Merck KGaA, Darmstadt, Germany

40TH ANNUAL J.P.MORGAN HEALTHCARE CONFERENCE

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Agenda

Business overview

Group

Leading positions in fastest growing science & technology markets

		Share of net sales	Share of EBITDA pre
A diversified industry leader in **Life Science**	**Strong portfolio** & performance drive above-market growth **Leading positions** and capabilities in core business areas (esp. BioP) **New high-growth segments** (e.g. novel modalities, services, digital)	42%	45%
A global specialty innovator in **Healthcare**	**Strong growth** from new products & pipeline with blockbuster potential **Resilient base business** backed by excellent life cycle management **Value-maximizing pipeline** prioritization **& cost discipline**	38%	36%
A leading player in **Electronics**	**Uniquely positioned** to serve and enable **electronics industry** catering to ongoing data explosion **Growing semiconductor share** and **strong semiconductor performance** drive acceleration	20%	19%

Group

Accelerated science & tech leadership driving growth

New Strategic Framework

Direction	**Mobilize for growth in the BIG3**	Focus on profitable top line growth in BIG3	Core pillars
Frame	**Accelerating science & technology leadership**	Innovation as key driver for sustainable growth	Core pillars
Foundation	**Focused & disciplined capital allocation**	No “coffee for all” disciplined and focused investment in Enterprise Planning Units	Supporting pillars
Values	**Continued long-term orientation & sustainability**	Continued long-term focus as part of the DNA further reinforced by significant sustainability effort	Supporting pillars
Drivers	**Agility, Diversity, Cost discipline**	Strong, diverse, fast, agile & unbureaucratic; cost discipline in non-focus & support areas	Supporting pillars

Group Innovation Center Darmstadt

From: Capital Markets Day 2021 – 2021.09.09

Group

2021 and beyond – poised for growth in a challenging environment

COVID -19

Trade Wars

World Economy

Group-wide: Profitable Growth & Cost Discipline

Life Science

- Continued strong mid-term outlook
- Sustain industry leading profitability

Industry Consolidation

Novel Modalities

Healthcare

- Drive profitable growth through pipeline launches
- Execute on stringent cost discipline

US Health Policy

China VBP

Electronics

- Accelerate top-line growth
- Keep margins at attractive level

China Auto

Semicon Cyclicality

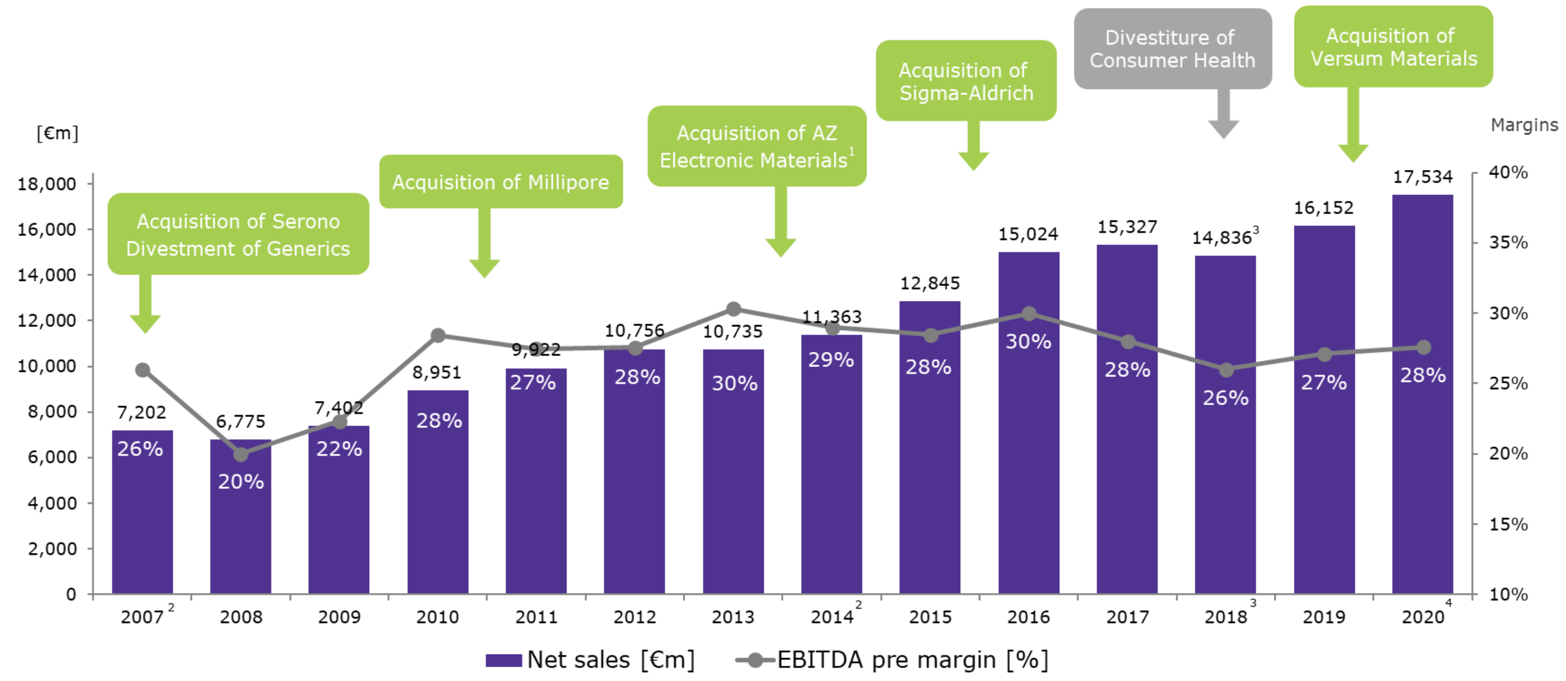
Staying on course in a potentially volatile environment

Acronym: VBP = volume based procurement

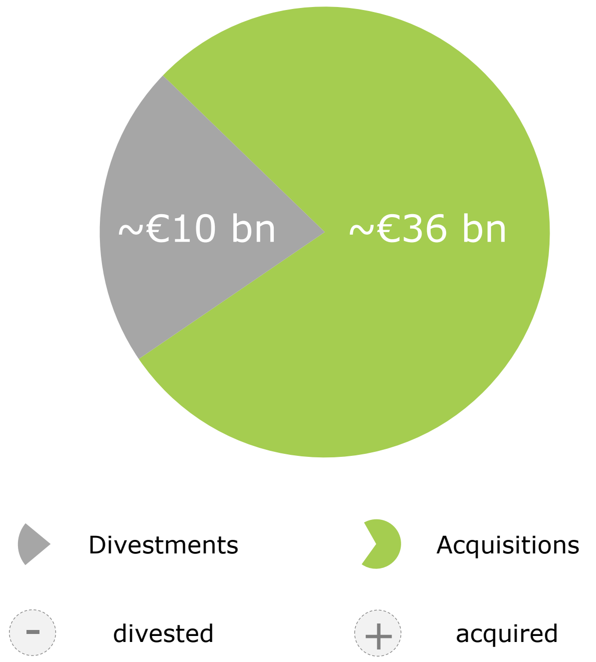
transforming the company

Added scale and strengthened attractiveness of portfolio

Growth trajectory



Transformation volume[5]



[1]Included since 2 May 2014; [2]2007 and 2014 EBITDA pre margin adjusted for comparability; [3]2018 net sales reflect Consumer Health divesture (reduction of ~€1 bn net sales p.a.)
[4]2020 margin restated for €365 m patent litigation provision release; [5] 2007 - 2020

Group
Well positioned to win in high-growth focus areas

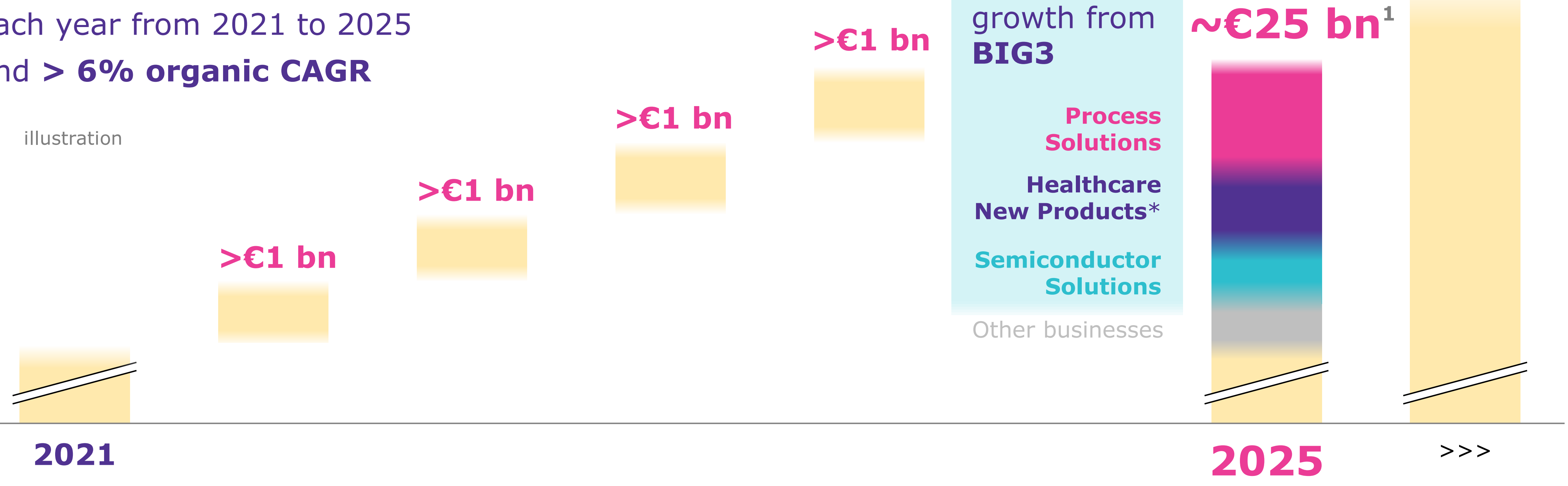
Global economy[1]	End markets[1]	Focus market areas[1]	BIG3
	Global pharma industry ~4% to 5%	Oncology ~9% to 12% Neurology ~3% to 6%	New HC Products
	Global life science industry ~5% to 7%	Biologics >10% Services >10%	Process Solutions
	Global electronics industry ~4% to 5%	Semi materials ~5% to 7%	Semi Solutions
Global GDP ~3% to 4%	Σ ~4% to 6%	Σ 6% +	

Uniquely positioned to address inevitable market trends
Diligent execution of **focused & disciplined investments** plan to **fuel BIG3 growth**

[1] Company estimates of mid-term growth outlook based on industry forecasts and reports from public research institutes (e.g. IMF, IQVIA, EvaluatePharma, Prismark, etc.)

#25by25: delivering €5 bn+ organic additional sales by 2025

>€1 bn organic sales growth **per annum** each year from 2021 to 2025 and **> 6% organic CAGR**



Clear commitment to efficient growth

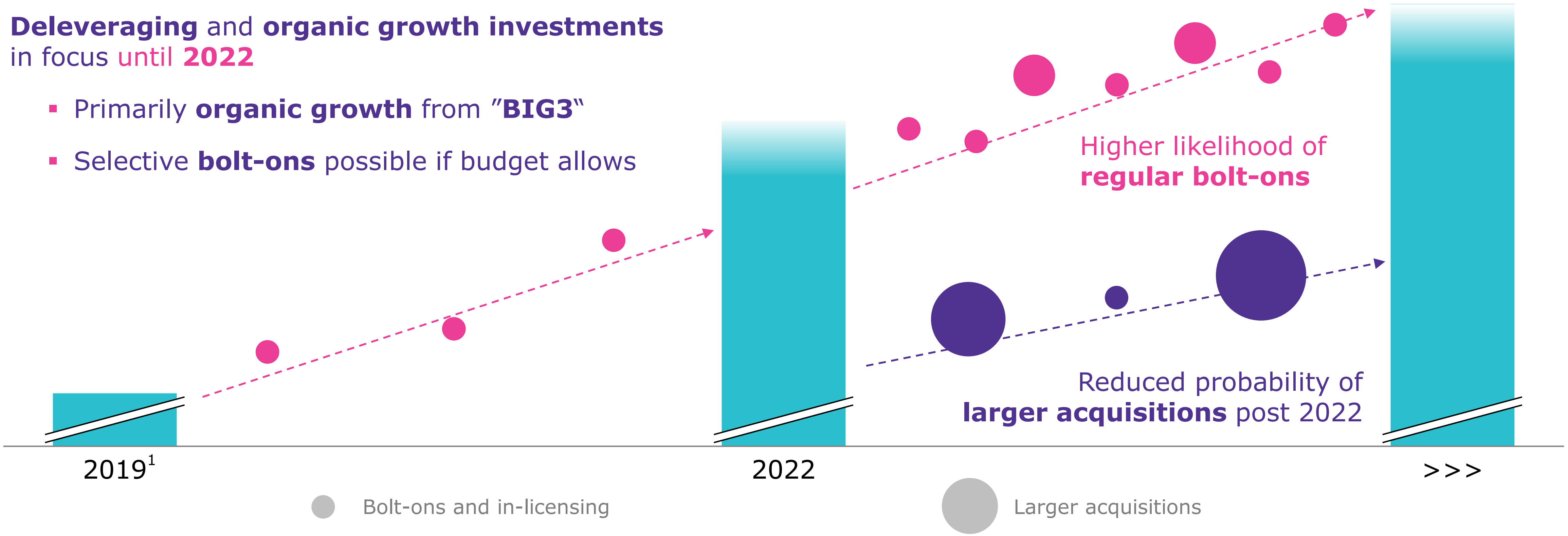
1) including potential bolt-on M&A

*Updated scope: New Products consist of recent launches (Bavencio®, Mavenclad®, Tepmetko® MET-exon 14) and risk-adjusted launches to come until 2025

Group
Portfolio strategy – from transformation to evolution

Deleveraging and **organic growth investments** in focus until **2022**

- Primarily **organic growth** from "**BIG3**"
- Selective **bolt-ons** possible if budget allows



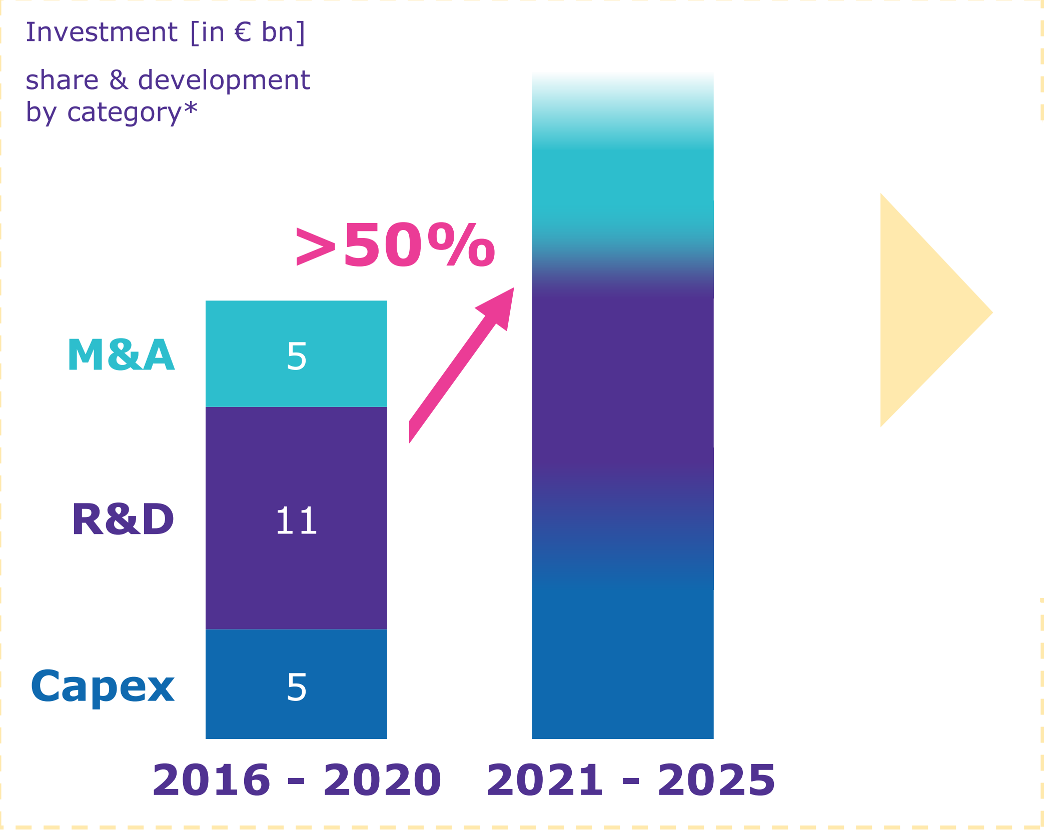
> €1 bn organic sales growth per annum each year from 2021 to 2025

[1] 2019 Group sales of €16.2 bn

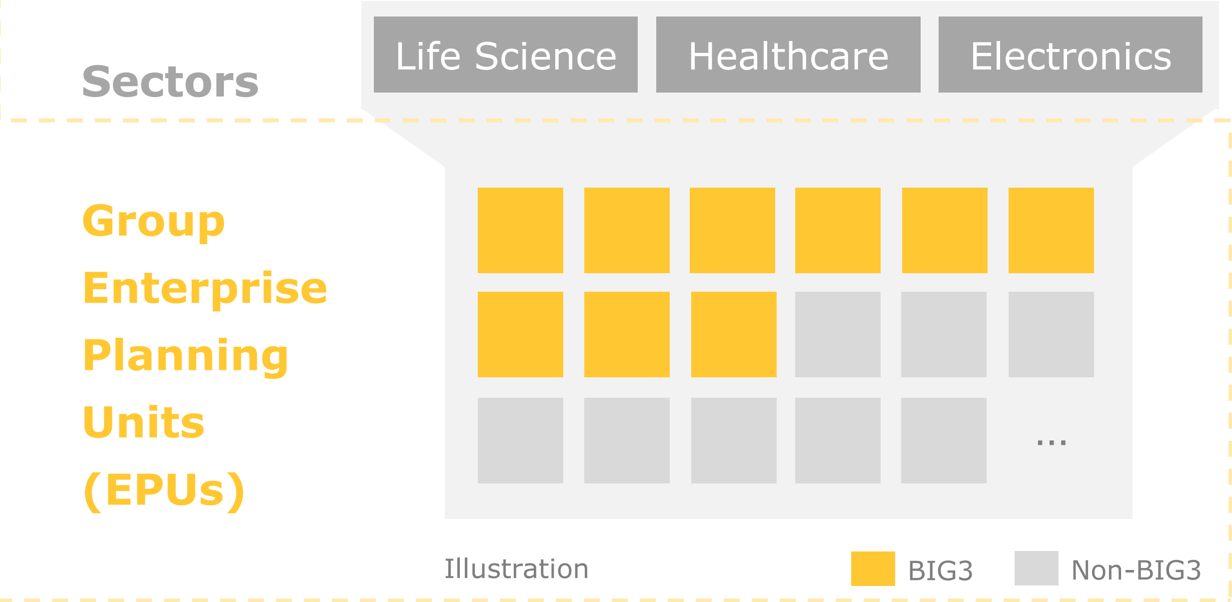
Group

Committing to record investments - targeted @BIG3 growth engines

Leading positions in **growth markets** fuel significant **boost in investment capacity**



Targeted, **disciplined** & **focused** capital allocation across **>20 enterprise planning units**

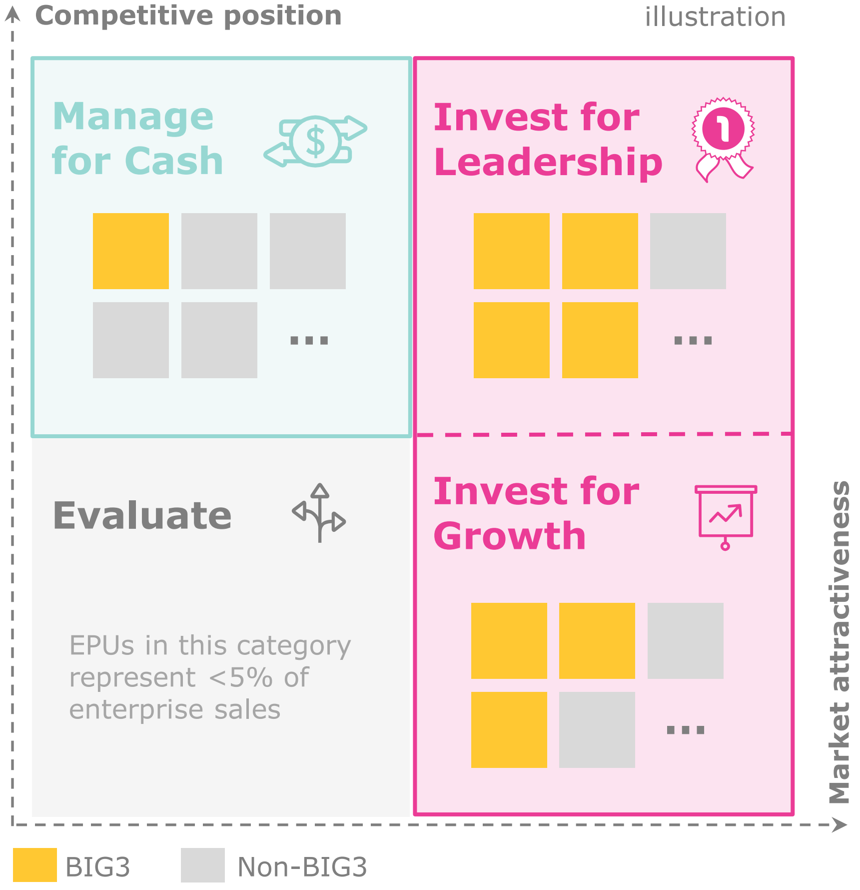


BIG3 consist of ~**10 planning units**
with a capital allocation target of >70% between 2021 and 2025

* >50% statement primarily valid for R&D and CAPEX plan, future M&A purely illustrative as it is deal-dependent

Optimized capital allocation through distinct portfolio roles

Roles determined by **thorough analysis** of **markets** and **competitive positions**



Investment focus on businesses with **greatest strengths** and **attractive opportunities**

- Segmentation in planning units allows **right level of granularity** in market & competitive analysis (vs. sector level or product level)
- **Enterprise Portfolio Units (EPUs) with different roles** drive balance between **strong cash generation** & **targeted capital allocation**

✔ **Strong**, well-positioned **portfolio**

✔ Enterprise setup allows **boosted investment capacity and optionality** that would be unattainable to 3 standalone businesses

✔ **No** need for **further diversification** (within or across sectors) or target sector ratios

Group

Portfolio roles provide clear guidance to resource allocation

Simplified portfolio unit life cycle

		Invest for Growth	Invest for Leadership	Manage for Cash	Evaluate ▪ Build/partner ▪ Back on track ▪ Consider divestment
Top-line growth		↑	↗	↗ →	→ ↘
Margin focus		◔	◕	●	●
M&A	Transforma-tional	✓	✓	✗	✗
M&A	Bolt-on	✓	✓	(✓)	✗
Invest (Capex/R&D)		●	●	◑	○

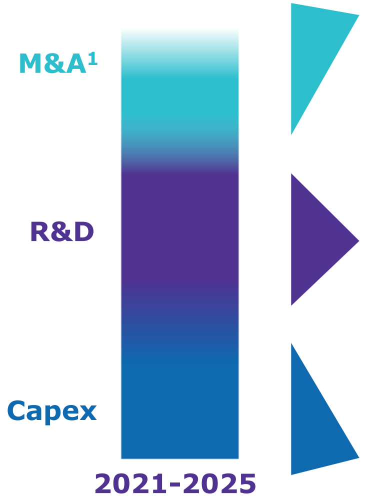
● High importance ○ Low importance

From: Capital Markets Day 2021 – 2021.09.09

Group
Financial flexibility fueling investment capacity

Accelerated deleveraging to <2x net debt to EBITDA pre ratio enables **unprecedented financial flexibility**

Investment € bn share illustration



>50%
higher investment*

with BIG3 capital allocation target of
>70%

* >50% statement primarily valid for R&D and CAPEX plan, future M&A purely illustrative as it is deal-dependent

[1] M&A: Mergers and Acquisitions

Abundant growth opportunities make **strategic capital allocation** more important than ever

M&A

- **Strong operating cash flow** & **increased debt capacity**
- **High single-digit € bn financial flexibility by end of 2022**
- Continued higher likelihood of **bolt-on** vs. large transformational deals

R&D

Clear focus on **innovation** & further development of **pipeline productivity**

- **Life Science:** accelerating targeted R&D scale-up to capture trends & strengthen portfolio
- **Electronics:** continuous alignment with customer technology roadmaps incl. new R&D labs
- **Healthcare:** driving "R&D productivity" to benchmark levels with focused leadership

CAPEX

More **complex & multifaceted** CAPEX decisions requiring **discipline**

Rich growth opportunities driven by demand step changes, e.g.

