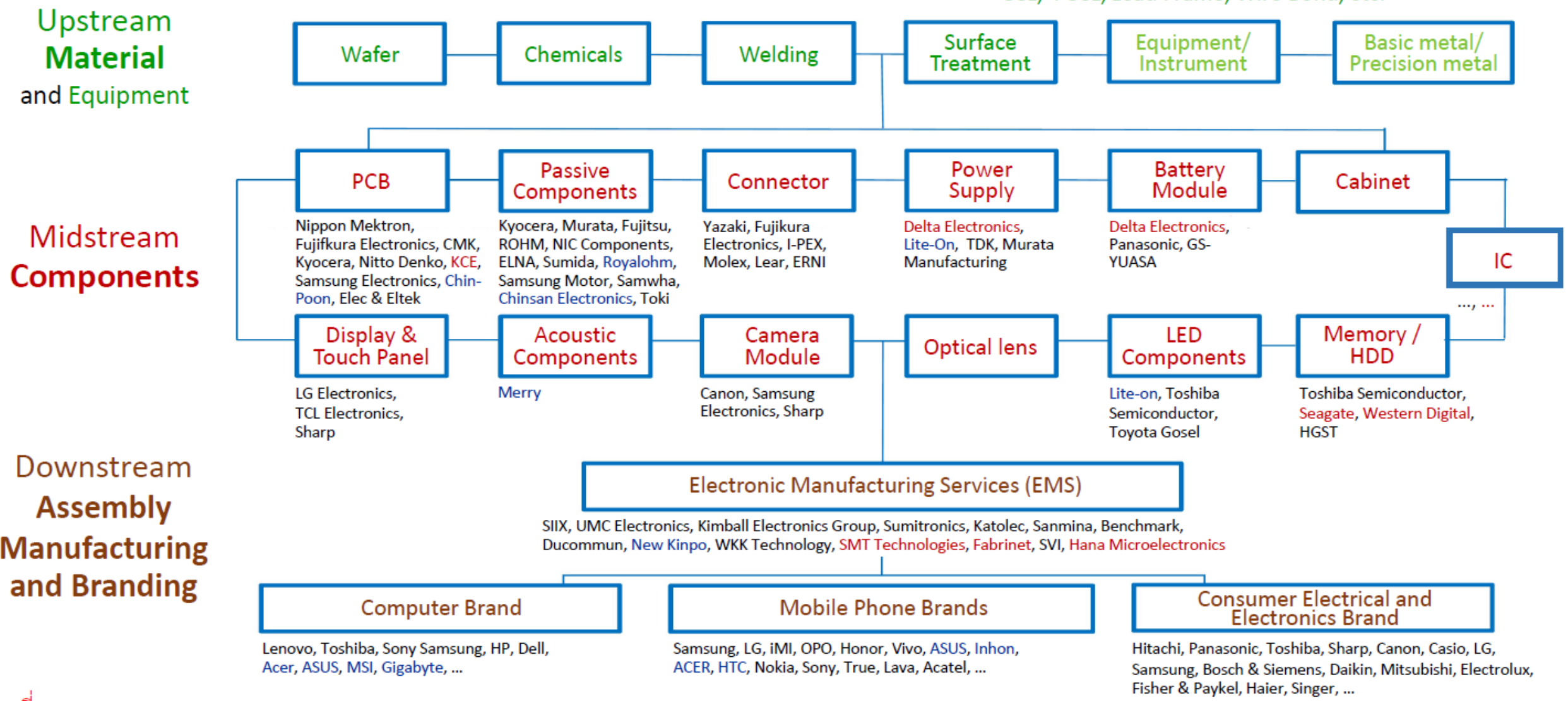
	Legacy applications and players	Safety and autonomy: volume impact	New applications and players
Image sensors	<p><u>AEB, LKA, ALKS + Driver monitoring</u></p> <p>onsemi. OMNIVISION™ STMicroelectronics SONY Panasonic</p>	↗	<p><u>Same + other eyes-off applications:</u></p> <p>Same players, strong volume increase</p>
Radar sensors	<p><u>AEB, LKA, ALKS + Child detection</u></p> <p>BOSCH Continental • APTIV • FORVIA DENSO veoneer</p>	↗	<p><u>Same + other eyes-off applications:</u></p> <p>arbe UHNDER METAWAVE RadSee vayyar</p>
LiDAR sensors	<p><u>ALKS</u></p> <p>Valeo DENSO HESAI Continental rooSense</p>	↗	<p><u>Same + other eyes-off applications:</u></p> <p>CEPTOR INOVIZ LUMINAR HUAWEI</p>
Ultrasonic sensors	<p><u>Parking assist</u></p> <p>Valeo MAGNA HYUNDAI MOBIS DENSO BOSCH • APTIV •</p>	→	<p><u>Parking assist</u></p> <p>Same players, limited volume increase</p>
MEMS accelerometers	<p><u>Airbag and ESP</u></p> <p>BOSCH NXP muRata STMicroelectronics Panasonic</p>	→	<p><u>Airbag and ESP</u></p> <p>Same players, limited volume increase</p>
Inertial Combo / IMU	<p><u>Airbag and ESP</u></p> <p>BOSCH muRata STMicroelectronics NXP Panasonic ANALOG DEVICES</p>	→	<p><u>Airbag and ESP</u></p> <p>Same players, limited volume increase</p>

2022-2035 sensor's & functionalities integration roadmap

(Source: Sensors & Actuators for Wearables 2023, Yole Intelligence, February 2023)



Thailand's Electronics Industry Structure



ที่มา : ITRI, Taiwan

โอกาสของประเทศไทยในการพัฒนาอุตสาหกรรม Sensors



- การพัฒนางานวิจัยสู่ภาคอุตสาหกรรม
- ความร่วมมือด้านเทคโนโลยีกับต่างชาติ
- การดึงดูดการลงทุนใหม่ด้านไมโครอิเล็กทรอนิกส์และอุปกรณ์ ในกลุ่มที่ไทยมีศักยภาพ
- ผลักดันให้ผู้ประกอบการไทยเข้าสู่ห่วงโซ่อุปทาน Supply Chain ของการผลิต sensors และอุปกรณ์ข้างเคียง



Center of Microelectronics Devices and Design (CMDD)



Objective:

- Stimulating the country's high value electronics industry ecosystem by focusing on design activities parts of intelligent electronics systems (IC, PCB, HDI PCB) which is the foundation of future high technology industries.
- Being a connecting point of domestics and global entrepreneurs, educational institution and government agencies to encourage knowledge exchange and utilize resources in related industry.
- Providing services, training and consultant in design and analysis of analog/digital IC, sensors, power devices, electronics system both prototype and testing development.
- Providing hardware and design software (EDA) infrastructure according to design and development in high value electronics system.