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PHOTONICS IN EUROPE 2030: STRATEGIC PRIORITIES, INDUSTRIAL TRENDS AND GLOBAL CHALLENGES

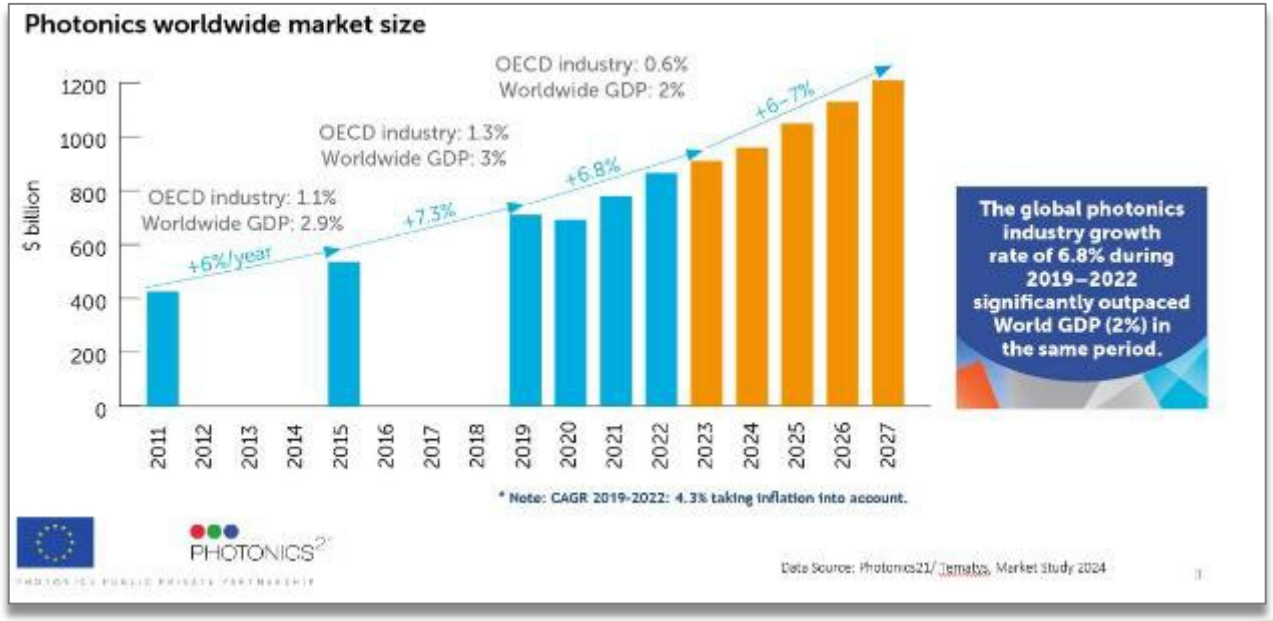
Lutz Aschke, Photonics21 President

1 October 2026, LASER-PRO Annual Conference 2026



EUROPE'S POSITION IN THE GLOBAL PHOTONICS MARKET

