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# ADVA open edge networking

Solutions for a digital future

Investor presentation, February 2023

# Disclaimer

## FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements with words such as “believes”, “anticipates” and “expects” to describe expected revenues and earnings, anticipated demand for optical networking solutions, internal estimates and liquidity. These forward-looking statements involve a number of unknown risks, uncertainties and other factors that could cause actual results to differ materially. Unknown risks, uncertainties and other factors are discussed in the ‘risk report’ section of ADVA Optical Networking’s annual report 2021.

## CONSOLIDATED PRO FORMA FINANCIAL RESULTS

ADVA provides consolidated pro forma financial results in this presentation solely as supplemental financial information to help investors and the financial community make meaningful comparisons of ADVA’s operating results from one financial period to another. ADVA believes that these pro forma consolidated financial results are helpful because they exclude non-cash charges related to stock compensation programs and amortization and impairment of goodwill and acquisition-related intangible assets, which are not reflective of the group’s operating results for the period presented. This pro forma information is not prepared in accordance with IFRS and should not be considered a substitute for historical information presented in accordance with IFRS.

The background of the slide is a photograph of a modern, multi-story building with a prominent cantilevered upper floor. The building features large glass windows and a series of white structural columns supporting the overhang. The sky is blue with scattered white clouds, and the foreground shows a green lawn.

# Company overview

Mission, vision, customers and products

# Transforming our business

## Statement from the CEO

"With our investments in recent years, we have created the foundation for transforming our business model.

This transformation includes growing revenue contributions from software and services, expansion into new industries and further verticalization of our business."



Digitization is bringing the investment focus to us



# ADVA fundamentals



## Background

- Headquartered in Munich, Germany
- Approximately 1,900 employees
- EUR 0.6 billion annual turnover



## Our vision

We love to work with highly innovative people to connect the world and drive change, success and value. In an increasingly digital environment, our networking technologies enable those who are solving the world's most critical challenges



## Our mission

Our mission is to be an innovation leader focused on our customers' experience by building better networking solutions

- Atlanta Richardson Neuchâtel York Meiningen **Munich** Gdynia



- Haifa Shenzhen **Singapore** Melbourne

We build the technology that helps to create a connected world

# The executive team



**Christoph Glingener**

**CEO**

PLM,  
Development  
Sales and marketing



**Ulrich Dopfer**

**CFO**

Finance, IR  
Legal, HR  
IT



# The ADVA brand promise



## Open networking solutions

- Differentiated technology
- Network-level applications
- Market-leading scalability and efficiency

## Operational excellence

- High quality
- Short lead times
- Award-winning sustainability focus

## Ease of doing business

- Technology and VAR ecosystems
- Broad and deep application expertise
- Financial stability, solid balance sheet

Enabling our customers to capitalize on cloud and mobility

# Serving network operators around the world

## Private enterprises

- 30 of top 50 banks (revenue)

30%\*

- + Premium quality
- + Customer loyalty and trust
- Limited project volume

## Communication service providers

- 17 of top 25 global CSPs
- 5 of top 6 global Ethernet service leaders

65%\*

- + Longevity (stickiness)
- + Volume
- Long sales cycle (RFPs)

## Internet content provider

- 4 of top 5 global ICPs

5%\*

- + Volume and growth potential
- Aggressive pricing
- Limited visibility and stickiness



\*approximate revenue contribution FY 2022

Global diverse customer base drives growth and mitigates risk



# Our partners

## Technology partners



## Ensemble harmony ecosystem



... and many more driven by real-world customer deployments

## Partner ecosphere members

### Featured ELITE partners



### Featured SELECT partners



... and many more Connect+ and Connect partners

# ADVA's technology tripod

## Cloud interconnect



70% of revenues

### Private enterprises:

Business continuity  
and disaster recovery

### Internet content provider:

(Hyperscale) DCI

### Communication service provider:

Metro and edge upgrade for IoT, 5G  
and cloud services

## Cloud access



25% of revenues

### Private enterprises:

Secure cloud access  
and SD-WAN

### Internet content provider:

Edge cloud

### Communication service provider:

Zero-touch service delivery and  
assurance

## Network synchronization



OSCILLOQUARTZ  
An ADVA Company

5% of revenues

### Private enterprises:

Timing for critical infrastructure  
MiFID II financial time stamping

### Internet content provider:

Global database synchronization

### Communication service provider:

Next-gen mobile (5G)

# ESG approach and ratings

## Holistic approach

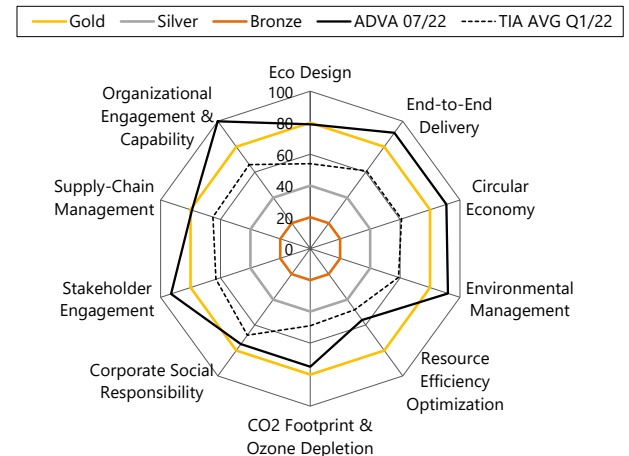
- Science-based emissions targets (SBTi)
  - Approved 1.5°C targets in place
  - Net Zero committed
- Circular-economy processes
  - Process-based lifecycle assessments (LCA)
  - Sustainability in product strategy
  - Process-based product ecodesign
  - Optimization of logistics, packaging
  - REACh, RoHS, conflict-minerals processes
  - Supply-chain engagement
- ISO 14001 EMS, ISO 50001 EnMS
- Risk, materiality and context assessments

## External ratings

Gold rating  
from EcoVadis  
(top-3%)



Gold rating from TIA / QuEST Forum



Top ratings for a holistic sustainability approach

# Why ADVA?

Growth and profitability



**Positive macro dynamics**

First-class customers and partners



**Strong products and technology alignment**

Excellent team and patent portfolio



**Accelerating cash generation**

Innovative solutions for a digital future



# Market dynamics

Growth drivers, competitive landscape



# Market growth drivers

## Network transformation

- Investment in broadband networks
- Stimulus funding to advance digitization of society
- Security is of highest importance



