We are creators and makers of technology

- One of the world’s largest semiconductor companies
- 2019 revenues of $9.56B
- **46,000** employees of which **7,800** 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 other **stakeholders**

Committed to sustainability

Our values: Integrity – People – Excellence
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 technology stems from long-term strategic 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.
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
- Affordable, desirable electric vehicles
- Cleaner, greener Internal Combustion Engines (ICE)

Road crashes carry a high human toll and cost > $500 Billion every year.

Electric vehicles* from 9% in 2019 to 19% in 2025 of global car production.

ICEs in > 90% of new vehicles produced 2020-2025.

Sources: www.asirt.org, Strategy Analytics
* Excluding Mild Hybrid EV
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
- Decrease carbon emissions to reduce global warming impact
- Increase use of renewable energy

> 30% global electricity demand increase from 2020 to 2030

45% CO₂ emission reduction from 2010 to 2030 to limit warming to 1.5°C

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

Sources: IEA, IPCC, BP
ST provides sensors, embedded processing, connectivity, security and power management, as well tools and ecosystems.

Cloud connected and data-enabled services

Digital security for all data

5G accelerating the connection of objects to the IoT

**Two** billion industrial IoT & utility connected devices by 2022

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

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

Source: ABI
Our Strategy
We address four end markets

Automotive

Industrial

Personal electronics

Communications equipment, computers & peripherals
**Our strategic objectives**

<table>
<thead>
<tr>
<th>Automotive</th>
<th>Industrial</th>
<th>Personal electronics</th>
<th>Communications Equipment, Computers &amp; Peripherals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership in car electrification</td>
<td>Leadership in industrial <strong>embedded processing</strong></td>
<td>Leadership in <strong>selected</strong> high-volume smartphone applications:</td>
<td>Transform approach to communication infrastructure:</td>
</tr>
<tr>
<td>Leadership in car digitalization</td>
<td>Accelerate growth in <strong>analog &amp; sensors</strong> for industrial</td>
<td>Sensors, secure solutions, power management, analog and Front End Module</td>
<td>From digital wireline to cellular and satellite</td>
</tr>
<tr>
<td></td>
<td>Expansion in industrial <strong>power &amp; energy management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acceleration of growth with <strong>industrial OEMs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capture opportunities in 5G with RF mixed signal</td>
<td></td>
</tr>
</tbody>
</table>
Products and Technologies
Differentiated technologies are our foundation

**MEMS**
for sensors & Micro-actuators

**FD-SOI CMOS**
FinFET through Foundry

**Analog & RF CMOS**

**eNVM CMOS**

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

**Discrete, Power MOSFET, IGBT**
Silicon Carbide, Gallium Nitride

**Vertical Intelligent Power**

**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

<table>
<thead>
<tr>
<th>Product Portfolio</th>
<th>Dedicated Automotive ICs</th>
<th>Discrete &amp; Power Transistors</th>
<th>Analog, Industrial &amp; Power Conversion ICs</th>
<th>GP MCU &amp; MPU Secure MCUs, EEPROM</th>
<th>MEMS &amp; Optical sensing solutions</th>
<th>ASICs based on ST proprietary technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPC5</td>
<td>STPOWER</td>
<td>STSPIN</td>
<td>STM32</td>
<td>inEMO</td>
<td>RF-SOI</td>
</tr>
<tr>
<td></td>
<td>Stellar</td>
<td>SIC</td>
<td>ViperPlus</td>
<td>STSECURE</td>
<td>Flight Sense</td>
<td>FD-SOI</td>
</tr>
<tr>
<td></td>
<td>Accordo</td>
<td>SIC</td>
<td>BlueNRG</td>
<td>ST25</td>
<td>InSilico</td>
<td>BiCMOS</td>
</tr>
</tbody>
</table>

**Smart Mobility**

**Power & Energy**

**Internet of Things & 5G**
Dedicated Automotive ICs

### Automotive MCUs
- 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
- 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
Discrete & Power Transistors

- 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

- 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

Diodes
Rectifiers
Thyristors (SCR)
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