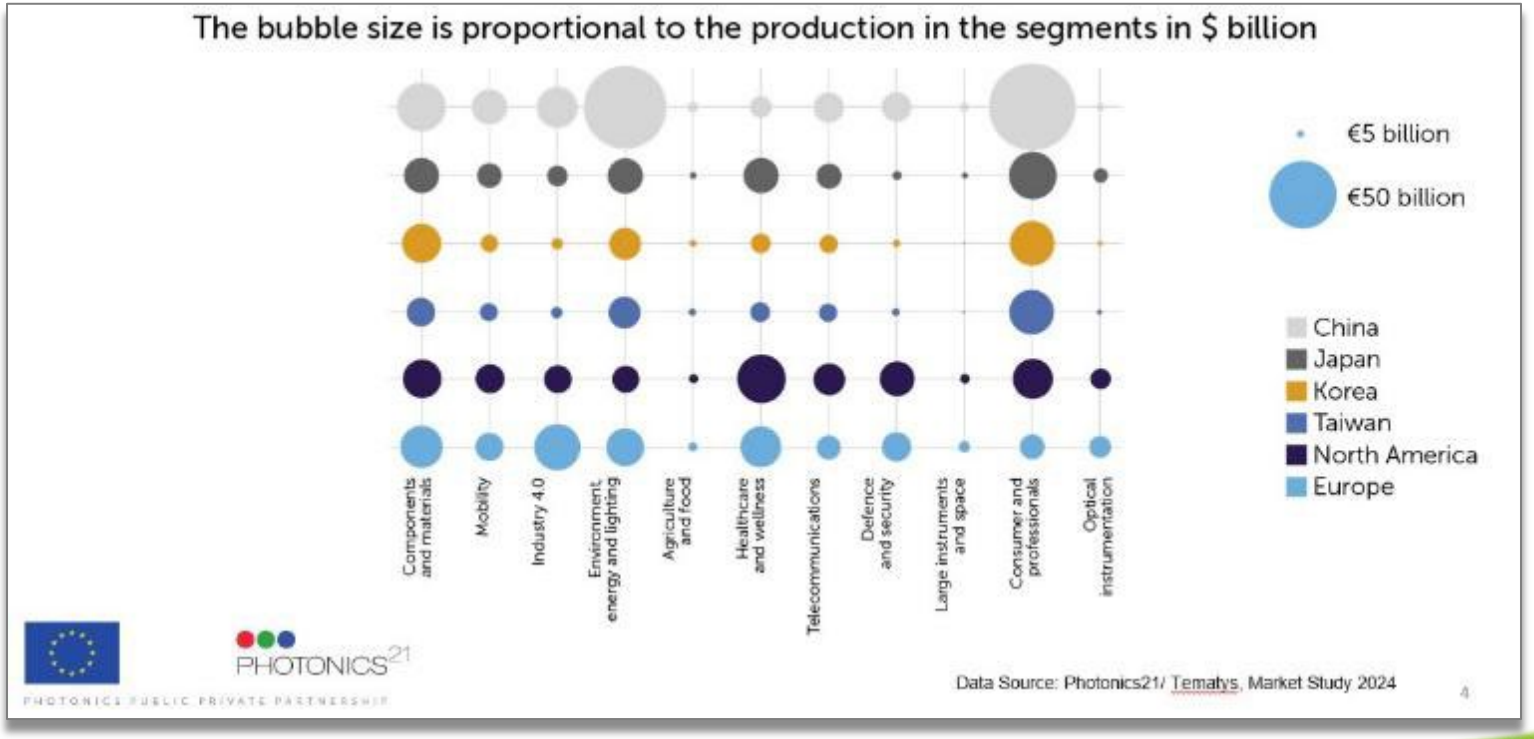
- The global photonics market accounted for $865 bn (€820 bn) in 2022 and is expected to grow to $1200 bn in 2027.





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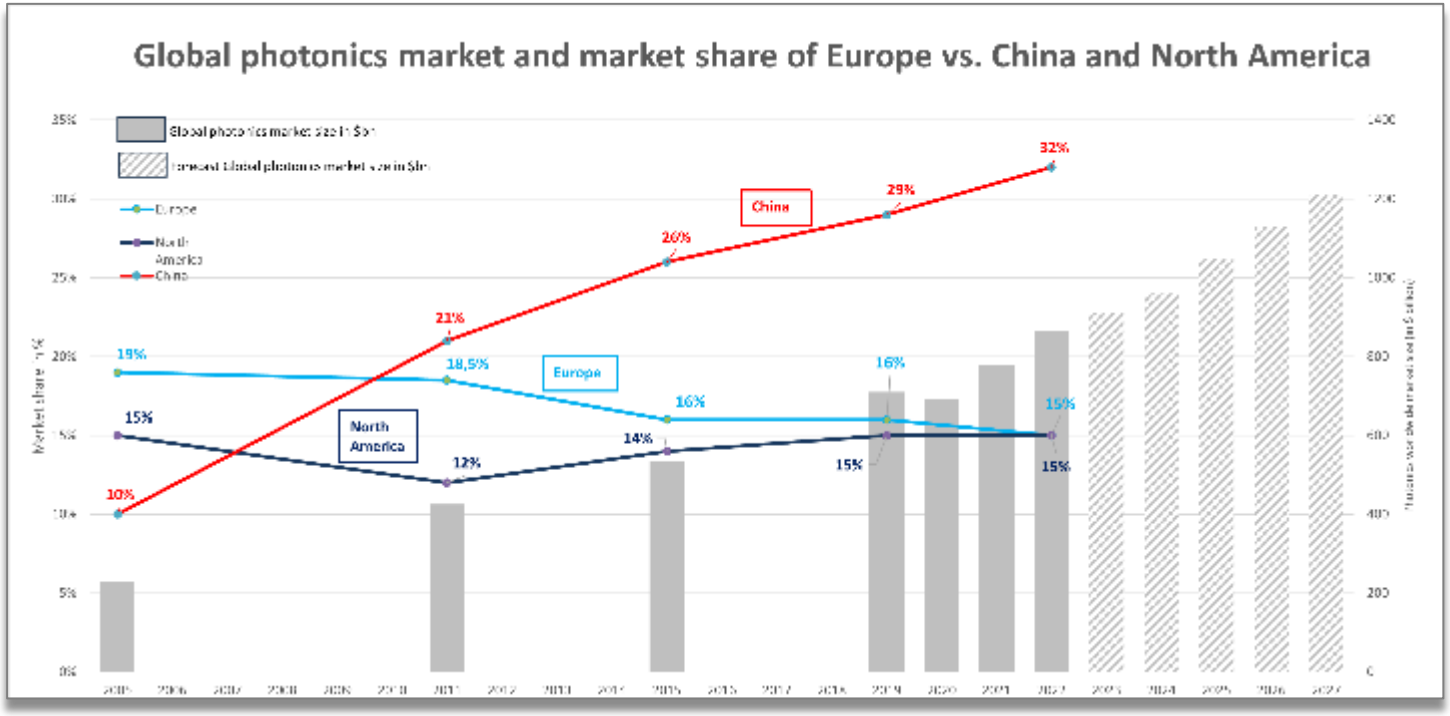
GLOBAL PHOTONICS INDUSTRY (2022): MARKET SHARES OF PHOTONICS SEGMENTS IN LEADING AREAS