## Moving to the cloud

- Video, video, video!
- Terascale DCI\*
- Secure cloud access
- Virtualized service creation
- Edge cloud investments



\*data center interconnect

## 5G and IoT

- New fronthaul, backhaul and timing investments
- Edge compute resources inside the network expand rapidly
- Open wholesale models prevail

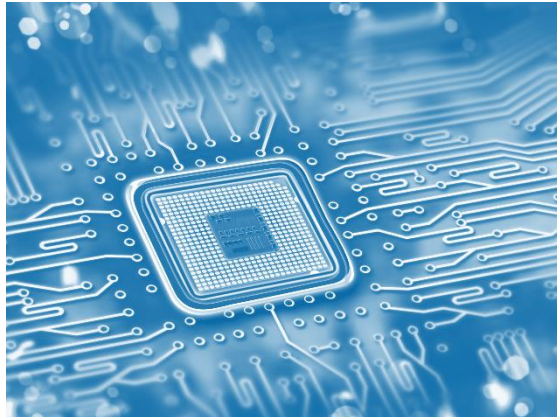


Megatrends drive investment focus to the edge, where ADVA performs best

# Networking industry – a consolidating ecosystem



Components



Systems



Production floor ADVA, Meiningen, Germany

Networks



# Systems suppliers in times of deglobalization



## Acquired

  
2014

  
2015

  
2015

  
2016

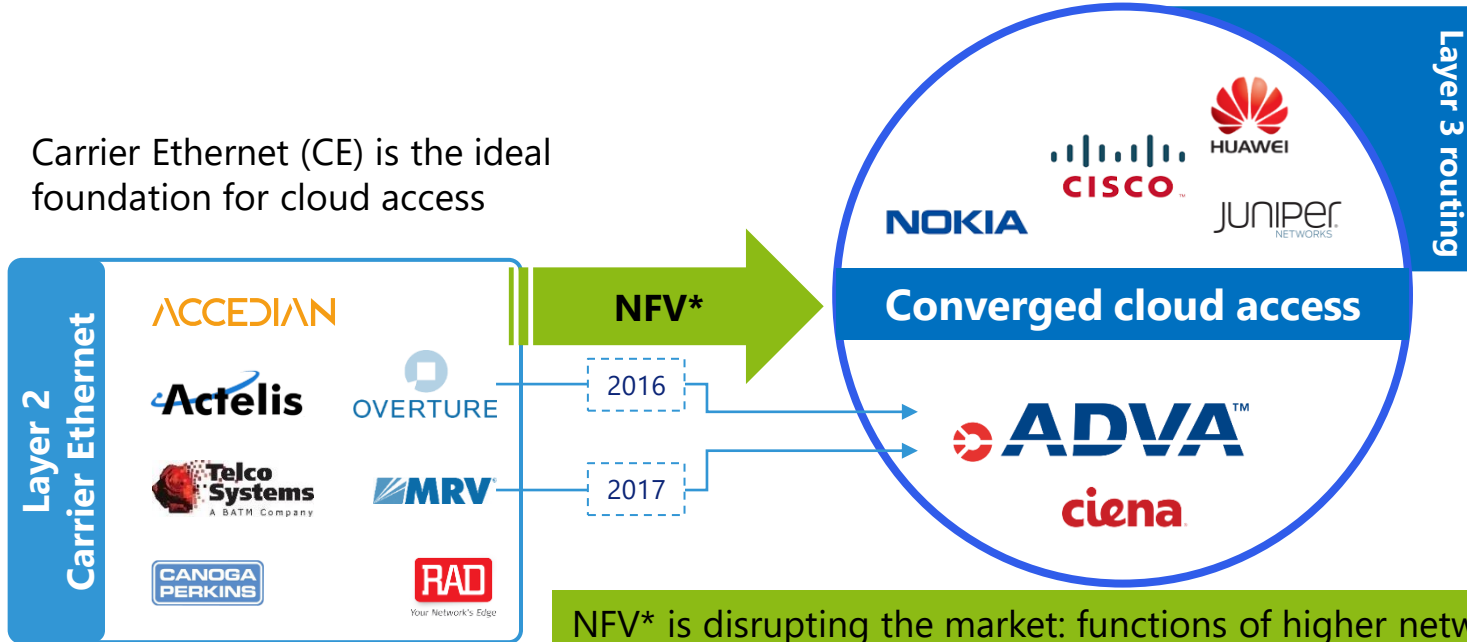
  
2017

  
2018

  
2019

# Technology convergence at the network edge

Carrier Ethernet (CE) is the ideal foundation for cloud access



NFV\* is disrupting the market: functions of higher network layers run as software installations on generic servers. NFV transition is leaving smaller CE players behind.

\*network function virtualization

Network layers 2 and 3 in the access are converging leading to TAM expansion

# New market dynamics and opportunity expansion

## Macro dynamics ...

- Pandemic accelerates digitalization
- Deglobalization impacts vendor selection
- Industry consolidation reduces choice

## ... have shifted the baseline


- Network infrastructure transitions from cheap commodity to strategic asset
- Government stimulus favors trusted suppliers
- Few remaining western suppliers that are profitable and have required credentials


Macroenvironment provides positive tailwinds for ADVA




# Market share data – ADVA highlights

## Optical networking<sup>1</sup>


 Access WDM,  
EMEA (12%)


 Metro WDM,  
EMEA (16%)

 Purpose built DCI,  
EMEA (20%)


1) Omdia, Optical networking Q3 2022, December 2022

## Data center interconnect<sup>2</sup>

 Enterprise, global (37%)

 Enterprise, EMEA (58%)

 Enterprise, NA (25%)

 Government & R&E  
EMEA (29%)

2) Omdia, Data center interconnect Q2 2022, October 2022

## SP access switching and Carrier Ethernet demarcation<sup>3</sup>

 EMEA (45%)

 Global (21%)

3) Omdia, Service provider access switching and Carrier Ethernet demarcation, Q3 2022, publ. December 2022