Key power technologies & packages for:
Car electrification
Power management
Motor control

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

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

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

Connectivity solutions:
- Bluetooth® Low Energy ICs
- Sub-1 GHz transceivers
- Sigfox-compatible devices
- LoRaWAN® technology
- Short-range RF transceivers
- Powerline communication ICs
- IO-Link
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**
- FlightSense* ToF proximity & ranging modules
- 3D FlightSense* ToF sensors
- Global shutter CMOS image sensors
- Ambient light sensors
- Custom optical solutions

* registered and/or unregistered trademarks of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere
General purpose MCU & MPU, secure solutions & NFC

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

**Secure Solutions**
- 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**
- NFC / RFID Tags
- Dynamic NFC Tags
- NFC / RFID Readers
- UHF Readers
- High-performance & high-endurance EEPROM

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

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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 RF-SOI, 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
We are drivers of your innovation

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

- 18,500 patents & 590 new filings in 2019
- 16% of revenues invested in R&D
- 7,800 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 Customers* 2019
- Apple
- Bosch
- Ciena
- Continental
- Seagate
- Samsung
- Huawei
- Mobileye
- Tesla
- HP

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

Globally Managed Accounts
Distribution & Mass Market

Top 10
Q1 2020 Revenues

% by product group
- Analog, MEMS & Sensors Group (AMS): 33%
- Microcontrollers & Digital ICs Group (MDG): 38%
- Automotive & Discrete Group (ADG): 28%
- Others: 9%

% by shipment location
- Americas: 65%
- EMEA: 22%
- Asia Pacific: 13%

% by region of origin
- Americas: 40%
- EMEA: 27%
- Asia Pacific: 33%

% by customer type
- Top 10 OEMs: 42%
- Other OEMs: 33%
- Distribution: 25%
- Others: 9%
2019 revenues by product group and customer type

% by product group 2019

- Analog, MEMS & Sensors Group (AMS): 34%
- Automotive & Discrete Group (ADG): 38%
- Microcontrollers & Digital ICs Group (MDG): 28%
- Others: 0.1%

% by customer type 2019

- Top 10 OEMs: 45%
- Other OEMs: 25%
- Distribution: 30%
2019 revenues

Shipment location and region of origin

<table>
<thead>
<tr>
<th>Shipment location</th>
<th>Americas</th>
<th>EMEA</th>
<th>Asia Pacific</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62%</td>
<td>24%</td>
<td>14%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region of origin</th>
<th>Americas</th>
<th>Asia Pacific</th>
<th>EMEA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38%</td>
<td>33%</td>
<td>29%</td>
</tr>
</tbody>
</table>
Our People
Our technology starts with our people

<table>
<thead>
<tr>
<th>Region</th>
<th>Approximate Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>~10,600</td>
</tr>
<tr>
<td>France</td>
<td>~10,100</td>
</tr>
<tr>
<td>Asia</td>
<td>~18,400</td>
</tr>
<tr>
<td>Mediterranean</td>
<td>~4,700</td>
</tr>
<tr>
<td>Others</td>
<td>~750</td>
</tr>
</tbody>
</table>

As of December 31, 2019

<table>
<thead>
<tr>
<th>Department</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>~67%</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>~17%</td>
</tr>
<tr>
<td>Marketing &amp; Sales, Divisional Functions, Administration &amp; General services</td>
<td>~16%</td>
</tr>
</tbody>
</table>
Sustainability
A longstanding commitment
Our sustainability strategy

We conduct our business responsibly to create value for all stakeholders

WE LIVE OUR VALUES: People, Integrity, Excellence

WE PUT PEOPLE FIRST
- Health & Safety
- Labor & Human Rights
- Development & Engagement
- Diversity & Inclusion

WE IMPROVE EVERYBODY’S LIFE
- Sustainable Profit
- Innovation
- Quality
- Sustainable Technology

WE PROTECT THE ENVIRONMENT
- Energy & Climate Change
- Water
- Waste & Effluents
- Chemicals

TOGETHER, WE SHAPE THE FUTURE
- Supply Chain Responsibility, Education & Volunteering

Based on 2017 external materiality exercise
Our sustainability ambitions and 2025 goals

**WE PUT PEOPLE FIRST**
- **Health & Safety**: Be a safe workplace with zero injuries, zero occupational diseases and ensure healthy lives and well-being for all.
- **Labor & Human Rights**: Be recognized as a leader in labor and human rights and accept zero tolerance on forced labor.
- **Development & Engagement**: Offer the best employee experience in all the locations where we operate.
- **Diversity & Inclusion**: Achieve full gender equality and be a leader in cultural and disability inclusion.

