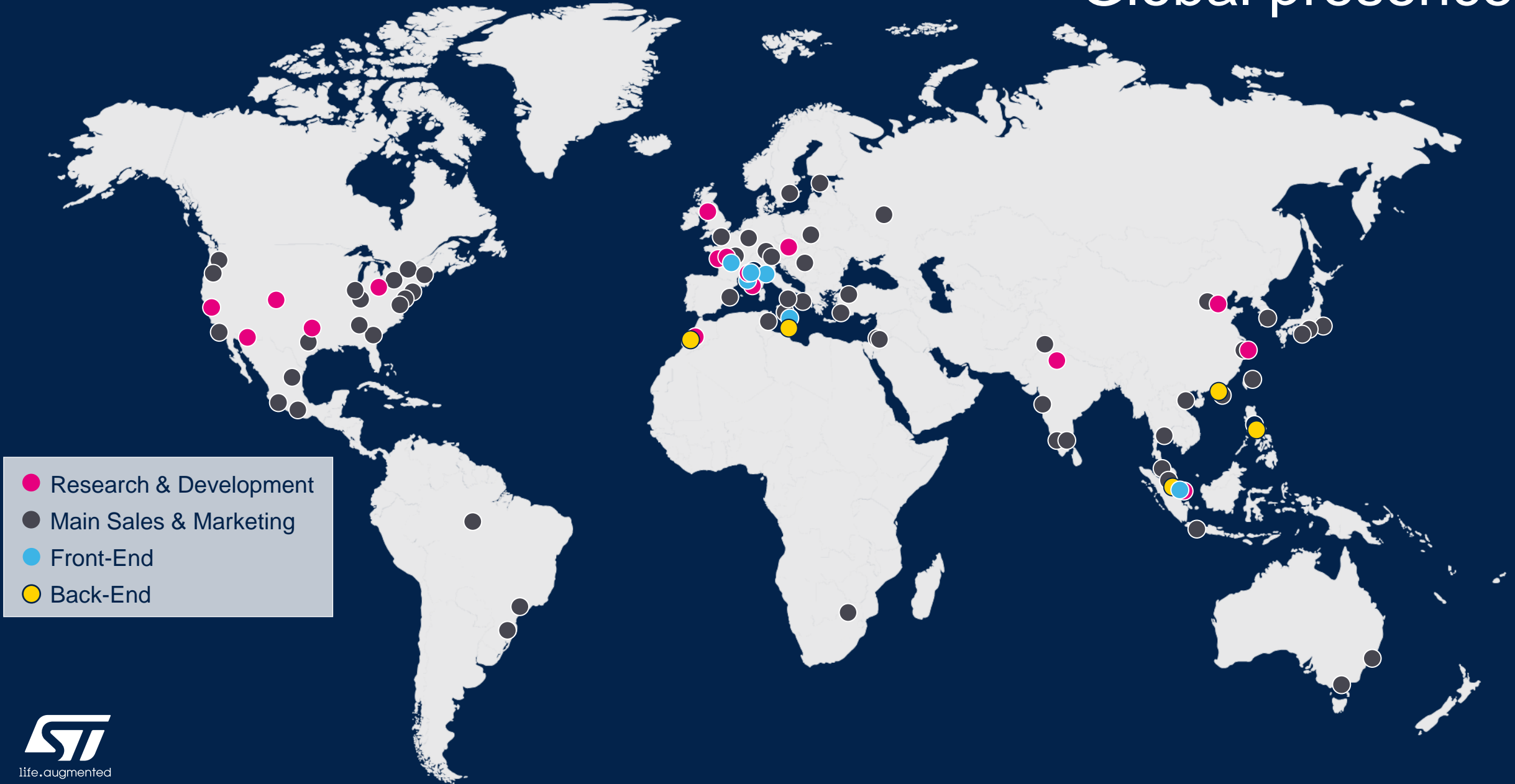# Company presentation

October 2021

We are creators and makers of technology

- One of the world's largest semiconductor companies

- 2020 revenues of **$10.2 B**

- **46,000** employees of which **8,100** in R&D

- Over **80** Sales & marketing offices serving over **100,000** customers across the globe

- **11** Manufacturing sites

- Signatory of the United Nations Global Compact (UNGC), Member of the Responsible Business Alliance (RBA)

Global presence

Research & Development

Main Sales & Marketing

Front-End

Back-End

ST stands for

life.augmented

Everywhere microelectronics
make a positive contribution to people's lives,
ST is there

Our value proposition

For our **shareholders**

Return value in line with our sustainable, profitable growth objective

Sustainable and profitable growth

For our **customers**

Provide differentiating enablers

Independent, reliable & secure supply chain

For all other **stakeholders**

Committed to sustainability

Our values: Integrity – People – Excellence

Our technology starts with you

At ST we create technology that starts with
You

Our employees

Our customers

Our partners

Where you find us

Making **driving** safer, greener and more connected

Enabling the evolution of **industry** towards smarter, safer and more efficient factories and workplaces

Making **homes & cities** smarter, for better living, higher security, and to get more from available resources

Making everyday **things** smarter, connected and more aware of their surroundings
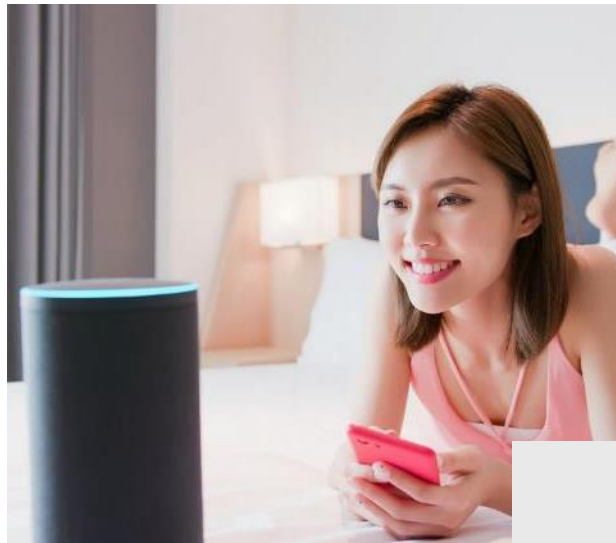
Trends and markets
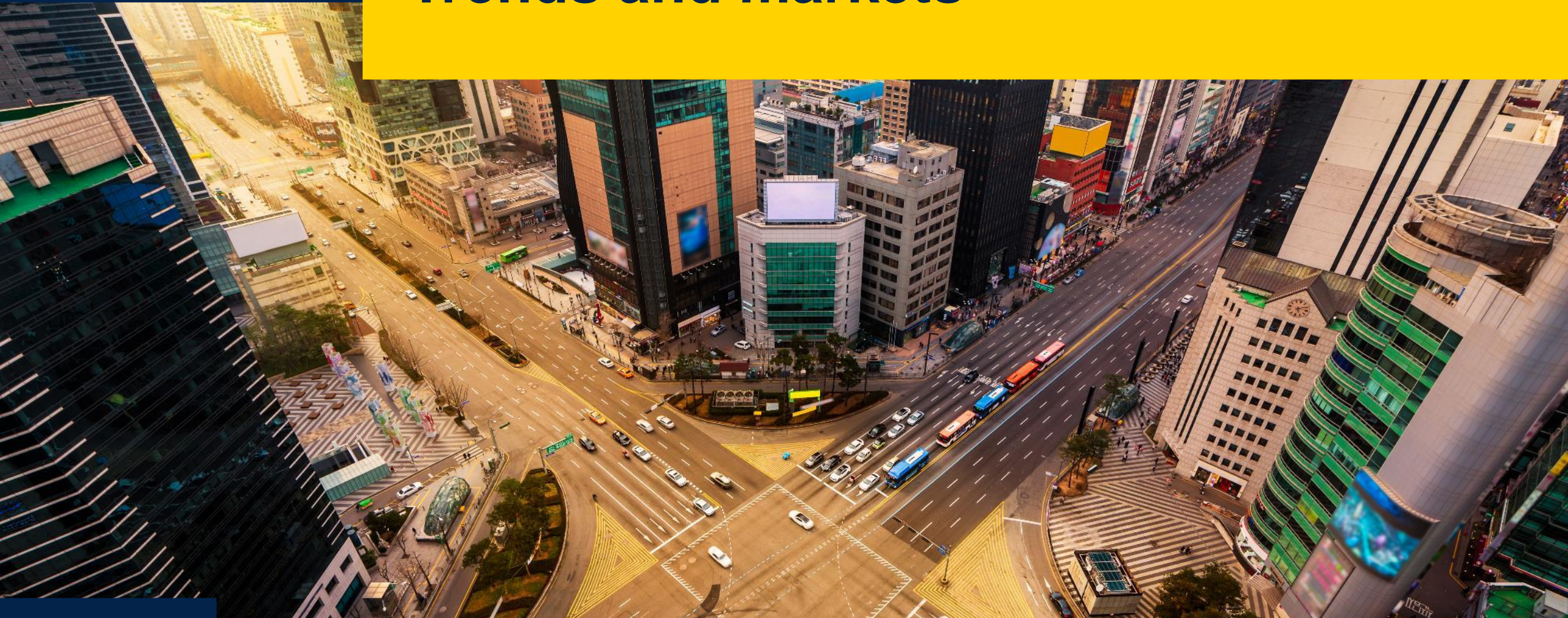
Our strategy stems from key long-term enablers