- Process Solutions **capacity & network expansion,** targeted scaling of **high value CDMO/CTO services** across traditional & novel modalities
- Semi capacity expansion in line with customer demand & smart localization

Annual capex guidance: from **~€1.5 bn in 2021** to **~€2 bn by 2023**

From: Capital Markets Day 2021 – 2021.09.09

Life science

Focusing on profitable growth

Life Science Market
Attractive secular drivers across segments create opportunities

Life Science market[1]
2021: ~€190 bn ex COVID, *growing 5 to 7%*

Portfolio | **Customer** | **Geography**

Pharma largest *(high single-digit)*

Process ~€70 bn — *9 to 10%*
- Rising **mAbs volume** *(11%)*
- **Novel modalities** *(25%)* esp. **mRNA**
- **Outsourcing** *(CDMO 12%)*

Applied ~€70 bn — *5 to 6%*
- **QC testing** across modalities *(12%)*
- **Diagnostics** enabling precision medicine

Research ~€50 bn — *2 to3%*
- **R&D spend** *(4%)*
- **Discovery outsourcing** *(CRO 12%)*

China fastest *(double-digit)*
- Local **mAb approvals**
- Tightening **regulations**, e.g. F&B
- Annual **publications** surpassed US

Developed markets
Large, stable growth *(mid single-digit +)*
- Robust fundamental drivers (**Pipeline** growth, **testing** volumes, **R&D** funding)

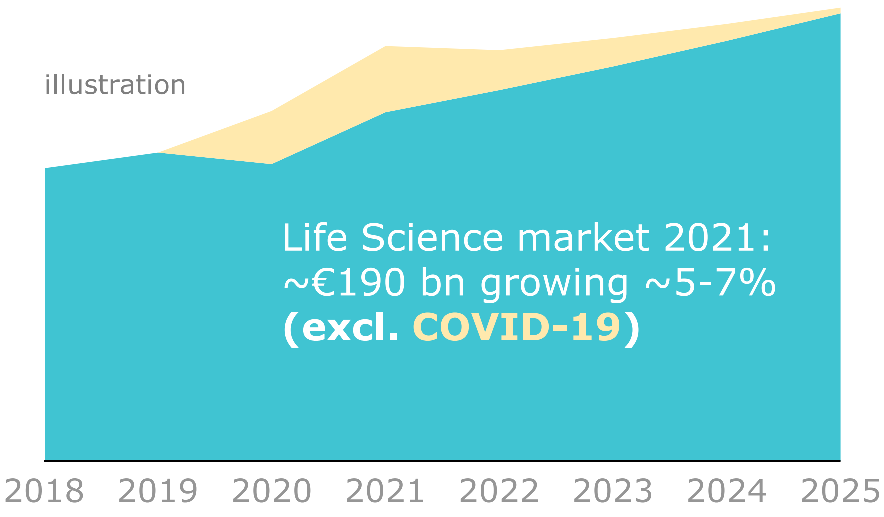
Evolving expectations | Move to **digital** | Demand for **local supply**

We continuously pursue key growth trends as a leading diversified life science player

[1] Company estimate based on industry forecast over 5-year horizon for the markets we operate in with all *growth rates* indicating 2021-25 CAGRs; Acronyms: mAbs = Monoclonal Antibodies; mRNA = Messenger Ribonucleic Acid; CRO = Contract Research Organization; CDMO = Contract Development Manufacturing Organization; F&B = Food & Beverage

Life Science
Driving growth and expanding leadership in Process Solutions

Robust market with diverse growth pockets, **elevated during pandemic**



- Attractive **base market**, on slightly higher growth trajectory post 2021
- Significant **demand from COVID-19**, expected to decline as pandemic recedes

Life Science will be fully equipped to capture growth opportunities with a **focus on Process Solutions**

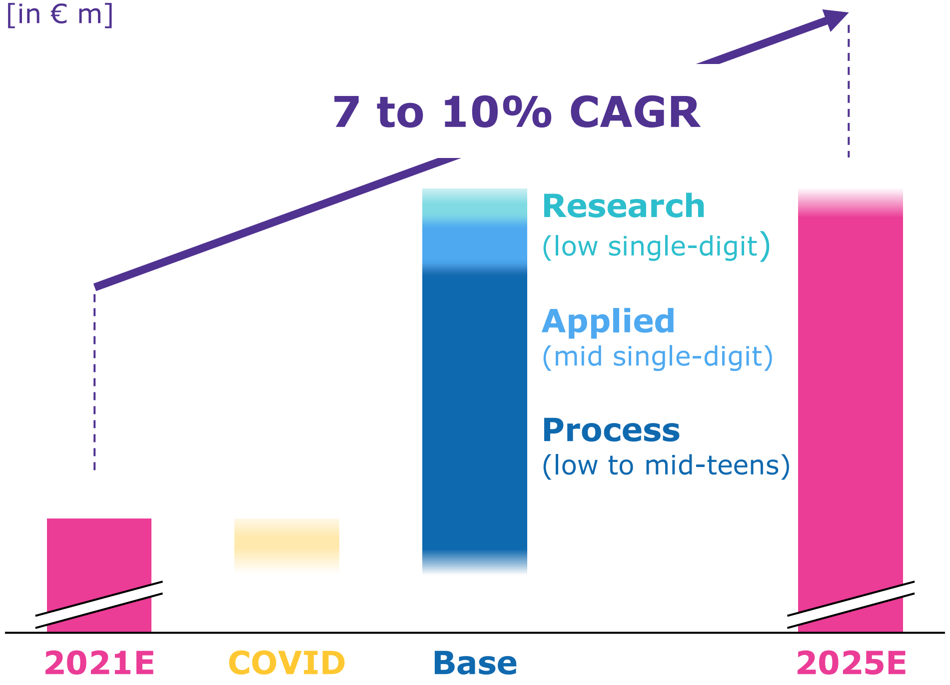
- Major **capacity and network expansion** to fuel growth of key product portfolios, **especially bioprocessing**
- Targeted scaling of **high value CDMO/CTO services** across traditional and novel modalities
- **Relevant and diversified** portfolio in **Research and Applied,** not only for cash and resilience, more importantly for **innovation and trend scouting**
- Programmatic **bolt-on M&A** plus rising focus on **China/APAC, innovation,** and **digital**

Upgrading mid-term financial ambition to **7-10% org. sales CAGR** (incl. fading COVID business)

Strong growth and improved mid-term outlook

Life Science mid-term sales outlook

[in € m]



Drivers of strong mid-term outlook

- **LS-wide: Above-market performance** with continued positive YoY growth rates **despite expected fading COVID-19 demand**[1]
- **Process: Driving ~80% growth** based on three main pillars
  - Capitalizing on strong demand for **products for traditional modalities** via network / capacity expansion and innovation (e.g. BioPharma 4.0)
  - Building scale in **services for all modalities** with a focus on mAbs, hp-APIs, ADCs, viral vectors and mRNA
  - Templating **products for novel modalities**
- **Applied** and **Research:** Building on strong positions with continued **robust growth** in line with historical trends

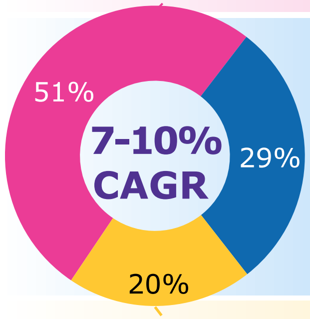
Confident to deliver above-market growth despite expected fading COVID-19 business

[1]Mid-term organic sales outlook of 7 to 10% CAGR assumes fading COVID-19 related business between two scenarios: A) zero COVID-19 related business in 2025 [implied CAGR of 6 to 9%] and B) COVID-19 related business in 2025 on 2021 level [implied CAGR of 8 to 11%]

Life Science

All business units contributing to strong mid-term outlook

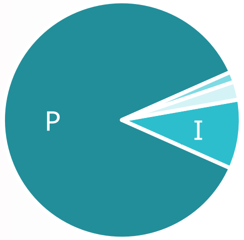
Sales split[1] | **Mid-term outlook[2]** | **Customer Split[3]** | **Fundamental growth drivers**



Process Solutions

Low- to mid-teens growth

vs. market of 9-10%

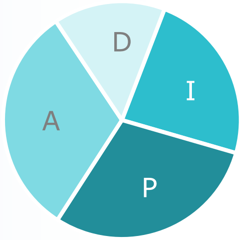


- **Biologics:** rising mAbs volume (11% CAGR[4]), growing adoption of single use, and shift to next-gen bioprocessing (intensified, digitized)
- **Novel modalities:** cell & gene therapies, ADCs, and mRNA inflection driving strong growth (25% CAGR[4]) and need for templated processes
- **Outsourcing:** increased role of emerging biotechs contributing to outsourcing in development & manufacturing (CDMO with 12% CAGR[4])

Research Solutions

Low single-digit growth

vs. market of 2-3%

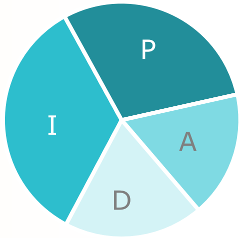


- **Research activity:** >9,000 pre-clinical projects in research pipelines[5]; rising number of experiments backs healthy growth in biotechs/CROs
- **Public and private funding:** availability, access and predictability drive demand from academia and emerging biotechs
- **Emerging technologies:** high growth technologies for drug discovery and development, e.g. advanced cell culture and AI drug discovery

Applied Solutions

Mid single-digit growth

vs. market of 5-6%



- **Regulation:** rise in quality standards and increasing demand for testing across customer segments
- **Population and economic growth:** demand for access to more sophisticated products and services rises, e.g. in emerging markets
- **Speed:** need for fast testing results raises requirements for Applied customers, esp. in clinical testing and food & beverage testing

Customer Segments: P Pharma and Biotech   I Industrial and Testing   A Academia   D Diagnostics

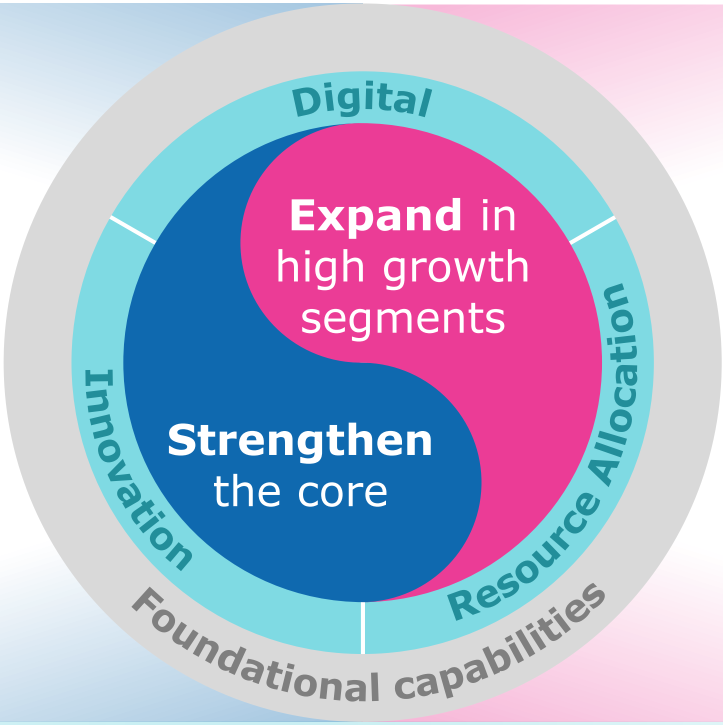
[1] Based on H1 2021, CAGR is organic mid-term ambition including anticipated fading of COVID contribution; [2] market growth rates are excluding COVID effects; [3] indicative only; [4] Source: company estimate of market growth based on industry forecast over 5-year horizon; [5] Source: statista; Acronyms: mAbs = Monoclonal Antibodies; ADCs = Antibody Drug Conjugates; mRNA = Messenger Ribonucleic Acid, CDMO = Contract Development Manufacturing Organization; CRO = Contract Research Organization; AI = Artificial Intelligence

Life Science Strategy
Focus on strengthening the core and expanding in high-growth areas

Productivity Gains

Network & Capacity Expansion

Go-To-Market Optimization



New Business Models

Holistic Offering

Emerging Regions

eCommerce • Digital Solutions • Data • R&D • Partnerships • Bolt-on M&A • CAPEX

Regulatory & Quality • Supply Network • People • Culture & Diversity • Sustainability • One Group

Stringent execution of strategic priorities driving sustained profitable growth; upgrading mid-term outlook to 7 to 10% org. sales CAGR (incl. fading COVID business[1])

[1]Mid-term organic sales outlook of 7-10% CAGR assumes fading of COVID-19 related business between two scenarios: A) zero COVID-19 related business in 2025 [implied CAGR of 6 to 9%] and B) COVID-19 related business in 2025 on 2021 level [implied CAGR of 8 to 11%]

Process Solutions – the largest of the BIG3

Fueling the growth engine to accelerate further in a dynamic market

Strategic focus	Growth pillar	Selected initiatives
Core	**Products** for **traditional modalities** *(near-term)*	
Growth	**Services** for **all modalities** *(mid-term)*	
Innovation	**Products** for **novel modalities** *(long-term)*	

	NA	EU		APAC
Single Use	Danvers	Molsheim		Wuxi
Filtration	Jaffrey	Cork	Darmstadt	

Indicating existing / future capacity

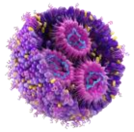
- Proactive **capacity expansions**
- **Regionalization**
- Driving **next gen bioprocessing** (BioContinuum ™)

	Early Dev.	Clinical Mfg.	Comm. Mfg.	Fill & Finish
Traditional				
Novel				

Indicating existing / future capability

- **Multimodality scale up:** mAbs (single use), viral vectors, ADCs, HP-APIs
- **Venturing** into mRNA (AmpTec)

Ekko autologous manufacturing system for CAR-T



Synthechol 2 for mRNA delivery

- **Developing** robust tools for cell, viral and gene therapy
- **Enhancing** lipids portfolio for nonviral delivery

Robust supply enabling attractive base growth, services and innovation as accelerators

Acronyms: mAbs = Monoclonal Antibodies; HP-APIs = High Potency Active Pharmaceutical Ingredients; ADCs = Antibody Drug Conjugates; mRNA = Messenger Ribonucleic Acid

Leveraging strong positions for durable growth in robust markets

Selected initiatives **Research Solutions**	Strategic focus	Selected initiatives **Applied Solutions**
✓ Building on strengths in **research chemistry** ✓ Capitalizing on evolving **CRO market**	Core	✓ **Lab Water** instrument platform innovation ✓ Expanding **Pharma QC testing** (biologics & novels)
✓ Innovating to accelerate **research biology** ✓ Expanding further in **China/APAC**	Growth	✓ Enhancing **custom services for diagnostics** ✓ Expanding further in **China/APAC**
✓ Leveraging **upgraded eCommerce platform**	Digital	✓ Driving **digital solutions**

Strategic focus on sustaining core positions and capturing higher growth segments

From: Capital Markets Day 2021 – 2021.09.09

Innovation, digital and portfolio

Key supporting pillars of strategy for value creation

Innovation	Digital	Resource allocation
Addressing evolving market …	**Internal**	**Focus on organic growth…**
Sensing **unmet customer needs** and **trends**	Data & AI driven decisions	Capex increasing ~2.5x[1]
Building on **tech strengths** and **interdisciplinary expertise**	Infrastructure & capabilities	Target R&D ratio ~5% of sales
… to ensure differentiation	**External**	**…paired with targeted bolt-on acquisitions**
Continually **raise the bar** in core portfolios	Digital engagement	Technologies
Set the standard in rapidly evolving segments	Go-To-Market	Capabilities
	Digital solutions	
Sustaining leading positions and capturing new growth areas	***Drive business value and address evolving customer expectations***	***Maximizing returns through strategic capital allocation***

[1]Comparing average capex spend p.a. over the period 2016-20 with the period 2021-25

Healthcare

Executing on the earnings phase

Well positioned in a dynamic environment, focused leadership in R&D

Existing market trends unchanged...

- High growth in largest TA Oncology
- Precision medicines to further increase share
- Cost pressure and pricing volatility growing

... well positioned to grow further

- Long-term Oncology strategy with diversified clinical portfolio
- Innovative models of treatment personalization, e.g. in Fertility
- Diversified geographical sales footprint, lower exposure to potential U.S. pricing reforms
- Global while local - 18 manufacturing sites and 4 R&D hubs across the globe
- Broad spectrum of payer types due to TA and geographical variety

Focused leadership in R&D driven by recent launches & pipeline

- SCCHN
- Bladder cancer
- MET driven tumors
- ...

✓ From correlated to distinct uncorrelated risks

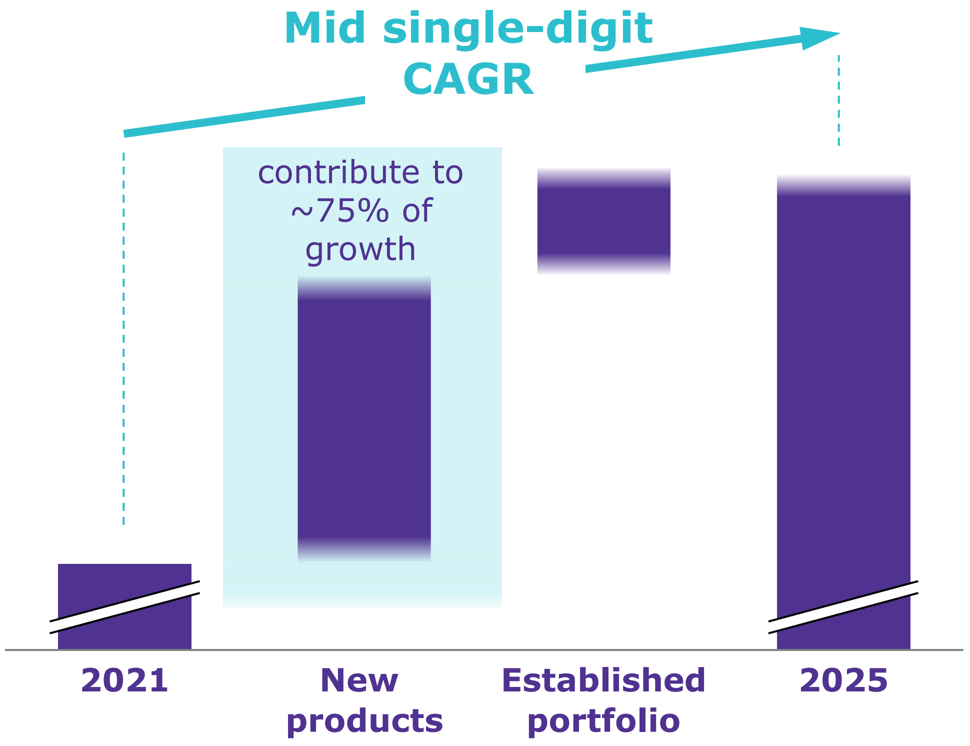
✓ Variety of pathways supported by new modalities e.g. ADCs, Oral ATRi, TIGIT...

post '25 — New Products by '25

Early stage	Late-stage development	Recently launched
	Evobrutinib RMS Xevinapant SCCHN LA Berzosertib SCLC Tepotinib NSCLC EGFR MET-amp	Mavenclad RMS Bavencio MCC, RCC, UC Tepmetko NSCLC MET-exon 14

Introducing mid-term financial ambition **of mid single-digit org. sales CAGR**

Growth driven primarily by innovation, augmenting a solid established portfolio foundation



Risk-adjusted illustration

Positioned to accelerate science & technology leadership

Profitable sales growth above global pharmaceutical market (4.6% across TAs until 2025)[1]

New products

- Evobrutinib (BTKi) to strengthen our leadership position in Multiple Sclerosis
- Multiple assets within our targeted Oncology TA focus
- Committed to drive our recent launches Bavencio, Mavenclad® and Tepmetko®

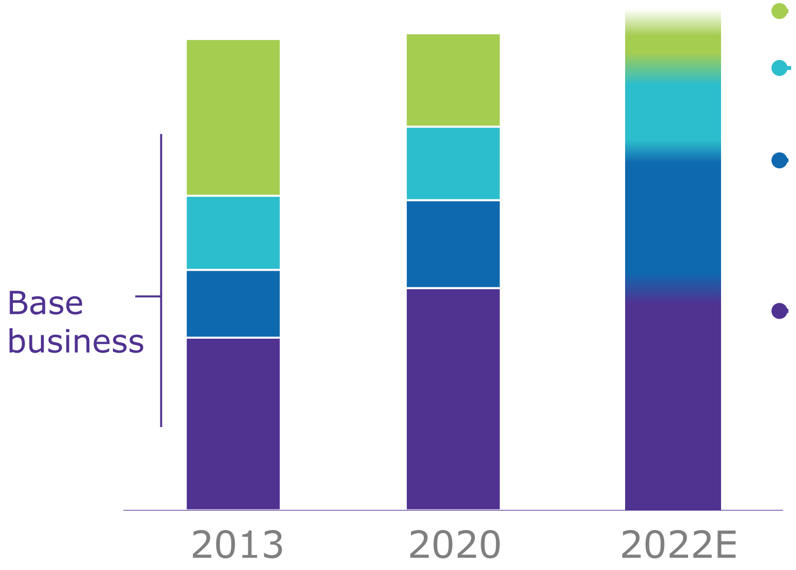
Sustainable long-term growth for Healthcare beyond 2025

[1] Company estimates of mid-term growth outlook based on industry forecasts and reports from public research institutes (e.g. IQVIA Global Medicine Trend Report from April '21)

Healthcare: Base Business

Ambition to keep base business ~stable throughout 2021 and 2022

Healthcare base business net sales until 2022



Rebif®
Decline in line with interferon market

- Maintain solid track record of patient retention
- Integrate into joint franchise with Mavenclad®

Erbitux®
Stable to slightly growing

- Drive EM[1] growth and mitigate competitive / price pressure in EU by clear branding
- Continued China NRDL inclusion secured through successful renegotiation in late 2020