**TOGETHER, WE SHAPE THE FUTURE**
- **Supply Chain Responsibility**: Systematically assess and mitigate social, environmental, health & safety, and ethical risks in our extended supply chain.
- **Education & Volunteering**: Prepare the future by supporting education in schools in all the countries where we operate.

**WE PROTECT THE ENVIRONMENT**
- **Energy & Climate Change**: Continuously reduce our carbon footprint and our impact on climate change by decreasing our GHG emissions and improving energy efficiency.
- **Water**: Maintain our leadership in water efficiency by reducing consumption, recycling more, and reinforcing our efforts in water scarcity areas.
- **Waste & Chemicals**: Strive for zero waste in landfill, reduce our consumption of chemicals and eliminate hazardous materials.

**WE IMPROVE EVERYBODY’S LIFE**
- **Innovation & Profits**: Sustain profitable growth, being the world leader in Industrial, Internet of Things and Automotive applications and markets.
- **Quality**: Lead our market in terms of product quality, with no severe quality incidents, while meeting the most stringent customer expectations.
- **Sustainable Technology**: Design and manufacture products that have the greatest positive impact on the planet and society.

**2025 GOALS**
- **<0.15% recordable cases** for employees and contractors
- **100%** of ST manufacturing sites recognized by external international bodies
- **Employee engagement rate +10 points above country norms**
- **>20% women in all management levels**
- **100% suppliers at risk audited**
- **STEM** education partnerships in **20 countries**
- **>20% of revenues generated by new product lines**
- **-75% severe quality incidents**
- **x3 % revenues generated by responsible products**
- **-20% energy consumption and GHG emissions**
- **-20% water consumption**
- **95% of our waste reused and recycled**

* Injuries and illnesses
*2016 baseline
* vs 2016
* Normalized values vs 2016
Main steps in our value chain

Resources

- 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.

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 50 hours training per employee
  - 77% of employees recommend ST as a great place to work
  - 0.76 recordable case rate (injuries)

- Financial
  - Sustainable financial performance
    - US$9.56 billion net revenues
    - US$2.96 billion salaries and benefits
    - US$165 million taxes paid
    - US$214 million cash dividend

- Intellectual
  - Innovative products and solutions
    - 18,000 active patents
    - 62% of new products classified Sustainable Technology
    - 16% of revenues generated by new product lines

- Manufactured
  - Responsible and effective business operations
    - >100,000 customers served
    - ISO 9001, 14001, 22301, 45001/CHSAS18001 and IATF certifications
    - 100% of manufacturing sites covered by RBA audits
    - 99% of new suppliers screened on social responsibility criteria

- Natural
  - Mitigation of the impact of our activities
    - 84% decrease in PFC emissions since 1994 (per unit of production)
    - 54% of waste reused, recovered or recycled
    - 41% of water recycled or reused

- Social and relationship
  - Knowledge and values shared with all
    - >110,000 beneficiaries in local communities
    - 389 volunteering initiatives from 33 sites worldwide
    - >720,000 people trained on computer basics by ST Foundation since 2003

Unless otherwise stated, all data refer to 2019.
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
Sustainability reporting

Transparency – Reliability – Comparability

• Economic, environmental and social performance
• Programs results and objectives
• Focus on site initiatives
• Aligned with Global Reporting Initiative guidelines
• Content and data verified by a 3rd party

Among the highlights in 2019

Read ST’s 2020 sustainability report: sustainabilityreports.st.com
Thank you