Smart Mobility

ST provides innovative solutions to help our customers make driving **safer, greener and more connected** for everyone

Power & Energy

ST technology and solutions enable customers to increase **energy efficiency** everywhere and support the use of renewable energy sources

Internet of Things & 5G

ST provides **sensors**, **embedded processing solutions**, **connectivity**, **security and power management**, as well as **tools and ecosystems** to make development fast and easy for our customers

Smart mobility

ST provides innovative solutions to help our customers make driving safer, greener and more connected for everyone

| Increase safety for road users & driver comfort and convenience | Road crashes carry a high human toll and cost > **$500** Billion every year |

| Affordable, desirable electric vehicles | Electric vehicles* from **9%** in 2019 to >**20%** in 2025 of global car production |

| Cleaner, greener Internal Combustion Engines (ICE) | ICEs in > **90%** of new vehicles produced 2020-2025 |

ST technology and solutions enable customers to increase energy efficiency everywhere & support the use of renewable energy sources

Rising demand for and usage of electrical energy

> **30%** global electricity demand increase from 2020 to 2030

Decrease carbon emissions to reduce global warming impact

45% CO_2 emission reduction from 2010 to 2030 to limit warming to 1.5oC

Increase use of renewable energy

Electrical energy from renewal sources from ~**10%** in 2020 to ~**20%** in 2030

Sources: IEA, IPCC, BP

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Internet of things & 5G

ST provides sensors, embedded processing, connectivity, security and power management, as well tools and ecosystems

Cloud connected and data-enabled services

Two billion industrial IoT & utility connected devices by 2022

Digital security for all data

IoT security services market > **$10** billion in 2021

5G accelerating the connection of objects to the IoT

> **90** million new 5G IoT connections in 2026

Our strategy

We address four end markets

Automotive

Industrial

Personal electronics

Communications equipment, computers & peripherals

Our strategic objectives

Automotive

- Lead in **car electrification**
- Lead in **car digitalization**

Industrial

- Lead in **embedded processing**
- Accelerate growth in **analog & sensors**
- Expand in **power & energy** management
- Accelerate growth with **industrial OEMs**

Personal electronics

- Lead in **selected** high-volume **smartphone** applications with differentiated products or custom solutions
- Leverage **broad portfolio** to address high-volume applications

Communications Equipment, Computers & Peripherals

- Address **selected** high-volume **applications** with differentiated products or custom solutions
- Address selected applications in **cellular** and **satellite communication** infrastructure
- Leverage **broad portfolio** to address high-volume applications

Products and technologies
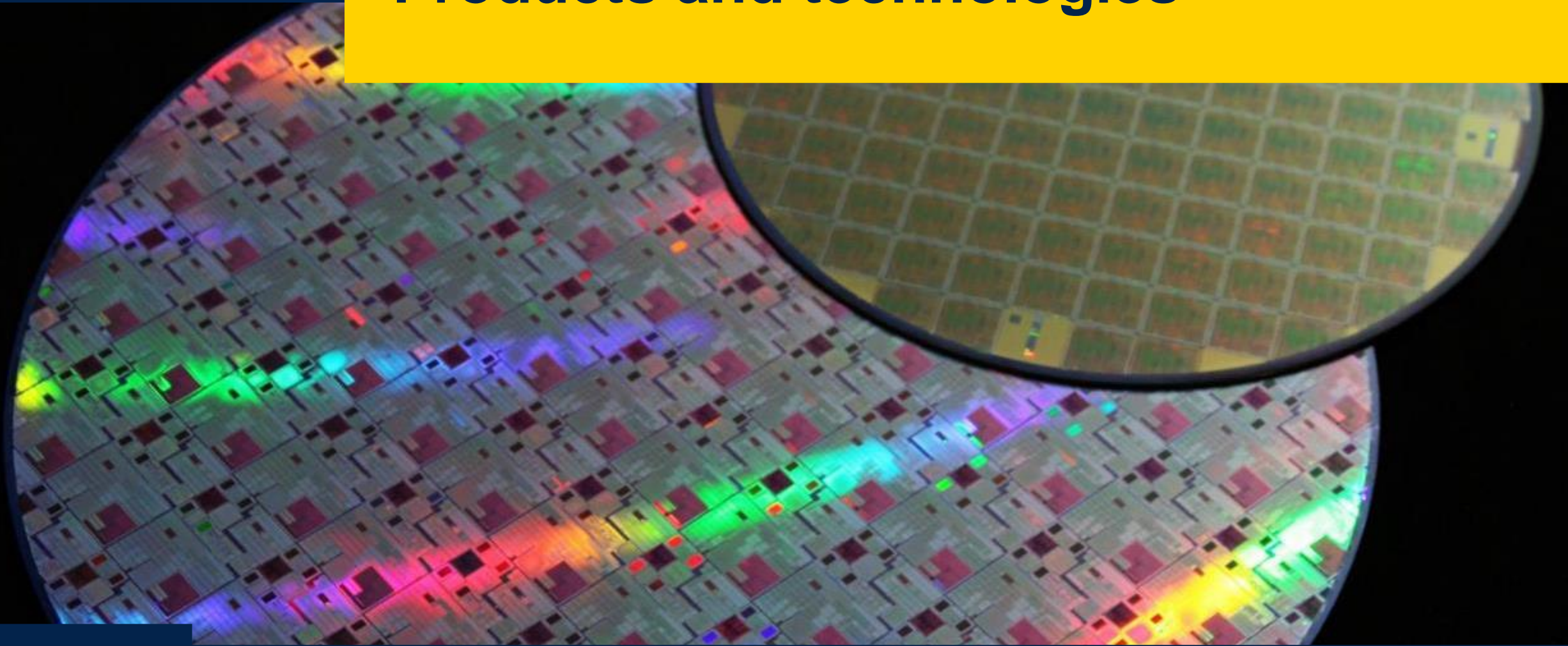
Differentiated technologies are our foundation

MEMS
for sensors & Micro-actuators

Smart Power: BCD
(Bipolar - CMOS - Power DMOS)

FD-SOI CMOS
FinFET through Foundry

Discrete, Power MOSFET, IGBT
Silicon Carbide, Gallium Nitride

Analog & RF CMOS

Vertical Intelligent Power

eNVM CMOS

Optical sensing solutions

Packaging technologies
Leadframe – Laminate – Sensor module – Wafer level

Our products and solutions enable customer innovation

Dedicated Automotive ICs	**Analog, Industrial & Power Conversion ICs**	**GP MCU & MPU, Secure MCUs, EEPROM**
Discrete & Power Transistors	**MEMS & Optical sensing solutions**	**ASICs based on ST proprietary technologies**

ST product portfolio enabling strategic trends

Dedicated Automotive ICs	Discrete & Power Transistors	Analog, Industrial & Power Conversion ICs	GP, Connected MCU, MPU Secure MCU, EEPROM	MEMS & Optical sensing solutions	ASICs based on ST proprietary technologies
SPC5	STPOWER	STSPIN	STM32	iNEMO	RF-SOI
Stellar	SIC	VIPerPlus	STSECURE	FlightSense	FD-SOI
ADAS	IGBT		ST25		BiCMOS
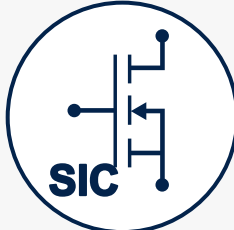
Smart Mobility   **Power & Energy**   **Internet of Things & 5G**

