

Quality Review

2022 -
2023





Foreword President and CEO

ST is an integrated device manufacturer with in-house manufacturing complemented by outsourcing through a network of partners. We are transforming our manufacturing base to enable future growth, with a significant expansion of our 300mm and wide bandgap semiconductor capacity. We believe that mastering the full semiconductor value chain, from chip design to wafer fabrication, and assembly and testing, allows us to provide innovative, sustainable and high-quality solutions to our customers.

We continue to be successful in the markets we serve by providing our customers with products and solutions that allow them to address their opportunities and challenges. Our commitment to quality and our ability to deliver reliable products is a fundamental element of our success. It allows ST to become a trusted partner for all of our customers, large and small.

Quality is embedded in our culture. It is driven by our will to continuously improve, a mindset of prevention, and our Strive for excellence values. Every time we deliver a high-quality product, we reinforce trust in our company. Every time we listen, collaborate, and respond to customer needs we build long-lasting relationships.

This 2022-2023 quality report highlights the strong results achieved since we established a systematic approach to quality, combined with the pioneering initiatives we have implemented across the company. We are now embarking on a new cycle of our quality strategy and this report also outlines the path forward to fulfill our value proposition for both our customers and shareholders. This means delivering high-quality products through an independent, reliable, and secure supply chain for our customers, as well as driving sustainable and profitable growth for our shareholders.

Jean-Marc Chery

Quality is about what our customers expect from ST every day.

Jean-Marc Chery
President and CEO

Executive Vice President for Product Quality and Reliability



Nicolas Yackowlew
Executive Vice President,
Product Quality and Reliability

Quality is about continually striving for excellence.

In 2022, we successfully completed our second quality improvement cycle. Despite the company size nearly doubling between 2018 and 2022, we collectively managed to significantly enhance global quality in ST. We fulfilled our commitments and expectations, and making a positive impact on quality throughout the entire company.

The transformation we have undertaken encompasses various aspects, such as quality planning, ensuring robustness and prevention in our design flow, and operational excellence. By detecting signals early and providing innovative responses to potential quality events, we have increased customer satisfaction and trust.

In 2023, we will embark on a new cycle dedicated to consolidating these achievements. We will capitalize on all our accomplishments, consolidating and strengthening our assets, processes, programs, and working models. Prevention, detection, and innovation will continue to be the key pillars of our design flow quality. We will reinforce teamwork and expert networks

as the new norm, and enhance simplification and rationalization through digitalization and data analytics.

Our STRIVE for Excellence values - Strength, Teamwork, Resilience, Innovation, Value, Expertise - will serve as the foundation of our consolidation efforts. These values constitute the quality culture we have developed and deployed across ST.

Going forward, the quality organization is fully aligned with the company's strategy as we expand our manufacturing capacities.

We will leverage our agility, strong processes, and procedures to capitalize on this competitive advantage and successfully deploy these new capabilities, striving for the highest level of quality excellence in the solution we provide.

Nicolas Yackowlew

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STMicroelectronics at a glance

200 000+ customers



\$16.1 billion revenue in 2022

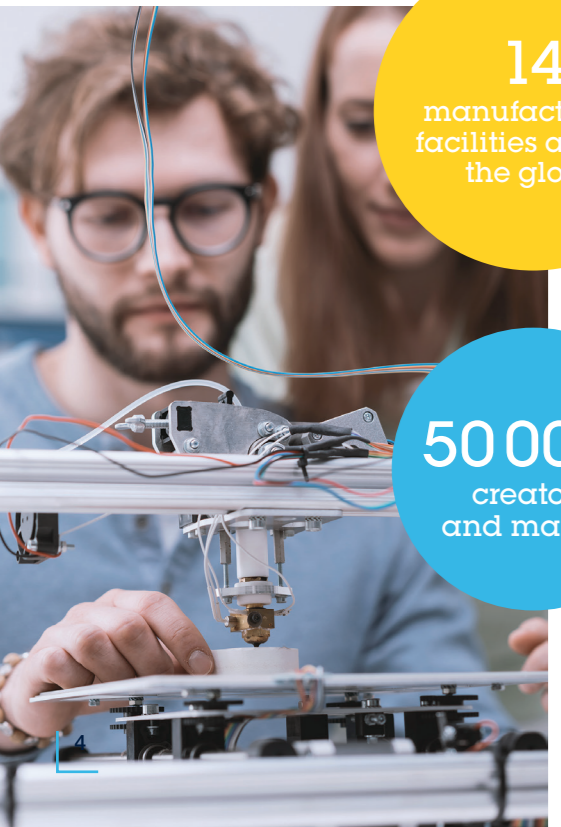
We are a global semiconductor company serving customers with innovations that make a positive impact on people's lives.

At ST, we are over 50,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An integrated device manufacturer, we work with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, efficient power and energy management, and the wide-scale deployment of the Internet of Things (IoT) and connectivity. We serve four primary end markets:

Automotive, Industrial, Personal Electronics, and Communications Equipment, Computers, and Peripherals, where our products play a crucial role in enabling our customers and partners to have a positive impact on people's lives and contribute to a more sustainable future. Our chips and systems are integrated into billions of products, encompassing a wide range of applications such as automotive and industrial robotics, washing machines, solar panels, smartphones, satellite communications, and more. They help enhance these products by making them more intelligent, energy-efficient, connected, safe, and secure.

14 manufacturing facilities around the globe

50 000+ creators and makers



Our aim is to be our customers' most valued and trusted partner.

Our Quality culture and striving for excellence

In ST, we diligently strive to meet and even surpass customer expectations in terms of quality and reliability across all our products and services. Our aim is to be our customers' most valued and trusted partner.

Quality is deeply embedded in our ST culture. We hold the belief that all employees, from our executives to our newest team members, have a shared responsibility to consistently deliver the highest quality in their daily work. We encourage a culture of continuous learning, improvement, and innovation, where our team members actively seek out new ways to enhance their skills and drive progress.

Our approach to quality is rooted in our core STRIVE principles: Strength, Teamwork, Resilience, Innovation, Value, and Expertise. These foundational principles form the bedrock of our commitment to delivering excellence in all aspects of our work.

From product definition to after-sale services, from clean-room to shipping services, we seek to continually improve and innovate across the company. The resulting company-wide initiatives bring together all our organizations and sites to work together as one unified team focused on delivering best-in-class quality to our customers.

Our approach to quality is rooted in our core STRIVE principles:

- Strength
- Teamwork
- Resilience
- Innovation
- Value
- Expertise

The foundations of our approach to quality



Quality framework

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.