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EU – LEADING IN INNOVATION, LAGGING IN SCALE?
EUROPE MUST STEP UP INVESTMENTS IN PHOTONICS

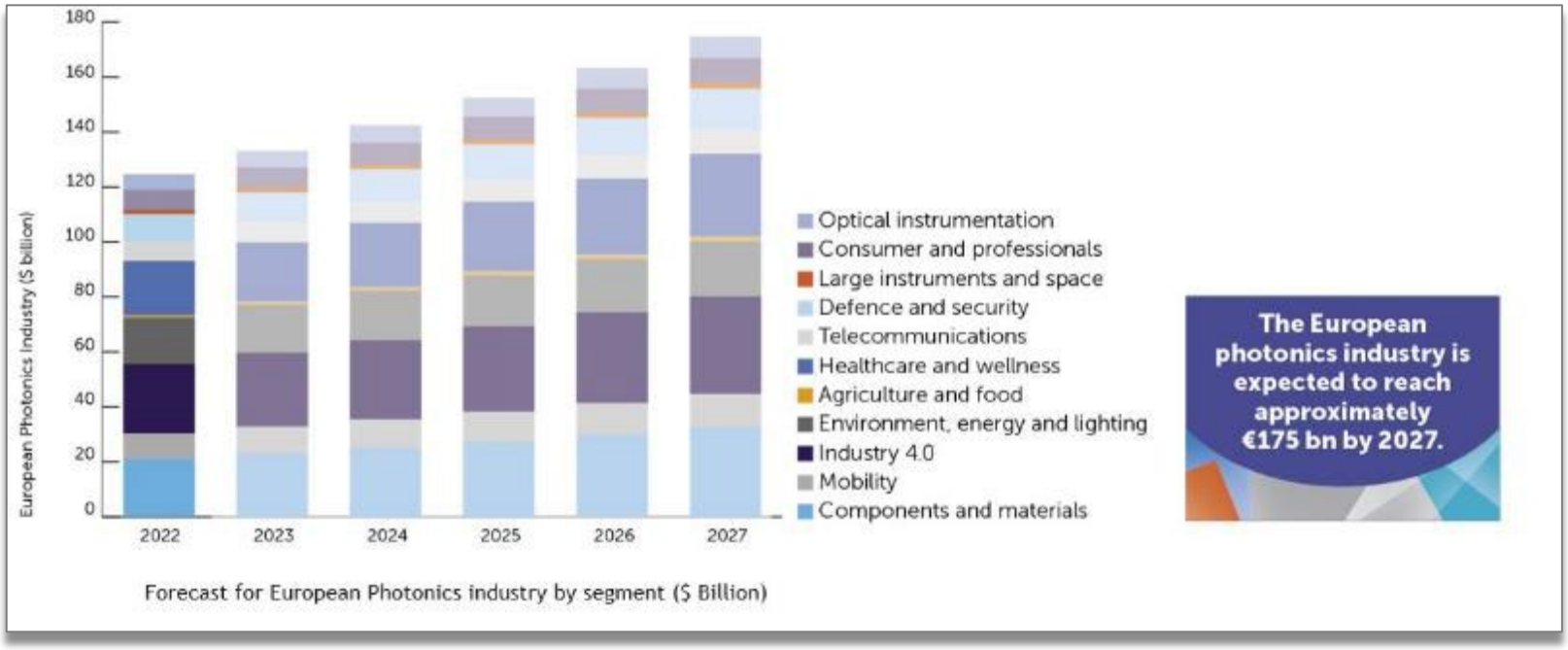




Global photonics market development over time and market share of Europe vs. China and North America. Data and Forecasts: Photonics21/Tematys, Photonics21 Market study, 2024.