Dedicated automotive ICs

Automotive MCUs

SPC5

- Scalable single- and multi-core MCU solutions
- Targeting cost-sensitive to highly-advanced applications
- Comprehensive development ecosystem

ADAS solutions

- CMOS image sensors
- Image signal processors
- Radar transceivers
- V2X communication solutions

Infotainment and telematics

TELEMACO
Teseo
Accordo

- Makes the driving experience more fun and comfortable
- Outstanding audio fidelity and positioning accuracy in every condition
- Secure smartphone mirroring
- Safe vehicle connectivity with wide set of peripherals

Automotive Analog & Power

- Compliance with rigorous automotive requirements
- Design-ins at automotive suppliers and car makers
- Wide portfolio of analog, power and digital products
- VIPower* HSDs, LSDs & H-bridges and LED drivers
- Complete system kit solutions

* registered and/or unregistered trademarks of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere

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Discrete & power transistors

Diodes **Rectifiers** **Thyristors (SCR)** **AC switches**	• Silicon carbide (SiC) & high- and low-voltage silicon diodes • Ultra-fast & bridge rectifiers • Power Schottky diodes & field-effect rectifiers • Thyristors (SCR) & Triacs • ACS* AC switches
Transient Voltage Suppressors (TVS) **Integrated EMI filtering and protection ICs**	• ESD protection • EOS & lightning surge protection • Current limiters • IPAD* Integrated EMI and ESD protection devices • Integrated passive devices • Smart antenna tuning

STPOWER

Key power technologies & packages for:

Car electrification

Power management

Motor control

- Gallium Nitride (GaN) on silicon power and RF transistors
- LDMOS & DMOS RF power transistors
- Silicon-Carbide MOSFETs
- High- and low-voltage silicon power MOSFETs (STripFET, Planar & MDmesh*)
- IGBTs
- Power bipolar transistors
- ACEPACK* power modules
- SLLIMM* intelligent power modules

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Analog, industrial & power conversion ICs

Power management

- AC/DC & DC/DC converters
- Analog & digital controllers
- Linear voltage regulators
- Voltage reference
- eFuses
- LED drivers & lighting ICs
- Intelligent Power Switches
- Battery management ICs
- Wireless power solutions
- Power-over-Ethernet ICs
- Photovoltaic ICs
- Rad-Hard products

DC+

VIPerPlus

Analog products & Specific ICs

- Operational amplifiers
- Comparators
- Current sensing amplifiers
- Filtering & signal conditioning
- Interfaces & transceivers
- Audio ICs
- Switches
- Reset and Supervisors
- Rad-Hard products
- Medical ICs
- Smart Metering ICs

STUSB

ST Op Amps

Motor control

- Brushed DC motor drivers
- Brushless DC motor drivers
- Stepper motor drivers
- MOSFET & IGBT gate drivers
- Galvanic isolation ICs
- GaN drives

STDRIVE

STSPIN
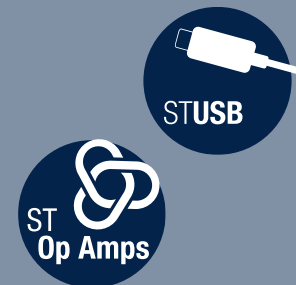
Connectivity solutions

- Bluetooth® Low Energy ICs
- Sub-1 GHz transceivers
- Sigfox-compatible devices
- LoRaWAN® technology
- Short-range RF transceivers
- Powerline communication ICs
- IO-Link

BlueNRG

SPIRIT

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MEMS & optical sensing solutions

Motion sensors

- Accelerometers
- e-compasses
- Gyroscopes
- iNEMO* inertial modules
- T-Plus: Motion MEMS with embedded temperature sensor

Environmental sensors

- Pressure sensors
- Temperature sensors
- Humidity sensors
- MEMS microphones

Micro actuators

- Actuators for printheads
- Micro mirrors & drivers
- Piezoelectric actuators
- Electrostatic actuators
- Electromagnetic actuators
- Thermal actuators

Optical sensing solutions

- **Flight**Sense* ToF proximity & ranging modules
- 3D **Flight**Sense* ToF sensors
- Global shutter CMOS image sensors
- Ambient light sensors
- Custom optical solutions

General purpose MCU & MPU, secure solutions & NFC

GP 32-bit MCUs & MPUs

STM32

- STM32* 32-bit general-purpose microcontrollers (MCUs) and microprocessors (MPUs)
- 1000+ compatible devices
- Arm® Cortex® Cores
- Maximum integration
- Extensive ecosystem

GP 8-bit MCUs

STM8

- 8-bit general purpose microcontrollers (MCUs)
- Dedicated series for mainstream, ultra-low-power and automotive
- Rich ecosystem

Secure Solutions

STSECURE

- Secure MCUs
- eSIM, eSE, NFC for mobile
- eSIM, eSE and TPM for industrial, IoT and automotive
- Secure payment solutions
- Authentication and Brand protection solutions

NFC & Memory

ST25

EEPROM

- NFC / RFID Tags
- Dynamic NFC Tags
- NFC / RFID Readers
- UHF Readers

- High-performance & high-endurance EEPROM

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ASICs based on ST proprietary technologies

ST offers strategic independence and product differentiation to ASIC customers through three key enablers:

- Advanced manufacturing technology platforms
- Worldwide design resources and advanced IP
- ST's Independent Device Manufacturer supply chain

Digital ASICs	System-on-Chip designs in CMOS and FD-SOI technologies with eNVM option, as well as FinFET (through foundry)	**Analog & RF ASICs**	Unique expertise in RF and analog design using advanced technologies, such as RFSOI, BiCMOS and millimeter wave
MEMS and imaging ASICs	Proprietary micromachining process, deep expertise in MEMS integration Custom imaging solutions and premium foundry services	**Power ASICs**	A broad portfolio of differentiated technologies including BCD, VIPower*, SiC, GaN and power MOSFET

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Manufacturing and R&D

We offer quality, flexibility and supply security

France (Crolles, Rousset, Tours)

Italy (Agrate, Catania)

China (Shenzhen)

Philippines (Calamba)

Malaysia (Muar)

Morocco (Bouskoura)

Malta (Kirkop)

Singapore

- ● Front-End
- ● Back-End
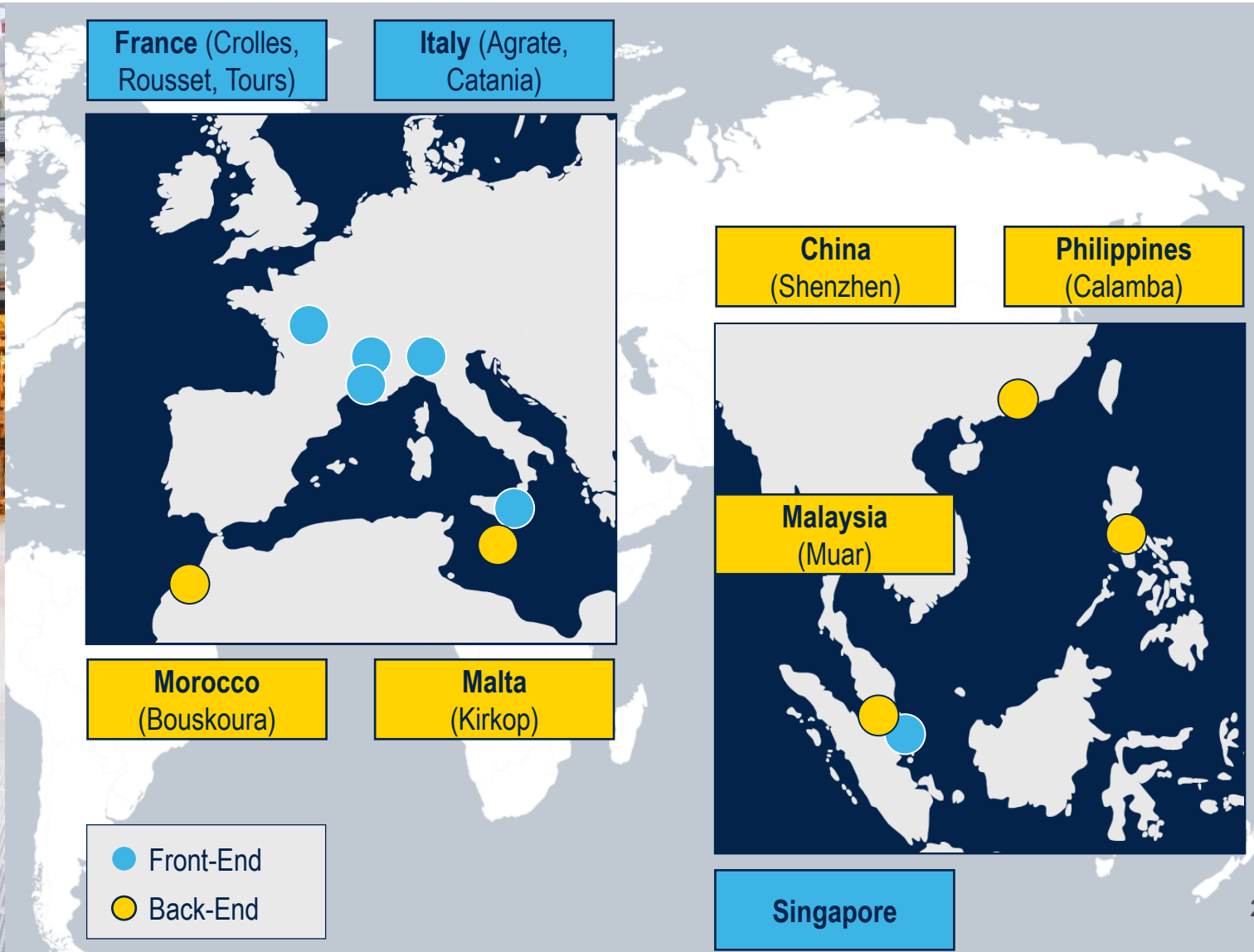
We are drivers of your innovation