Fertility
Recovery as of mid 2020, mid single-digit growth beyond 2021

- Drug demand driven by emerging markets growth and demographics
- Leverage competitive strengths (e.g. broad and innovative portfolio, security of supply)
- Drive recovery after COVID-19

CM&E[2]
Stable in 2021, mid to high single-digit growth beyond

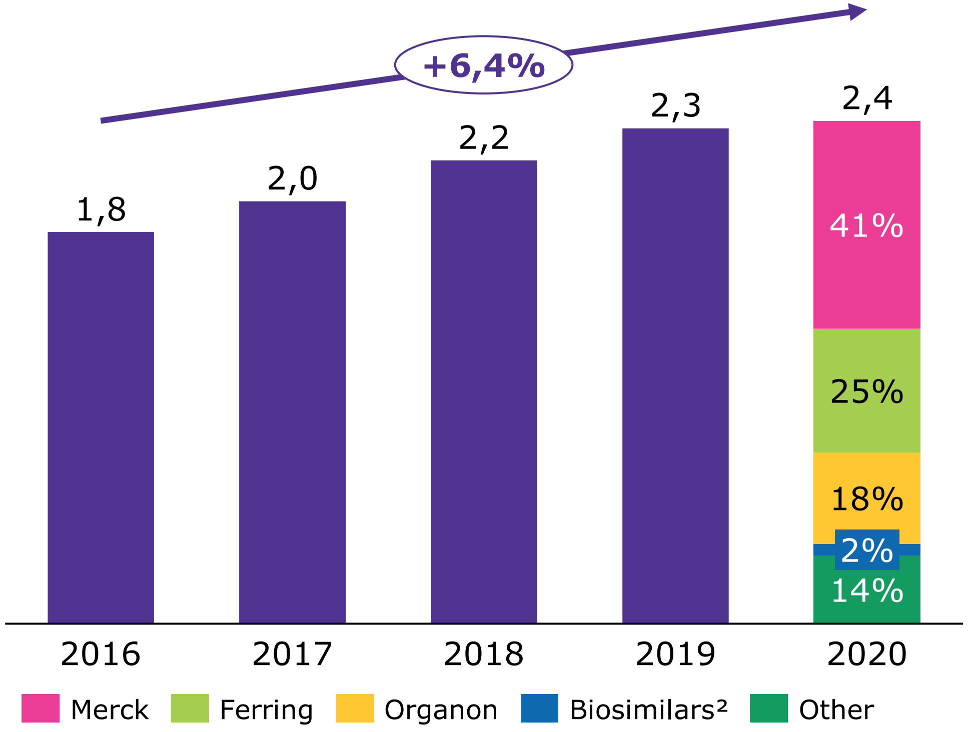
- Increasing prevalence of diabetes and cardiovascular diseases
- Mitigate VBP pressure in China through EM growth, effective life cycle management, and portfolio expansion

[1] EM: emerging markets; [2] Cardiovascular, Metabolism and Endocrinology (new Franchise name as of Q1 2021)

Healthcare

Strengthening our leadership in Fertility

Global Gonadotropin market in € bn[1]



Strategies to expand our leadership position

GONAL-f The world's most prescribed r-hFSH treatment[3]

- Growing prevalence of infertility driven by delayed parenthood and lifestyle habits
- Increasing awareness and access to treatment

Pergoveris: Only recombinant FSH + LH product in the market

- Doubling sales and market share since 2017
- Strong growth potential by geographical expansion

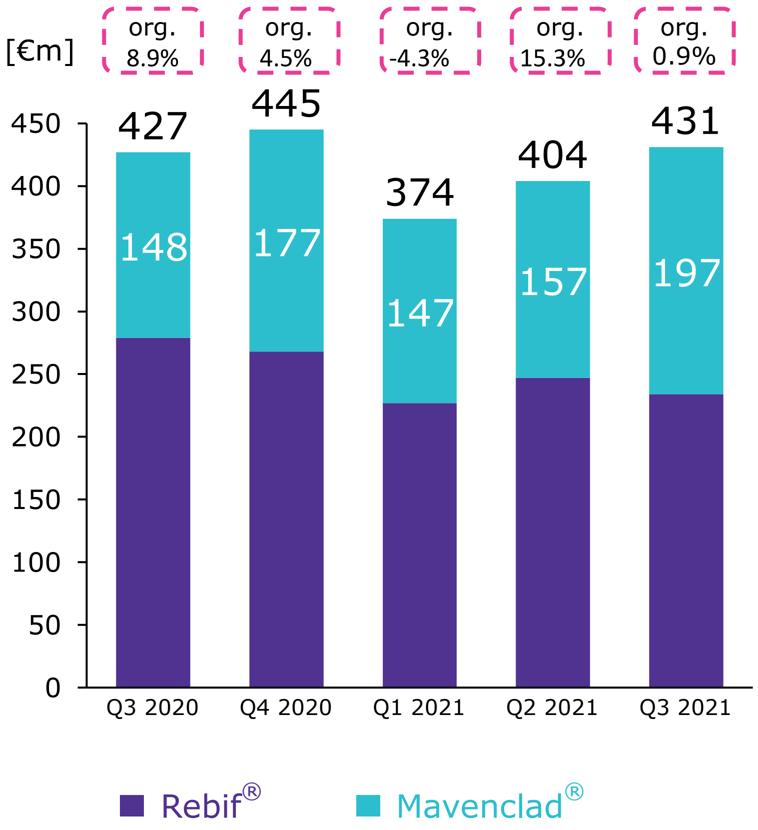
Innovations & digital solutions (e.g. Philips partnership)

- Better treatment insights & improved convenience
- Contributing to higher live birth rates

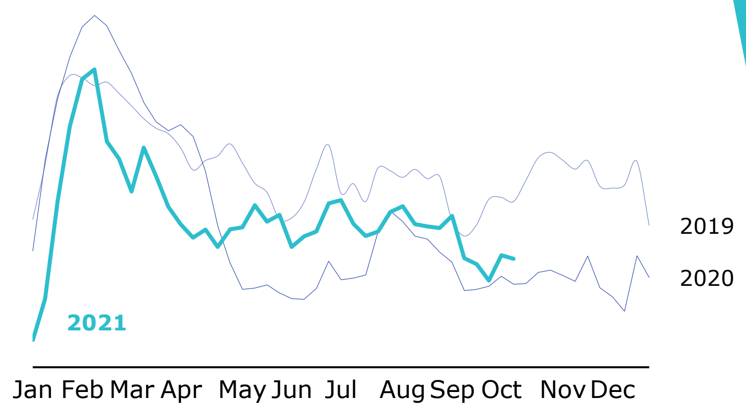
[1]Source: IQVIA Analytics Link covering 74 countries. Gonadotropin market includes FSH, LH and hMG products; other product classes used in Fertility treatment (hCG, Progesterone, GnRH-antagonist etc.) not included; [2]Major Biosimilars: Bemfola (Gedeon Richter), Ovaleap (Theramex); [3]Data on file. IQVIA Market Data Analysis. Dec 2020

Neurology & Immunology: Mavenclad® hits record quarter with sales up 33% (org.) YoY and equal growth contribution by U.S. and ex U.S.

Sales development N&I, [€m]

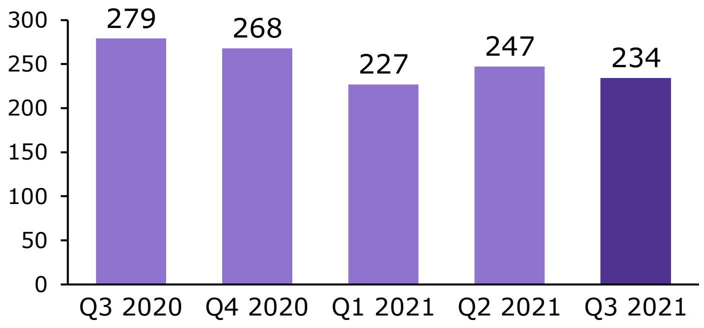


Dynamic market volume [R3W] [1]



- Recovery of US dynamic market dampened by COVID 19 delta wave
- Underlying ~20% Mavenclad sales growth QoQ, boosted by add. <5% one time US impact
- QoQ growth driven by improved new patient acquisition and higher volume of return patients

Rebif® net sales, [€m]



- Rebif® decline in line with U.S. interferon market trend
- N&I franchise growing QoQ as Mavenclad® growth outweighs Rebif® decline

1: IQVIA Projected Dynamic National Claims weekly data; Acronyms: HE = High Efficacy

Bavencio® UC 1L launch: Growing adoption of 1L maintenance therapy treatment and establishing stable market shares across key geographies

U.S. - Approved in June 2020:

Newly diagnosed metastatic UC cases → YTD 85% → Platinum eligible → YTD 70-75% → PT-based chemo[1] 1L treatment → YTD ~70% → Maintenance therapy eligible[2] → YTD 45-50% → 1L Maintenance Therapy (SOC) → YTD 80-90% → BAVENCIO® avelumab Injection 20 mg/mL

Stable % of patients given PT-based treatment

Growing adoption in 1L setting

Retaining stable share in addressable market

EU and Japan - Approved in January and February 2021 respectively:

- Now approved in **50 markets** and **reimbursed in ~1/3**
- **Strong 1L adoption in key launch markets** (e.g. Japan, France, Germany) supported by **treatment guideline recommendations** and **KOL support**, on track to become **SOC**

1: Carboplatin or Cisplatin, 2: Complete / partial response or stable disease based on clinical trial data; Acronyms: PT = Platinum, SOC = Standard of care, UC = Urothelial carcinoma

Healthcare catalysts

Oncology
Immuno-Oncology
Immunology

Q4 2021	Q1 2022	Q2 2022
Tepotinib (c-Met–inhibitor) — EMA: Filing accepted in Q4 2020, review ongoing	**Tepotinib (c-Met–inhibitor)** — EMA: Filing accepted in Q4 2020, review ongoing	
Bavencio® (Avelumab/Anti-PD-L1) — 1L NSCLC (JAVELIN 100): Expected data read-out[1]		**Bintrafusp alfa (TGFbeta trap/anti-PD-L1)** — 2L Cervical (INTR@PID 017): Expected data read-out
	Xevinapant (IAP inhibitor) — Initiation of Ph III study in cisplatin-ineligible LA SCCHN	**Xevinapant (IAP inhibitor)** — Initiation of Ph III study in cisplatin-ineligible LA SCCHN
Enpatoran/ M5049 (TLR 7/8 antagonist) — COVID-19 pneumonia: Expected data read-out		

Acronyms: EMA = European Medicines Agency, LA = locally advanced, SCCHN = Squamous cell carcinoma of the head and neck, NSCLC = Non-small cell lung cancer, TLR = Toll-like receptor, 1: Clinical timelines are event-driven and may be subject to change

Pipeline with uncorrelated risk and significant potential to drive topline growth from 2025

	PROMISE	INDICATION	EARLIEST SUBMISSION
Tepotinib (MET inhibitor)	Overcoming resistance of Osimertinib (third gen. EGFR inhibitor)	2L EGFR+ NSCLC post Tagrisso	**2023**
Evobrutinib (BTK inhibitor)	Addressing chronic inflammation and progression between relapses, in addition to reducing acute inflammation with BIC ARR	RMS	**2024**
Xevinapant (IAP inhibitor)	Transformative benefit – Maximizing chances for Cure for patients with locally advanced SCCHN	Cis-fit LA SCCHN Cis-unfit LA SCCHN	**2025** **≥ 2027[1]**
Berzosertib (ATR inhibitor)	Blocking ATR "aster regulator" of DNA repair to enhance efficacy of TOP I inhibitors for patients with few treatment options	rSCLC	**2024**
M1231 MUC1/EGFR bi-specific ADC	Next generation "Triple Innovation" ADC for patients with solid tumors, aiming for effective delivery of potent chemotherapy payload with reduced in & off target toxicity	NSCLC ESCC	**2025** **2025**
Enpatoran TLR7/8 inhibitor	Small molecule for targeted inhibition of important lupus mediator TLR7/8, aiming for improved efficacy with low infection risk	CLE SLE	**2026** **2027**

Timeline visibility

[1] depending on trial design

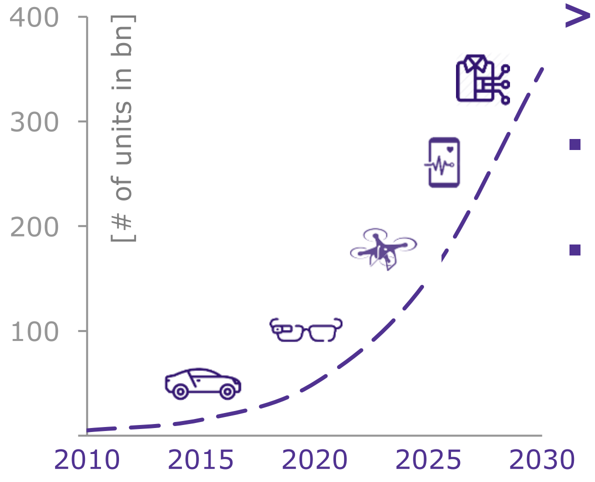
electronics

Shifting gears to growth execution

Electronics industry has clear roadmaps with vast market potential and substantial need for materials innovation

More applications than ever before to fuel Semiconductor growth

12% Automotive
7% Server / Storage / Communication infrastructure (5G)
6% Consumer (wearables/IoT)
5% Industrial/Medical/Military/Aviation
4% PC/Computing
4% Mobile phones / tablets

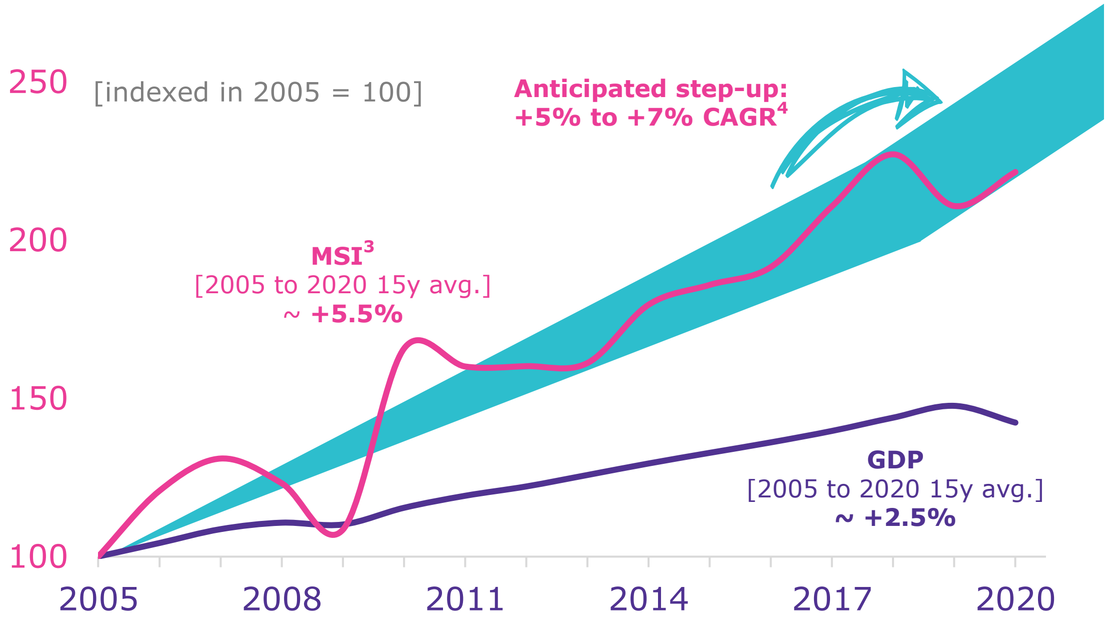


# of AIoT[1] devices >350 bn in 2030

- **More innovative chips required**
- **Value-share of chips per device increasing from:**

  ~18% in 2020
  to **>30%** in 2025[2]

Growth expected to accelerate…
…with reduced upward cyclicality



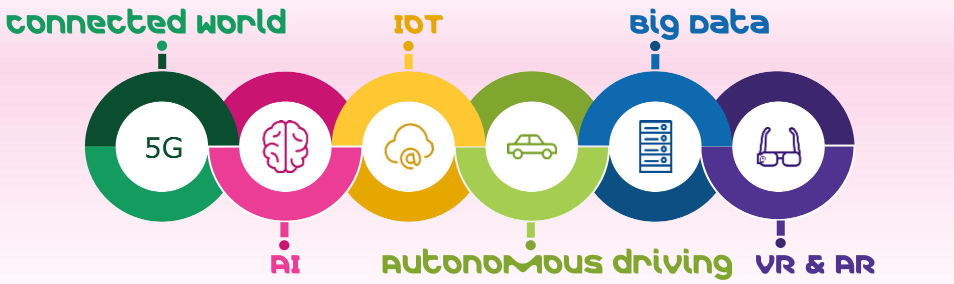
- **Diverse end applications & higher capital discipline** expected to reduce future cyclicality
- Semiconductor **Materials** show **lower cyclicality than Semiconductor market**

1) AIoT = Artificial Intelligence + Internet of Things; 2) McClean, Prismark Semiconductor and packaging report Q4 2020; 3) Million Square Inch of silicon wafers; 4) Group estimate based on industry forecasts

From: Capital Markets Day 2021 – 2021.09.09

Electronics
Building on leading positions in semiconductor materials

External trends drive strong demand



Tech trends inevitably drive exponential data growth requiring **s**emiconductors and displays in virtually all data applications

- Customers & governments significantly **accelerating semi capacity expansions**
- **Semiconductor materials market** expected to **accelerate growth** based on **broader demand**

Electronics well positioned to capture it

- **One of the strongest portfolios** – providing solutions necessary to **enable industry growth**
- **Enabling breakthrough technologies**, in **high value areas** of wafer processing & display innovation
- **Pioneering** in **high-throughput experimentation** and **Big Data & AI projects** with key customers
- **Shift to executing growth** accelerating **investment** and **innovation in sync** with customer plans

Further upgrading mid-term financial ambition **to 3 to 6% org. sales CAGR**

Abbreviations: AI = Artificial Intelligence; IoT= Internet of Things; VR = Virtual Reality ; AR = Augmented Reality

Electronics

Shifting gears from transformation to growth execution

From building a platform…

Successful "Bright Future" transformation

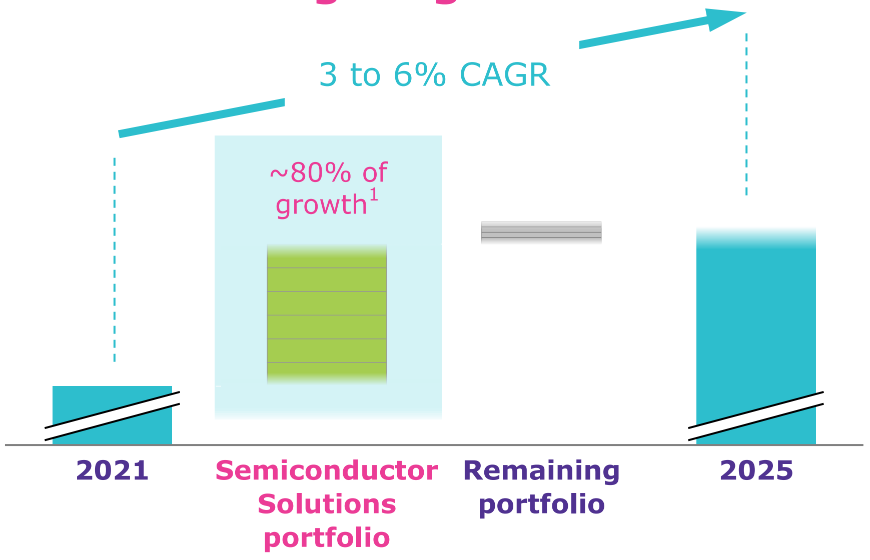
- **Superior business composition**
  - ~10 equally sized, differentiated tech platforms
  - Wider customer base than ever before
  - Balanced presence in all major customer hubs
- Clear **focus on Semi & innovation**

Significantly higher Versum synergies

- **Accelerated capex** investment plan
  - Smart localization
  - Global presence & local proximity

- **Display & Surface well managed** according to Enterprise Planning Unit role

…to executing on growth



- **Semiconductor Solutions:** to grow **200 to 300bps**[2] above faster underlying market of 5% to 7%
- **Display Solutions:** low-single digit decline in the coming years expected to return to growth until 2025
- **Surface Solution**: low single-digit growth post COVID-19 turnaround

1) illustrative split by semiconductor solutions technology platform

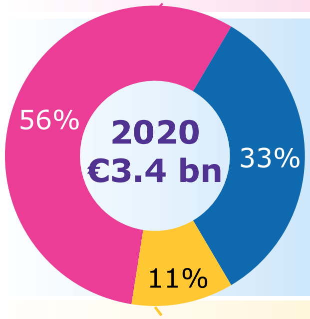
2) „Basis points"

From: Capital Markets Day 2021 – 2021.09.09

Electronics

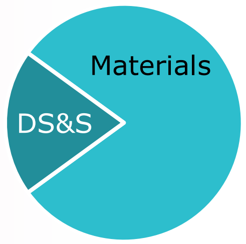
Portfolio refocus drives mid-term guidance upgrade to 3 to 6% CAGR

Sales split[1] | **Mid-term outlook[2]** | **Business Split[3]** | **Fundamental growth drivers**



Semiconductor Solutions

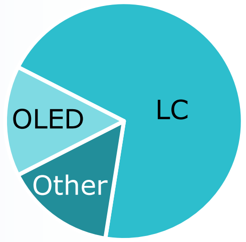
7% to 10% growth



- Continued market growth due to technological advances (Artificial intelligence, 5G, Big Data and cloud, Internet of Things) serving customers in **Logic, Memory, Packaging and others**
- 5 to 7% market growth[4]
- 200 to 300bps above-market growth from share gains & better portfolio (incl. 100 to 150bps additional growth from integration top-line synergies)

Display Solutions

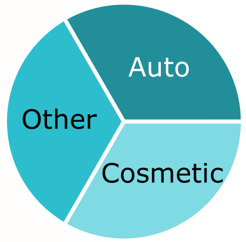
Low single-digit decline



- Driven by trend to **bigger TV size, higher resolutions, more mobile devices**
- 3 to 4% growth of total LCD m² area[5], while price pressure continues
- 18 to 22% growth of total OLED m² area[5] with slight to moderate market share gains
- OLED material market to exceed LC material market by 2021[6]

Surface Solutions

Low single-digit growth



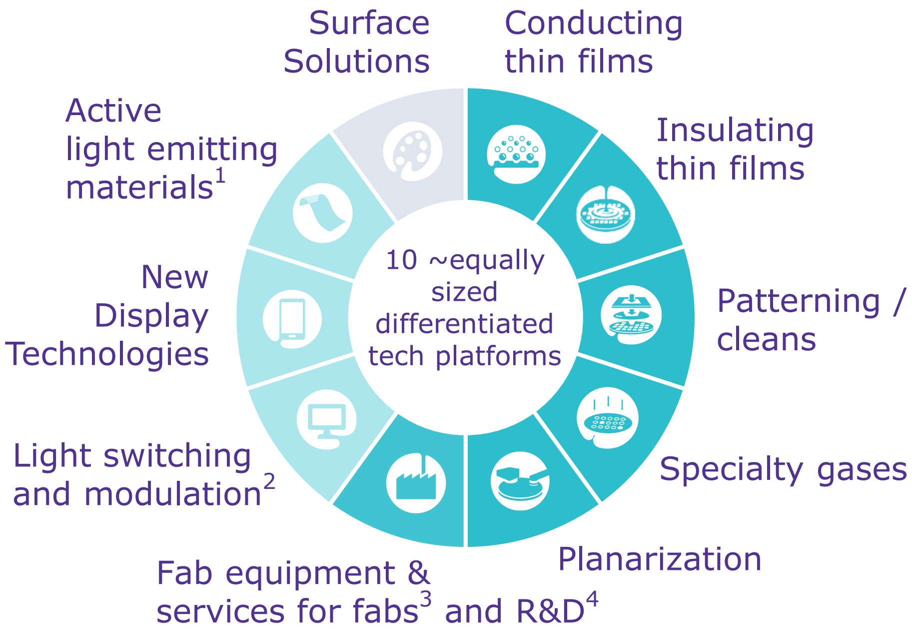
- Well balanced exposure to **automotive** and **cosmetics** end market
- Drivers: rising living standards, higher disposable income in growing markets & higher demand for high value products at reasonable prices
- Light vehicle production and relevant cosmetics end markets returning to growth in 2021 and reaching 2019 levels by 2022 and beyond[7]