Quality is about creating value for our customers and business for our company.

Nicolas Yackowlew
Executive Vice President,
Product Quality and Reliability

New Quality milestones

We have successfully executed two major 3-year quality programs since 2017. Our first program set out to improve operations and boost operational excellence. Our next focus was on quality transformation, securing company-wide quality alignment and expanding our quality culture.

As of 2023, and until 2025, we are embarking on a new phase in our pursuit of quality excellence – the STRIVE for Excellence program.

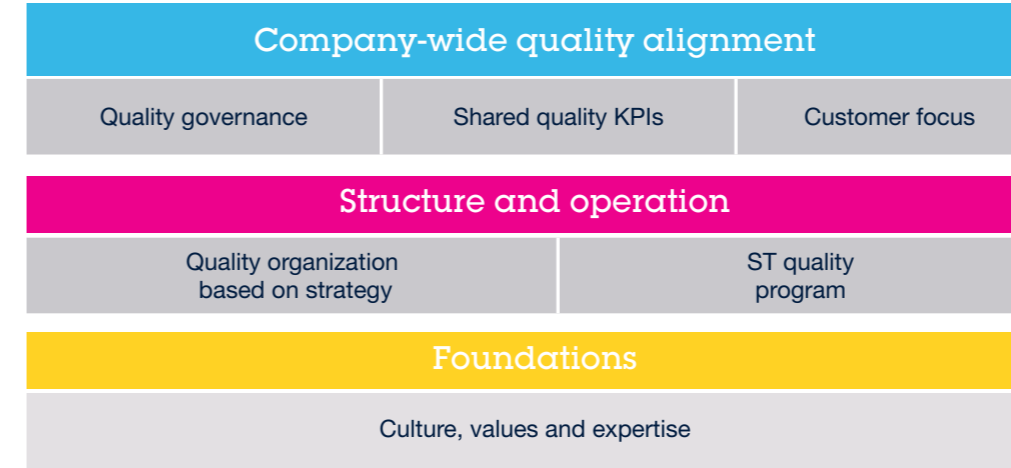
Steady improvement with visible results

Our quality programs have delivered strong results both internally and externally. Internally, the indicators we monitor demonstrate our collective dedication to achieving quality excellence. Our quality index, which consolidates some quality key performance indicators, consistently reflects year-over-year improvement. Externally, customer scorecard indicators showcase improvements, reaffirming the substantial return on investment from our quality initiatives.

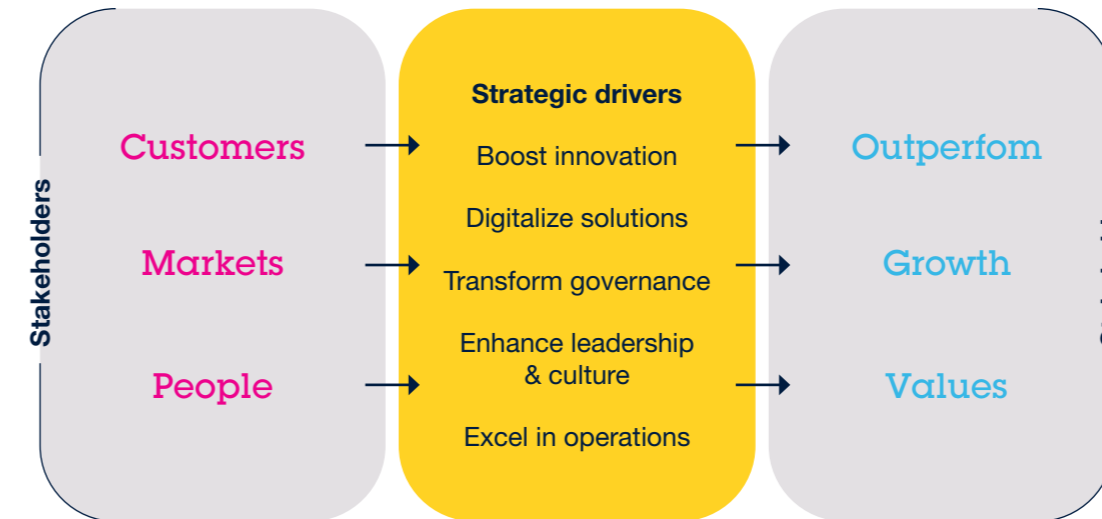
Scaling for quality excellence in a rapidly changing environment

As our company continues its path of rapid and sustainable growth, coupled with our integrated device manufacturer strategy, we are simultaneously ramping-up our capacities and expanding our manufacturing footprint in a fast-moving environment. Our aim is to maintain the robustness of our overall quality and reliability as we transition to a larger operation, and to empower every ST employee with the tools they need to make a difference.

Our Quality working model



2023-25 STRIVE for Excellence quality program



STRIVE for Excellence quality program

To address these challenges and foster our world-class organization, we roll-out our STRIVE for Excellence program. This comprehensive quality program aims to adapt to the changes we face and drive advanced initiatives in quality, innovation, and competitiveness.

The STRIVE for excellence program focuses on 5 main drivers:

- **Innovation:** Foster innovation by challenging conventional approaches and exploring new ways of working. Embrace experimentation as an integral part of our work to drive continuous improvement and transformation.
- **Digitalization:** Empower our people and teams with cutting-edge tools, leveraging the power of data and artificial intelligence, to provide real-time access to information, driving efficiency and enabling informed decision-making.
- **Governance:** Establish company-wide governance systems to ensure robust, resilient and agile processes.
- **Culture:** Deeply embed quality in our company culture, cultivating a workforce of smart, agile, bold, and engaged leaders.
- **Operational excellence:** Consistently deliver quality results that exceed our customers' expectations through prevention and risk management initiatives. Deliver quality results that reinforce our reputation as a trusted and reliable partner.

Customer focus

Elevating customer relationships

We strive to exceed our customers' expectations and become their most valued and trusted partner through excellent quality, reliability, and responsiveness.