Advanced R&D centers around the world for close collaboration with operations and customers

- **~18,000** patents & **557** new filings in 2020

- **~15%** of revenues invested in R&D

- **~8,100** people working in R&D and product design

Quality as a key business enabler

Our Quality Vision

Elevate ST to the highest level of quality as an asset for our customers

Our Quality Mission

Ensure ST products meet the highest quality and reliability requirements of customers in the markets we address

How do we achieve this

- Sustainable culture of quality excellence
- Customer focus
- Result-driven improvement programs

Customers & sales

We are partners with our customers worldwide

Over 80 sales offices in 35 countries
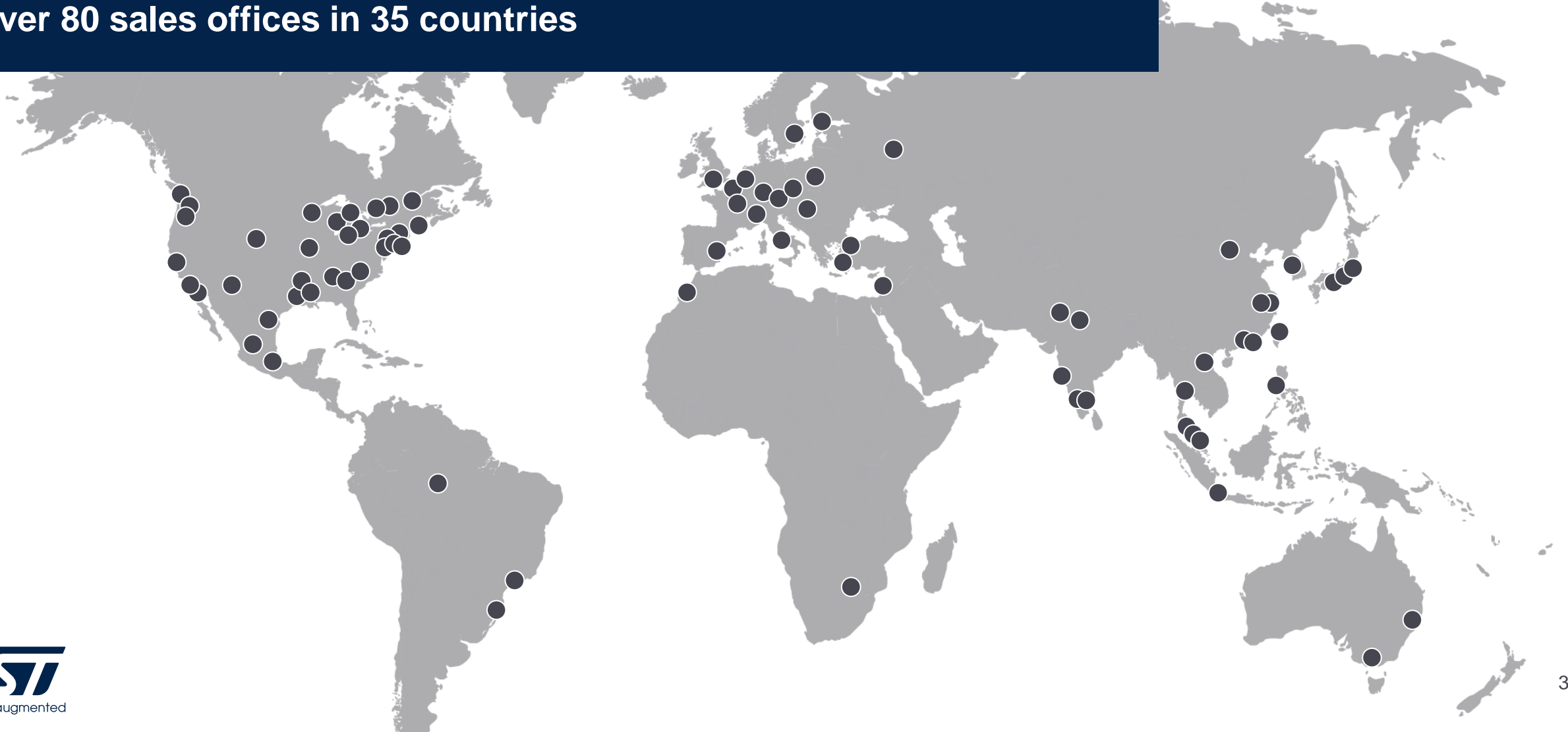
We serve more than 100,000 customers

Top 10

Globally Managed Accounts

Distribution & Mass Market

Top 10 Customers* 2020

Apple	Intel-Mobileye
Bosch	Nintendo
Continental	Samsung
HP	Seagate
Huawei	Tesla

Unified worldwide account management tailored to each account to provide global coverage and service