All numbers rolling four quarters

Innovation leadership and strength in growth markets

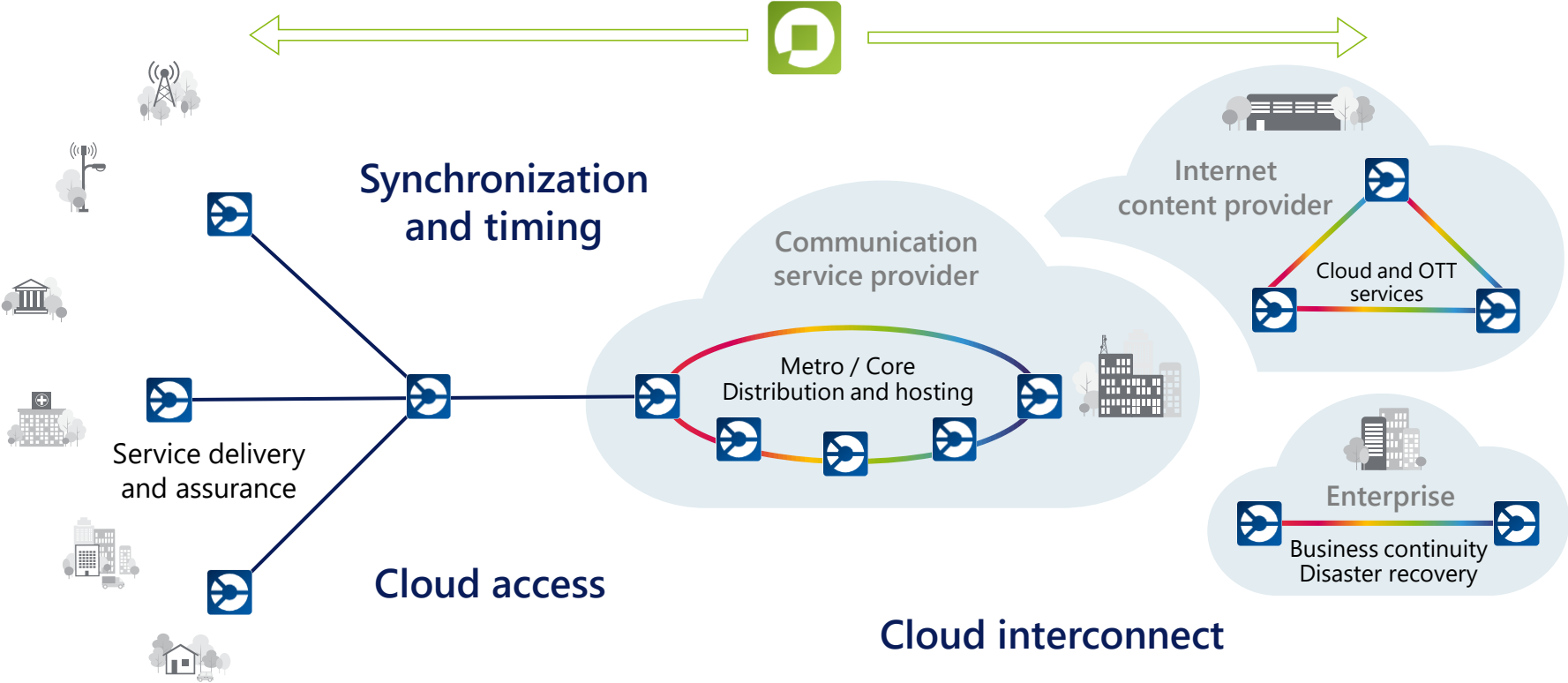


# Technology

Products and solutions

# ADVA solutions overview

## Ensemble network management and control



# Cloud interconnect overview



## Objective

## Industry focus

## ADVA innovation

Lowering cost per Gbit/s mile

Higher bitrate adoption (400G+)

Increasing infrastructure value

Service innovation and security

Terminal

TeraFlex™

OpenFabric™

OLS

Metro DCI\*

Spectrum as a service

Security

ConnectGuard™

Quantum-safe networking

Open terminal with highest data rates (1200G)

Efficient Terabit traffic grooming

Industry-leading open line system, empowering new services

Industry-leading encryption technology

\*data center interconnect

# Cloud interconnect dynamics

## Open optical networking solutions

### Foundation

- Market leadership in enterprise DCI<sup>1</sup>
- Large installed base of OLS<sup>2</sup> in hyperscale DCI
- Proven track record with global tier 1 / tier 2 customer base

### Transformation

- Higher bitrate adoption (400Gbit/s+)
- Disaggregation to eliminate vendor lock-in
- Stringent security and encryption requirements

### Upside

- Share gain through 400G+ optimized product portfolio
- TAM and margin expansion through verticalization
- Share gain through leadership in post quantum security