[1] Based on FY 2020, CAGR is organic mid-term ambition; [2]growth rates are organic CAGRs; [3]indicative only
[4]Source: Company estimate based on industry forecasts; [5]Source: Omdia Display Market Outlook, Q1 2020; [6]Internal Business Intelligence; [7]Sources: LMC Automotive Light Vehicles Forecast, Aug 2020 & Euromonitor BPC (Beauty & Personal Care) Aug 2020

From: Q1 2021 Roadshow Presentation
Updated Sep 2021

Electronics: Successful transformation, ready for accelerated growth

An integrated electronics innovation leader with one of strongest industry portfolios



INDICATIVE chart of mid-term future portfolio composition

Semiconductor Solutions   Display Solutions   Surface Solutions

1) Incl. materials for OLED displays 2) Incl. liquid crystal displays
3) Delivery Systems & Services 4) Intermolecular

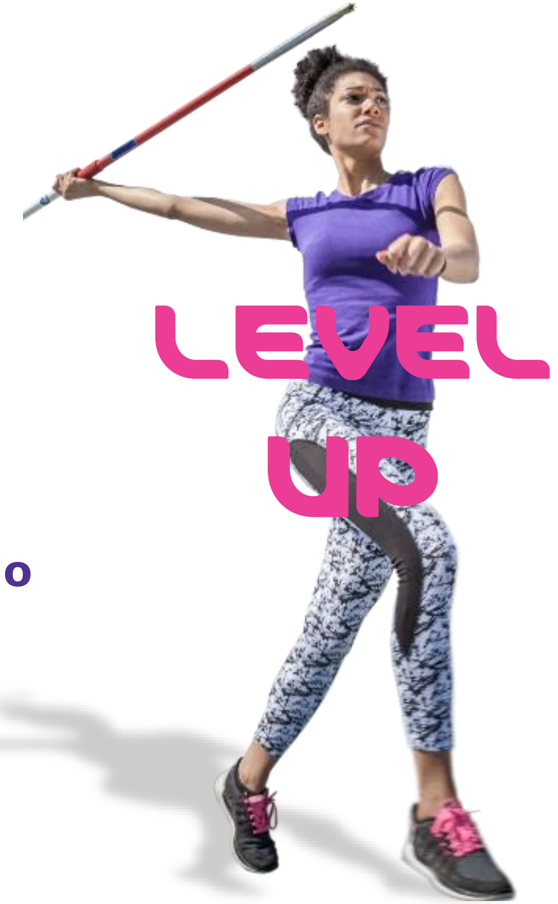
Delivering on promises and above

- **Bright Future program** key deliverables & savings
- **€3.3 bn** sales with **~90%** of sales **focused on electronics**
- Successful **integration of Versum**
- **Attractive**, stable **EBITDA pre margins**
- **Display & Surface well managed** according to Enterprise Planning Unit role
- Upgraded mid-term guidance of **3% to 6% sales CAGR**

Everything in place to gain further speed as vital growth engine for Group

"Level Up" - Shifting gears from transformation to growth execution

Enabling ambition
of 3 to 6% org. CAGR
2021 to 2025+



Level up **scale**

- **Capacity investments** synchronized to **customers' expansion plans**
- Ability to **tackle industry challenges** & supply reliability
- Continue **localizing footprint** close to customers in **Korea, Taiwan, China, and U.S.**

Level up **portfolio**

- Commitment to **relevant portfolio breadth** in **high growth areas**
- Diligent **bolt-on** acquisitions
- Targeted expansion of **portfolio**

Level up **tech**

- Further sharpen **focus on profitable innovation**, addressing key inflection points
- Address **sustainable innovation**
- **Expand R&D** and keep one of the highest **R&D rates in the industry**

Level up **people & capabilities**

- **Attractive** employer for **NextGen talents**
- Drive **safety, quality & sustainability**
- Drive **data analytics & digital transformation**

sustainability

Boundaries of human progress today will become reality tomorrow: Our sustainability goals

SUSTAINABLE DEVELOPMENT GOALS

01

Positive impact through our products

- Ensure global access to medicines
- Enable cutting edge technologies
- Support greener production

Dedicated to human progress

***In 2030**, we will advance human progress for*
***>1 bn people** through sustainable science & technology*

- Sustainable innovations and technology for our customers
- Impact of our technologies and products on health and well-being

3 8 9 17

02

Stabilize production and minimize risks

- Actively manage ESG risks
- Training on policies & standards
- Manage sustainability in supply chain

Creating sustainable value chains

***By 2030**, we will integrate sustainability into*
all our value chains

- Sustainability culture & values
- Sustainable and transparent supply chain
- Securing our social license to operate in all regions

8 12 17

03

Minimize negative impact through our operations

- Achieve climate neutrality
- Manage water efficiency
- Reduce waste

Reducing our ecological footprint

By 2040**, we will achieve **climate neutrality
*and **reduce our resource consumption***

- Climate change & emissions
- Water & resource intensity

9 12 17

Group
Expanding KPIs to monitor and steer sustainability comprehensively

Goal	Exemplary KPIs to be implemented in 2021
01 *Human Progress*	# of people positively impacted by Group technologies/products % of new patent families with positive sustainability impact
02 *Sustainable Value Chain*	Environment, Health and Safety: Incident Rate % of employees trained on sustainability % of relevant suppliers that are covered by a sustainability assessment/audit
03 *Ecological Footprint*	Greenhouse Gas Emissions Scope 1+2 Greenhouse Gas Emissions Scope 3 Waste Score & Water Intensity Score

The KPIs and goals are complementary to KPIs and goals reported in our sustainability report, annual report and SASB reporting, e.g. on compliance, safety, employees, diversity

Our sustainability ambition is integrated in the Executive Board remuneration system

From 2021 onwards:
Explicit reflection of the new targets on **qualitative level** in the criteria **for the profit sharing modifier** (0.8-1.2)

In addition, from 2022 onwards:
Quantitative sustainability factor (0.8-1.2) applicable in the **long-term incentive plan** for the executive board

Set of sustainability KPIs will build the underlying basis for the development of the sustainability factor

Reduce our environmental footprint: Emissions, Water and Waste

Goal 03 reducing our ecological footprint

Climate neutrality by 2040

- Aiming for **climate neutrality** (scope 1-3 emissions) **by 2040**
- **Lower scope 1 and 2 GHG[1] emissions by 50%** and to source 80% of purchased electricity from renewable sources until 2030 vs. 2020 baseline (2020: ~2,100 kt)
- **Absolute reduction of 1,500 kt[2] scope 3** CO_2 equivalents by 2030

Enhance water efficiency, reduce harmful emissions

- Enhancing water efficiency and **improve the new Group water intensity score by 10% by 2025** vs. 2019 baseline
- Minimize negative environmental impacts, **harmful emission residues should be lowered** below a scientifically defined threshold by 2030

Reduce waste impact

- Based on the Company Waste Score, we have set ourselves the goal of **reducing the environmental impact of our waste by 5%** by 2025 compared to 2016
- By end of 2020, we achieved a reduction of 4.6%

[1]GHG = Greenhouse Gas
[2]corresponds to ~30% of 2019 scope 3 emissions (current estimation incl. Versum Materials)

Diverse human capital: Thinking, talking, and leading differently

Focus areas	Status quo 2020	Aspirations
Gender	**35%** women in leadership globally	**Gender parity*** until 2030
Culture & Ethnicity	**20%** of underrepresented ethnic colleagues in US leadership	Increase to **30%** until 2030
	16% of nationals from Asia, Latin America, Middle East & Africa in leadership	Increase to **30%** until 2030
Inclusion	Rollout of Inclusive Leadership Programs and participation of leaders across all business	Participation of **all** leaders by 2026

* The gender concept considers room for non-binary people

The **uniqueness** of our people brings our **curiosity** to life. It contributes to our success in **science & technology**.

Group

Clear set of tasks to enable our 2030 ESG goals

Tasks	Development → In place	Results and next steps
Analysis of requirements: Strategy, business, regulation, stakeholders		**Ongoing** due to developing field of ESG stakeholder expectations and regulation
Build effective **data platform** for **internal steering**		Feed in internal data, external data, industry benchmarks and **modelling projects in 2021**
Develop ESG **KPIs** for **reporting**		Developing & evaluating **ESG KPIs** for steering, milestones, decide on reporting **in 2021**
Develop **SBV tool**[1] to measure **product sustainability value**		SBV tool **developed and tested** in up to 10 cases **by 2021**
Link ESG[2] to **board compensation** with 20% sustainability factor from 2022		**Approved** by AGM, qualitatively included, **quantitative factor to be developed in 2021**
Further incorporate ESG[2] in R&D, Controlling, M&A and Supply Chain		**ESG-Framework M&A/Capex in 2021**, progress in supply chain, controlling, R&D
Decide on **dedicated investments** and **initiatives** to achieve targets		Business strategies and priorities under development, **budgeting & decisions in 2021**

[1]Sustainable Business Value: Dive in deeper and read the research article on the SBV method; [2]ESG: Environmental, Social, Governance

Outlook: On the path towards climate neutrality 2040

Nov. 2021	Q2 2022	2030	2040	**Climate Neutrality**
SBTi commitment letter signed + validation documents submitted for SBTi certification	Certification by SBTi expected[1]	Work on SBT roadmap towards climate targets	Develop towards climate neutrality (2040)	

- Aiming for **climate neutrality** (scope 1-3 emissions) **by 2040**
- **Lower scope 1&2 GHG[2] emissions by 50%** by 2030 vs. 2020 baseline
- **Source 80% of purchased electricity from renewable sources** by 2030
- **Scope 3 aspiration: reduce 1,500 kt[3]** CO_2 equivalents by 2030

Science-Based Target initiative (SBTi):

Science-based targets provide a clearly defined pathway for companies to reduce GHG emissions, helping prevent the worst impacts of climate change and future-proof business growth.

Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement, pursuing efforts to limit global warming to 1.5°C.

[1]Depending on SBTi processing time; [2]GHG = Greenhouse Gas;
[3]current ambition incl. Versum Materials, upgrade planned in connection with SBTi plan

Guidance and Executive Summary

Full-year 2021 guidance

Net sales:

Organic: +13% to +15% YoY

FX: -1% to -2% YoY

~€19.30 bn to €19.85 bn

EBITDA pre:

Organic: +26% to +29% YoY *(excl Biogen[1])*

FX: -1% to -2% YoY

~€6.00 bn to €6.30 bn

EPS pre:

~ €8.50 to €9.00

[1] Q3 20 reversal of the provision for the patent dispute over Rebif in the amount of ~€365 m; Guidance including Biogen – organic: +17% to +20%

executive summary

4 key priorities to deliver on our science & tech ambitions

Mobilizing for Efficient growth

Leveraging Innovation in the BIG3

Driving Culture & Leadership

Focusing on Sustainability

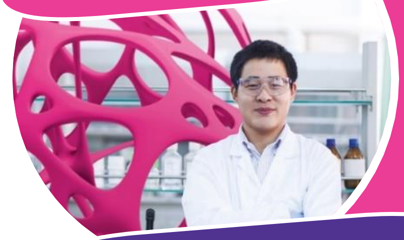
From: Capital Markets Day 2021 – 2021.09.09

Appendix

Group

2021 business sector guidance[1]

Life Science



Net sales

- Organic: +20% to +22%
- Process Solutions as main growth driver, including ~€1 bn COVID-19 sales

EBITDA pre

- Organic:+36% to +39% YoY
- FX: -1% to -2% YoY
- ~€3,200 – 3,350 m

Healthcare

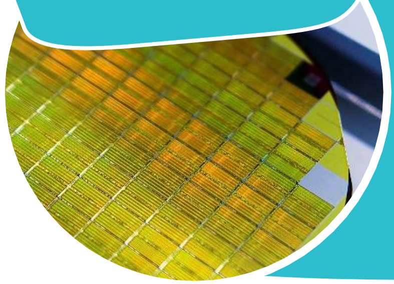
Net sales

- Organic: +8% to +9%
- Mainly driven by Mavenclad® and Bavencio®
- Established portfolio growing organically

EBITDA pre

- Organic:+17% to +20% YoY *(excl Biogen[2])*
- FX: -5% to -6% YoY
- ~€2,110 – 2,200 m

Electronics



Net sales

- Organic: +7% to +8%
- Strong Semiconductor Solutions contribution
- OLED with high growth

EBITDA pre

- Organic:+9% to +12% YoY
- FX: 0% to -2% YoY
- ~€1,080 – 1,140 m

[1] Divisional guidances are only support to the group guidance and do not have to add up;
[2] Q3 2020 reversal of the provision for the patent dispute over Rebif in the amount of ~€365 m; Healthcare Guidance including Biogen – organic: +1% to -2%

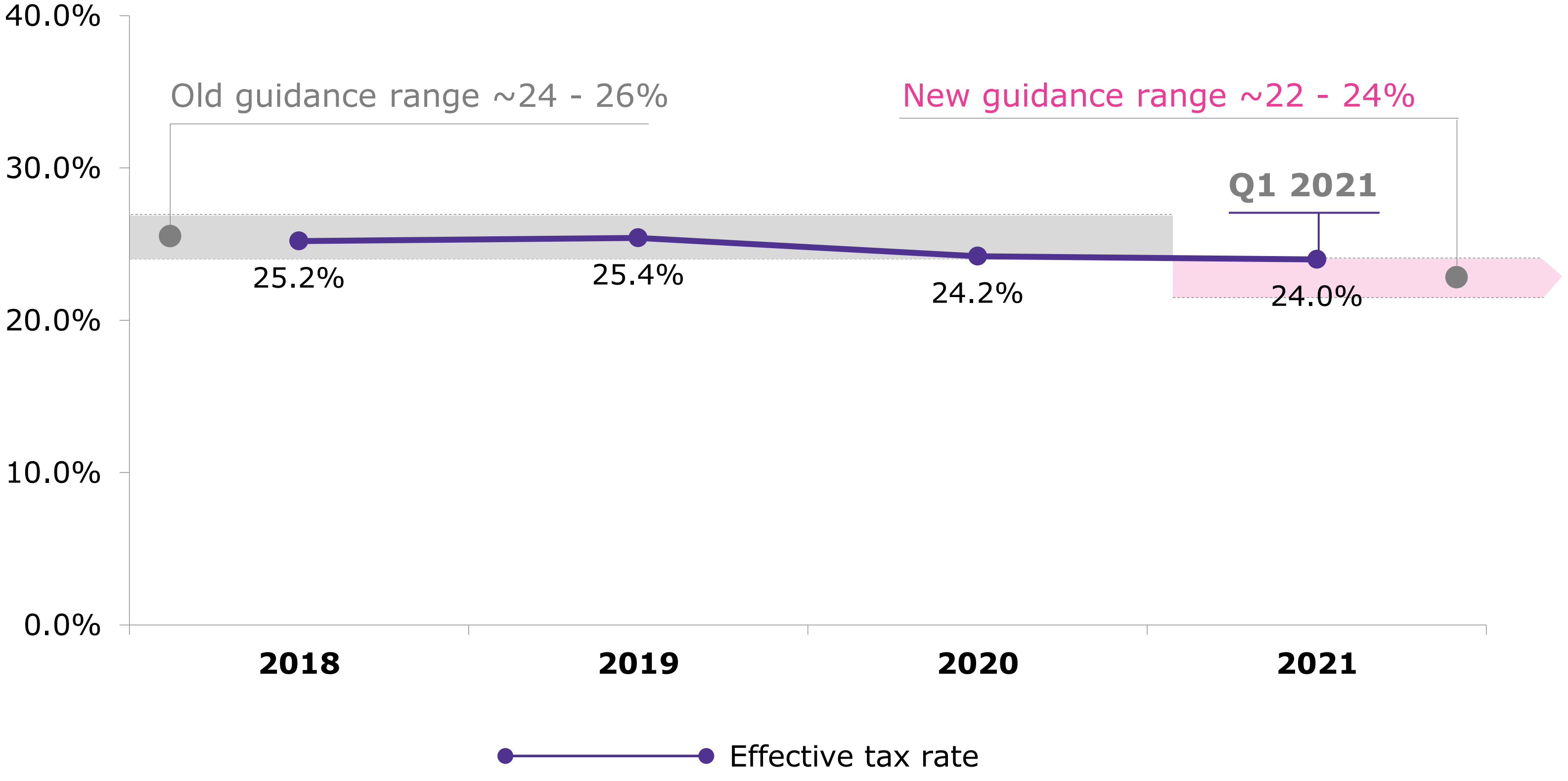
Additional financial guidance 2021

Further financial details

Corporate & Other EBITDA pre	**~ €-440 to -470 m**
Interest result	**~ €-190 to -220 m**
Effective tax rate	**~22% to 24%**
Capex on PPE	**~€1.4 bn**
Hedging/USD assumption	**FY 2021 hedge ratio ~70% at EUR/USD ~1.17**
2021 Ø EUR/USD assumption	**~1.17 to 1.19**

Effective tax rate guidance lowered to new range of 22% to 24%

Tax rate development 2018-2020 and from 2021 onwards



Rationale for update

Strong profit growth in Life Science results in different profit contributions worldwide, leading to a lower overall tax rate

New **resulting underlying tax** rate used for EPS pre calculation is now 23%

From: Q2 2021 call

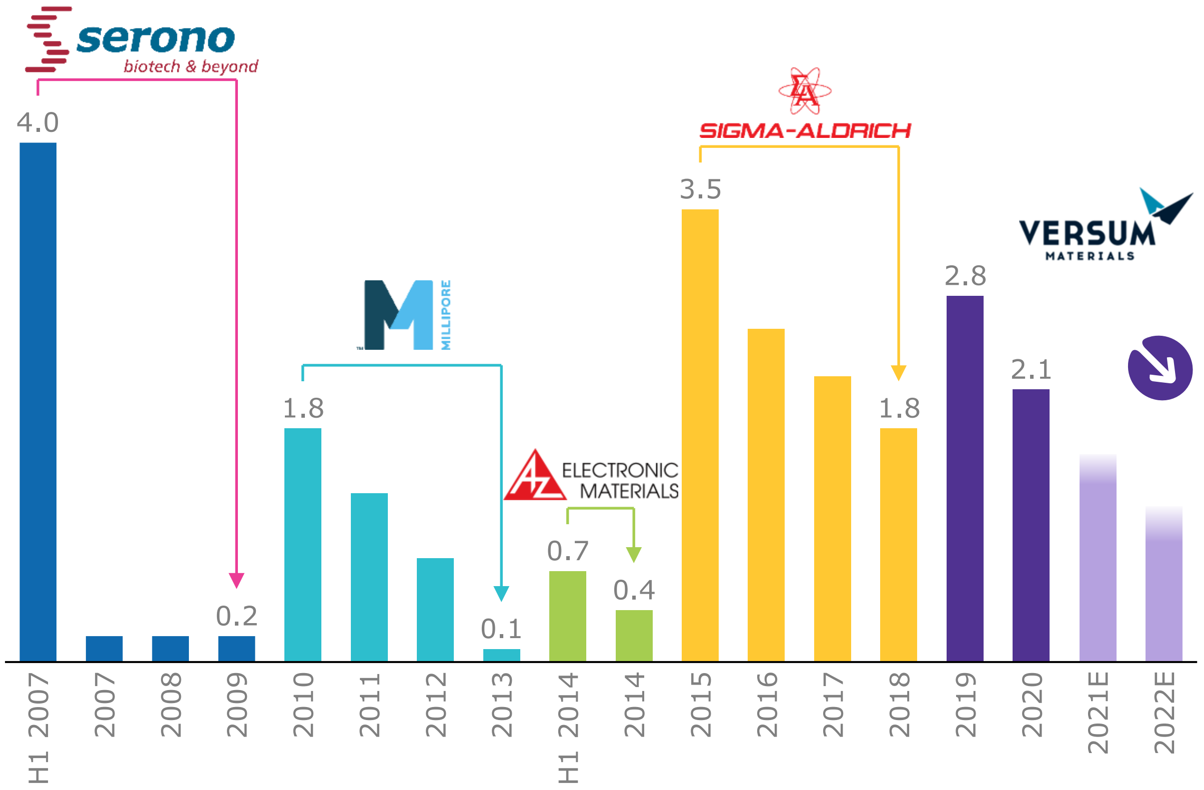
Focus on organic growth and further deleveraging

Proven swift deleveraging
after major acquisitions

UPDATE

- **Deleveraged to ~2x** net debt/EBITDA pre already in 2020
- **M&A on hold until 2022**; only smaller deals to be realized if budget available
- Annual capex guidance: from ~€1.4 bn in 2021 to ~€2 bn by 2023 and **increased focus on organic investment**
- Dividend policy mirrors **sustainable earnings trend**

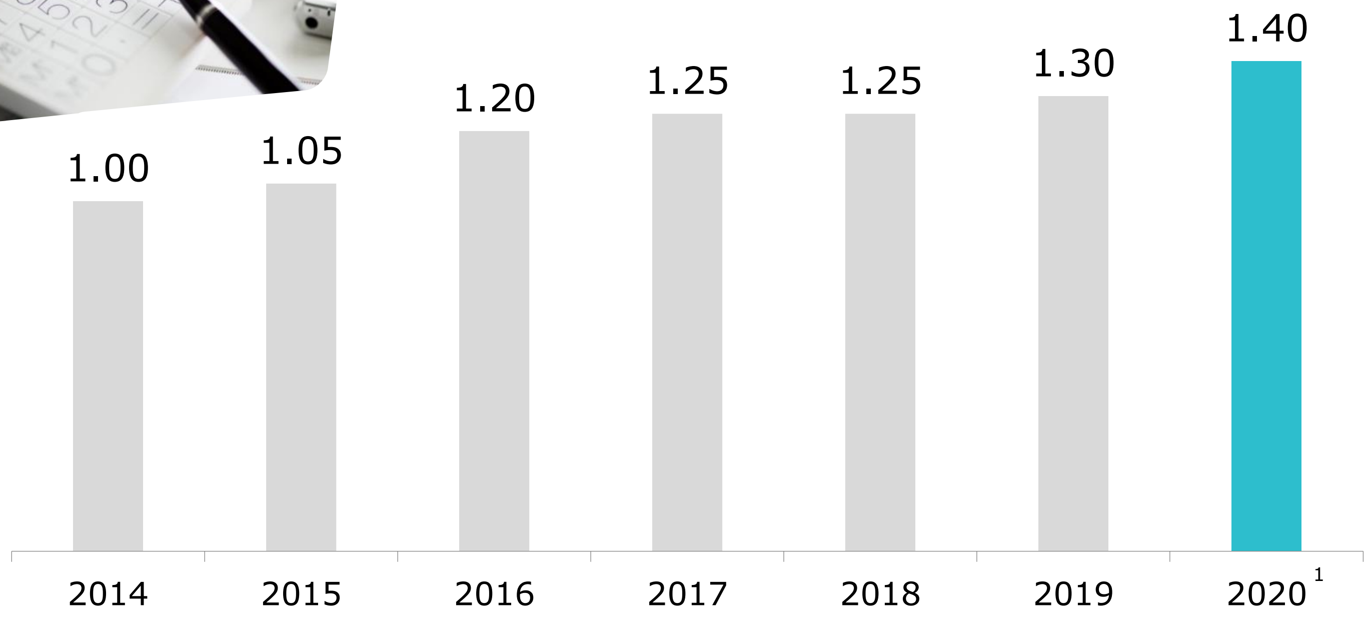
Net debt / EBITDA pre track record & outlook



From: Capital Markets Day 2020 – 2020.09.16
Updated Nov 2021

Sustainable dividend growth

Dividend development 2014 - 2020



2020 dividend

- Dividend of €1.40 (+8% YoY) per share approved[1] by Annual General Meeting
- Payout ratio of 23.1% of EPS pre[2] in 2020; aiming for 20-25% of EPS pre
- Dividend yield[3] of 1.0%

[1] April 28, 2021: Pay Date

[2] Excluding Biogen provision release, including the provision release the ratio is 20.9%

[3] Calculated with 2020 year-end share price of €140.35 per share.