Standard process, reporting & follow-up in Sales & Marketing worldwide

Differentiated approach by type of customer

*In alphabetical order

Q3 2021 Revenues

% by product group

Others 0.1%

Microcontrollers & Digital ICs Group (MDG) — 29%

Automotive & Discrete Group (ADG) — 31%

Analog, MEMS & Sensors Group (AMS) — 40%

% by shipment location

Americas 11%

EMEA 18%

Asia Pacific 71%

% by region of origin

Americas 45%

Asia Pacific 32%

EMEA 23%

% by customer type

Distribution 32%

Top 10 OEMs 49%

Other OEMs 19%

34
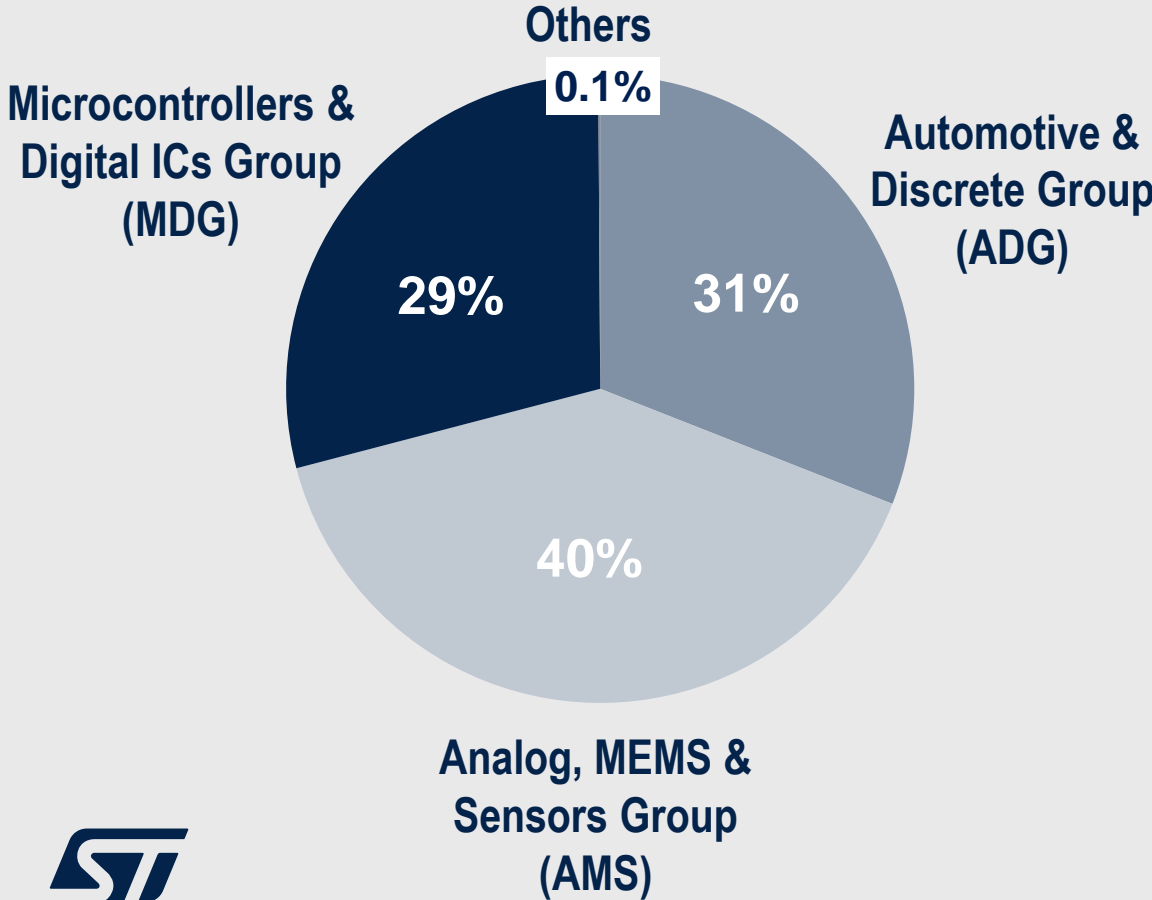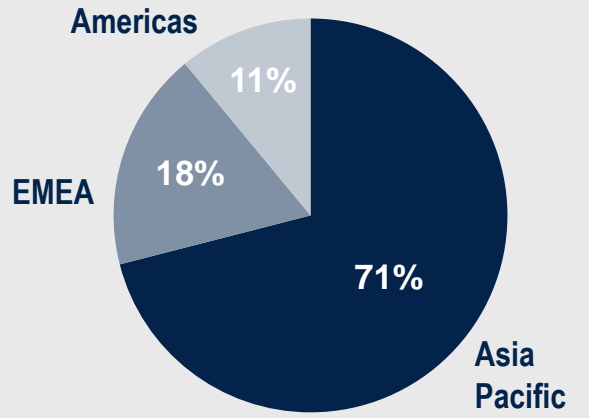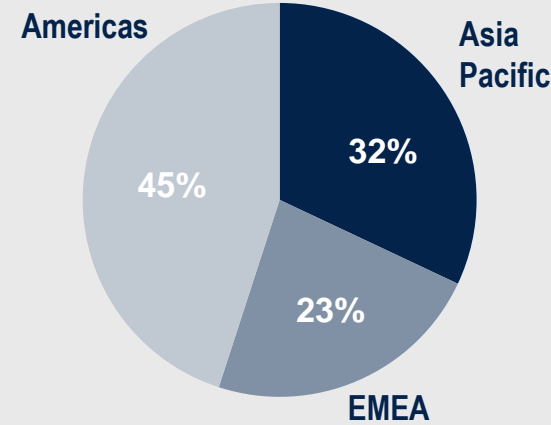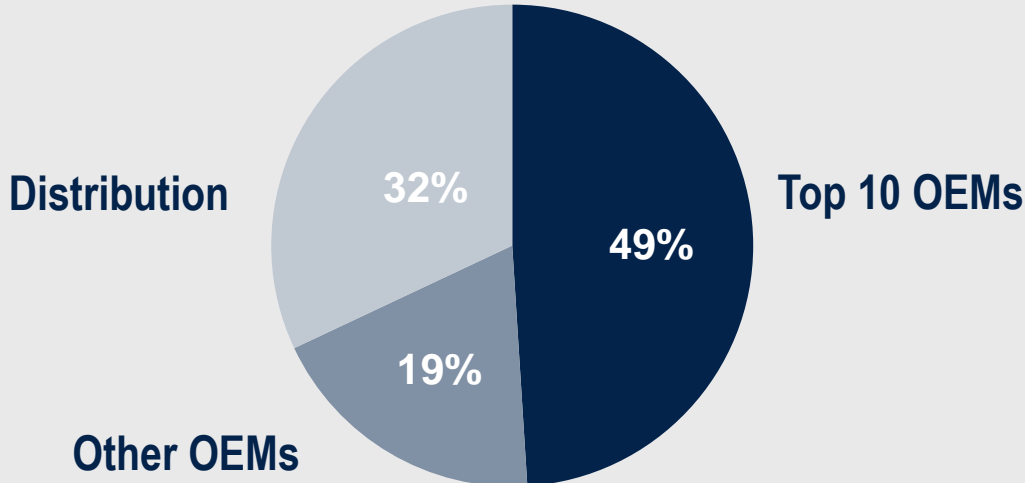
2020 revenues by product group and customer type

