STMicroelectronics Company presentation

July 2024
We are creators and makers of technology

One of the world’s largest semiconductor companies

Over 50,000 employees of which 9,500+ in R&D

$17.3 billion revenues in 2023

Over 80 sales & marketing offices serving over 200,000 customers across the globe

14 main manufacturing sites

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

As of December 31, 2023
Global presence

- Research & Development
- Main Sales & marketing
- Front-end manufacturing
- Back-end manufacturing
ST stands for *life.augmented*

Everywhere microelectronics makes a positive contribution to people’s lives, ST is there.
Our value proposition for all stakeholders

For our **shareholders**
- Return value in line with our objective
- Sustainable and profitable growth

For our **customers**
- Provide differentiating enablers
- Independent, reliable & secure supply chain

For all **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

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

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

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

<table>
<thead>
<tr>
<th>Smart Mobility</th>
<th>Power &amp; Energy</th>
<th>Cloud-connected Autonomous Things</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helping car manufacturers make driving safer, greener, and more connected for everyone</td>
<td>Enabling industries to increase energy efficiency everywhere and the use of renewable energy</td>
<td>Supporting the proliferation of secure, connected, autonomous devices enabled by edge AI</td>
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</tbody>
</table>
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 $500B+ every year
- Electric vehicles to grow from ~15% of car sales in 2023 to ~40% by 2030
- ICEs in over 70% of new vehicles produced 2023-2027

Sources: asirt.org, TechInsights, IEA
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

Over 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
Cloud-connected Autonomous Things

Supporting the proliferation of secure, connected, autonomous devices enabled by edge AI

- Cloud connected and data-enabled services
- Digital security for all data
- Edge AI proliferation

- More than 20 billion IoT connected devices per year by 2025
- IoT security services market over $12 billion by 2025
- A billion edge AI devices in 2023 growing > 30% per year through 2028

Sources: ABI, Ericsson, GSMA
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>
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</thead>
<tbody>
<tr>
<td>Lead in car electrification</td>
<td>Lead in <strong>embedded</strong> processing</td>
<td><strong>Lead in selected</strong> high-volume smartphone applications with differentiated products or custom solutions</td>
<td>Address selected high-volume applications with differentiated products or custom solutions</td>
</tr>
<tr>
<td>Lead in car digitalization</td>
<td>Lead in <strong>Power &amp; Energy Management</strong></td>
<td><strong>Lead in Sensors</strong></td>
<td>Leverage <strong>broad portfolio</strong> to address high-volume applications</td>
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<td></td>
<td></td>
<td><strong>Accelerate in Analog</strong></td>
<td>Leverage <strong>broad portfolio</strong> to address high-volume applications</td>
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Differentiated technologies are our foundation

<table>
<thead>
<tr>
<th>MEMS for sensors &amp; micro-actuators</th>
<th>Smart Power: BCD (Bipolar - CMOS - Power DMOS)</th>
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<tbody>
<tr>
<td>FD-SOI CMOS FinFET through Foundry</td>
<td>Discrete, Power MOSFET, IGBT Silicon Carbide, Gallium Nitride</td>
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<tr>
<td>Analog &amp; RF CMOS</td>
<td>Vertical Intelligent Power</td>
</tr>
<tr>
<td>eNVM CMOS</td>
<td>Optical sensing solutions</td>
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</table>

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, Wireless MCU secure MCU, EEPROM
- Discrete & power transistors
- MEMS & optical sensing solutions
- ASICs based on ST proprietary technologies
# Dedicated automotive ICs

## Automotive MCU
- Scalable single- and multicore MCU solutions
- Targeting cost-sensitive to highly advanced applications
- Supporting next-generation architectures
- Comprehensive development ecosystem

## ADAS solutions
- Image signal processors
- Radar transceivers
- V2X communication solutions
- Automotive CMOS image sensors
- Automotive Inertial sensors

## Infotainment & telematics
- Outstanding audio fidelity and positioning accuracy in every condition
- Secure smartphone mirroring
- Safe vehicle connectivity with wide set of peripherals

## Automotive analog & power
- 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

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) EMI filtering & protection ICs
• ESD protection
• EOS & lightning surge protection
• Current limiters
• IPAD* Integrated EMI and ESD protection devices
• Integrated passive devices