From: Q4 2020 call

Group

Merck‘s KGaA, Darmstadt, Germany ownership structure

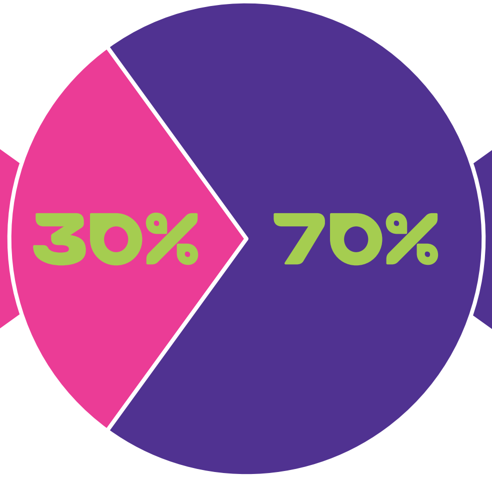
Shareholders of Merck KGaA, Darmstadt, Germany

- Shareholders hold ~30% of Group’s total capital
- Share capital is divided into 129,242,252 bearer shares and one name share without nominal value
- Listed at German Stock Exchange’s Prime Standard, member of the DAX 30
- Only bearer shares entitled to vote at Company’s Annual General Meeting: **one share, one vote**

Supervisory Board

Its Chairman leads AGM, representing interests of Group’s shareholders:

- Approving financial statements of the Group
- Working together with Executive Board, receiving reporting on progress regarding business and financial development at Group, Containing 16 members: **8 employee representatives, 8 independent representatives** (2 family representatives and 6 elected shareholder representatives)
- 2 committees: **Nomination and Audit Committee**



E. Merck KG, Darmstadt, Germany: Partners‘ Meeting & Family Board

- E. Merck KG, Darmstadt, Germany (99.9% the Family) holds ~70% of Group’s total capital
- These 70% of the total capital are **not entitled to vote** at Company’s AGM
- A Family Board represents the entrepreneurial interests of the Family (elected by partners’ meeting)

Board of Partners

Elected by Family Board, and takes over some duties of a usual Supervisory Board:

- Appointment, dismissal and supervision of Executive Board members of Merck KGaA, Darmstadt, Germany
- Approves extraordinary business transactions and annual financial statements of E. Merck KG, Darmstadt, Germany
- Contains **5 members of the Family Board and 4 external members** of the business community
- 3 committees: **Finance, Personnel and R&D Committee**

Nomination Committee	Audit Committee	Finance Committee	Personnel Committee	R&D Committee
Defines criteria and makes proposals for new candidates	Control systems, external auditing, financial statements	financial statements, external auditing	Executive board members, contracts, compensation	research activities of all sectors: HC, LS, EL

Family Board: Familienrat; Board of Partners: Gesellschafterrat; Supervisory Board: Aufsichtsrat; Nomination Committe: Nominierungsausschuss; Audit Committee: Prüfungsausschuss: Finance Committee: Finanzausschuss; Personell Committee: Personalausschuss; R&D Committee: Forschungs- und Entwicklungsausschuss

From: SRI Presentation October 2021

Group: Executive board compensation

Pay for performance reflecting the company’s long-term strategy

Variable

40-50%

Long-Term Incentive Plan

- Reflecting the long-term strategy for Company’s **growth and (from 2022) sustainability ambition**
- **4 years performance cycle**: 3 years target achievement + 1 year holding period
- Based on virtual Group Share Units (Grant € divided through start share price, multiplied with the end share price)
- **Financial targets**: 50% Group Share Price vs. DAX + 25% EBITDA pre margin + 25% Organic sales growth
- **From 2022** multiplied with **sustainability factor** (0.8-1.2) reflecting KPIs from each of the sustainability goals
- Corridors for each target and achieved targets **published transparently** ex-post in the compensation report
- **Maximum cap**: Maximum pay out 250%, maximum € cap for LTIP for each board member published
- **Claw-back** allows to retain amounts allocated from the Long-Term Incentive Plan

Performance of Group share price vs. the DAX **50%**
\+ EBITDA pre margin in relation to target value **25%**
\+ Organic sales growth in relation to target value **25%**
× **0.8-1.2** Sustainability factor
= **0-180%** of allocated units

25-35%

Profit Sharing

- **Three-years average profit after tax** of the E. Merck KG, Darmstadt, Germany, multiplied with individual permille rate
- **From 2021 reduced individual performance factor of 0.8-1.2** can increase (bonus) or decrease (malus) the amount based on a set of criteria, incl. the 3 sustainability goals, disclosure of catalogue and reasons for if performance factor ≠1.0
- **Individual permille rate** for each board member and maximum € cap for each board member published
- **Staggered incentivization** and **minimum threshold value** and maximum limit for profit after tax (€0.75/2.0 bn)
- Mandatory **personal investment in Group Shares** amounting to one third of the net payment of the profit sharing (4 year holding period)

Basic

6-9% **Pension Entitlements** Defined contribution

0-3% **Additional Benefits** Mainly contributions to insurance policies, personal security expenses, company car…

15-20%

Basic Compensation

- **Fixed and non-performance related compensation**
- Paid in 12 equal monthly installments
- €1.4 million for the chairman / up to €1.1 million for the members of the executive board

Maximum total compensation: reduced to €11.5 m Chairman, €9.5 m other executive board members

pink = new from 2021

From: SRI Presentation October 2021

Group

Strategic focus areas in sustainability

Sustainability innovation and technology for our customers

- Sustainability as integral part of **product design**
- Enable **customers** to reduce sustainability footprint
- SBV as a tool to assess net sustainability **impact**

Health and wellbeing impact of our technologies and products

- Health (Healthcare, Life Science) & wellbeing (Life Science, Electronics)-related impact of:
  - Group **products**
  - Group's **activities**

Climate change and emissions

- **Greenhouse gas emissions** Scope 1, 2, 3
- **Renewable energy**
- **Energy efficiency** in operations

Sustainability culture & values

- **Diversity** & **inclusion** activities
- Sustainability **mindset**: Communication, trainings, incentive schemes
- **Employee engagement**

Sustainable and transparent supply chain

- Supply chain management activities:
  - Sustainability **assessments**
  - Supplier **data management**

Secured social license to operate across regions

- **Safe & ethical** research, **ethical & compliant** business conduct
- **Plant & process** safety, **patient & product** safety
- **Stakeholder** engagement & communication

Water and resource intensity

- **Waste & water** management and **recycling**
- **Circular** activities

Group

External stakeholders assess our engagement

As of 2021, Group received an MSCI **ESG* Rating of AAA.**

*Environment, Social, Governance

In September 2021, we improved our **ESG Risk Rating** to 18,3 and were assessed by Sustainalytics to be at **low risk** of experiencing material financial impacts from ESG factors.

Since 2008, Group is part of **FTSE4Good Index**, measuring the performance of companies with strong ESG practices (top 15).

In 2020, Group has once more achieved **prime status** by **ISS Oekom**.

In 2019, the Group share was again **included in STOXX Global ESG Leaders Index**, a sustainability index based on key environmental, social and governance criteria.

Group has been **reconfirmed** as a constituent of the **Ethibel Sustainability Index** (ESI) Excellence Europe since May 2020, based on VigeoEiris.

Group for the second time received platinum status in 2021, among the **top 1% of companies**. **EcoVadis** annually examines ~75,000 suppliers from 160 countries.

CDP Climate: In 2020, we scored “B” (2019: C). **CDP Water**: In 2020, we received a “B” (2019: B).

In the 2021 **Access to Medicine Index** Group ranked **eighth place**. We were recognized for our performance in R&D, where we ranked fifth.

From: SRI Presentation October 2021

Regular portfolio review remains key to success

Strong track record

- Acquisitions and divestments are part of Group's history
- Licensing and partnerships remain on our agenda
- All prior transactions earned their cost of capital

Defining portfolio guard rails

- Three strong pillars with no business marginalized
- Leading market position in attractive markets
- Focus on innovation and sustainability through science and technology

Clear financial M&A criteria

- Supporting profitable growth strategy
- IRR > WACC
- EPS pre accretive
- Maintain investment grade rating

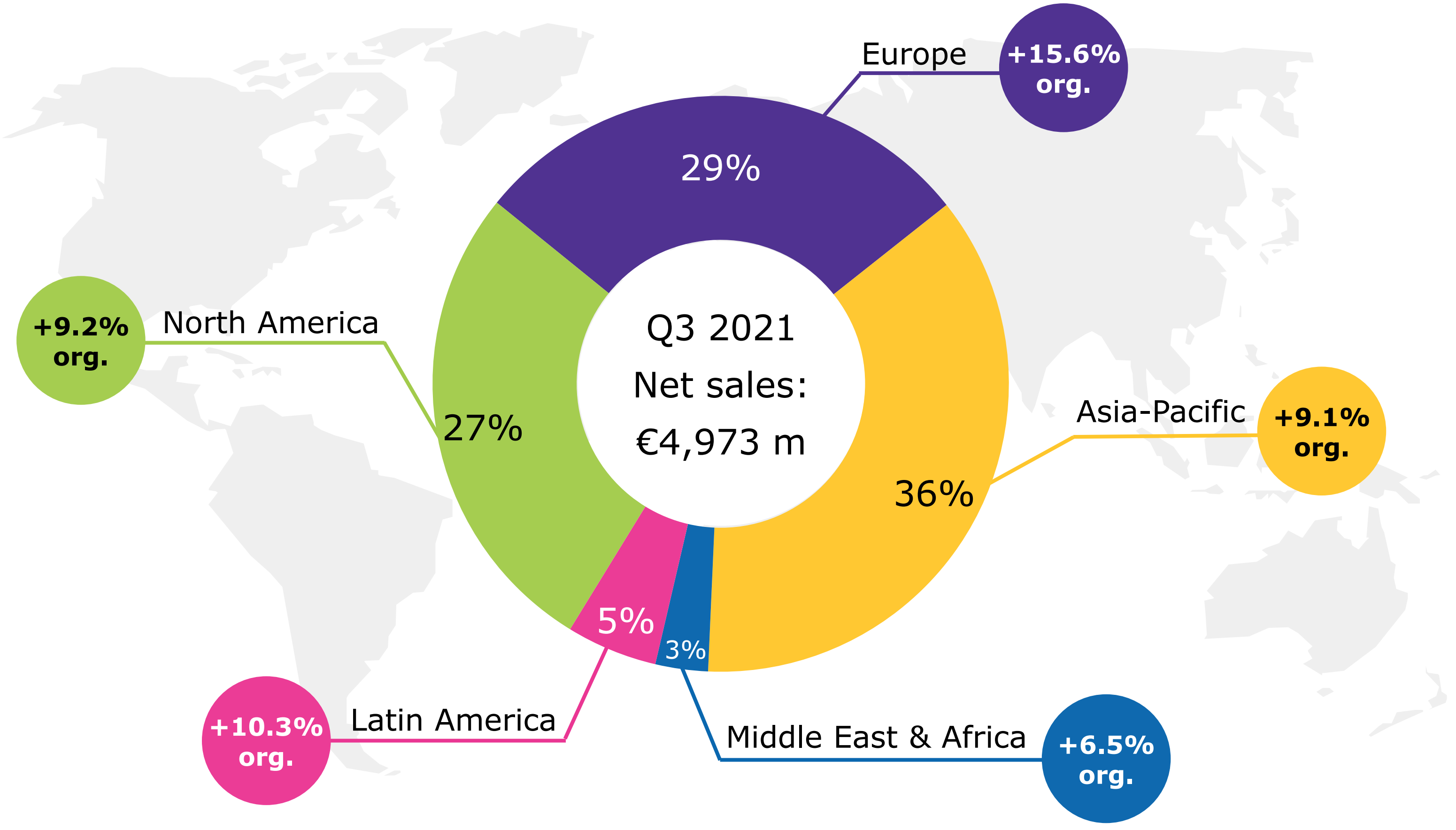
Current set-up is strong and organic investment opportunities are attractive

Expect to regain financial flexibility by 2022 to pursue external growth opportunities

Targeted and more regular bolt-on approach more likely than large transformative deals

Continued strong Life Science demand primary driver of growth across all regions

Regional breakdown of net sales [€m]



Regional organic development

- APAC: Life Science and Electronics largest contributors to growth particularly in Process Solutions, and Semiconductor Solutions
- Europe: Strong demand in Process Solutions primary growth driver, Bavencio® ramp-up also contributing
- North America: Process Solutions, Research Solutions and Bavencio® top three drivers of growth, further supported by Semiconductor Solutions
- LATAM growth driven foremost by CM&E, Applied Solutions and Fertility
- Fertility continues driving ME&A growth

Totals may not add up due to rounding

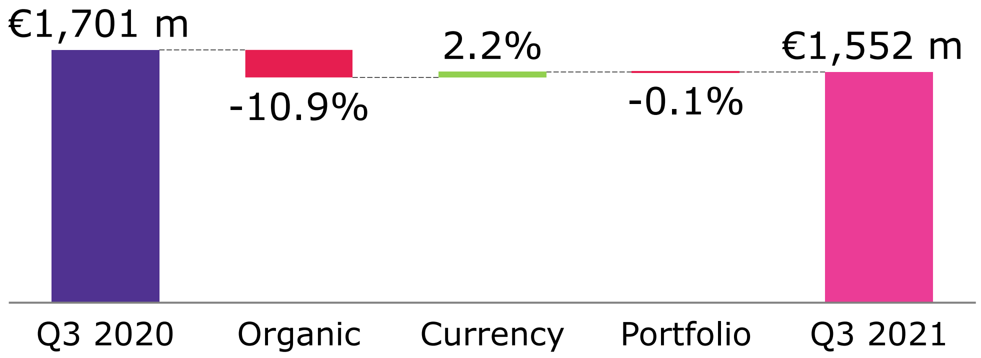
11% organic sales growth driven by all three business sectors; EBITDA pre growing 13% organically (excluding Biogen)

Q3 YoY Net Sales

	Organic	Currency	Portfolio	Total
Life Science	17.1%	0.6%	0.0%	17.7%
Healthcare	4.1%	1.0%	-0.1%	5.1%
Electronics	10.3%	1.7%	0.0%	12.1%
Group	**10.9%**	**1.0%**	**0.0%**	**11.8%**

- Process Solutions continues to drive Life Science growth; sequential evolution takes sales to new record level of €1.2 bn in the quarter; Research Solutions growth at higher levels but normalizing
- Mavenclad® and Bavencio® contributions and ongoing strong growth in Fertility more than offset continued Rebif® decline and China VBP impact on CM&E, driving 4.1% organic growth in Healthcare overall
- Electronics again growing 10% organically, driven by strong performance of Semiconductor Solutions (+21% org.) and soft comps in Surface Solutions

Q3 YoY EBITDA pre



- Underlying organic EBITDA pre growth of 13% against Q3 2020 (elevated by €365 m Biogen)
- Profitable growth primarily in Life Science paired with continued cost discipline in all sectors main driver of underlying EBITDA pre
- FX effect now turning positive at +2% driven by various currencies, with largest positive impact from CNY as it moves below previous years' rates

Totals may not add up due to rounding

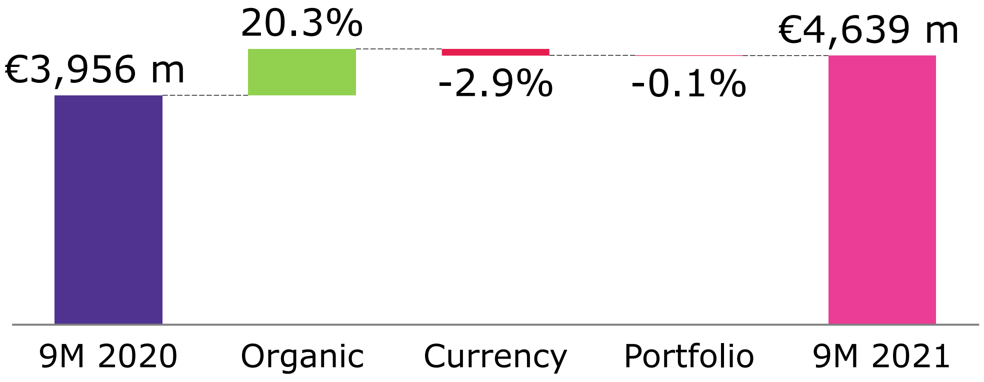
Strong 9M performance across all three business sectors; Life Science growing 24% organically in the first 9 months of 2021

9M YoY Net Sales

	Organic	Currency	Portfolio	Total
Life Science	23.9%	-3.5%	0.0%	20.4%
Healthcare	9.9%	-3.0%	-0.5%	6.4%
Electronics	6.7%	-2.6%	0.0%	4.1%
Group	**15.2%**	**-3.1%**	**-0.2%**	**11.9%**

- Record 9M sales in all three Life Science business units, supported by COVID-19 demand (Process & Research), drive unprecedented +24% 9M org. sales growth in Life Science
- Healthcare growing +10% organically YTD September, driven by Oncology, Mavenclad® and Fertility recovery against soft comps
- +12% organic growth in Semiconductor Solutions and +16% in Surface Solutions against soft comps drive 7% 9M organic growth in Electronics

9M YoY EBITDA pre

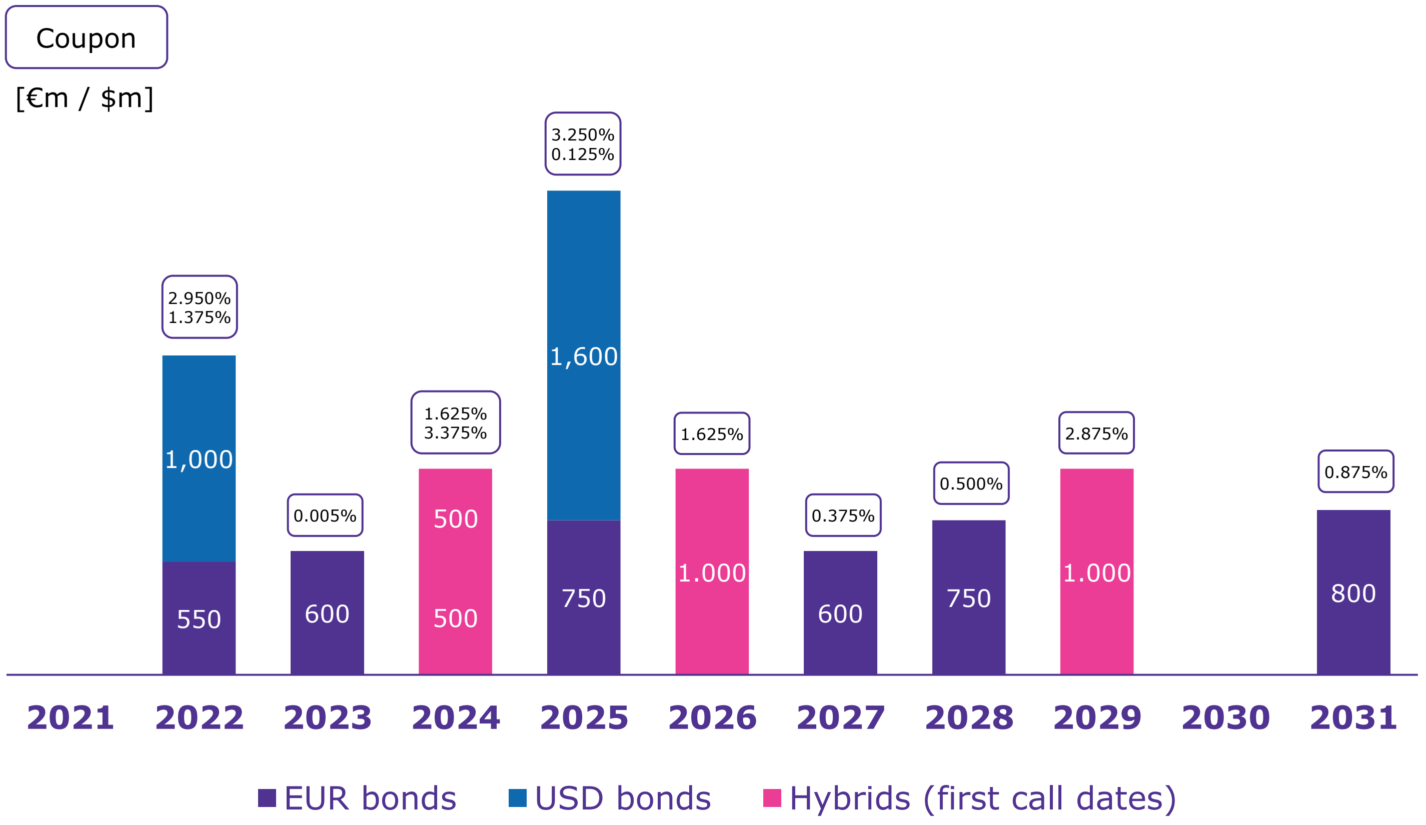


- Underlying EBITDA pre growing 32.5% organically (excluding Biogen provision reversal in Q3 2020) at more that twice the rate of sales growth
- Efficient growth primarily in Life Science drives EBITDA pre and margin expansion
- FX headwinds softening as Q3 FX effect turned positive resulting in a drag of -2.9% YTD

Totals may not add up due to rounding

Credit details

Maturity profile as of Sep 30, 2021



Credit rating information

	LT Rating	Since	Outlook	ST Rating
Moody's	Baa1 [1]	12.12.14	Stable	P-2
S&P Global	A	29.05.13	Stable	A-1
Scope	A-	19.10.16	Stable [2]	S-1

[1] Moody's upgrade to A3 as of 21 Oct 2021
[2] Scope outlook change to "positive" as of 11 Oct 2021

Q3 2021: Overview

Key figures

(Excl. Biogen provision reversal)

[€m]	Q3 2020	Q3 2021	Δ	Q3 2020	Δ
Net sales	4,447	**4,973**	11.8%		
EBITDA pre	1,701	**1,552**	-8.7%	1,336	16.2%
Margin (in % of net sales)	38.2%	**31.2%**	-7.0pp	30.0%	1.2 pp
EPS pre	2.34	**2.24**	-4.3%	1.71	30.9%
Operating cash flow	1,170	**1,467**	25.3%		