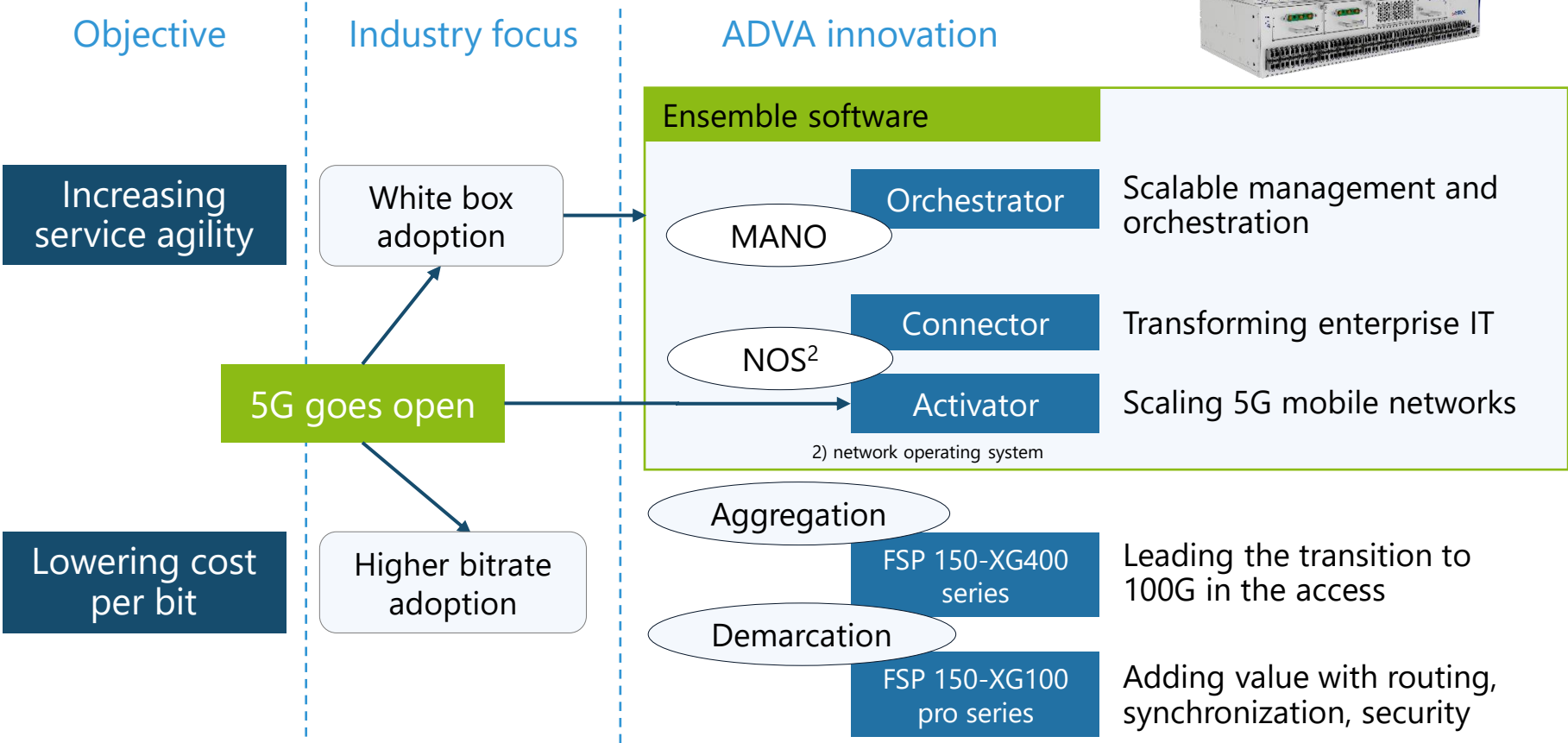
1) >35% global, >55% in EMEA; Source: Omdia, market share 2Q2022 (rolling four quarters) optical networks global and data center interconnect, publ. October 2022

2) open line system

Delivering scalable bandwidth for a digital future



# Cloud access overview



# Cloud access dynamics

## Empowering the network edge

### Foundation

- Market leadership in Carrier Ethernet (CE) access<sup>1</sup>
- Differentiated portfolio for 100G aggregation
- Technology leadership in NFVi<sup>2</sup>



### Transformation

- Transition to 10/100G in access and backhaul
- Collapsing multiple hardware appliances through NFV
- White box adoption in mobile networks and edge cloud



### Upside

- Share gain in consolidated CE vendor landscape
- Growing from switching into higher-value routing layer
- TAM expansion and software revenues through NOS<sup>3</sup>-leadership

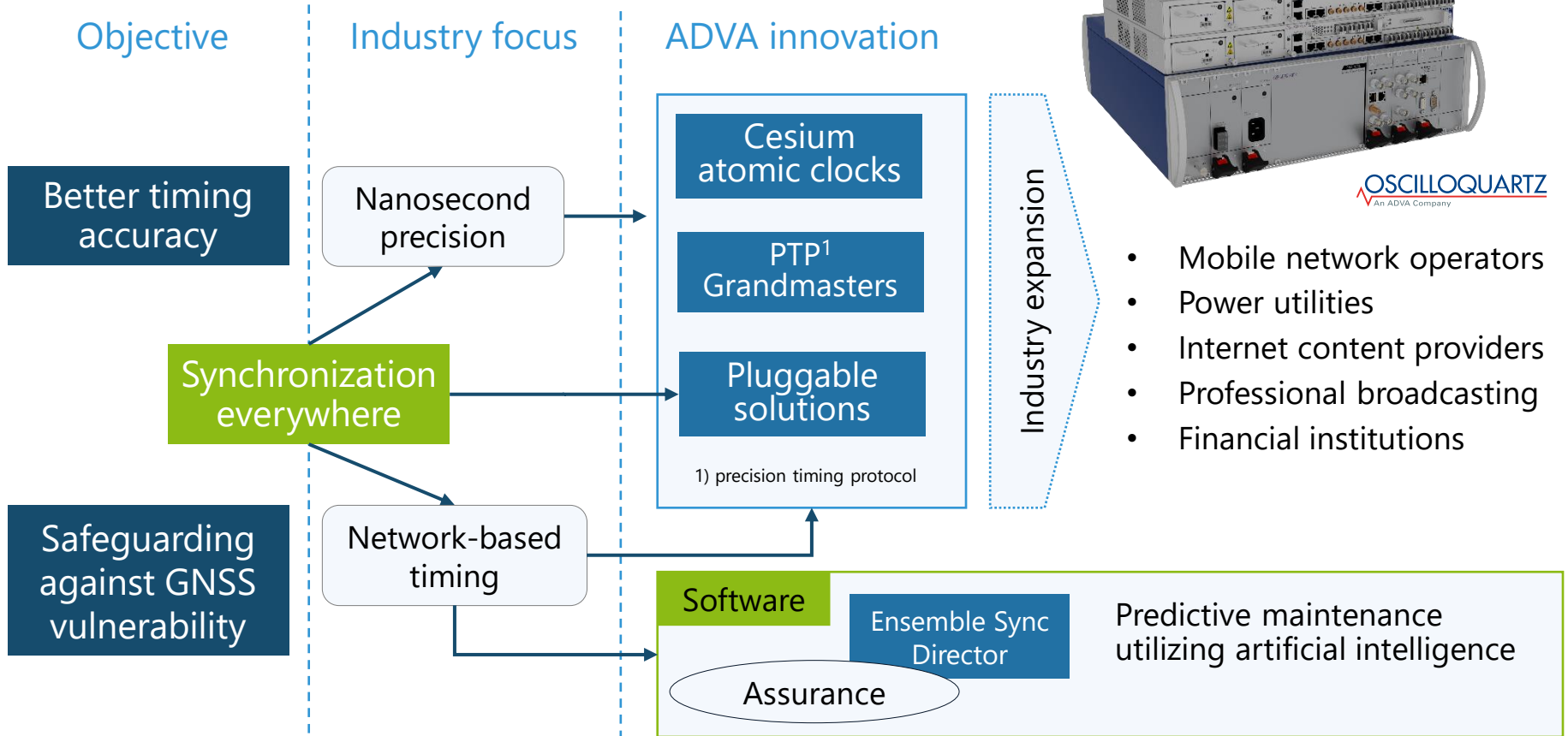
1) 21% global, 45% in EMEA; Omdia, market share 3Q2022, SP access switching & Ethernet demarcation, publ. December 2022