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
- Analog/digital controllers
- Linear voltage regulators
- LED & lighting
- Intelligent Power Switches
- Battery management

## Analog products & specific ICs
- Operational amplifiers
- Comparators
- Current sensing amplifiers
- Filtering & conditioning
- Interfaces & transceivers
- Reset and supervisors

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

## Connectivity solutions
- Short-range RF transceivers
- Powerline communication
- 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
- Electrostatic 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 & multi-zone ranging modules
- 3D FlightSense* ToF sensors
- Global shutter CMOS image sensors
- Ambient light sensors
- Custom optical solutions

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## General-purpose MCU & MPU, secure solutions & NFC

### General-purpose 32-bit MCU & MPU
- STM32* 32-bit general-purpose microcontrollers (MCU) and 32/64-bit microprocessors (MPU)
- Arm® Cortex® cores
- High performance, mainstream, ultralow power MCU offer
- Extensive ecosystem

### Secure solutions
- Mobile consumer transactions
- Authentication and brand protection
- Payment systems
- Connected services in cars

### Wireless 32-bit MCU
- Bluetooth® Low Energy ICs
- Zigbee, Thread, Matter
- Sub-1 GHz transceivers. Sigfox-compatible devices
- LoRaWAN® technology
- STM32 DNA, extended ecosystem for RF

### NFC & Memory
- NFC / RFID Tags
- Dynamic NFC tags
- NFC / RFID Readers
- High-performance & high-endurance EEPROMs

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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 Integrated 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 GHz wireless RF and analog design using advanced technologies, such as RFSOI, BiCMOS & 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.

Front-End (Wafer fabrication)
Back-End (Assembly & Test)
We are drivers of your innovation

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

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
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<tbody>
<tr>
<td>People working in R&amp;D and product design</td>
<td>~9,500</td>
</tr>
<tr>
<td>Active and pending patents worldwide</td>
<td>~20,000</td>
</tr>
<tr>
<td>Percentage of revenues invested in R&amp;D in 2023</td>
<td>~12%</td>
</tr>
<tr>
<td>Active R&amp;D partnerships</td>
<td>~200</td>
</tr>
<tr>
<td>Fab labs to drive open innovation</td>
<td>13</td>
</tr>
<tr>
<td>Startups engaged in our programs in 2023</td>
<td>~80</td>
</tr>
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</table>
Recognized as a top global innovator

STMicroelectronics recognized as one of the Top 100 Global Innovators 2023 by Clarivate

STMicroelectronics recognized as a Top 100 Global Innovator 2024 by Clarivate
Customers & sales
We are partners with our customers worldwide

Over 80 sales offices in 35 countries
We serve more than 200,000 customers

Top 10 Customers* 2023

- Apple
- Hyundai Motor
- Bosch
- Mobileye
- Continental
- Samsung
- HP
- SpaceX
- 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
Q2 2024 Revenues dynamics

% by reportable segments

- Analog, Power & Discrete, MEMS and Sensors (APMS) Product Group: 36%
- Power & discrete products (P&D): 23%
- Microcontrollers (MCU): 25%
- Digital ICs and RF Products (D&RF): 16%
- Others: 0.1%

% by end market

- Communications equipment & computer peripherals: 14%
- Automotive: 46%
- Industrial: 20%
- Personal electronics: 20%
- - more than 50% Y/Y: -24.4% Y/Y -8.8% Q/Q
- - ~ 6% Y/Y: -10.0% Y/Y -4.3% Q/Q
- - ~ 5% Q/Q: -7.6% Y/Y +8.6% Q/Q
- - ~ 15% Y/Y Y/Y: + ~ 2% Y/Y + ~ 15% Q/Q
- - ~ 8% Q/Q: - ~ 15% Y/Y - ~ 8% Q/Q
- - ~ 6% Q/Y: -15.7% Q/Q -8.8% Q/Q
- - ~ 5% Q/Q: -10.0% Y/Y -4.3% Q/Q
- - more than 50% Q/Y: +8.6% Q/Q

*Excluding the impact of the change in product mix in an engaged customer program, Personal Electronics was up ~ 14%.
Q2 2024 Revenues