% by product group
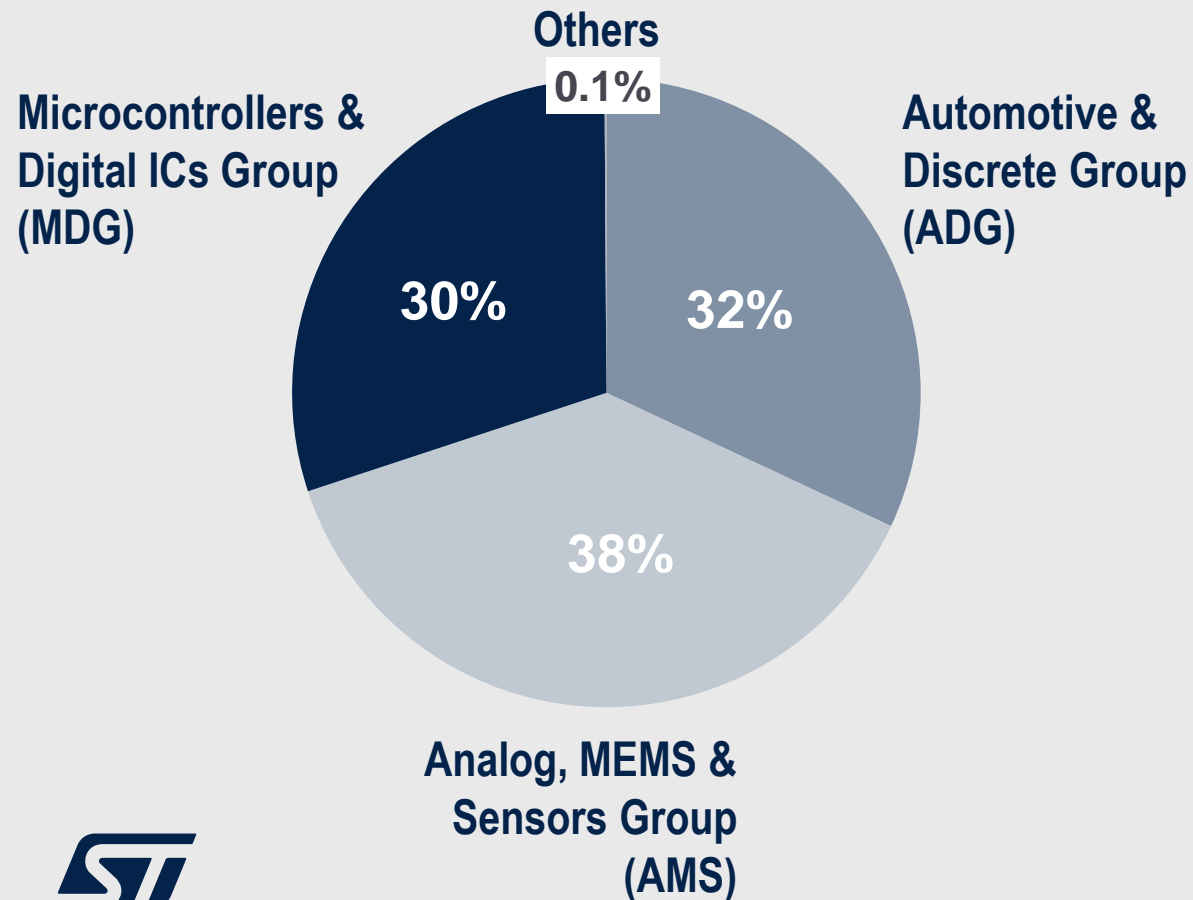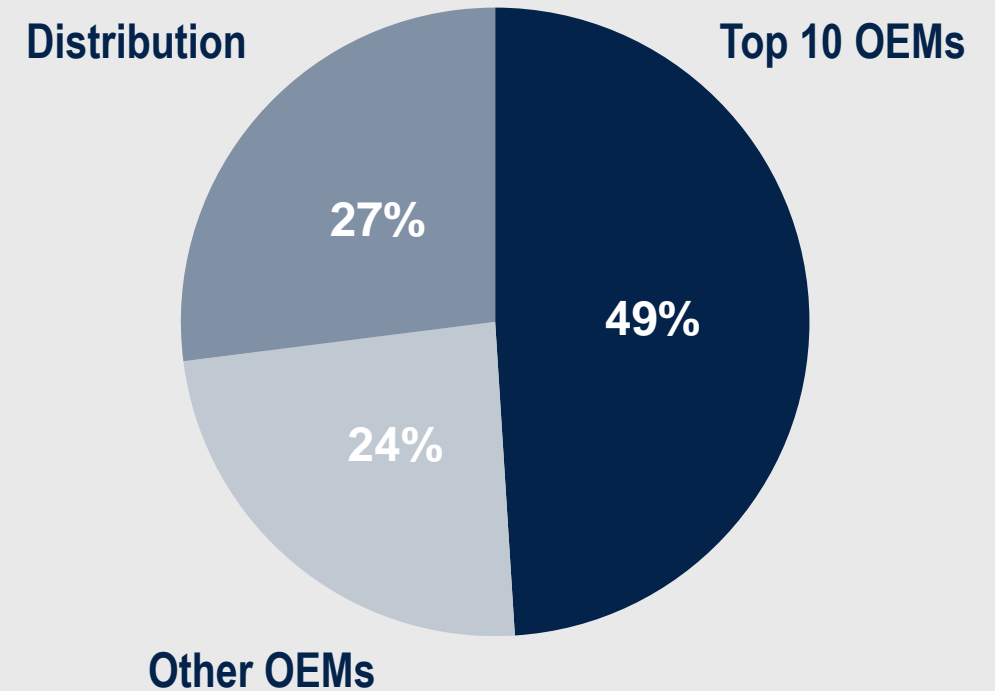
- Others: 0.1%
- Microcontrollers & Digital ICs Group (MDG): 30%
- Automotive & Discrete Group (ADG): 32%
- Analog, MEMS & Sensors Group (AMS): 38%

% by customer type

- Distribution: 27%
- Top 10 OEMs: 49%
- Other OEMs: 24%

Shipment location

Americas 12%

EMEA 19%

Asia Pacific 69%

Region of origin

Americas 42%

Asia Pacific 34%

EMEA 24%
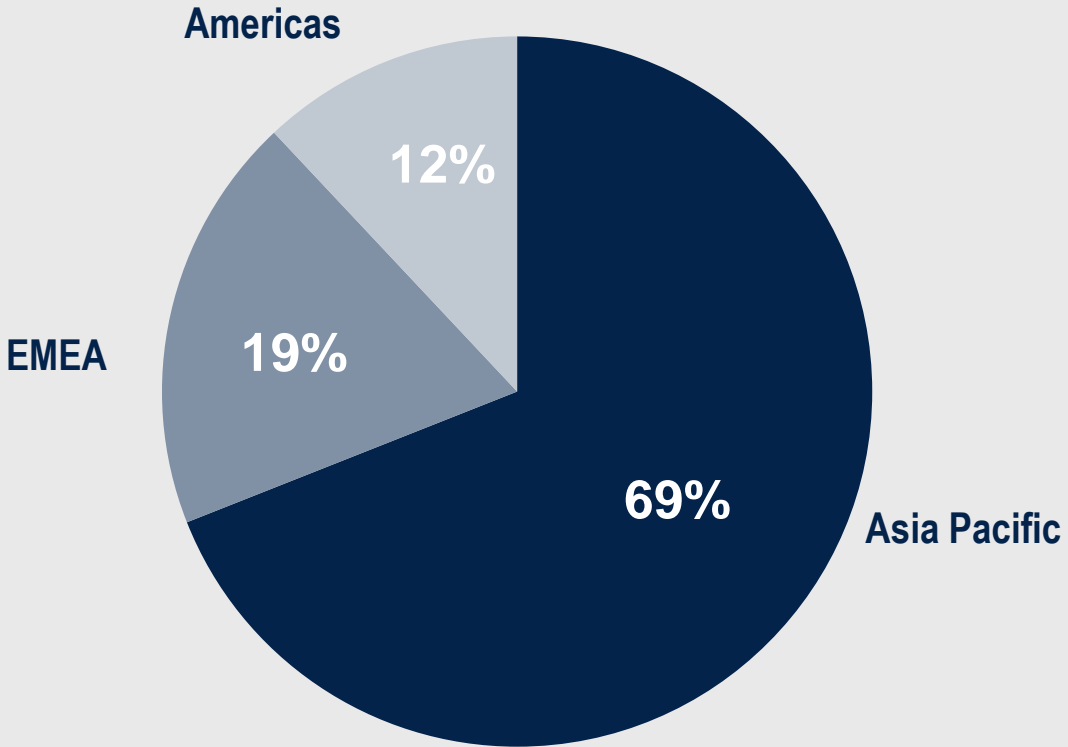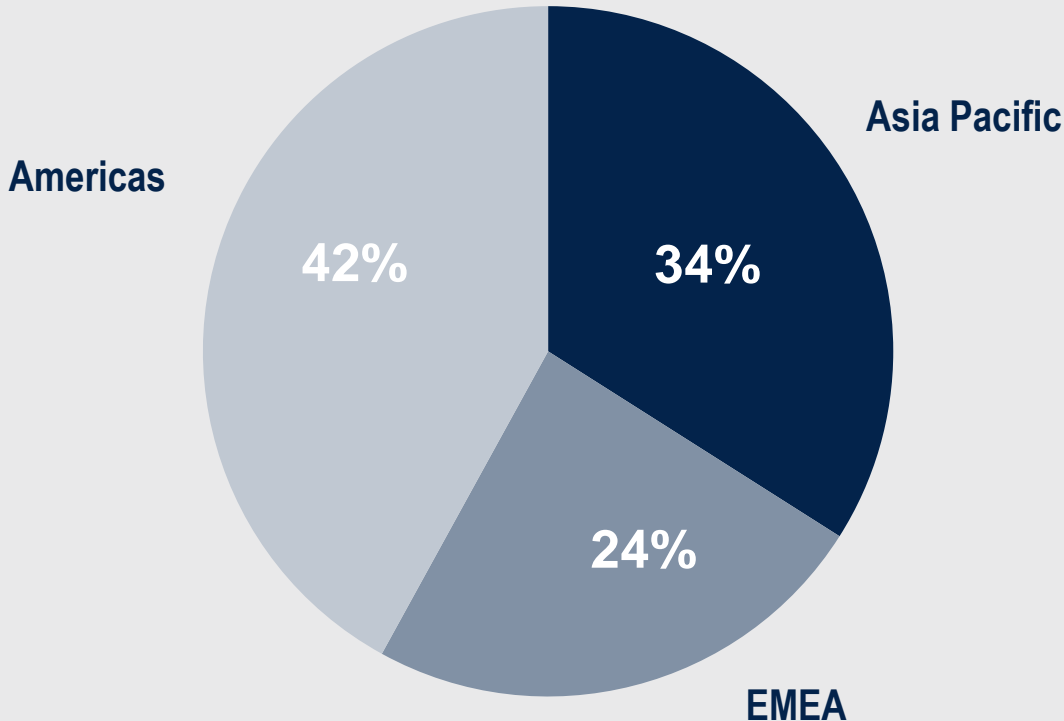
Our people