2) Network function virtualization infrastructure; Harmony ecosystem with >50 VNFs and a wide range of hardware choices

3) network operating system

Programmable edge cloud solutions for mobile networks, business access and IoT

# Network synchronization



# Network synchronization dynamics

## Foundation

- Technology leadership in network-based timing
- Consistently high win rates leading to impressive list of MNO<sup>1</sup> customers
- Three-year CAGR >25%

1) Mobile network operators

## Transformation

- Ever more stringent timing requirements with sub-microsecond accuracy
- Weakening competitors
- Security concerns<sup>2</sup>

2) Vulnerability of satellite-based timing increasingly problematic

## Upside

- Accelerating 5G rollouts
- New market verticals including energy, finance, broadcasting
- PNT<sup>3</sup> alternatives

3) Position navigation timing

The world needs better timing – network-based and assured

# Product portfolio overview

## Cloud access

Solutions that enable communication service providers to deliver software-defined, differentiated and performance-assured wholesale, mobile backhaul and business services;

Estimated 2022 market size and CAGR (2020-'25) for access switching & Ethernet demarcation, global, excl. China;  
Source: Omdia, "Service Provider Switching and Routing Forecast" (publ. Sep 2022)

TAM (billion USD) 0.6

CAGR (5 year) 4.0%

## Network synchronization\*

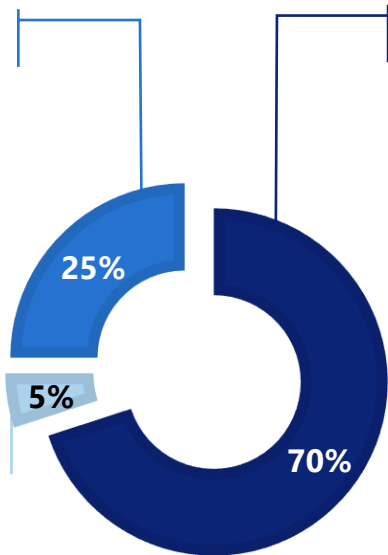
Solutions to deliver accurate and scalable time and frequency synchronization for mobile network infrastructure, utilities, media distribution networks, financial services, distributed data bases and meteorology;

Estimated 2022 market size and 5yr CAGR – ADVA internal estimates

TAM (billion USD) 0.4

CAGR (5 year) 5%

\*2022 revenue contribution >6%



## Cloud interconnect

Solutions that deliver scalable bandwidth for access, metro and long-haul networks; high levels of open interworking, programmability and ease-of-use;

	Metro	Long Haul
TAM (billion USD)	5.6	4.6
CAGR (5 year)	3.7%	5.4%

Estimated 2022 market size and CAGR (2021-'2026) for metro and long haul WDM excl. China;  
Source: Omdia "Optical Networks Forecast Spreadsheet: 2022-27" published May 2022