Ensuring customer satisfaction

We actively monitor and track customer satisfaction through :

- **Customer surveys** to collect feedback from our customer base
- **Vivavoce**, a digital portal for sharing customer quality KPIs
- **Customer scorecards** used at the sales regional level and for key accounts across our four core markets: Automotive; Industrial; Communication Equipment and Computer Peripherals; Personal Electronics
- **Direct communication** and engagement with customers to establish robust partnerships and build strong relationships
- **Management reviews** to proactively define targeted actions to nurture customer trust and monitor customer satisfaction

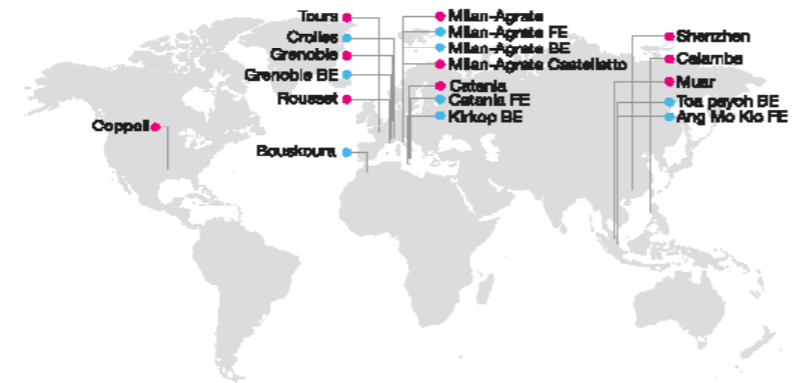
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Proximity to support global partners

To support new technologies, products, and solutions, ST operates dedicated facilities all around the world. Product quality laboratories are centralized in each region in order to be close to our customers across the globe and offer short response times for customer issues or support requests.



● Product quality laboratories

Full analysis capability at product level to support activity from new product introduction to customer support

● Manufacturing quality laboratories

Tailored analysis capability to support new technology R&D and manufacturing excellence

Quality is about a mindset and a culture of targeting excellence.

Jérôme Roux
President, Sales and Marketing



Quality excellence for our entire customer base

We deliver the same level of energy and commitment to quality excellence for our entire customer base. The customers we serve through our distribution channels and partners are a key asset for us. They represent over 30% of our revenue and an immense source of innovation and growth potential. We are determined to provide them with the opportunity to become the champions and our key accounts of tomorrow.

Our quality efforts are undertaken with each and every customer in mind. The inherent quality our products, processes and systems enable us to consistently deliver a high level of quality to all our customers. Consequently, we ensure all customers are equipped with adequate quality assets that align with their business needs so as we can succeed and grow our business together.



Changing the game: Proactive mindset

As we continue to develop our quality culture, we constantly strive for improvement to identify areas where we can make a difference and better serve our customers. In certain instances, it requires a shift in mindset to open new avenues for improvement. This is exactly what is happening in the way we manage customer events.

As technologies and applications become increasingly complex, resolving the root causes of customer events requires collaboration between technical experts from both ST and the customer, as well as a proactive mindset. Instead of waiting for customers to complain, we need to proactively work together to resolve incidents before they escalate into complaints.

To reflect this proactive partnership approach, we are replacing the term "customer complaint" with "customer incident." This emphasizes our commitment to open and honest communication with customers and our belief that every event is an opportunity to learn and improve together. By prioritizing partnerships and openness to support our customers, we anticipate a significant positive impact not only for them but also for ourselves, as it demonstrates our dedication and adaptability in improving quality in all aspects of our work.

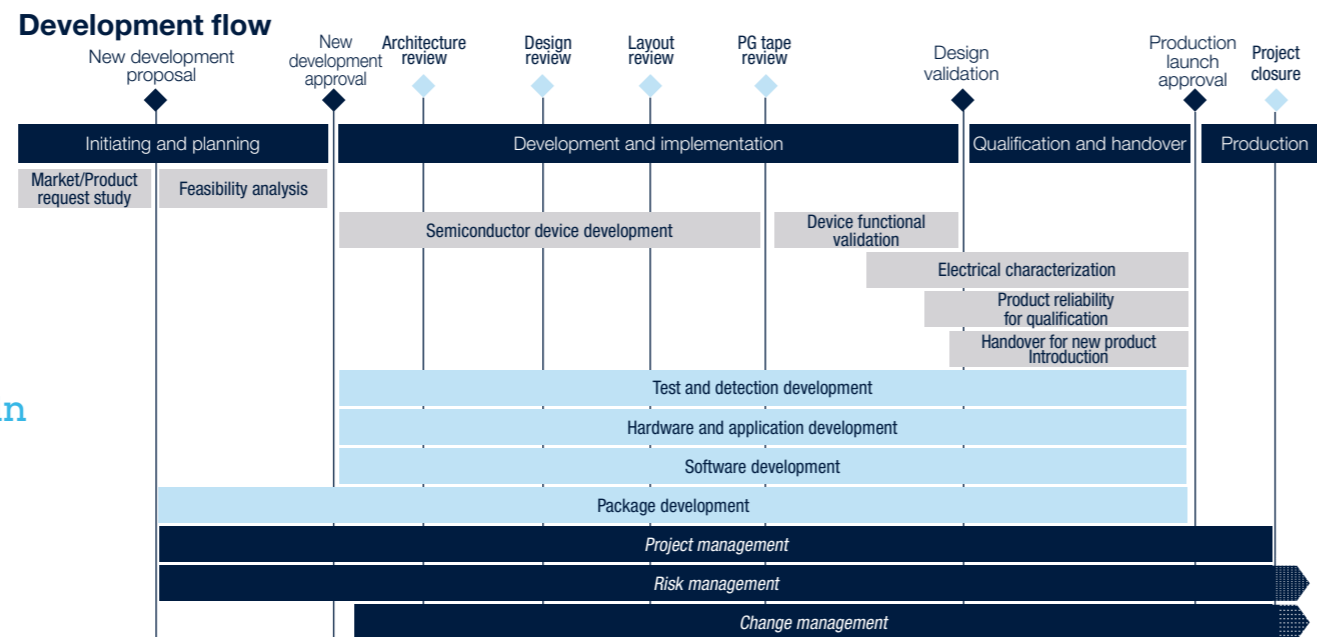
Product and technology development

Our goal is to sustain the rapid pace of innovation while elevating quality performance to the highest levels throughout the development process.



Quality is about working hard every day to meet and exceed customer expectations.

Marco Cassis
President, Analog, MEMS and Sensors
Group Head of STMicroelectronics' Strategy, System Research and Applications, Innovation Office



Elevating innovation to the highest production quality standards

Our company is deeply committed to innovation. Our design teams are continuously introducing increasingly complex mixed technology products and highly integrated SoCs (System-on-Chips). Simultaneously, our manufacturing is implementing new nodes and substrates to enhance our production capabilities, enabling us to better serve our customers. As a quality-focused organization, our goal is to sustain the rapid pace of innovation while elevating quality performance to the highest levels throughout the development process.