% by shipment location
- Americas: 16%
- Asia Pacific: 26%
- EMEA: 58%

% by region of origin
- Americas: 39%
- Asia Pacific: 31%
- EMEA: 30%

% by customer type
- Top 10 OEMs: 47%
- Other OEMs: 26%
- Distribution: 27%
FY 2023 Revenues

% by product group
- Automotive & Discrete Group (ADG): 45%
- Microcontrollers & Digital ICs Group (MDG): 32%
- Analog, MEMS & Sensors Group (AMS): 23%
- Others: 0.1%

% by shipment location
- Americas: 56%
- EMEA: 28%
- Asia Pacific: 16%

% by region of origin
- Americas: 37%
- Asia Pacific: 30%
- EMEA: 33%

% by customer type
- Top 10 OEMs: 42%
- Other OEMs: 24%
- Distribution: 34%
- Others: 0.1%
Our commitment to quality
Quality is embedded in our culture

Our quality culture is driven by a commitment to continuously improve, a prevention mindset & our STRIVE for Excellence values

STRIVE
FOR EXCELLENCE

Strength
Teamwork
Resilience
Innovation
Value
Expertise

Find out more at www.st.com/quality
Quality is a key business enabler for ST

**Our quality vision**

Elevate ST quality to the highest levels, positioning it as a valuable asset for our customers

**Our quality mission**

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

**Our quality strategy**

- Deploy a mindset and culture of quality
- Focus on quality performance at our customers
- Innovate for advanced quality and reliability
- Drive structured result-driven improvement programs
The ST Quality Review

2021-22
Quality Review

An annual status of the ST Quality organization, infrastructure and initiatives that demonstrate our commitment to continually strive for excellence.

Read ST’s 2021-22 Quality review
Our people
Our technology starts with our people

Manufacturing ~64%
Research & Development ~18%
Marketing & Sales, Divisional Functions, Administration & General services ~18%

As of December 31, 2023
Sustainability has been engraved in our business model and culture for over 30 years

1987  Creation of ST. Business conduct & ethics policy
1993  First environmental policy
1995  First environmental decalogue
1997  First environmental report, ISO 14001, EMAS
2000  Signatory of the UNGC 10 principles
2001  Creation of ST Foundation
2002  Establishment of a reforestation program
2007  Conflict Minerals program
2011  Sustainable Technology program
2012  ISO 50001 energy management
2014  5th Environment, Health & Safety Decalogue
2016  ISO 22301 Business Continuity 1st certification
2019  2025 CO₂ goal achieved
2020  Commitment to be Carbon Neutral by 2027*
2021  New Sustainability Charter published
2024  27th annual Sustainability Report

*on scope 1 & 2 and partially scope 3
Our approach to sustainability

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

**Sustainable company**
- Committing to carbon neutrality* 
- Leading environmental management system
- Reducing water usage & addressing local scarcity risks
- Reducing waste & promoting a circular economy
- Embedding risk management
- Monitoring and developing the extended supply chain
- Promoting STEM in all our eco-systems
- Monitoring & transparently reporting our progress

*on scope 1 & 2 and partially scope 3
Our business model
Management of our impact

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.

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.

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.

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.
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

Sustainable technology
Milestones

- Compliance with the 1.5°C scenario by 2025 – recognized by SBTi
- Carbon neutral on scope 1 & 2 and partially scope 3 by 2027
- Sourcing 100% renewable energy by 2027
- Collaborative programs and partnerships for carbon neutrality throughout our ecosystems

In 2023

- 71% use of renewable electrical energy
- 27 GWh of additional energy savings across ST

We will be carbon neutral by our 40th anniversary in 2027.
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)
- EU taxonomy

Content and data verified by a 3rd party

Read ST’s 2024 sustainability report: sustainabilityreports.st.com
ST Foundation’s mission is to develop, coordinate, and sponsor projects that employ modern sciences & latest technology to promote human progress.

In 2023, over 120,000 trainee students took part in classes on basic and advanced computer skills, and ‘Tablets for Kids’.

- The ST Foundation continues to bridge the digital divide between those who have access to modern technologies and those who do not.
- The Digital Unify (DU) program, launched in 2003, has trained over 1,120,000 people in 29 countries since its inception.
Our technology starts with You

Find out more at www.st.com