*Approximate revenue contribution rolling four quarters*

Growth rates augmented by shift to low-risk vendors in western markets

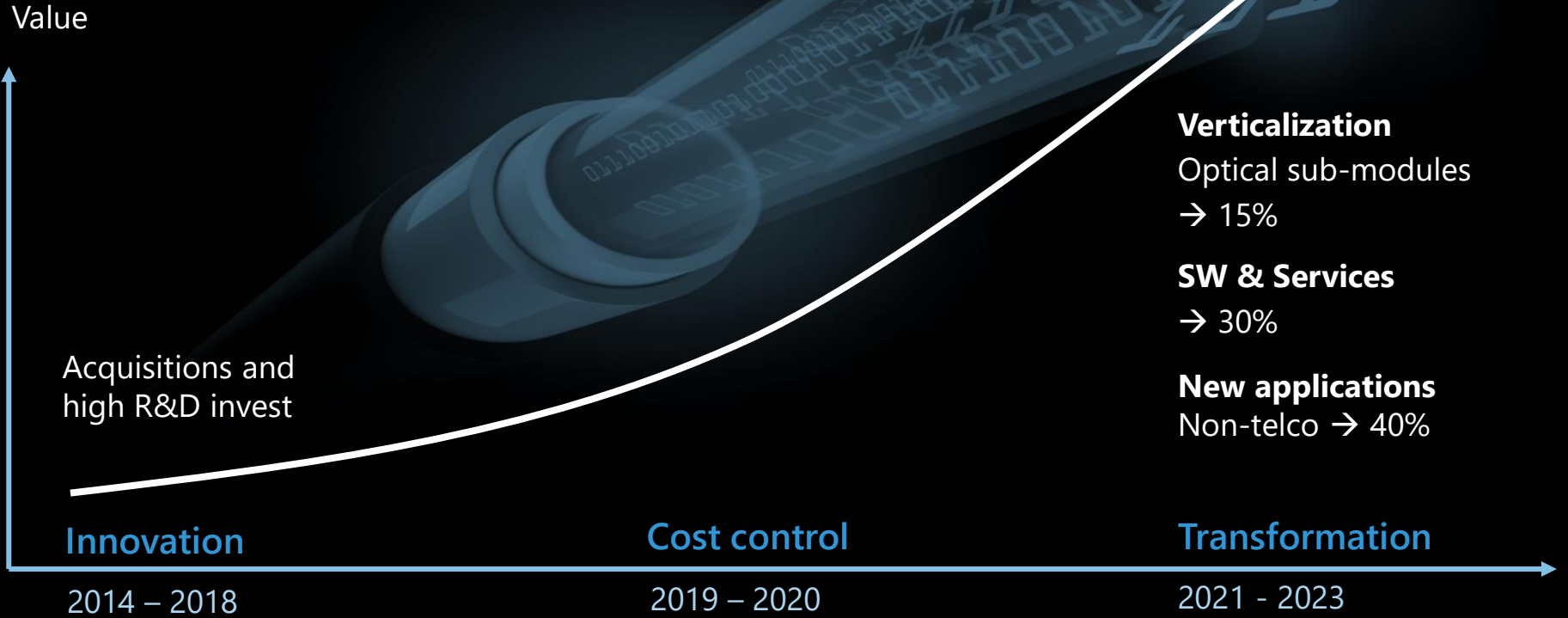


# Transformation

... to higher margin business



# Business transformation



Leveraging our investments of the last years to a higher margin model

# Transformation has started

to support our financials

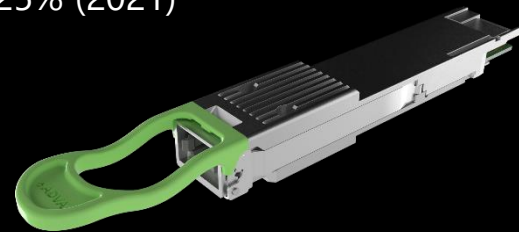
**New applications**  
Oscilloquartz CAGR >25%  
Government wins  
Enterprise IT

## **SW & Services**

Accelerating growth  
23% → 25% (2021)

## **Verticalization**

MicroMux™ family  
expansion



Driving operating results to new levels

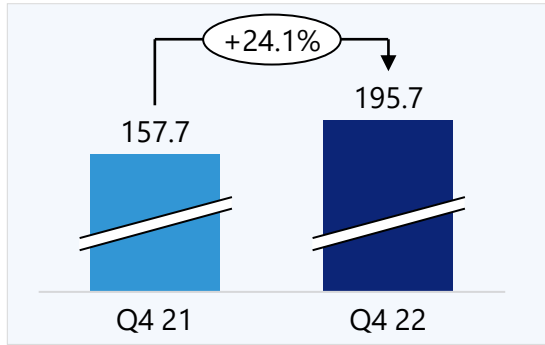


# Financials

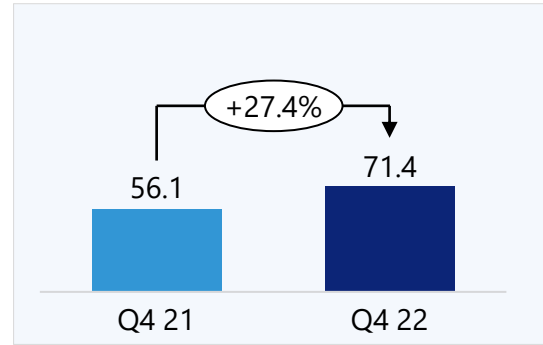
## Overview

# Q4 2022 key financials

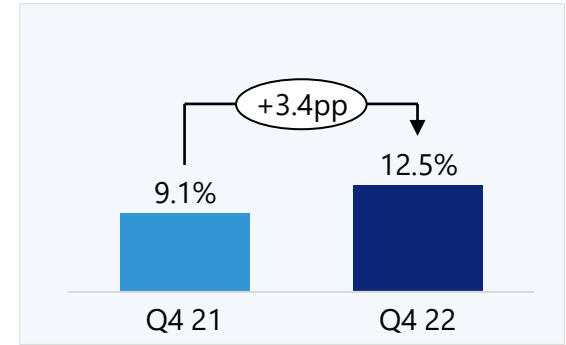
## Revenues (m€)



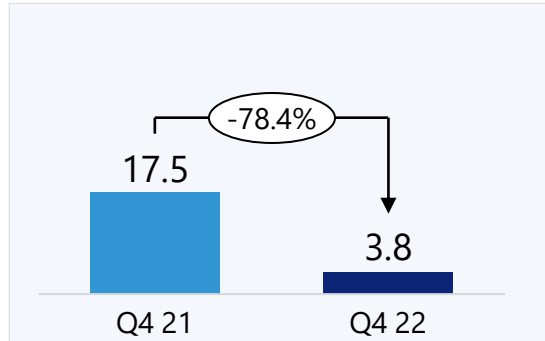
## Pro forma gross profit (m€)



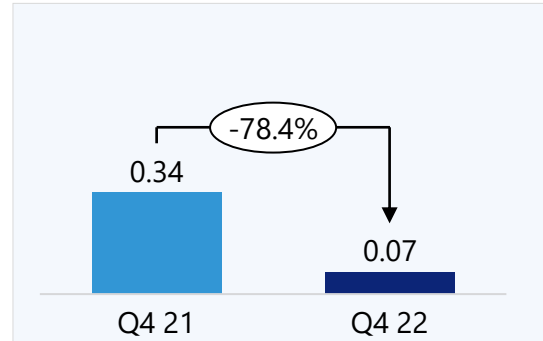
## Pro forma EBIT (%)



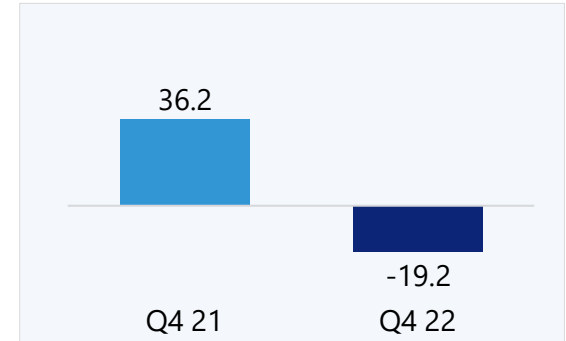
## Net income (m€)