The core factors for sustained product quality excellence

To achieve this goal, we focus on identifying and addressing the underlying root causes that can detract from our desired level of product quality:

- **Preventing 'occurrences':** Identifying and addressing potential quality events that could occur at various stages of the product development and manufacturing process. Our aim is to implement robust prevention measures, such as a meticulous product design process, ensuring all quality requirements are fully captured, and establishing proper simulation and validation processes.
- **Preventing 'escapes':** Ensuring that potential defects are detected before shipment to the customer. To mitigate any internal quality events, we focus on the development of comprehensive test programs and software solutions.
- **Maintaining a resilient system:** Building our quality management system (QMS) to secure robust products and technologies. Our QMS enables our teams, thanks to its capacity for knowledge sharing, to proactively prevent quality events and promptly identify any instances of escapes through efficient and rigorous design and testing programs.

Cybersecurity certification and ISO21434 compliance

As automotive embedded connectivity becomes more prevalent, the parallel rise in security risks, including cyber-attacks, poses significant threats to both vehicle safety and the well-being of passengers.

In response to industry challenges, the ISO 21434 standard for "Road vehicles — cybersecurity engineering" was developed in August 2021 to address cybersecurity risks in electronic systems of vehicles. Our global automotive customers have unanimously requested our implementation of this certification. Additionally, the European Union has issued regulation R155, which mandates the inclusion of a certified Product Cybersecurity Management System for all new vehicle registrations starting from July 2022.

ST in the driver's seat for automotive quality

Recognizing the importance of these developments, we committed ourselves to achieving certification within this tight timeline. We established a company-wide task force, engaging all relevant departments and leveraging on our existing knowledge and experience in automotive products. In a span of just 9 months, the team worked collaboratively to revise applicable company processes and rules, and train impacted employees.

As a result, we achieved certification and were acknowledged by auditors as a benchmark and industry leader. This accomplishment is a testament to the expertise, experience, and quality-driven culture of our teams, who effectively harnessed and capitalized on the strengths of our Quality Management System.



Quality is about our innovation and capacity to ensure the reliability of our products.

Marco Monti
President, Automotive and Discrete Group

Product control plan: a unified process for test and detection

In 2021, ST launched the product control plan (PCP), a company-level product control process, resulting of an engineering and management decision to define the most optimized product detection strategy and coverage to be applied in production. To implement PCP, we put in place a multi-functional team to work on a common set of selection criteria for critical quality parameters.

The PCP is fully integrated in the ST product development process and provides us with a unique, company-wide process for controlling our test and detection strategy. In turn, this helps us reduce test escapes and related quality events, foster the cross-fertilization of our corrective actions, and improve the quality of our products and solutions.

The PCP has been highly successful today and has contributed to improving the quality of our products. Our customers recognize the value of the PCP, appreciating its innovation, logical approach, and comprehensive nature. It is now regarded as a "business as usual" process with all business groups, covering 100% of new product introductions.

Remi El-Ouazzane
President,
Microcontrollers
and Digital ICs Group

Quality is about Quality is striving to reach excellence in everything we do so that we earn and keep our customers' trust every single day.



Quality manufacturing and technology



Quality is about anticipating problems so they don't happen and eliminating the root causes when they do.

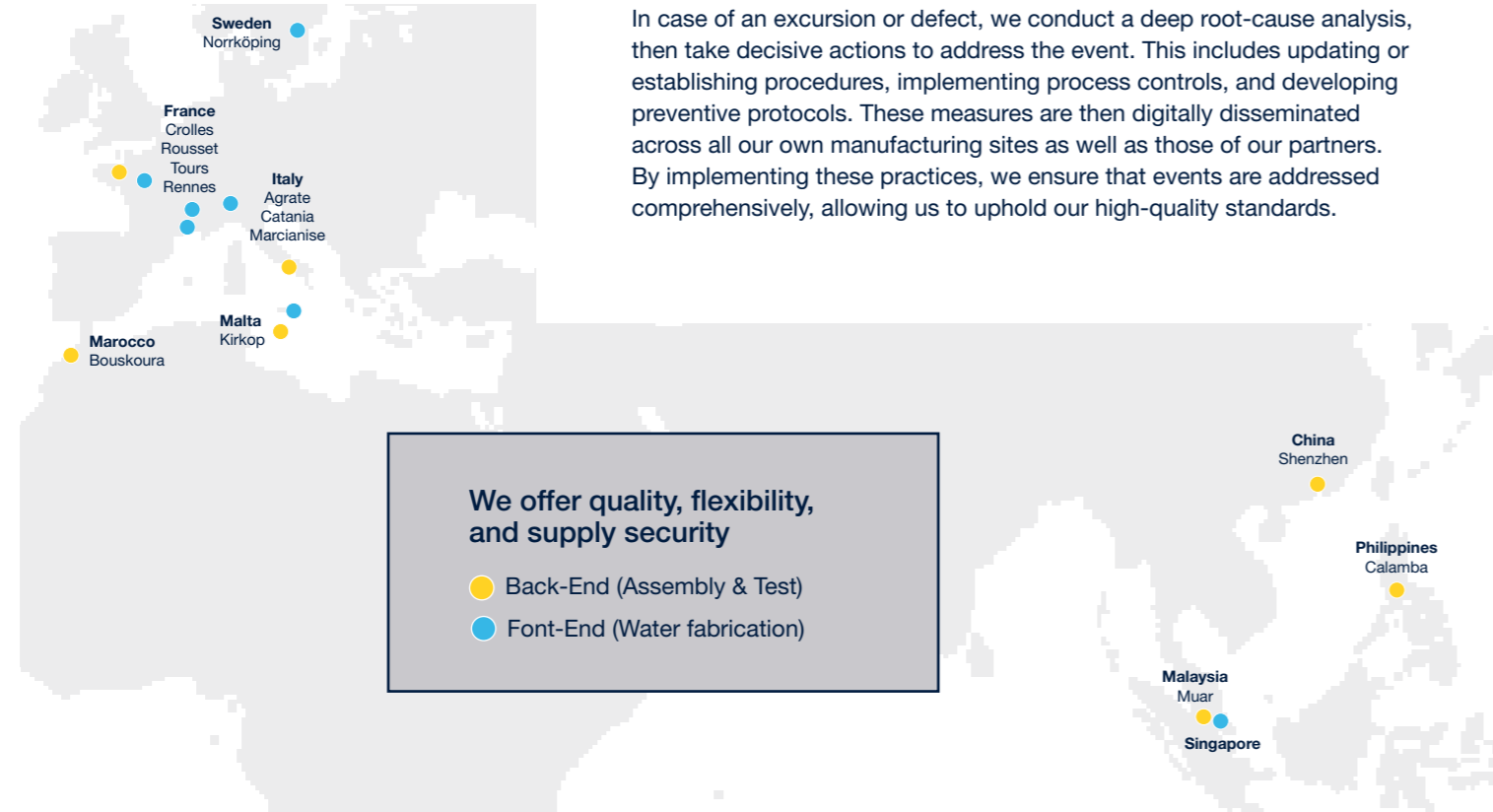
Fabio Gualandris
President, Quality, Manufacturing and Technology