Our technology starts with our people

Pie chart — employees by region:
- Asia ~18,300
- France ~10,800
- Italy ~10,800
- Mediterranean ~4,400
- Americas ~750
- Others ~1,000
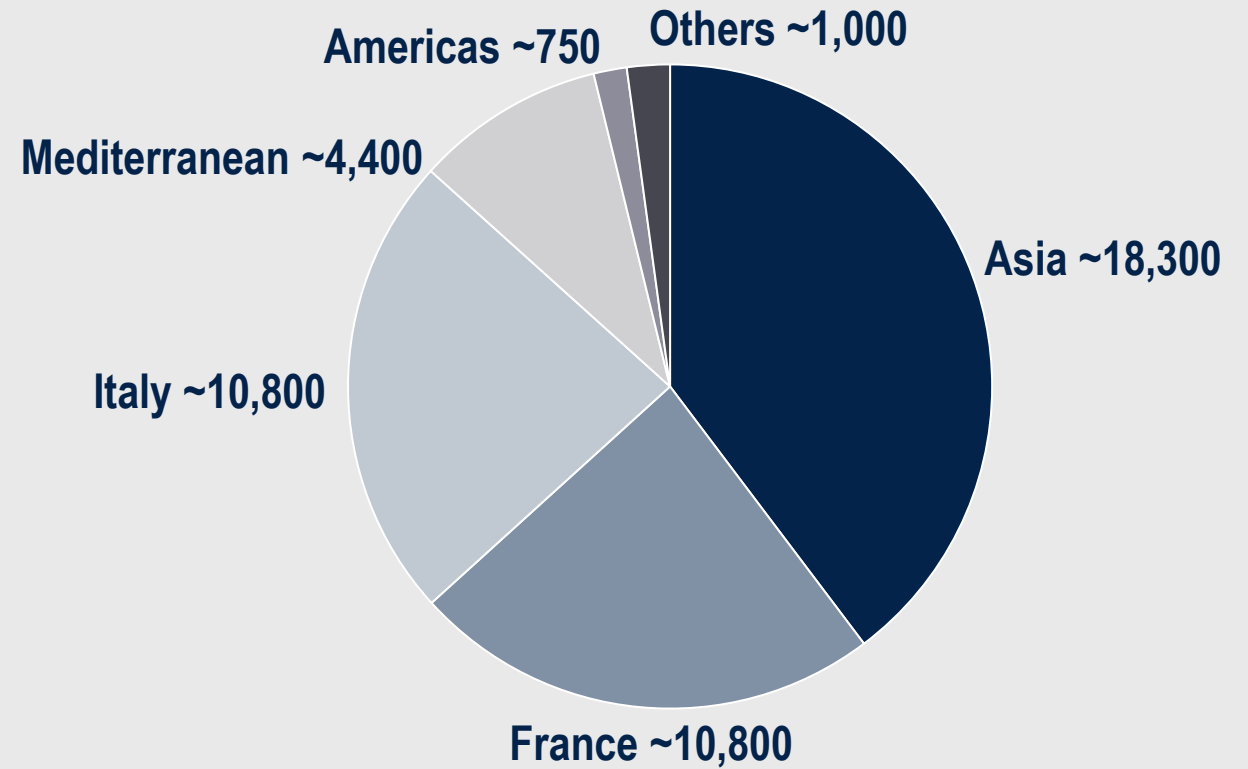
Manufacturing	~ 65%
Research & Development	~ 18%
Marketing & Sales, Divisional Functions, Administration & General services	~ 17%

As of December 31, 2020

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Sustainability

A long-standing public commitment to sustainability

Commitment to be Carbon Neutral by 2027

2021

20th Sustainability Report

2019

2020

2016

2017

5th Environment, Health & Safety Decalogue

ST Code of Conduct Principles of Sustainable Excellence

Health Plan

2012

2014

OHSAS 18001 certification

2011

ISO 22301 Business Continuity 1st certification

ST's creation

STMicroelectronics Foundation

2007

2005

ISO 50001 energy management

Sustainability Charter

Environmental policy

Business conduct & ethics policy

1st Environmental report ISO 14001, EMAS

2006

2002

2003

Conflict Minerals program

2025 CO$_2$ goal achieved

CARBON NEUTRAL

1st Environmental Decalogue

2000

2001

Supply Chain Responsibility

Ethics committee

1987

1995

1997

Reforestation program

1993

Signatory of the UNGC 10 principles

40

ACCELERATING SUSTAINABILITY TOGETHER

LIVING OUR VALUES

PUTTING PEOPLE FIRST	AUGMENTING EVERYBODY'S LIFE	PROTECTING THE ENVIRONMENT

ACTING TOGETHER

ACCELERATING SUSTAINABILITY TOGETHER

LIVING OUR VALUES

Governance, Ethics & Compliance, Risk Management

PUTTING PEOPLE FIRST

Health & Safety

Labor & Human Rights

Talent Attraction & Engagement

Diversity & Inclusion

AUGMENTING EVERYBODY'S LIFE

Sustainable Financial Performance

Innovation

Sustainable Technology

Customer Satisfaction

PROTECTING THE ENVIRONMENT

Energy & Climate Change

Water

Waste

Chemicals

ACTING TOGETHER

Responsible Supply Chain   Community & Education

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Our approach to sustainability

Sustainable Technology

We create technology for a sustainable world

- Designing responsible products and technologies
- Managing the lifecycle of our products in sustainable way
- Responsible minerals sourcing
- Eco-design devices - power-efficient & low-carbon

Sustainable Way

We prioritize people

- Ensuring people health, safety, & well-being
- Role model in labor & human rights
- Fostering diversity & inclusion
- Offering great employee experience

We protect the planet

- Committing to carbon neutrality
- Leading environmental management system
- Reducing water usage & addressing local scarcity risks
- Reducing waste & promoting a circular economy

Sustainable Company

We generate long-term value for all stakeholders

- Embedding risk management
- Monitoring and developing the extended supply chain
- Promoting STEM* in all our eco-systems
- Monitoring & transparently reporting our progress

*Science, Technology, Engineering , Mathematics

Our business model

Main steps in our value chain

Suppliers
We purchase raw materials, equipment, energy, gas, chemicals and services from many suppliers and subcontractors.

R&D concept and design
New products are created in a multi-step process including architecture conception, electrical layout, electrical and logic simulation, chip layout and generation of the mask that will be used to etch the design in silicon.

Front-end manufacturing
Manufacturing chips requires around 400 separate stages, starting with a plain wafer, and resulting in the etching of several hundreds to thousands of dies.

Electrical wafer sorting
Dies on the wafer are electrically tested. This step is known as wafer sort or probe.

Back-end manufacturing
The dies are cut from the silicon wafer before being assembled in a package. The chips are then tested prior to delivery to the customer.

Product use and end of life
We offer a large portfolio of products suitable for the wide range of applications addressed by our customers.

Resources

Human
- ~46,000 employees
- 103 nationalities
- 34% women, 66% men
- Average age: 40

Financial
- US$14 billion total assets
- US$1.3 billion capital investments
- US$1,099 million net cash

Intellectual
- ~8,100 employees in R&D
- US$1.6 billion R&D investments
- 143 R&D partnerships

Manufactured
- 11 main manufacturing sites in 7 different countries
- ~ 65% of employees in manufacturing
- >6,000 suppliers

Natural
- 2,626 GWh of energy consumed
- 40% of renewable energy
- ~20 million m3 of water withdrawn
- >5,900 chemicals used

Social and relationship
- ST values and Code of Conduct
- US$2.1 million cash donated by ST to local communities
- >114,000 hours donated to local communities

Management of our impacts

Suppliers
We require our suppliers to implement the Responsible Business Alliance (RBA) standards and encourage ISO and OHSAS certifications to address ethics, social, environmental, health and safety risks.
We participate in the Responsible Minerals Initiative.

Products
Through our Sustainable Technology program we design products systematically taking into consideration the environmental impact of the device during its whole life cycle, including raw materials, transportation, manufacturing, usage and end of life.