[€m]	Dec. 31, 2020	Sept. 30, 2021	Δ
Net financial debt	-10,758	**-9,320**	-13.4%
Working capital	3,938	**4,481**	13.8%
Employees	58,096	**58,483**	0.7%

Comments

- Growth across all sectors, particularly Life Science, further supported by +1% FX tailwind results in +12% sales growth
- 120 bps uplift in underlying EBITDA pre margin (excl. Biogen provision reversal)
- Underlying EPS pre growth of 31% driven by EBITDA pre growth, improved financial result and lower income tax rate
- Operating cash flow up 25% supporting YTD net debt reduction of €1.4 bn
- Life Science sales growth main driver of higher working capital

Totals may not add up due to rounding

9M 2021: Overview

Key figures

(Excl. Biogen provision reversal)

[€m]	9M 2020	9M 2021	Δ	9M 2020 (Excl. Biogen provision reversal)	Δ
Net sales	12,936	**14,474**	11.9%		
EBITDA pre	3,956	4,639	17.3%	**3,591**	29.2%
Margin (in % of net sales)	30.6%	32.0%	1.5pp	**27.8%**	4.2 pp
EPS pre	5.14	**6.66**	29.6%	**4.51**	47.7%
Operating cash flow	2,189	**3,571**	63.1%		

[€m]	Dec. 31, 2020	Sept. 30, 2021	Δ
Net financial debt	-10,758	**-9,320**	-13.4%
Working capital	3,938	**4,481**	13.8%
Employees	58,096	**58,483**	0.7%

Comments

- Strong YTD performance across all three Sectors. Particularly Life Science drives 12% growth in the first 9 months
- Underlying EBITDA pre growing at nearly 3x the rate of sales, driven primarily by operating leverage in Life Science, Bavencio® and soft comps in Fertility
- Improved financial result and lower tax rate further support EPS pre growth
- Operating cash flow up 63% supporting YTD net debt reduction of €1.4 bn
- Life Science sales growth main driver of higher working capital

Totals may not add up due to rounding

Q3 2021: Reported figures – comps impacted by Biogen provision

Reported results

[€m]	Q3 2020	Q3 2021	Δ
EBIT	1,167	**1,047**	-10.2%
Financial result	-102	**-54**	-46.7%
Profit before tax	1,065	**993**	-6.7%
Income tax	-258	**-229**	-11.2%
Effective tax rate (%)	24.3%	**23.1%**	-1.2pp
Net income	805	**761**	-5.6%
EPS (€)	1.85	**1.75**	-5.4%

Comments

- Underlying EBIT growing 31% while reported EBIT growth impacted by Q3 2020 €365 m provision reversal
- Improved financial result primarily driven by improved interest result from ongoing deleveraging
- Effective tax rate benefitting from favorable country mix in fastest growing business sector, Life Science

Totals may not add up due to rounding

9M 2021: Reported figures – impacted by Q3 2020 Biogen provision

Reported results

[€m]	9M 2020	9M 2021	Δ
EBIT	2,374	**3,140**	32.3%
Financial result	-302	**-208**	-31.2%
Profit before tax	2,071	**2,932**	41.5%
Income tax	-518	**-673**	30.0%
Effective tax rate (%)	25.0%	**23.0%**	-2.0pp
Net income	1,551	**2,253**	45.2%
EPS (€)	3.57	**5.18**	45.1%

Comments

- EBIT growing 32%, despite Biogen, driven primarily by operating leverage in Life Science, Bavencio® and soft comps in Fertility
- Improved financial result driven primarily by ongoing deleveraging
- Effective tax rate within guidance range of ~24-22%
- Higher net income and EPS reflect higher EBIT, improved financial result and lower tax rate

Totals may not add up due to rounding

Cash flow statement

Q3 2021 – Cash flow statement

[€m]	Q3 2020	Q3 2021	Δ
Profit after tax	806	**764**	-43
D&A	451	**443**	-8
Changes in provisions	-256	**191**	448
Changes in other assets/liabilities	114	**128**	14
Other operating activities	24	**22**	-2
Changes in working capital	31	**-82**	-113
Operating cash flow	1,170	**1,467**	296
Investing cash flow	-738	**-638**	100
thereof Capex on PPE	-237	**-295**	-58
Financing cash flow	-380	**-1,131**	-751

Cash flow drivers

- Operating cash flow up €296 m driven primarily by higher underlying profit after tax, particularly in Life Science
- Negative delta in profit after tax impacted by €365 m Biogen provision reversal (Q3 2020) and €71 m Bintrafusp study termination provision (Q3 2021)
- Outflow from working capital primarily driven by Life Science sales growth
- Q3 2020 investing cash flow elevated by temporary investment of excess cash in non-financial assets
- Higher CAPEX on PPE reflects ongoing capacity expansion
- Net repayment of liabilities & commercial papers drives financing cash flow

Totals may not add up due to rounding

Cash flow statement

9M 2021 – cash flow statement

[€m]	9M 2020	9M 2021	Δ
Profit after tax	1,554	**2,258**	705
D&A	1,442	**1,287**	-156
Changes in provisions	-294	**246**	540
Changes in other assets/liabilities	-75	**72**	147
Other operating activities	0	**46**	46
Changes in working capital	-437	**-338**	99
Operating cash flow	2,189	**3,571**	1,382
Investing cash flow	-1,242	**-1,226**	16
thereof Capex on PPE	-769	**-860**	-91
Financing cash flow	*-141*	***-2,184***	*-2,044*

Cash flow drivers

- Operating cash flow growing €1.4 bn or +63% vs. 9M 2020
- Profit after tax primary driver, with +€705 m (muted by 2020 €365 m Biogen provision reversal)
- Delta in changes in provisions driven primarily by €365 m Biogen provision reversal (Q3 2020)
- Favorable delta in working capital driven by higher inventories increase in 2020 to secure supply amid COVID 19
- Financing cash flow explained by net repayment of bonds, bank liabilities and commercial papers

Totals may not add up due to rounding

Adjustments in Q3 2021

Adjustments in EBIT

[€m]	Q3 2020		Q3 2021	
	Adjustments	thereof D&A	Adjustments	thereof D&A
Healthcare	4	0	**9**	0
Life Science	18	0	**18**	0
Electronics	28	1	**38**	18
Corporate & Other	31	0	**11**	1
Total	82	1	**76**	19

Adjustments in 9M 2021

Adjustments in EBIT

[€m]	9M 2020		9M 2021	
	Adjustments	thereof D&A	Adjustments	thereof D&A
Healthcare	-8	2	**30**	3
Life Science	15	0	**26**	0
Electronics	194	112	**65**	25
Corporate & Other	56	0	**114**	1
Total	256	114	**235**	30

Financial Calendar

Date	Event
March 3, 2022	Q4 2021 Earnings release
April 22, 2022	*Annual General Meeting*
May 12, 2022	Q1 2022 Earnings release
August 4, 2022	Q2 2022 Earnings release
November 10, 2022	Q3 2022 Earnings release

Life science

Process Solutions: Therapies are evolving from treatments to cures

Advancing traditional is critical as novel modalities develop

TRADITIONAL MODALITIES

- Uses small molecules, peptides, proteins
- Chronic, manages or treats
- Templated manufacturing

HP-API

Plasma

mAbs

Vaccines

FORMULATED **FOR THE MASSES**

NOVEL MODALITIES

- Uses DNA, RNA, Cells
- Potentially curative
- Non-templated manufacturing

Gene & Viral

ADCs

Cell therapies

mRNA

FORMULATED **FOR an individual**

Acronyms: HP-API = highly potent active pharmaceutical ingredient; mAbs = monoclonal antibodies; DNA = deoxyribonucleic acid; (m)RNA = (messenger) ribonucleic acid; ADC = antibody drug conjugate

Moving from today's technology to BioPharma 4.0

unit operations		GE PALL	Thermo Fisher Scientific	SARTORIUS
Cell culture media	A leading player	A leading player	A leading player	Significant presence
Biopharm materials	A leading player	No offering	A leading player	No offering
Chromatography	A leading player	A leading player	Significant presence	Significant presence
Hardware	A leading player	A leading player	Significant presence	A leading player
Single use	Significant presence	A leading player	A leading player	A leading player
Sterile	A leading player	A leading player	No offering	A leading player
Virus	A leading player	A leading player	No offering	Significant presence
Clarification	A leading player	A leading player	No offering	Significant presence
Tangential flow filtration	A leading player	A leading player	No offering	A leading player

= A leading player = Significant presence = No offering

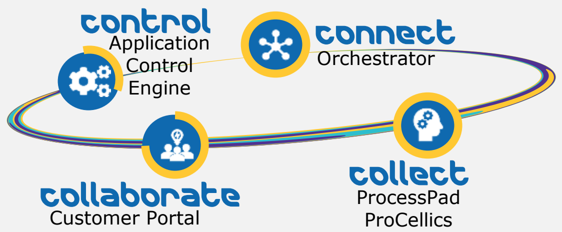
Intensified, integrated, digitally-enabled

Intensified Processing

Value for customers

Process Analytics

Insight for customers



Progress Launched

Real-time Release

Assurance at speed

Core technologies

Microbial cont./ Bioburden | Biosafety | CQA | In-process

Sources: press releases, company reports, and internal assessments

COVID demands align with existing strengths

COVID-19 Outlook

Type & Global Doses	Implications
Nucleic Acid Vaccines **4.8 Billion** Gov. contracted **4.3 Billion** 2021 manuf.	• Leveraging **human factory** • Emerging manuf. process • Lipids are critical
Viral & Protein Vaccines **6.8 Billion** Gov. contracted **8.7 Billion** 2021 manuf.	• Protective **immune response** • Multiple templates • Leveraging Single Use
mAb Therapeutics **2.5 Million** Gov. contracted **13.5 Million** 2021 manuf.	• **Bind & block** virus entry • Universal templates • Leading position for 8/9 unit ops

Product offering

Capabilities in all unit operations

Nucleic Acid Vaccines: CCM & BPM[1] · Plasmid linearization[2] · Chrom · IVT & capping · Filtration · Encapsulation & Formulation[2] · Fill & Finish · SU Cons[1]

Viral & Protein Vaccines: CCM & BPM[1] · Cell expansion · Chrom · Filtration[1] · Fill & Finish · SU Cons[1]

mAb Therapeutics: CCM & BPM[1] · Cell expansion · Chrom · Filtration[1] · Fill & Finish · SU Cons[1]

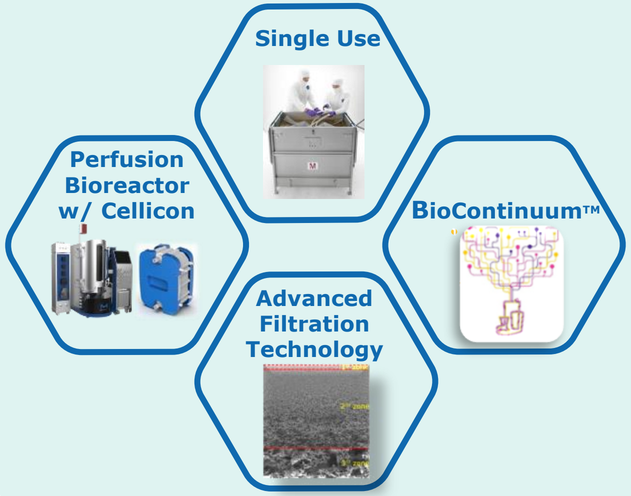
1) Used across manufacturing unit operations; 2) Lacking GMP enzymes and nucleotides products; Source: press releases, company reports, internal assessments; Acronyms: CCM = cell culture medium, BPM = biopharma materials, IVT = in vitro transcription, SU Cons = single use consumables

Process Solutions: Strategic direction

Innovate and invest today to continue above market growth in the future

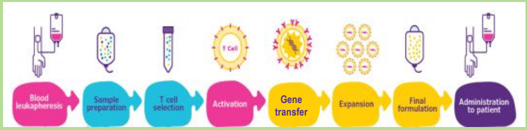
Modality	TRADITIONAL	ALL	NOVEL
Revenue driver	Near term	Mid term	Long term
Offering	Products	Services	Products

Portfolio



- ✓ Contract development & manufacturing organization
- ✓ Contract testing organization
- ✓ Product characterization

Manufacturing novel therapies



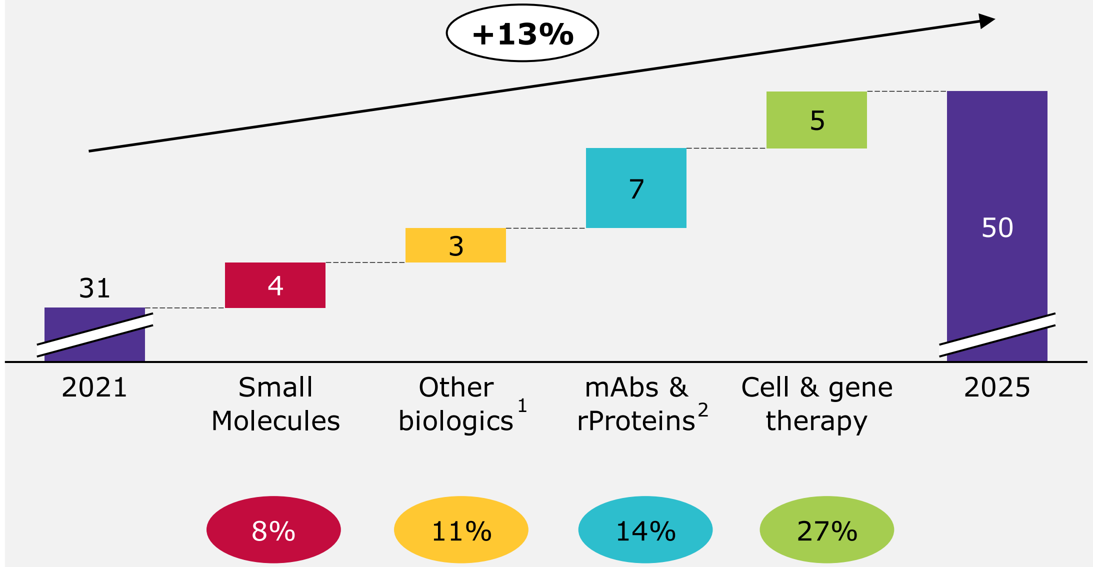
- ✓ Templated viral manufacturing consumables and reagents
- ✓ Autologous manufacturing system

From: Capital Markets Day 2020 – 2020.09.16

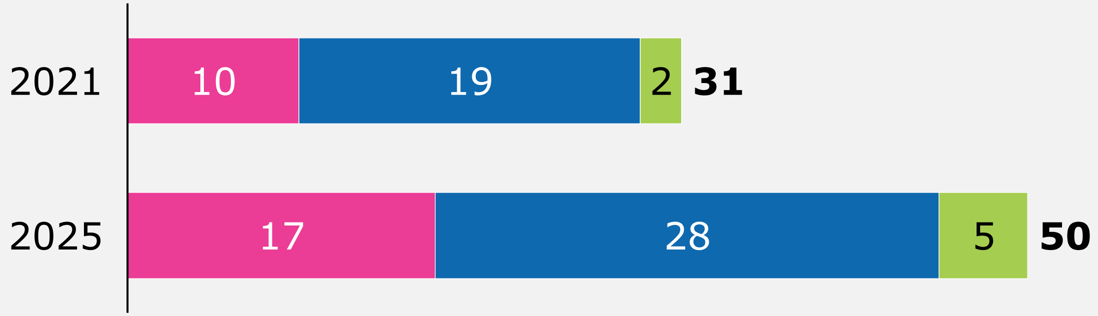
Opportunities in services to accelerate double-digit growth

Accessible Market (€ bn)

mAbs dominate; Novels fastest



Importance of services and novel modalities increases



21-25 CAGR

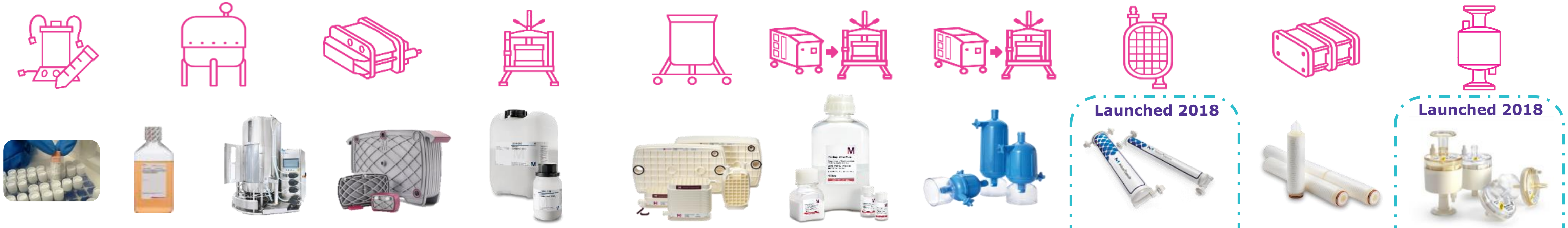
16%	Services: all modalities
10%	Products: Traditional modalities
21%	Products: Novel modalities

Sources: Evaluate Pharma, internal market models, CSR sales data; [1] Other biologics include plasma, vaccines, insulin, microbial and non-mAb biosimilars; [2] mAbs include ADCs here
Acronyms: mAbs = monoclonal antibodies, rProteins = recombinant proteins, ADCs = antibody drug conjugates

Process Solutions

Next-generation bioprocessing on the cards

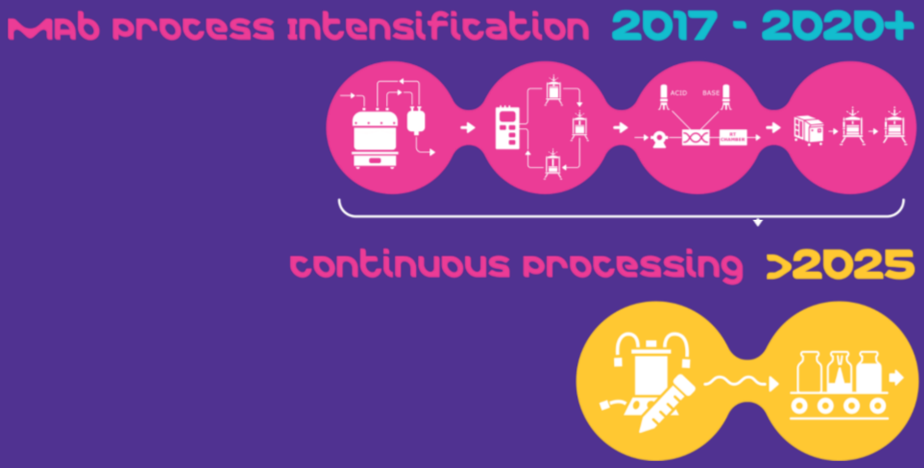
Today's process & portfolio



CHOZN Cell Line	**Ex-Cell® Advanced™** media	**Mobius®** bioreactor	**Clarisolve®** Depth Filters	**Eshmuno®** Chrom. resin	**Viresolve®** Pro Solution	**ProSep®** Ultra Plus Resin	**Opticap®** Filters	**Pellicon®** Ultrafiltration Cassettes	**Durapore®** Filtration	**Millipak®** Final Fill Filter

BioReliance ® | **cGMP SOLUTIONS & SERVICES** | **EMPROVE®**

Tomorrow's process



Continuous bioprocessing will …

- be an evolution in mAb bioprocessing
- take time to establish
- leverage the present
- lead to hybrid solutions

Our single-use technologies drive flexibility in modern bioprocessing

30,000 l stain-less steel tank

500 l single-use tank

Traditional multi-use facility

CAPEX* required	**~$500 m to $1 bn**
Time to construct	**5 to 10 years**
Change over time	**4 weeks**
Footprint	**~>70,000 m²**

Innovative single-use facility

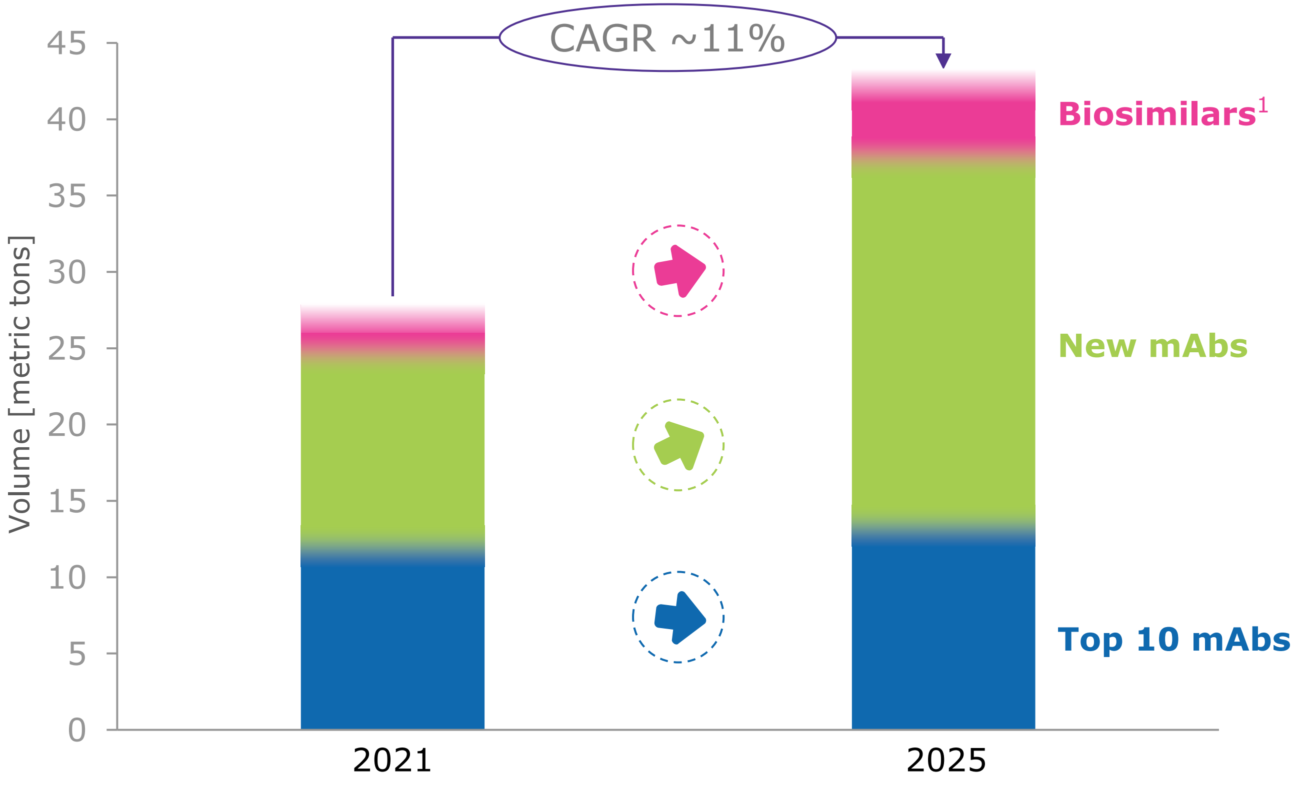
CAPEX required	**$20 m to $100 m**
Time to construct	**1.5 years**
Change over time	**0.5 days**
Footprint	**~11,000 m²**

Strong demand for single-use technologies and Process Solutions' broad offering was and will remain a key source of growth for Life Science