## Diluted EPS (€)



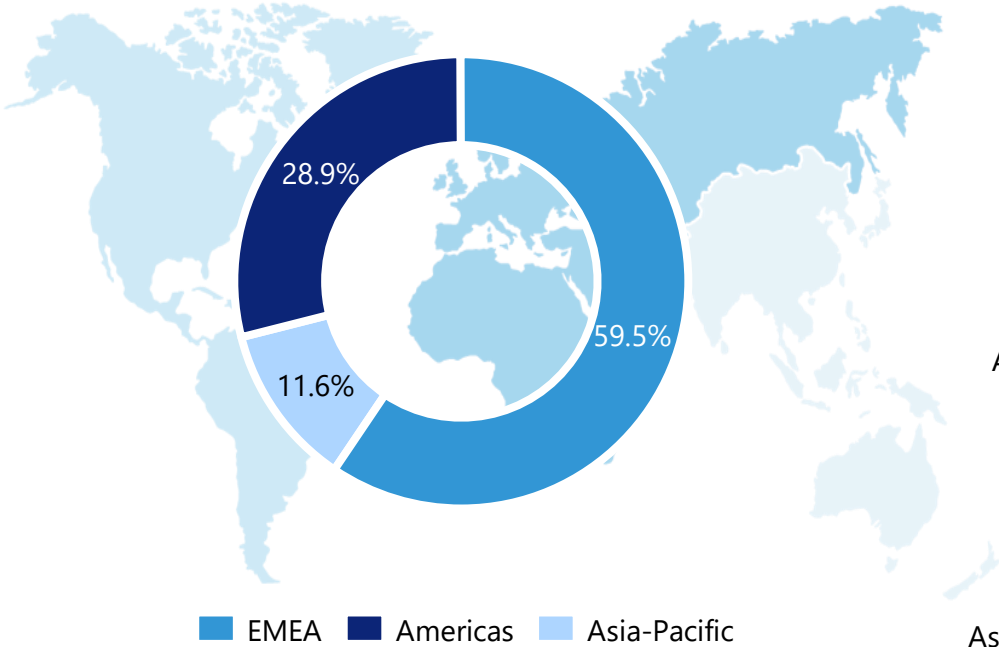
## Net cash (+) / debt (-) (m€)\*



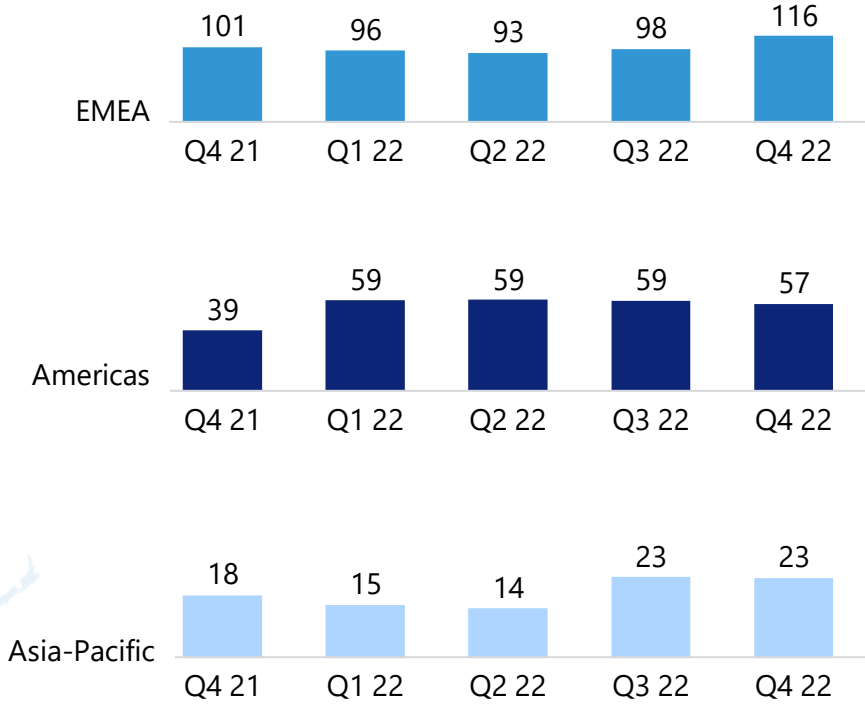
\*Note: Net cash Q4 2022 includes EUR 21.2 million lease liabilities due to IFRS 16 (Q4 2021: EUR 25.0 million)

# Regional revenue development Q4 2022

Revenue split Q4 2022 (%)



Revenue development per region Q4 21 – Q4 22 (m€)

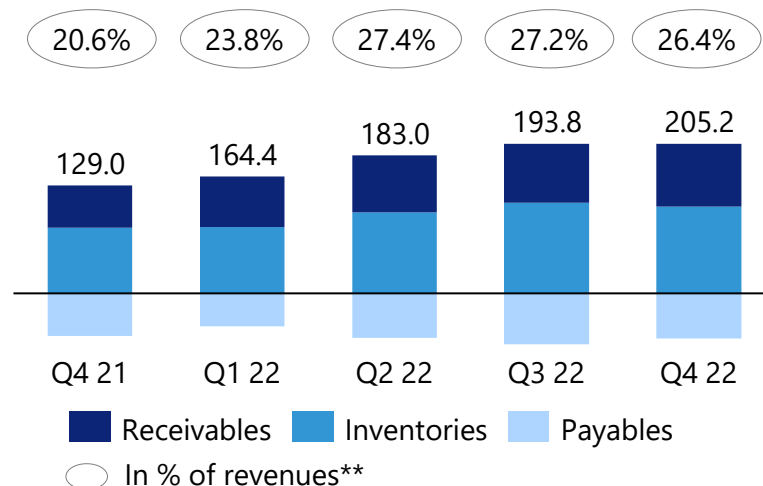


# Cash flow and balance sheet

## Cash flow breakdown (m€)\*

	Q4	
	2021	2022
Earnings before taxes	12.3	9.2
Depreciation & Amortization	18.3	20.3
Increase (-) / decrease (+) in working capital	1.8	-12.7
Increase (-) / decrease (+) in other items	3.3	3.6
<b>Operating cash flow</b>	<b>35.7</b>	<b>20.4</b>
R&D	-11.6	-9.5
Other investing cash flow	-8.1	-11.3
<b>Investing cash flow</b>	<b>-19.7</b>	<b>-20.8</b>
<b>Free cash flow</b>	<b>16.0</b>	<b>-0.4</b>
Gross cash end of period	109.0	58.4
Net cash end of period	36.2	-19.2