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EUROPEAN PHOTONICS INDUSTRY FORECAST



The European photonics industry is expected to reach approximately €175 bn by 2027.



Data Source: Photonics21/ Tematys, Market Study 2024

The new Photonics Market study will be published at the end of 2026.

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THE MFF WINDOW: NOW OR NEVER





Europe's Budget is Being Written.
Photonics Must Be in It.

- The EU's next Multiannual Financial Framework (MFF 2028 - 2034) is being shaped **right now**.
- Framework Programme 10 (FP10) will define Europe's **R&I priorities for the next decade.**
- Decisions made today will determine who leads tomorrow — in AI, defence, quantum, and beyond.
- Photonics21 handed over its Photonics Strateic Research and Innovation Agenda to the European Commission

INVESTING IN LIGHT: THE VISION TO SECURE EUROPE'S COMPETITIVENESS IN THE GLOBAL TECH RACE

The Position Paper



One Programme. One Opportunity. No second chances.

- **€2 billion** for photonics in FP10 – unlocking **€6-8 billion** in private investment
- Launch **Photonics Grand Challenge** – Europe's answer to global tech rivalry
- Scale up manufacturing. Secure the supply chain. Own the value chain.
- Make integrated photonics a **pillar of Chips JU 2.0** — not an afterthought.

INDUSTRY UNITED: PHOTONICS21 JOINT STATEMENT

Europe's Industry Speaks with One Voice

Bosch. Volkswagen. Mercedes-Benz. Nokia Bell Labs. ZEISS. TRUMPF. EssilorLuxottica.

"Photonics must be at the heart of FP10."

- €2 billion **stand-alone programme** under FP10 — non-negotiable
- **Grand Challenges** in AI, space, quantum, and defence — starting now



AI NEEDS LIGHT

No Photonics. No Scalable AI.

- AI data traffic is doubling **every year** — electronics alone cannot keep up
- Photonic chips deliver **50× faster processing** and **30× lower energy** than silicon electronics
- Co-packaged optics are already entering data centres — Europe must lead, not follow
- Photonics is the **only path** to sustainable AI growth aligned with Europe's climate goals



LIGHT DRIVING THE FUTURE – KEY MESSAGES



Economic Power. Political Sovereignty. Strategic Autonomy.

- New **Photonics Research and Innovation Agenda** – our European response to the global shift in technological power
- Photonics **underpins 20% of Europe's economy** — and the share is growing
- Over **50% of EU photonics companies** depend on Chinese suppliers — this is a vulnerability
- **Photonics shapes the future**: cleaner energy systems, more efficient manufacturing, better healthcare, and more secure societies
- Europe's opportunity to **lead the world in photonics**

LIGHT DRIVING THE FUTURE – KEY MESSAGES



Control the Chip. Control the Future.

- Integrated photonics = the backbone of **AI, quantum, defence, and secure communication**
- Dramatic gains in **speed, energy efficiency, and data capacity** — no electronic alternative
- European leadership must span the **full value chain**: design → fabrication → packaging
- Without sovereign PIC capabilities, Europe's **strategic autonomy is hollow**

PHOTONICS GRAND CHALLENGES: MISSION-DRIVEN INNOVATION

Eight Missions. One Goal: European Leadership

Grand Challenge	Strategic Priority
Lightspeed AI	Power AI **with light — not carbon**
Zero Contaminant	**Safe food and clean environment** — by design
Clean Orbit & Defence	**Lasers defending Europe** — on Earth and in space
Directed Energy & PICs	Sovereign defence technology — **made in Europe**
Test-before-Invest	**De-risk innovation** — scale faster
Microfactories for Space	Build in orbit — reduce launch dependency
NextGen Photonics	Secondary sources — **unlocking new industries**
Personalised Digital Twin	Preventive healthcare — **powered by light**







LIGHT DRIVING THE FUTURE: THE INVESTMENT CASE

- Each Grand Challenge: **€250–900 million** in public investment
- Return: **at least 4× in private co-investment** — every time
- Total programme leverage: **€6–8 billion** in industrial R&I
- This is not a cost. **It is Europe's most strategic investment of the decade.**



The light is on. Europe must lead.

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Thank you!