*CAPEX = Capital Expenditure

mAbs market democratization will drive diversification, change & variability

mAb volume projections 2021 to 2025



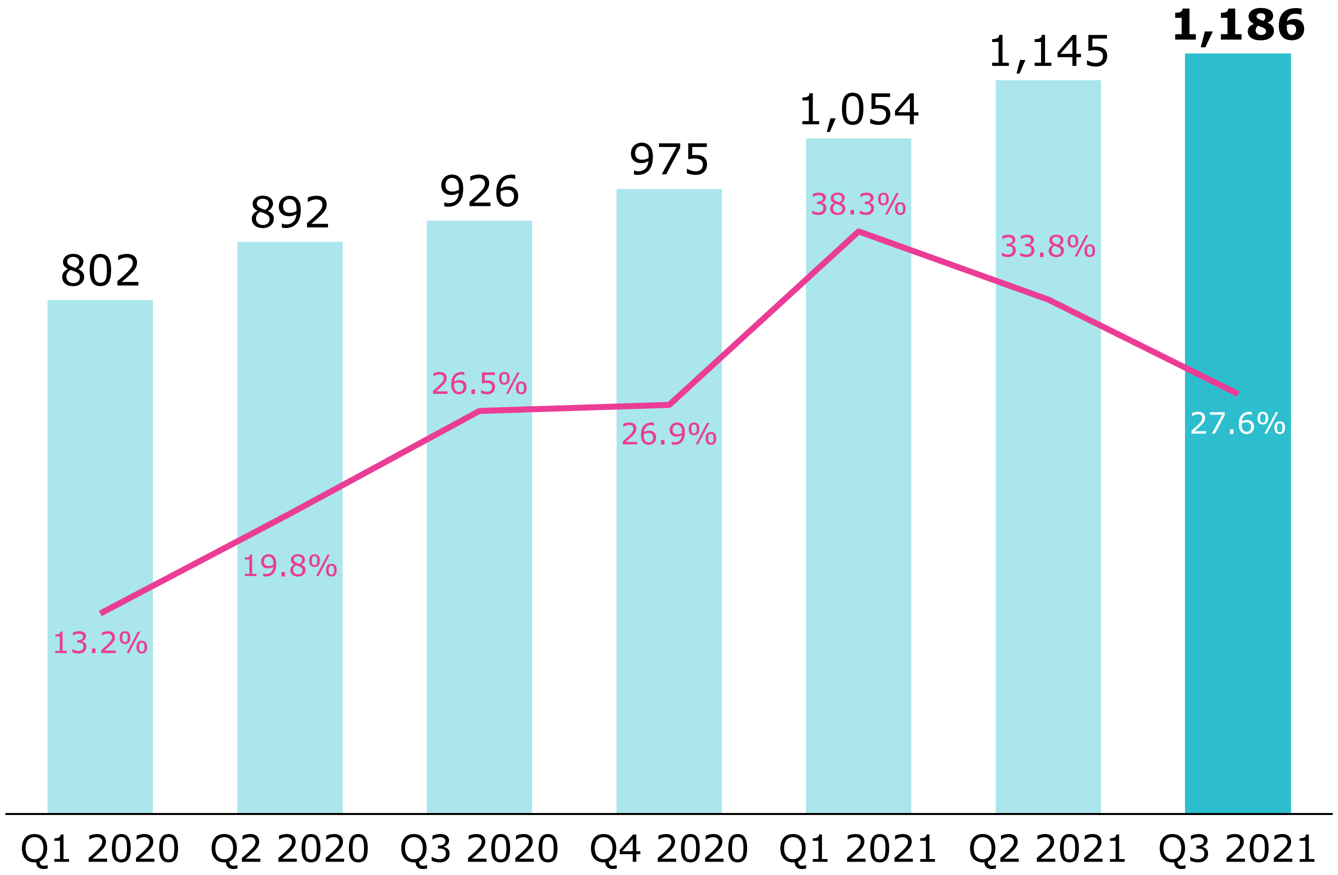
Market development

- mAbs market will grow ~11% CAGR
- Top 10 originator mAbs represent ~45% (11mT) of volume today; volume grows but share declines to ~35% (14mT) in 2025
- Biosimilars continue to gain share

[1]Biosimilars scaling factor = 2.8 based off internal estimates and McKinsey analysis; Source: company estimate based on industry forecasts, EvaluatePharma; Acronyms: mAbs = Monoclonal antibodies

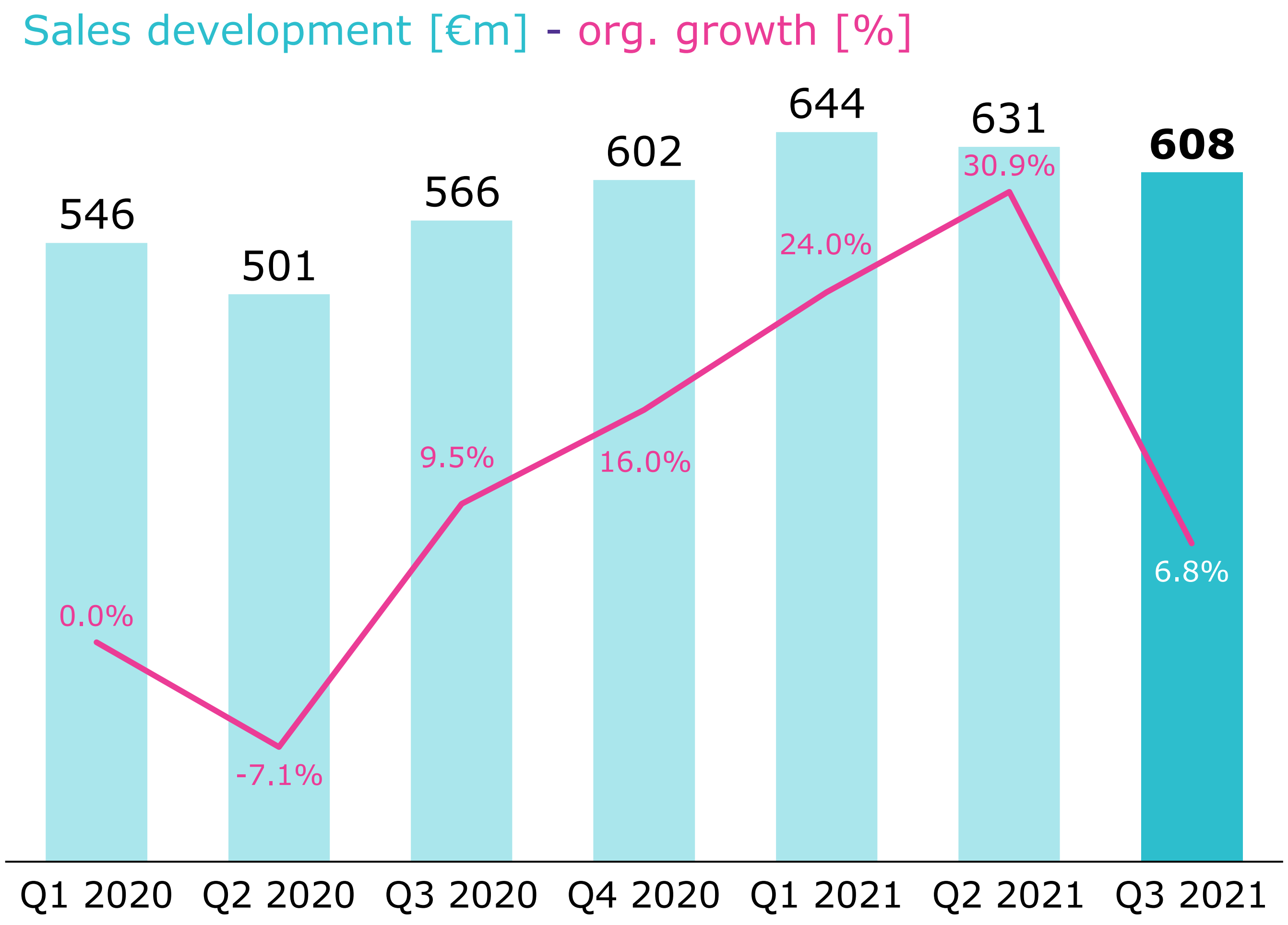
BIG 3 - Process Solutions: record Q3 2021 in absolute terms, declining growth rate against tough comps

Sales development [€m] - org. growth [%]



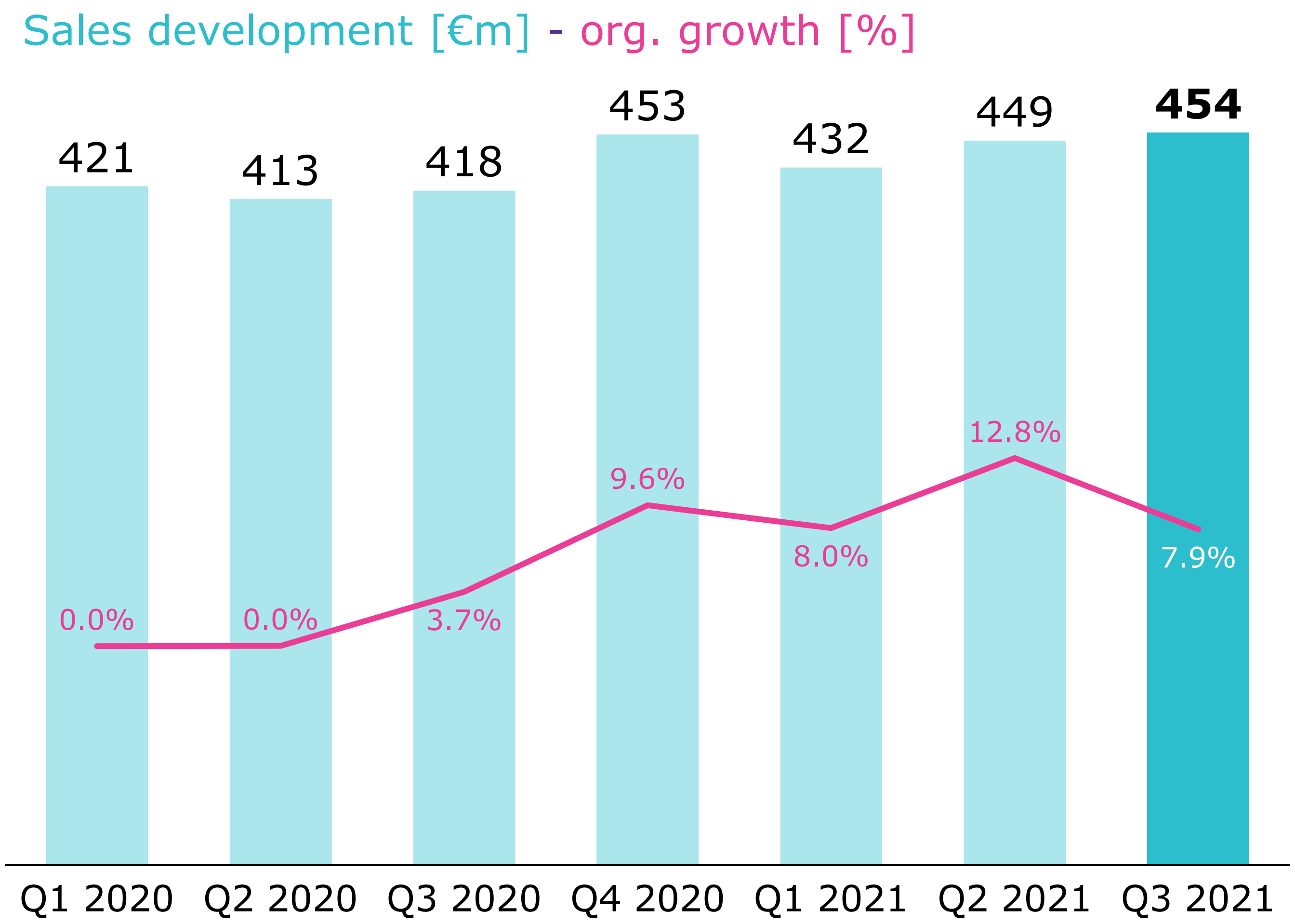
- Continued **strong growth in the core business** paired with still increasing **COVID-19 contributions** (mainly vaccine related) which face increasingly tougher comps
- **BioP remains main growth driver**, followed by formulations (e.g. lipids for mRNA)
- **Growth starting to moderate** as expected **amid rising comps** (Q3 2020 with increasing COVID-19 contributions)
- Sequentially higher sales as output increases on the back of **ongoing productivity gains and successful capacity ramp-up**
- **Order intake growth** in Q3 2021 remains above sales growth (>30%)

Research Solutions: Normalizing org. growth against tougher comps



- **Organic growth now moderating to 7%** as Q3 2020 comparables include strong post Q2 lockdown catch-up and recovery as well as additional COVID-19 demand
- Absolute sales on high Q4 2020 level, but sequentially below Q1 and Q2 as **COVID-19 sales** (diagnostic raw mats) **start to fade**
- Ongoing **core business recovery** and catch-up amid **rising lab activity**
- **North America continues to be fastest growing region** in Q3, followed by emerging markets
- **Pharma & Biotech** and Industrial & Testing fastest growing customer segments, followed by Diagnostics & Academia

Applied Solutions: record absolute sales, normalizing growth rate



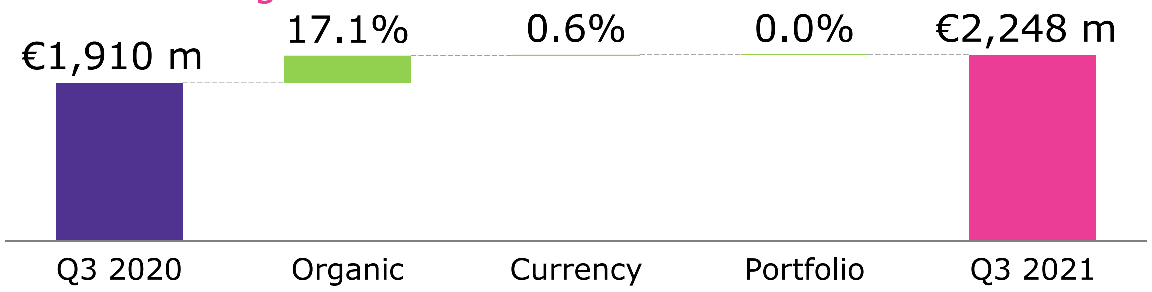
- **Growth remains on elevated level** due to ongoing post-lockdown recovery
- **Core business remains main driver** with broad-based performance across business lines
- **COVID-19-related sales are negligible**
- **APAC and Europe** main growth drivers in Q3, followed by North America region
- **Industrial & Testing** fastest growing amid ongoing market recovery, followed by Pharma & Biotech, Diagnostics and Academia

Life Science Q3: Strong core business and COVID-19 demand drive another quarter of record sales

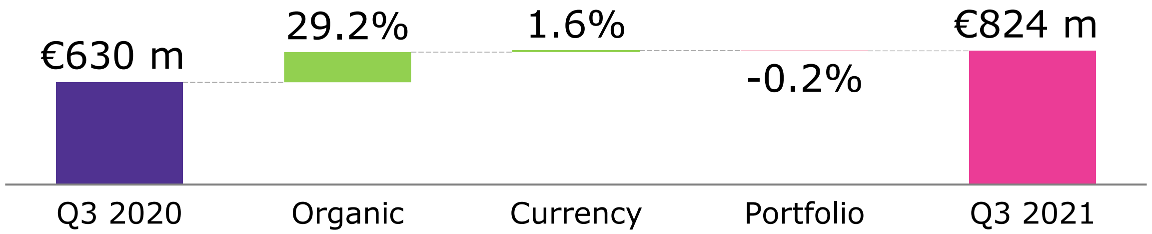
Life Science P&L

[€m]	IFRS		Pre	
	Q3 2020	Q3 2021	Q3 2020	**Q3 2021**
Net sales	1,910	2,248	1,910	**2,248**
M&S*	-478	-529	-477	**-527**
Admin	-88	-93	-80	**-84**
R&D	-75	-88	-75	**-88**
EBIT	417	614	435	**632**
EBITDA	612	806	-	**-**
EBITDA pre	630	**824**	630	**824**
(in % of net sales)	33.0%	**36.6%**	33.0%	**36.6%**

Net sales bridge



EBITDA pre bridge



Comments

- Process Solutions: +28% organic growth, ~2/3 driven by COVID-19 demand, primarily in bioprocessing on top of solid base business performance; comps now include significant COVID-19 business
- Research Solutions: grows +7% organically against already stronger post-lockdown recovery in Q3 2020, driven primarily by strong base business and small COVID-19 contributions
- Applied Solutions: grows +8% organically against rising comps
- M&S in % of sales declining from 25% to 23% due to strong top line leverage, higher in absolute terms with logistics being the largest driver
- Higher R&D in absolute terms with continued focused investments in high growth & emerging segments
- Business performance, favorable mix & operating leverage continue to drive strong EBITDA pre and margin expansion

* Marketing and selling expenses
Totals may not add up due to rounding

Acquisition of Exelead – a leading LNP player with strong manufacturing expertise and longstanding track record

Exelead
Complex Drug Product Formulations

Transaction overview

Rationale	• **Targeted bolt-on acquisition** to accelerate innovation in Process Solutions ("BIG3") • Strengthening CDMO offering in **rapidly emerging mRNA** market
Terms	• USD ~780 m in cash
Timing	• Expected closing in Q1 2022

Key products

COMIRNATY™ COVID-19 mRNA Vaccine (nucleoside modified)	• mRNA Covid-19 vaccine
ABELCET® (Amphotericin B Lipid Complex Injection)	• Fungal infections in patients with compromised immune systems
oncaspar® pegaspargase	• Acute lymphoblastic leukemia and hypersensitivity to native forms of L-asparaginase

Company overview

Location	• 1 site in in Indianapolis, USA
Employees	• ~200+
Business description	• **>10 years experience** as CDMO for LNP and PEGylated formulations • **Full service CDMO** covering all development phases (pre-clinical / clinical / commercial) • GMP and ISO certified manufacturing processes

Key customers

Pfizer[1] · teva · Takeda · HORIZON · Alnylam Pharmaceuticals · gritstone oncology · PROVECTUS BIOPHARMACEUTICALS, INC. · Leadiant Biosciences · GENEVANT

Global reach: manufacturing of drugs tested or approved for market in over 20 countries worldwide

Underlines ambition to become a leading integrated multi-modality CDMO

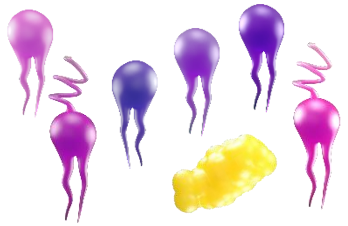
[1]Agreement with Pfizer for COVID vaccine since May-21; Acronyms: LNP = liquid nanoparticle, CDMO = contract development and manufacturing organization, mRNA = messenger ribonucleic acid; PEG = polyethylene glycol; GMP = good manufacturing practice; ISO = International Organization for Standardization

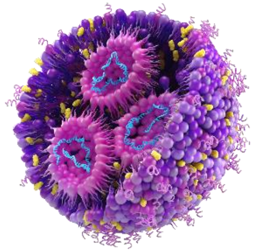
The addition of Exelead's capabilities advances our integrated offering from mRNA-API manufacturing to final drug product

Process flow

mRNA | Non viral drug delivery vehicle: Lipids | LNP formulation | Fill & finish

+





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Offering

AmpTec
Amplification Technologies

GROUP
legacy

Exelead
Complex Drug Product Formulations

Establishing uniquely integrated CDMO offering in rapidly emerging mRNA market

Additional acronyms: API = active pharmaceutical ingredient

Healthcare

Healthcare

Pioneering patient benefit in MS for > 30 years

Rebif® (interferon beta-1a)

- Blockbuster platform therapy
- Well-established clinical profile
- >1.8m patient-year experiences[1]
- Continued upgrading (pregnancy label, injection devices)

EMA 1998 | FDA 2002
>100 countries

MAVENCLAD® cladribine tablets

- Oral high-efficacy therapy with unique posology & mode of action[2,3]
- Only product to demonstrate full antibody response to COVID-19 vaccines[4]
- Growing in HE dynamic market
- >30,000 patients[1]

EMA 2017 | FDA 2019
84 countries

evobrutinib BTKi

- Designed for best-in-class efficacy[5]
- Full covalent binding and dosing regimen expected to enable constant, near complete BTK occupancy[6]
- Dual mode of action targeting both B-cells and immune cells in the CNS and periphery[6,7]

Phase 3 Clinical Development

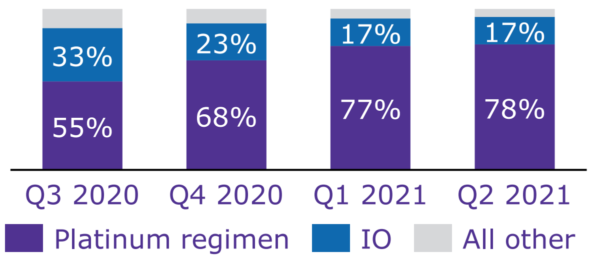
[1]IQVIA 2021; [2]MAVENCLAD® EU SmPC, Feb 2021; [3]Rammohan K et al. Drugs 2020;80:1901–28; [4]Achiron A et al. Ther Adv Neurol Disord. 2021;14:1-8; [5]Papasouliotis et al. EAN 2021; [6]Haselmayer P et al. J Immunol 2019;202:2888–906; [7]Piasecka-Stryczynska et al. triMS 2021

Healthcare
Building focused leadership positions in Oncology

Building leadership in mUC[1]

- **Bavencio** redefined SoC in mUC with unique 1L maintenance Tx. Since launch, platinum-based regimen has grown substantially

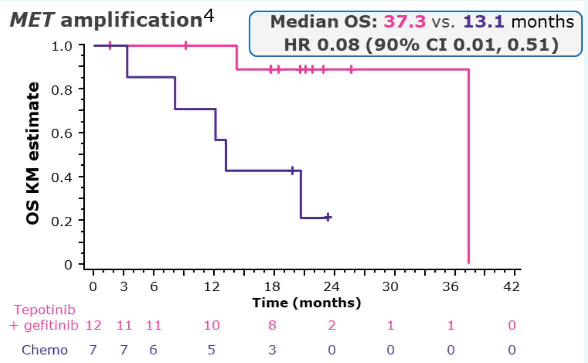
US treatment share of 1L mUC pts[2]



- Significant opportunity to drive further growth by increasing adoption of 1L maintenance Tx
- Opportunity to further strengthen Bavencio as SoC with novel combinations (e.g. anti-TIGIT)

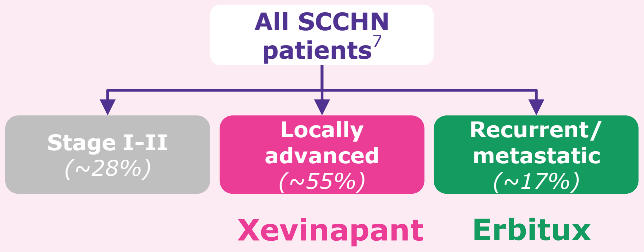
Defining leadership in MET-driven tumors

- **Tepmetko** - discovered and developed inhouse, highly potent and selective c-MET inhibitor
- Has shown consistent efficacy in METexon14 mutation across treatment lines[3] and strong tolerability profile
- Foundation for expansion with MET-amplified tumors indications