Manufacturing excellence

In our journey of sustainable growth, manufacturing is more crucial than ever in shaping our future success. To ensure the continued progress of our operations, the Manufacturing Quality team is continuously developing its solid and proven global quality strategy, focusing on three pillars: a systematic approach to technical compliance, robust and innovative quality programs, and thorough compliancy audits for both front-end and back-end processes.

In doing so, we aim to strengthen the stability of our fabrication and packaging process and prevent any deviations from our stringent quality standards. These initiatives play a vital role in enhancing our overall manufacturing capabilities and driving our commitment to excellence.

In case of an excursion or defect, we conduct a deep root-cause analysis, then take decisive actions to address the event. This includes updating or establishing procedures, implementing process controls, and developing preventive protocols. These measures are then digitally disseminated across all our own manufacturing sites as well as those of our partners. By implementing these practices, we ensure that events are addressed comprehensively, allowing us to uphold our high-quality standards.



In our dynamic environment, led by the introduction of new fabs and technologies, along with volume ramp-ups, maintaining high quality standards has never been more critical at ST.

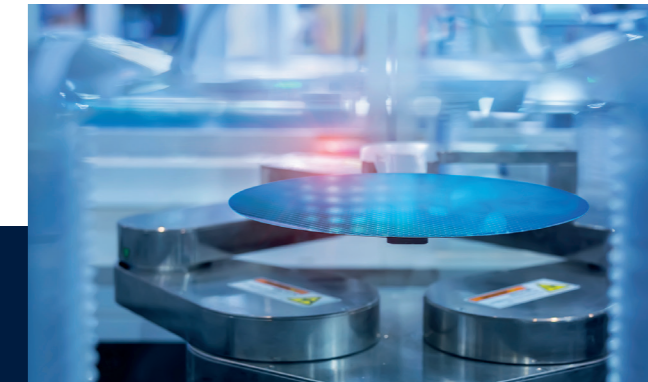
Supplier and material management

At ST, we meticulously select suppliers based on their ability to meet our quality requirements and standards, while also prioritizing their commitment to fair treatment of employees and a positive environmental impact.

Building sustainable partnerships with our suppliers is at the core of our approach to continually enhance the quality of the materials we use. Beyond regular audits, we actively collaborate with our suppliers to proactively prevent and solve issues, exchange knowledge and drive overall performance improvements. Simultaneously, we continually assess and refine our own material and supplier management system.

Finally, we go one step further by engaging in collaborative R&D projects with select suppliers, jointly working towards the development of materials needed for cutting-edge applications like 5G, space technology, and automotive systems.

Building sustainable partnerships with our suppliers is at the core of our approach to continually enhance the quality of the materials we use.



Reliability

Through our rigorous testing and simulation processes, we strive to enhance the reliability of our products and provide customers with upmost confidence in their performance and longevity.

Reliability laboratories



From robust technology to highly reliable products

Reliability at ST encompasses two distinct aspects that ultimately converge to ensure product reliability. The first domain is related to technology. R&D teams work diligently to qualify new technologies through rigorous qualification tests and processing test vehicles. Our goal is to drive technology yields and reliability to the desired levels. Once the manufacturing technology reaches maturity, our product groups introduce and qualify their respective product designs using the new technology.

Fulfilling the product mission profile

The boundaries of product reliability are defined by the product mission profile established by the customer. This profile outlines the real-world conditions under which the product is expected to operate. At this stage, our aim is to conduct comprehensive tests and anticipate potential issues to ensure that the product meets all user requirements domain (URD) specifications. We employ various simulations, such as accelerated stress testing or accelerated failure mechanism analysis, which may involve extreme temperature or humidity environments. These simulations allow us to replicate the entire product lifetime and ensure that our products not only fulfill but exceed the highest quality and reliability standards defined in the customer's mission profile.

Through our rigorous testing and simulation processes, we strive to enhance the reliability of our products and provide customers with upmost confidence in their performance and longevity.

Quality in wide bandgap technologies

ST has been engaging in wide bandgap materials (WBG) such as Gallium Nitride (GaN) and Silicon Carbide (SiC) R&D for over 25 years. Today, our portfolio of SiC-based power products is among the widest in the industry. SiC-based solutions, thanks to their level of power density, can handle far higher temperatures more safely and can work at higher frequencies. This makes them an ideal choice in demanding applications such as electric-vehicle (EV) inverters and chargers or industrial motor drives. As greater volumes will be required over the coming years, we believe ownership of the full wide bandgap technologies supply is the key to answer the market demand.

Enhancing quality and reliability in SiC technology

SiC technology, a semiconductor material made of silicon and carbon, requires unique considerations. SiC is the third hardest composite material in the world, almost as hard as a diamond, demanding higher temperatures, energy, and extended time for crystals to grow and be processed. Its high transparency and high refractive index make it difficult to inspect the material for surface defects that could ultimately impact component yields. Our reliability and operations teams are successfully addressing these challenges by reducing cycle times, improving efficiency, and eliminating defects, resulting in an upscale of quality and reliability.

GaN: a highly differentiating technology under quality focus

ST's SiC products are currently manufactured in Catania and Singapore. Assembly and test are done at back-end sites in Shenzhen and Bouskoura. The new SiC substrate manufacturing facility in Catania, for the production in volume of SiC epitaxial substrates, alongside the existing SiC facility will be a first in Europe. Our Quality and Reliability teams are on deck, relentlessly focusing on the smooth integration of the GaN technology in the production flow and the expansion of a secured supply chain to meet demand growth.

Thanks to our robust and innovative quality approach, we are successfully overcoming these complex production and integration stages and meeting the most stringent customers' requirement.