## Working capital development (m€; %)



Equity ratio

57.0%

Leverage LTM\*\*\*

0.7x

ROCE LTM

4.4%

\* Potential differences due to rounding

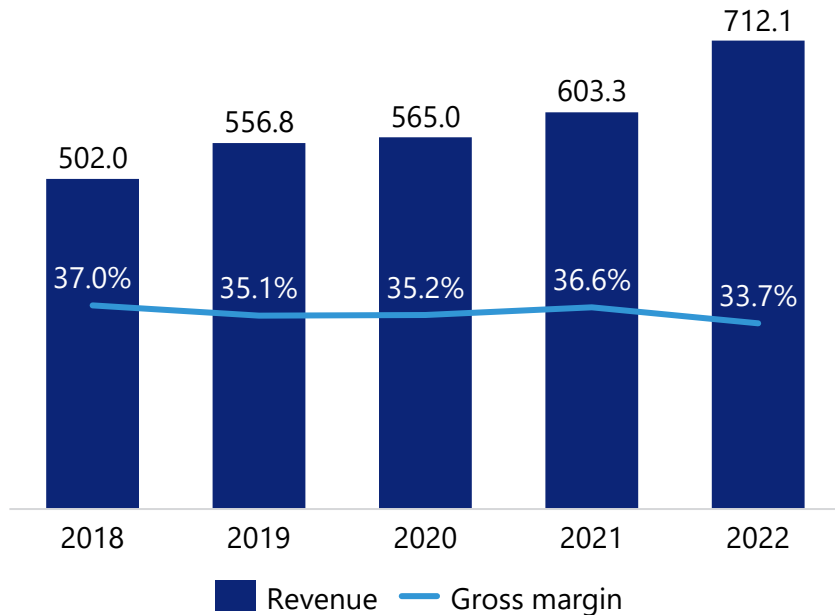
\*\* Calculated on a quarterly basis

\*\*\* Leverage is calculated as total bank debt divided by EBITDA. EBITDA is calculated as operating income plus depreciation and amortization of non-current assets. Impacts from IFRS 16 are excluded from leverage calculation.

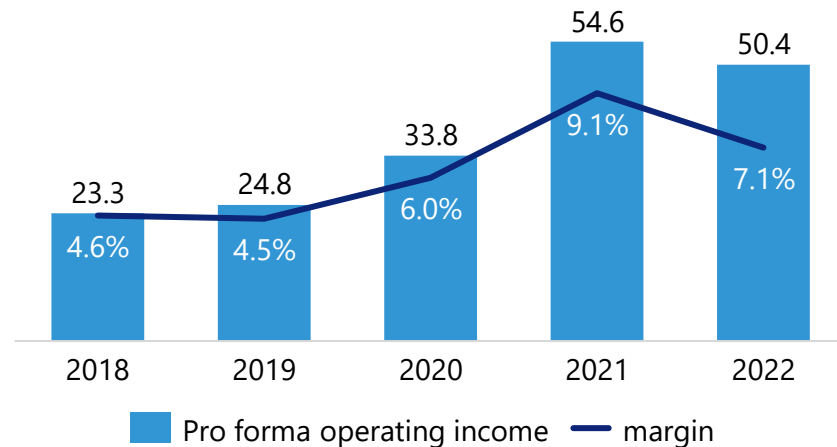


# Annual revenue and pro forma profitability

Revenue & pro forma gross margin (m€; %)



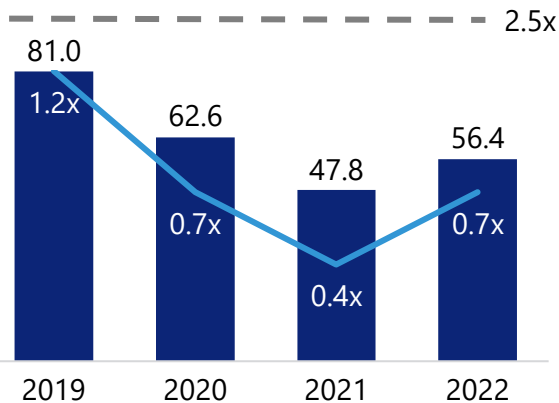
Pro forma EBIT & margin (m€; %)



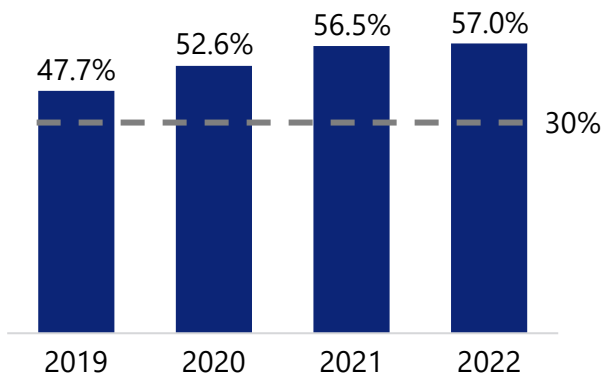
\* Pro forma EBIT is calculated prior to non-cash charges related to the stock compensation programs and amortization and impairment of goodwill and acquisition-related intangible assets. Additionally, non-recurring expenses related to M&A and restructuring measures are not included.

# Financial policy – investment grade rating

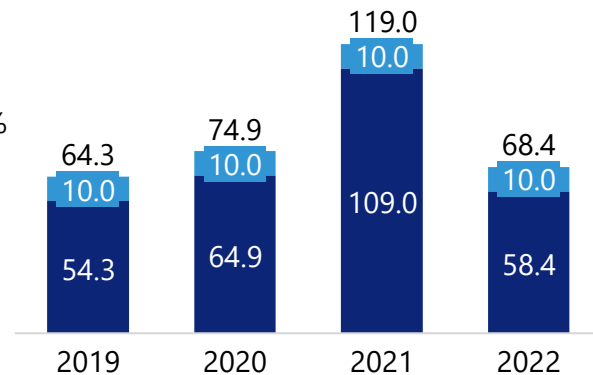
## Leverage (Debt / EBITDA)



## Equity ratio



## Available liquidity



■ Debt — Leverage (Debt / EBITDA)

■ Equity ratio

■ Undrawn facilities ■ Cash

## Comments

- Conservative financial policy targets a Debt / EBITDA leverage ratio of max. 2.5x
- Low current leverage level of 0.7x
- Balanced repayment profile and future profit generation will lead to a strengthened balance sheet
- High equity ratio of 57% significant above target of 30%



# Thank you

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