People
We ensure the health and safety of our employees through advanced management systems and certification.
We implement our Code of Conduct and the RBA standards in all our sites to mitigate our ethics and labor and human rights risks, and carry out regular assessments and audits in all our production sites.

Environment
We deploy programs to reduce our direct and indirect greenhouse gas emissions from all our operations, including Perfluorinated Compounds (PFCs), which have a very long atmospheric lifetime and high global warming potential.
We minimize the environmental, health and safety risks related to the chemicals and materials used in the manufacturing process, by basing the selection, handling, and substitution on the precautionary principles.
We are continually reducing our water footprint through reuse and recycling and all our wastewater is treated before being discharged into the environment.
We reduce, reuse, recycle or recover as much of our waste as possible, rather than sending it to incineration or landfill.

Value created

Human
Engaged and skilled people in an inclusive and safe workplace
- average of 44 hours training per employee
- 81% of employees recommend ST as a great place to work
- 0.14 recordable case rate (injuries)

Financial
Sustainable financial performance
- US$10.22 billion net revenues
- US$3.07 billion salaries and benefits
- US$174 million taxes paid
- US$168 million cash dividend

Intellectual
Innovative products and solutions
- ~18,000 active patents
- 63% of new products classified Sustainable Technology
- 15% of revenues generated by new product lines

Manufactured
Responsible and effective business operations
- >100,000 customers served
- ISO 9001, 14001, 22301, 50001 45001/OHSAS 18001 and IATF certifications
- 100% of manufacturing sites covered by RBA audits
- 98% of new suppliers screened on social responsibility criteria

Natural
Mitigation of the impact of our activities
- 78% decrease in PFC emissions since 1994 (per unit of production)
- 88% of waste reused, recovered or recycled
- 41% of water recycled or reused
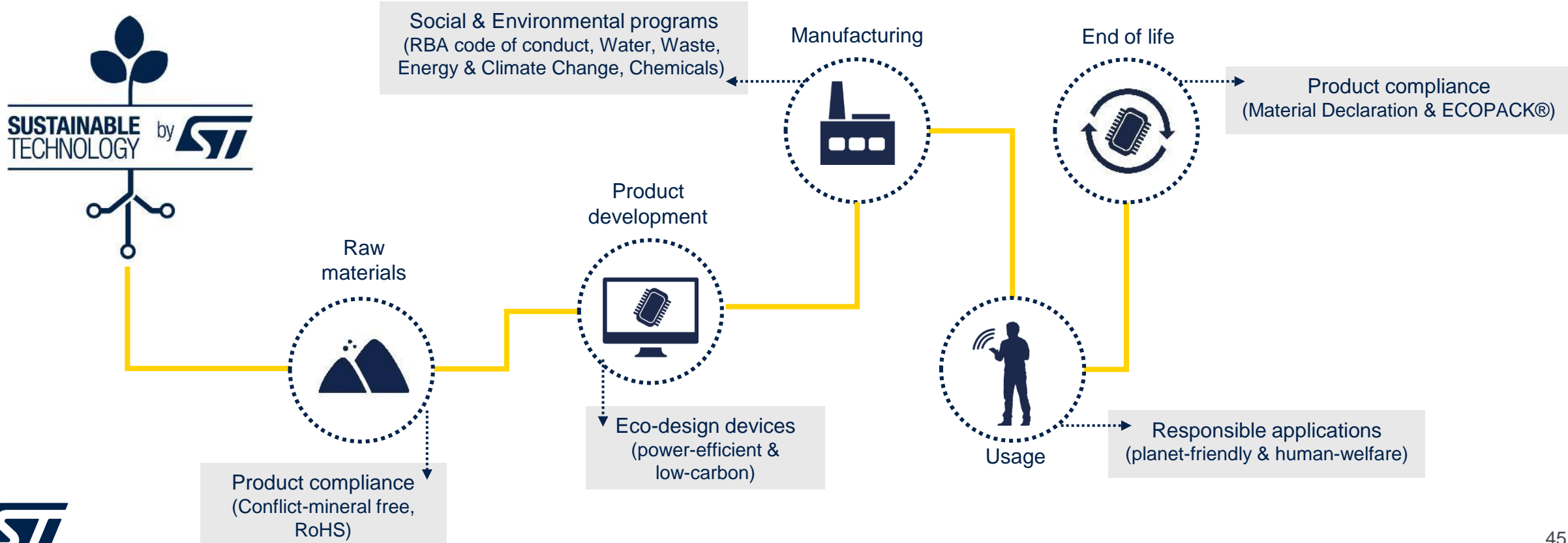
Social and relationship
Knowledge and values shared with all
- >163,000 beneficiaries in local communities
- 340 volunteering initiatives from 35 sites worldwide
- >770,000 people trained on computer basics by ST Foundation since 2003

Unless otherwise stated, all data refer to 2020

Sustainable technology

Our Sustainable Technology program aims to develop responsible products which:
- **improve our social and environmental footprint at every stage of the product life**
- **have the greatest positive impact on the planet and people in the end-application**

Social & Environmental programs
(RBA code of conduct, Water, Waste,
Energy & Climate Change, Chemicals)

Manufacturing

End of life

Product compliance
(Material Declaration & ECOPACK®)

SUSTAINABLE TECHNOLOGY by ST

Raw materials

Product development

Product compliance
(Conflict-mineral free, RoHS)

Eco-design devices
(power-efficient & low-carbon)

Usage

Responsible applications
(planet-friendly & human-welfare)

45

ST will be Carbon Neutral by 2027

CARBON NEUTRAL

Milestones

- Compliance with the 1.5°C scenario (Paris COP21) by 2025
- Carbon neutral by 2027
- Sourcing 100% renewable energy by 2027

- Collaborative programs and partnerships for carbon neutrality throughout our ecosystems

100%

Net CO_2 emissions

Renewable Energy

CO_2 offset

0%

2018

2027

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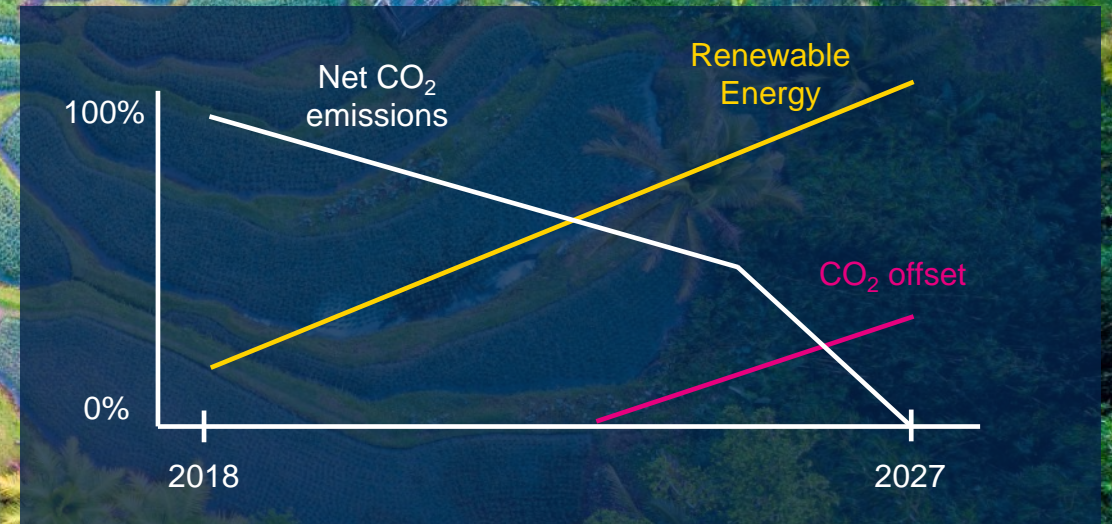
Sustainability reporting 24th edition

Transparency – Reliability – Comparability

- Economic, environmental and social performance
- Our long-term sustainability ambitions and goals
- Program progress
- Focus on site initiatives
- Stakeholder inclusiveness
- Aligned with international reporting standards and disclosures:
  Global Reporting Initiative (GRI)
  Sustainability Accounting Standards Board (SASB)
  Task Force on Climate-related Financial Disclosures (TCFD)
- Content and data verified by a 3rd party

Read ST's 2021 sustainability report: sustainabilityreports.st.com/sr21/

Accelerating sustainability, together

2021 Sustainability report
2020 performance

Our technology starts with You

🌐 Find out more at www.st.com

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