Quality innovation

State-of-the-art quality

ST is an innovative, technology-driven company that places a strong emphasis on maintaining the highest quality standards. Our strategic direction is fueled by long-term market trends, which empower us to transform cutting-edge chip fabrication technologies into products that offer optimal solutions to our customers' needs, enabling them to tackle challenges and seize opportunities.

In our context, quality innovation is imperative. We maintain a constant pursuit of new and innovative methods to meet our customers' expectations, fostering teamwork, knowledge sharing, experimentation and the exchange of ideas and best practices. In parallel, we leverage the power of data through our comprehensive digital management systems, enabling us to delve deeply into intricate details. This empowers us to anticipate and prevent quality events before they occur.

The examples below highlight the strength of our robust quality culture, bolstered by state-of-the-art quality systems.

ST is an innovative, technology-driven company that places a strong emphasis on maintaining the highest quality standards.

QUEST: the ST cognitive search solution

The QUEST initiative aims to deploy a unique, fast, and effective system that provides access to a multitude of structured and unstructured technical knowledge data sources. This system enhances product quality by accelerating technology learning and improving operational and R&D efficiency. Our company generates over a million documents annually, but over time, these documents become scattered across different formats and storage repositories. As a result, the valuable knowledge accumulated over the years can be difficult to access.

Retrieving and sharing knowledge

QUEST is a cutting-edge knowledge search engine that employs machine learning and semantic features to discover, describe, organize and analyze content and data. During the current deployment phase, QUEST is already being used to identify previous quality events that exhibit similar non-quality signals. This enables faster and more accurate diagnostics, expediting the management and resolution of customer-reported events.

Simulation and modeling networks

The simulation and modeling networks consist of groups of experts who convene regularly to suggest new avenues for exploration and investigation. Their purpose is to anticipate potential issues, identify areas for improvement, and assess the viability of new tools or applications for resolving complex problems. The four groups are respectively focusing on thermo-mechanical, thermal, electrical and piezo domains, with subgroups dedicated to specific topics in the areas of stress simulation and modeling, characterization, tools and methodologies.

Each domain group is comprised of between 30 and 70 experts usually meeting on a quarterly basis. In line with business and quality needs, their purpose is first and foremost the cross-fertilization, sharing and capitalization of knowledge, as well as the mutualization of capabilities, expertise and resources around common projects.

Their pivotal role and valuable contributions to the company's capabilities, including design optimization, risk reduction, performance enhancement, and cost and time savings, are actively supported as a vector of quality innovation.

Test procedure for total ionizing dose from x-ray exposure in terrestrial applications

X-ray inspection relies on the principle of X-ray radiation and its interaction with materials. X-ray photons are directed towards the semiconductor device. As they pass through the various layers and structures, they are attenuated or absorbed differently depending on the material density and composition. The resulting X-ray image provides valuable information about the internal features and potential defects within the device.

Traditionally, one of the significant advantages commonly attributed to X-ray package inspection was its non-destructive nature. Semiconductor devices could be inspected without damaging or altering their functionality. This was supposed to allow comprehensive analysis, defect detection, and quality control without compromising the integrity of the devices. However, it was also common knowledge that on some occasions related collateral effects were observed that could not really be explained. The inspection showed no defect, yet the product behavior changed after the inspection or it was even defective.



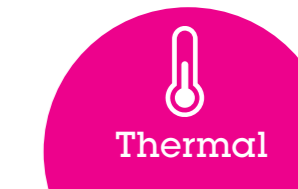
Working group

- 1: Stress characterization
- 2: Stress modelling
- 3: CAD flow integration
- 4: Design guidelines



Working group

- 1: Warpage
- 2: Interconnections
- 3: Adhesion
- 4: Experimental characterization
- 5: Tools methodologies



Working group

- 1: Tools & methodologies
- 2: Thermal material characterization
- 3: Electrothermal simulation/modeling
- 4: Multiscale & boundary conditions



Working group

- 1: System level power integrity
- 2: System level signal integrity
- 3: 3D package-die simulation / 4: EMC
- 5: IBIS (from modelling to simulation)
- 6: Antenna integration
- 7: EM/thermal bi-directional coupling
- 8: Effect of materials & manufacturing tolerances

A new test protocol

ST's quality team launched an initiative that quickly generated a great interest across the industry. The X-rays tools manufacturers were the first to step-in, quickly joined by other top semiconductors manufacturers. An international consortium, including ST quality experts, established a dedicated network that defined detailed tests protocols for X-ray radiation dose assessment and a structured method for product characterization that solved this longstanding issue.

This initiative allowed us to contribute to our leading-edge know-how with regards to manufacturing and improve our product robustness. It also further developed our understanding of radiation and x-ray package behavior that could be of great interest in radiation-intensive applications such as those encountered in space environments.



Quality is about transforming processes, behavior and culture to continually improve.

Rajita D'Souza
President, Human Resources and Corporate Social Responsibility

Culture, values and expertise

Under the guidance of robust governance, quality is a responsibility shared by everyone at ST. For us, it is not enough to be at the top; we strive for excellence in every aspect of our endeavors. It is not enough to be aware; we want quality to be deeply ingrained in our culture, to be a part of ourselves, shared with our stakeholders, and the bedrock of our strategy. We relentlessly pursue excellence to become the smart, agile, bold, and engaged leaders we aim to be, building on the solid foundations of our STRIVE values.

Five pillars of culture to proactively drive our Quality culture



ST Quality Week: Celebrating our quality culture and achievements

Our quality culture culminates in our annual ST Quality Week, a company-wide series of events, involving all ST sites, allowing us to collectively celebrate quality, build awareness, and share quality initiatives, progress and successes with our colleagues and our customers.

We hosted our sixth annual quality week in November 2022. It was an opportunity to exchange with ST teams and customers. It was also an important platform to directly hear from them about their expectations and measure the path going forward to total customer satisfaction.

ST employees from across the globe had the opportunity to attend both live and virtual events. These included insightful interviews with key customers and engaging interactions with quality leaders and ST executives from various groups and regions. These activities gave us the opportunity to better understand how customers perceive ST and gain further insights into the profound impact of quality in our value chain.

Our quality leaders also shared further information on Envision Quality 2025, our vision for the next stage of our quality journey. Throughout the week, individual sites also organized a range of collaborative activities, demonstrations and knowledge-sharing sessions on best practices to complement corporate events. The week was hugely successful in strengthening our quality culture across the organization and is a catalyst in our constant pursuit of excellence.



Embodying excellence, together

Year after year, our employee engagement surveys confirm that we are one of the top companies in the industry in terms of adherence to a quality culture and mindset. In our most recent employee survey, as many as 89% of our employees reported that they clearly understand how critical quality is to the company, demonstrating a continued increase in focus and engagement, placing ST above the global industry average by a double-digit figure.

Nurturing our expertise

We want everyone at ST to continuously deepen their expertise in quality. To this end, we are building our offerings in quality-focused trainings, development opportunities, and certification programs. We have set up cross-functional quality teams to encourage knowledge and best practice sharing across different teams and organizations in key quality domains, such as prevention, failure analysis, problem-solving and Lean management. Our expert networks also ready to collaborate and build company expertise in specialized technical domains.



For us, it is not enough to be at the top; we strive for excellence in every aspect of our endeavors.



The STRIVE Awards: recognizing outstanding quality initiatives

Everyone in ST is empowered to raise new ideas and suggest areas of improvement for quality in their field of expertise. The STRIVE Awards are no doubt the best testimony of our deep quality culture, exemplified by these teams that took the initiative to innovate and improve quality and customer satisfaction. In 2022, ST quality leaders selected 55 initiatives covering the categories of customer satisfaction, product quality excellence, technology and manufacturing excellence, and quality strategic initiatives.

The STRIVE awards celebrate initiative and highlight the role of quality as a key business enabler for our company. ST organizations are encouraged to learn, share and capitalize on these great achievements.

Both teams and individuals make the difference

Additionally, the STRIVER awards recognize individuals who embody the STRIVE values in their work. Through these awards, ST organizations aim to highlight outstanding achievements in their quality perimeter, outside the scope of standard activities.

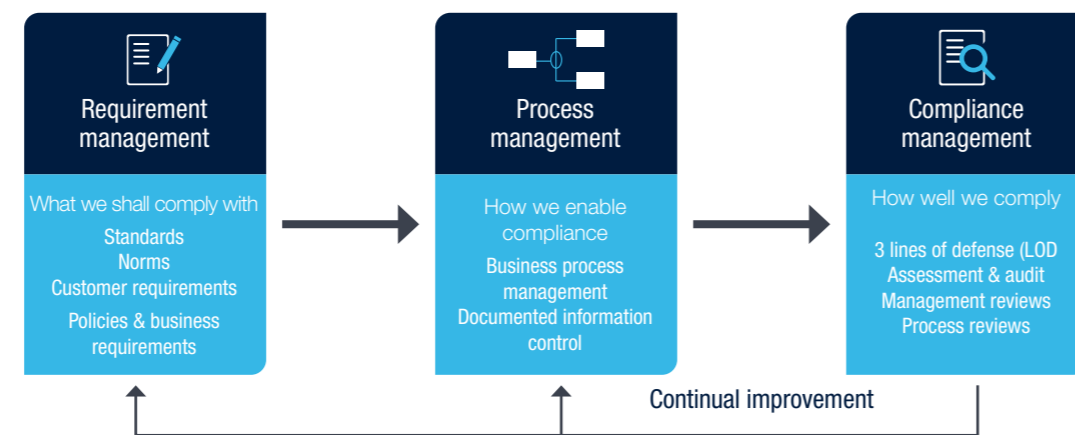
Management system governance

A robust quality management system (QMS)

Our quality management system enables our business strategy and is rooted in our main ambition: to satisfy our customers. It fosters a structured approach to quality and establishes efficient process management to ensure uncompromised quality standards. Our QMS is supported by robust governance, based on the strategic drivers of requirements management, process management and compliance management.

To sustain the long-term growth of our business, we are transforming our governance system. Our aim is to improve ST productivity, ease process management, and ensure compliant and robust execution of processes. The improved process efficiency will enable an overall enhancement of product and service quality and support faster data-driven decisions made based on timely data analysis.

The 3 strategic drivers of management system governance



Managing risk prevention to improve quality

Our QMS enables us to conduct risk assessment, risk analysis, and the implementation of risk mitigation strategies. By addressing potential risks at the earliest stages, we can effectively prevent quality events and enhance customer satisfaction. We continuously improve our QMS, for example by identifying ways to eliminate residual risks once all proper procedures have been executed then upgrading our procedures with this knowledge. In addition, the EMS transformation will allow for better integration and synchronization of the entire company's processes. Our goal is to continually standardize, integrate, and improve procedures and data in a user-centric platform, reducing non-compliance risks and costs.

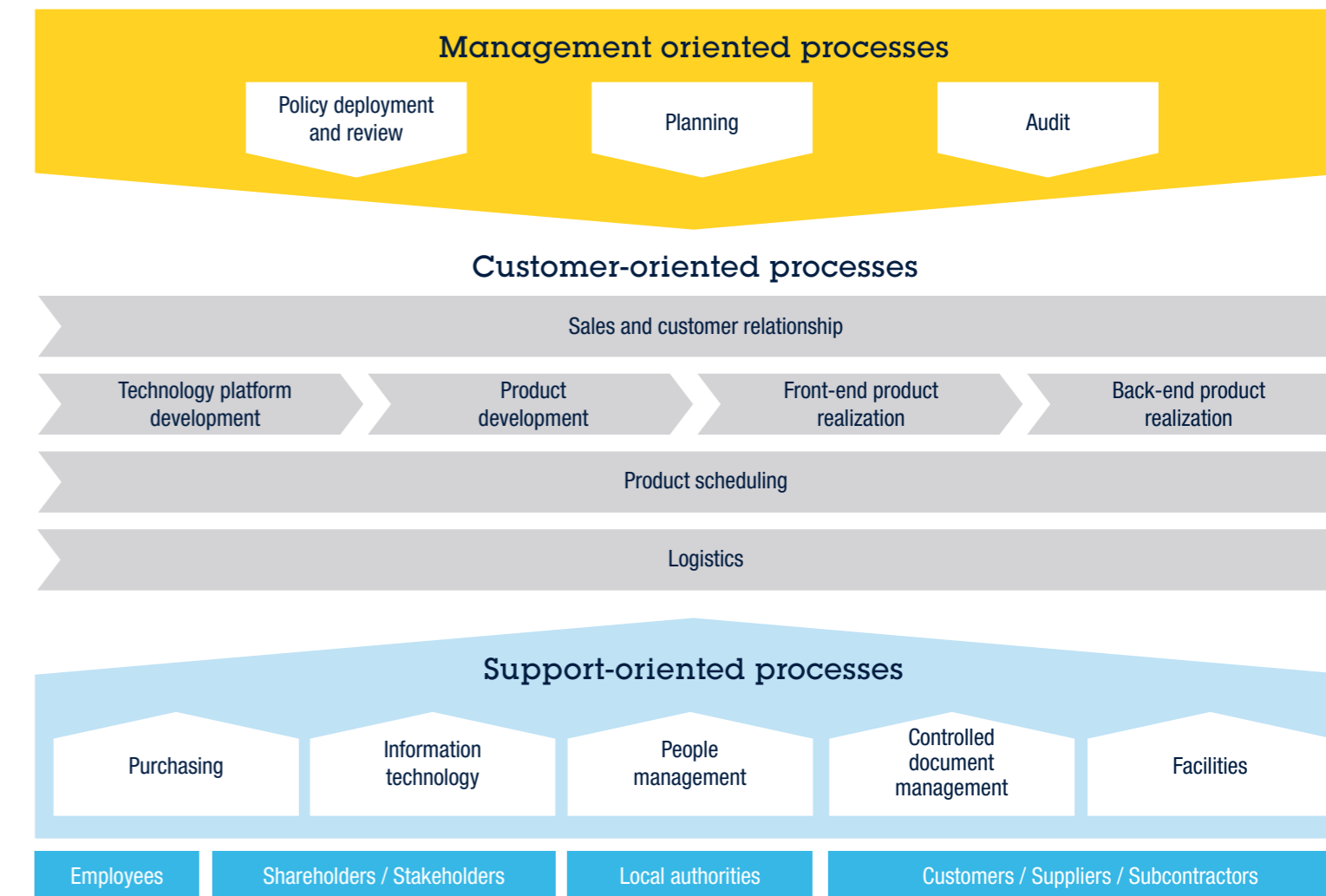
Our quality management system enables our business strategy and is rooted in our main ambition: to satisfy our customers.

Lorenzo Grandi
President, Finance,
Purchasing, ERM
and Resilience Chief
Financial Officer

Quality is about increasing value for our customers and our company.



ST key processes



Quality digital transformation

Driving adoption in quality digital transformation

Quality digital transformation refers to the process of leveraging digital technologies and strategies to improve our operational quality and enhance customer satisfaction. Our holistic approach focuses on delivering value, enhancing user and customer experience, improving efficiency, and driving sustainable growth in our ever-evolving landscape.

Through the utilization of our digital tools, we centralize and provide real-time access to quality data, enabling us to make informed decisions, identify areas for improvement, and optimize our processes. This establishes a virtuous cycle of continual improvement, fueled by robust data analytics, problem-solving, knowledge sharing, and agile process enhancement. Ultimately, this transformation drives enhanced quality and customer satisfaction.

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Delivering a superior user experience

To facilitate this significant company-wide change, our quality digital transformation teams have placed a special emphasis this year on ensuring a seamless and user-friendly adoption process, maximizing the added value for our stakeholders. We have diligently worked on numerous requirements, with particular attention to enhancing the user experience.

Our efforts have been focused on delivering integrated interfaces that offer comprehensive end-to-end solutions, bridging the gap between corporate operations and the shop-floor level. This unified interface empowers users to seamlessly provide and access the information they need.



To ensure an efficient deployment, we closely monitor key metrics and KPIs, including user adoption, cycle time reduction, and data volume. This enables us to gather real-life data and user feedback, facilitating continuous improvement and fine-tuning of tools during and after their launch. By leveraging these insights, we aim to optimize the user experience, enhance functionality, and align the interface with the needs of our users.

Amplifying the voice of our customers

We anticipate significant gains in terms of performance and cycle time, both internally as we streamline our processes and externally as we amplify the voice of the customer by centralizing all customer reports and inputs. We expect that these resulting improvements in quality will make a decisive difference in our journey towards achieving total customer satisfaction.

Digitalizing our entire quality event management process with e-Care

Started as a platform aimed at modernizing our management of customer events, e-Care has quickly evolved into a unified, global digital event management platform that encompasses both internal and external stakeholders, including suppliers.

This integrated online tool enables us to seamlessly report and analyze quality events, conduct problem-solving using the most appropriate methodologies, and share the knowledge gained throughout the company. As a result, we have established a more streamlined process that has optimized cycle time and enhanced the quality of our customer reports. Additionally, it incorporates innovative and enhanced features that facilitate problem-solving, such as an integrated cause map and automatically generated presentations.

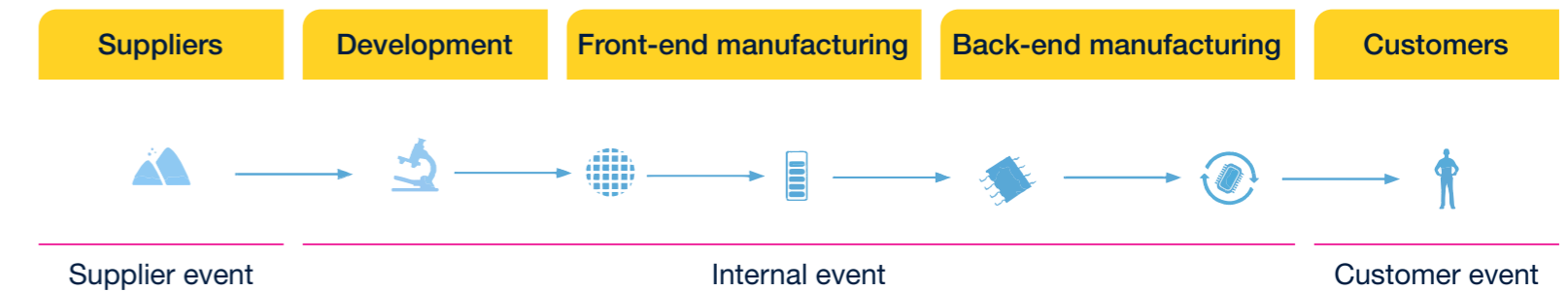
A careful attention to deployment

Transformation adoption



The quality organization has conducted a thorough review of the change management process, ensuring a smooth adoption journey for all users of this critical program. By fostering user empowerment, we can unlock the full potential of this simple yet powerful tool. To this end, we have developed a comprehensive suite of tools, ranging from ambassadors who provide support to local teams to robust Q&A and online discussion spaces.

eCare, a solution to manage events across the entire supply chain



Strength
Teamwork
Resilience
Innovation
Value
Expertise



Find out more at
www.st.com/quality

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