Expanding leadership in SCCHN

- **Xevinapant**[5] focuses on a novel mechanism with curative intent in a large segment with high unmet need, complimentary to Erbitux
- Strong clinical POC, doubling OS in Phase II study[6]
- Untreated and unresectable LA SCCHN patient candidates for chemoradiotherapy ~40K US & EU5



[1]Metastatic Urothelial Cancer; [2]Medimix UC Tracker US – May 2021; [3]Vision study, see FDA label; [4]Wu, Yi-Long et al. Lancet Respir Med, 2020; [5]Investigational product; [6]Sun, Xu-Shan, et al. The Lancet Oncology. 21.0 (2020). Bourhis, J., et al. Annals of Oncology. 31 (2020); [7]Incident and newly recurrent

China's VBP: Round 4 implemented, confidence in approx. stable base business through 2021 and 2022 sustained

Round 1	Round 2	Round 3	Round 4
2019	2020		2021

March: First round initiated, no products impacted

December: Round 2 announced (incl. bisoprolol)

April: Round 2 winners granted exclusive access to 60% of total hospital market[1], non-winners (incl. Concor®) retain access to remaining 40% of hospital market at a gradient price cut[2] + can freely compete in non-hospital/ retail market

July: Round 3 announced (incl. Metformin IR and XR)[1]

August: Bidding completed, 8 winners (all Chinese manufacturers), Glucophage® not among winners

- **Access retained to non-hospital/retail market (~30% of total market)**, and **~20% of the hospital market** (at gradient price cut)
- Continued **growth of Chinese metformin market >10% p.a.** over the next 5 years

Jan: Round 4 announced (incl. calcium dobesilate[3] and canagliflozin[3]), bidding completed on Feb 3, Invokana® & Doxium ® not among winners,

China Glucophage sales represent **only ~8% of the total base business** (2020 net sales)

Sustained confidence in **approx. stable base business (org.) through 2021 and 2022**

1: hospital market for bisoprolol and metformin makes up ~70% of total market, this includes urban hospitals, rural hospitals, and community health centers; 2: Concor® price cut in the high single digit %; 3: alliance products;
Acronyms: VBP = Volume-Based Procurement

Pipeline with uncorrelated risk and significant potential
Five focus assets with FIC potential

	FIC POTENTIAL	COMPETITION	PROMISE
Evobrutinib (BTK inhibitor)	✓	●	Tackling unmet need for patients in RMS: Addressing chronic inflammation and progression between relapses, in addition to reducing acute inflammation with BIC ARR Comprehensive PhII data supports BIC profile
Xevinapant (IAP inhibitor)	✓	○	Transformative patient benefit – Maximizing chances for cure for patients with locally advanced SCCHN
Berzosertib (ATR inhibitor)	✓	○	Blocking ATR “master regulator” of DNA repair to enhance efficacy of TOP I inhibitors for patients with few treatment options
M1231 MUC1/EGFR bi-specific ADC	✓	◔	Next generation “Triple Innovation” ADC for patients with solid tumors aiming for effective delivery of potent chemotherapy payload with reduced on & off target toxicity
Enpatoran TLR7/8 inhibitor	✓	◔	Small molecule for targeted inhibition of important lupus mediator TLR7/8, aiming for improved efficacy with low infection risk

Focused Leadership
Leveraging and extending deep expertise

	EVOBRUTINIB	XEVINAPANT	BERZOSERTIB	M1231	ENPATORAN
Disease insights/ Wealth of data	MS leadership ✓✓	SCCHN leadership ✓✓		NCSLC Lung Cancer (Likely indication) ✓	Depth & breadth of clinical trial experience and data ✓
Biologic expertise	Immune receptor & immune complex signaling ✓✓	Apoptosis ✓	DNA damage response (DDR) ✓✓	Oncogenic signaling/ EGFR receptor ✓✓	Innate and adaptive immunity ✓✓
Platform capabilities	FIC small molecule ✓✓	*In-licensed*	*In-licensed*	Next generation ADCs/ bi-specific antibody ✓✓	FIC small molecule ✓✓
World-Class Collaborations		Existing collaboration on IO combo ✓	NCI Tempus ✓	Sutro ✓	Academic collaborators (for TLR8 structure & disease modelling) ✓

Potential FIC BTK inhibitor, designed for BIC efficacy

FIC BTK INHIBITOR EVOBRUTINIB

- **Pioneering program,** developing breakthrough mechanism of action with potential to change SoC in RMS
- Aiming to **address chronic inflammation and progression between relapse** in addition to **reducing acute inflammation, delivering BIC ARR**
- **Strong clinical data** supporting our confidence in Evobrutinib BIC profile
- **PhIII studies** (Evolution MS 1&2) **fully recruited,** (PR October 4, 2021)

	EVOBRUTINIB	TOLEBRUTINIB	FENEBRUTINIB	REMIBRUTINIB/ ORELABRUTINIB
ARR at 48 weeks (PhII)	**0.11[1]**	**0.17[7]**	**No PhII conducted**	**No PhII conducted**
PhIII dose supported by robust data?	✓ [2,3]	⊖ Primary EP of PhII study didn't demonstrate dose response	⊖ No dose finding study in MS	⊖ No dose finding in MS
95% occupancy at trough in patients	✓ [3,4]	**Not shown**	**Not available**	**Not available**
Disease-relevant CNS concentration?	✓ [5,4]	⊖ Only single dose effect in HV (120mg dose)	⊖ **Not studied**	⊖ **Not studied**
Biomarker effect on progression at 48 weeks?	✓ Dose-dependent SEL volume reduction shown at 48 weeks	⊖ **Not seen**	⊖ **Not studied**	⊖ **Not studied**
Safety/Tolerability?[11]	✓ [1,4]	✓ [8,4]	✓ [10]	**Not available**

[1] Montalban X, et al. N Engl J Med 2019;380:2406–17; [2] Papasouliotis O, et al. PAGE 2021;29:Abstr 9801; [3] Papasouliotis O, et al. Eur J Neurol 2021;28(Suppl. 1):120 [OPR-084]; [4] Montalban X, et al. Mult Scler 2020;26 (Suppl. 3):213 [Abstract P0197]; [5] Piasecka-Stryczynska K, et al. Mult Scler Relat Disord 2021;51:103001 [Abstract P013]; [6] Arnold D, et al. ECTRIMS 2021 [OP115]; [7] Oh J, et al. ECTRIMS 2021 [P667]; [8] Reich D, et al. Lancet Neurol 2021;20(9):729-38; [9] Owens T, et al. Clin Transl Sci. 2021; doi: 10.1111/cts.13162; [10] Oh J, et al. Neurology 2021;96(Suppl. 15):Abstr 4564; [11] Evobrutinib, Tolebrutinib and Fenebrutinib have shown asymptomatic & reversible ALT elevations that have been reversible on treatment withdrawal

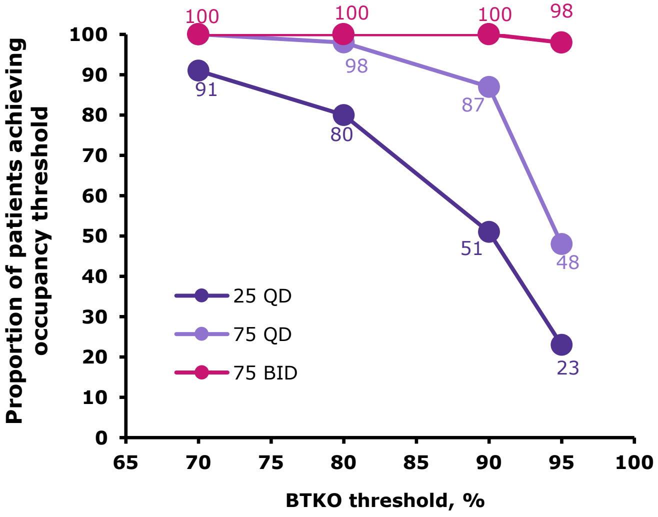
Protein turnover of BTK requires BID dosing to achieve optimal BTK occupancy for best efficacy

98% of patients receiving 75mg BID achieved >95% trough BTKO[1]

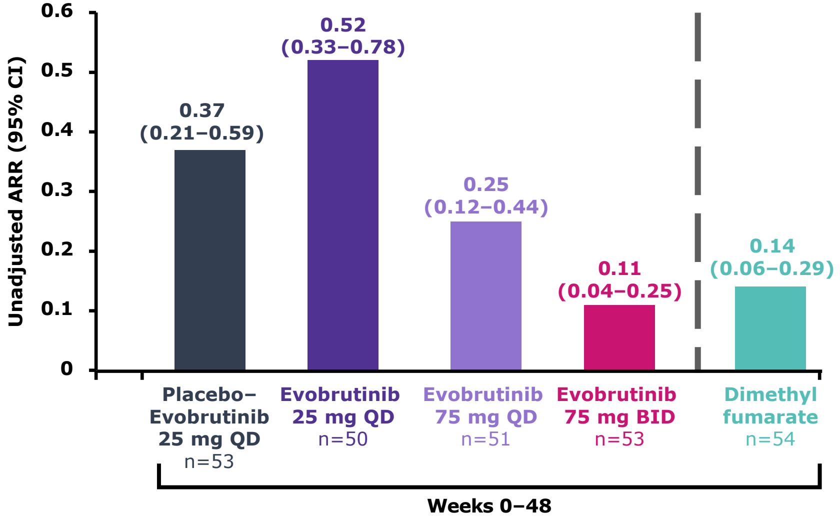
Patients achieving >95% BTKO experienced greatest ARR reduction[2]

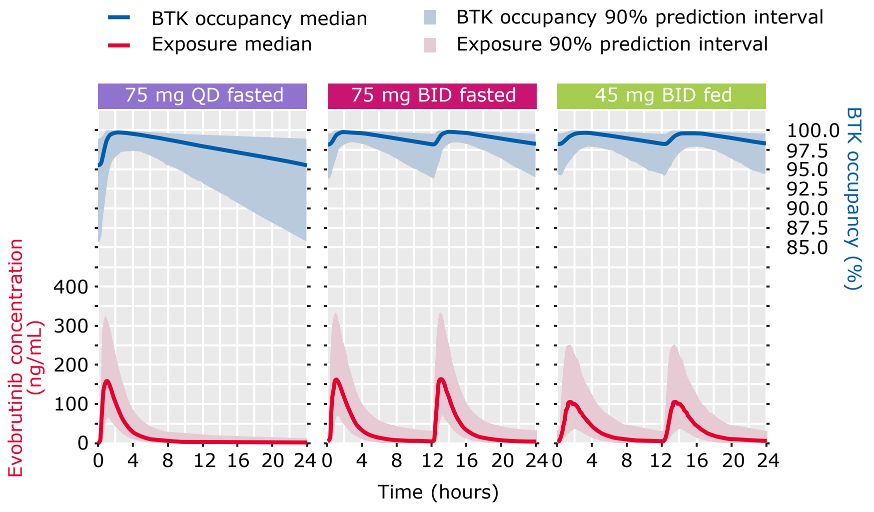
Food effect enables a lower dose in PhIII[1]

PATIENTS ACHIEVING BTKO THRESHOLD, %



PhII SECONDARY ENDPOINT





Due to continuous BTK protein turnover QD dosing of a covalent inhibitor with short half-life results in suboptimal BTKO

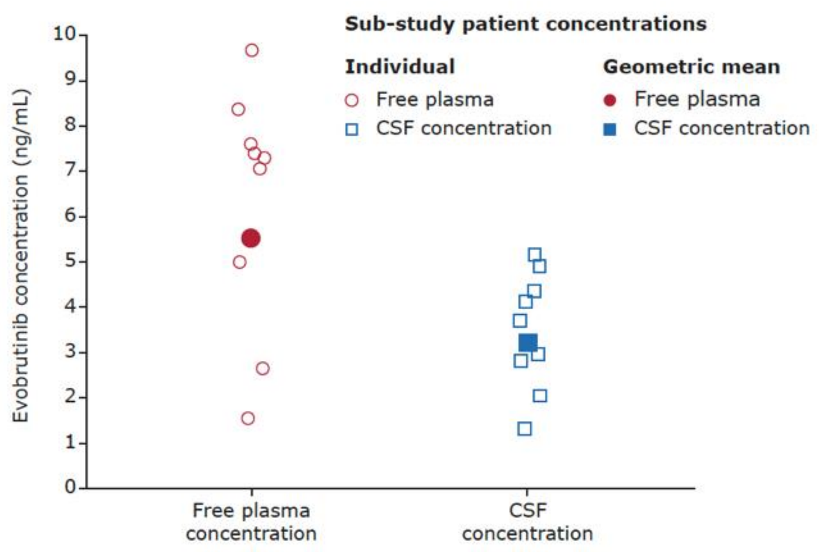
ARR reduction in the Evobrutinib 75mg BID group was sustained over 108 weeks[1,2]

PhIII dose (45mg BID fed) reaches comparable Evobrutinib exposure and BTK occupancy to PhII dose (75mg BID fasted) despite modestly lower plasma peak concentration

[1] Papasouliotis O. et al. Eur J Neurol2021;28(Suppl. 1):120 [OPR-084]
[2] Montalban X. et al. N Engl J Med. 2019 Jun 20;380(25):2406-2417. doi: 10.1056/NEJMoa1901981. Epub 2019 May 10.

Effective BTK inhibition in the CNS is achieved when CSF and free plasma concentrations are comparable

Figure 1. Evobrutinib CSF and free plasma concentrations



The CSF concentrations overlap the free plasma concentrations

- Effective inhibition of microglia requires therapeutically relevant BTK occupancy
- Concentrations in CSF and free plasma concentrations are comparable and within the range predicted by the population PK model
- Administration of the Evobrutinib PhIII dose will result in >95% trough BTK occupancy in peripheral B-cells and macrophages and lead to biologically relevant concentrations in the CSF
- Evobrutinib concentrations in plasma and CSF of PhII substudy participants were within the range expected for all RMS patients

Source: Piasecka-Stryczynska K. et al, *Concentration of Evobrutinib, a BTK inhibitor, in cerebrospinal fluid during treatment of patients with relapsing multiple sclerosis in a phase 2 study* triMS.online 2021, May 27, online, *Multiple Sclerosis and Related Disorders* 2021;51:103001

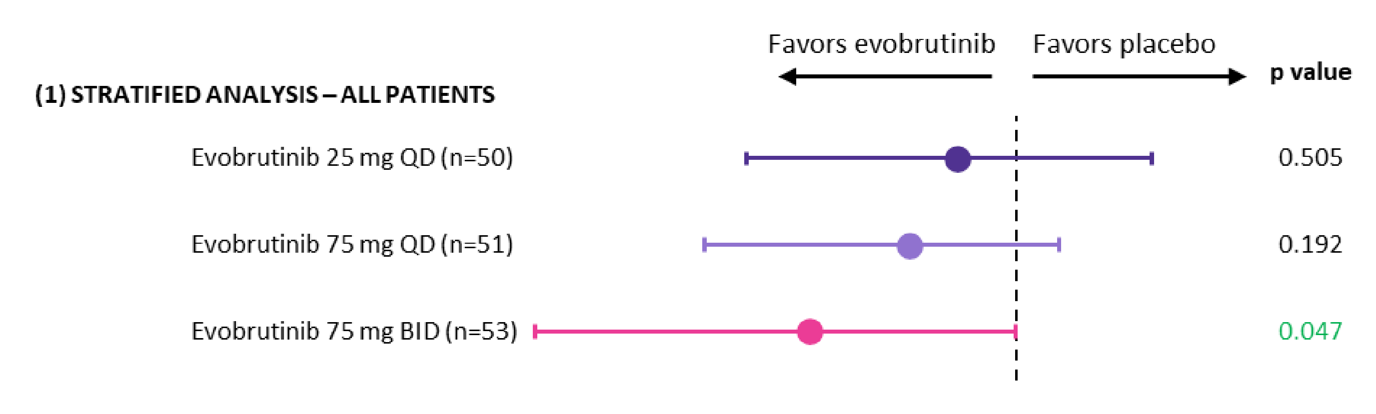
First clinical evidence of impact on brain lesions associated with chronic inflammation

SELs – A BIOMARKER FOR CHRONIC TISSUE LOSS IN THE ABSENCE OF ACUTE INFLAMMATION

- Slowly expanding lesions (SELs) (also known as "smouldering lesions") are chronically active, demyelinated MS lesions, thought to be driven by sustained microglial activity, resulting in the progressive accumulation of irreversible neural tissue damage and axonal loss[1]
- SELs are visible on conventional MRI/T2 images MRI and show gradual, radial expansion over time
- SEL activity and ongoing tissue damage within SELs predict long-term disability[2]
- Approved MS therapies have shown little impact on SELs[3], - consistent with their main treatment effect on acute inflammation

ECTRIMS 2021 oral presentation

EVOBRUTINIB REDUCED SEL VOLUME IN A DOSE-DEPENDENT MANNER AT 48 WEEKS[4]



[1] Elliott C, et al. *Mult Scler* 2019;25:1915-25; [2] Elliott C, et al. *Brain* 2019;142:2787–99; [3] Preziosa P, et al. *Mult Scler* 2021;27(10):1520–32; [4] Arnold D, et al. ECTRIMS 2021 [OP115]

Summary
Potential FIC BTK inhibitor designed for BIC efficacy

- **Pioneering development** of breakthrough MoA with potential to rewrite SoC in RMS
- Aiming to **address chronic inflammation and progression between relapse** in addition to **reducing acute inflammation, delivering BIC ARR**
- **Confidence in BIC profile supported by compelling clinical data from our comprehensive PhII program**

- Best ARR was achieved at BTKO of 95%; ARR of 0.11 at 48 weeks is supportive of BIC efficacy
- Importantly: Achieving 95% BTKO requires BID dosing of a covalent BTK inhibitor with short half-life due to continuous turnover of BTK protein
- Evobrutinib concentrations achieved in CSF of RMS patients support an effect on microglia
- Dose dependant reduction of SEL, a biomarker for disease progression is first evidence of Evobrutinib effect on chronic inflammation and progression
- De-risked profile based on safety analysis in >1000 patients

- **PhIII studies** (Evolution MS 1&2) **fully recruited** (Sept 2021), expected read out in Q4 2023

Targeted inhibition of important lupus mediator aiming for improved efficacy with low infection risk

- **For lupus patients, precise intervention for improved efficacy at low infection risk remains an unmet need in lupus**
- Enpatoran is an oral small molecule inhibitor of TLR7/8
- There is **evolving genetic evidence for TLR7 as a critical driver of lupus pathologies**

Inhibition of TLR7/8, a important lupus mediator is expected to result in

- broad inhibition of lupus-relevant effectors
- with potential for improved efficacy compared to strategies targeting single effectors (pDC, IFN, B-cells)
- at low risk of infection

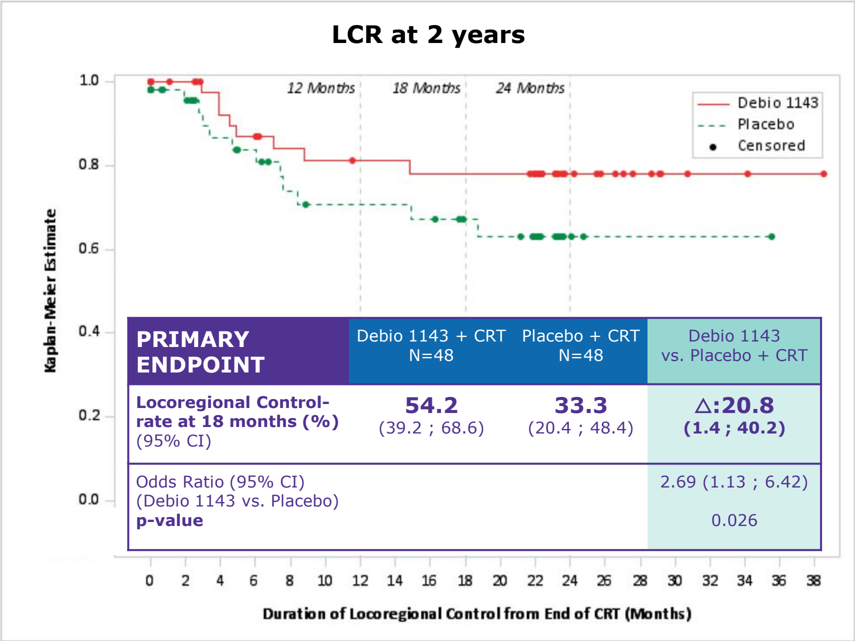
- **Compelling MoA, functional and safety data from PhI HV and COVID PhII study**
- **Innovative PhII in CLE and SLE planned to initiate in H1 2022, aiming to generate PoC in H1 2023**

Maximizing chances for cure in LA SCCHN

PhII: Consistent benefit across primary & secondary endpoints

PRIMARY ENDPOINT LCR

first presented at ESMO 2019

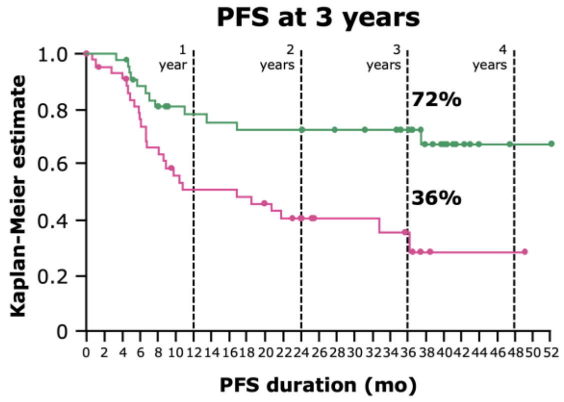


PRIMARY ENDPOINT	Debio 1143 + CRT N=48	Placebo + CRT N=48	Debio 1143 vs. Placebo + CRT
Locoregional Control-rate at 18 months (%) (95% CI)	**54.2** (39.2 ; 68.6)	**33.3** (20.4 ; 48.4)	**△:20.8 (1.4 ; 40.2)**
Odds Ratio (95% CI) (Debio 1143 vs. Placebo)			2.69 (1.13 ; 6.42)
p-value			0.026

Lancet Oncology, August 2020, doi:10.1016/S1470-2045(20)30327-2

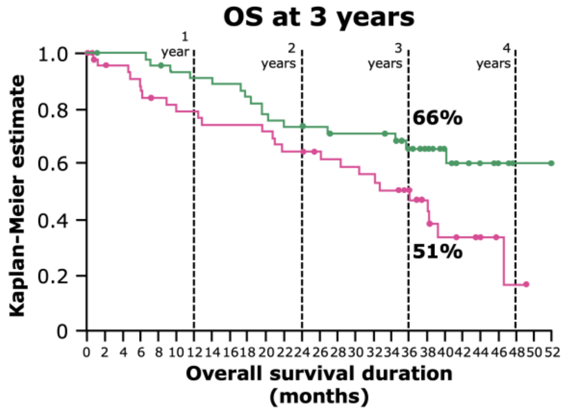
SUBSTANTIAL IMPROVEMENT OF PFS AND OS

3-year update, presented at ESMO 2020



PFS HR: **0.34** (0.17-0.68)

p=0.0023



OS HR: **0.49** (0.26-0.92)

p=0.0261

CR at 6 months (post CRT completion)
52% vs 38% for placebo

Xevinapant
Placebo

ESMO 2020; Bourhis J, et al. Abstract No. LBA39

Up Next: 5-year Update of OS at ESMO 2022

LA SCCHN = Locally advanced squamous cell carcinoma of the head and neck

Leveraging market-leading expertise in SCCHN

LA SCCHN SIMPLIFIED TREATMENT PARADIGM AND EPIDEMIOLOGY

TrilynX

	Cis-eligible	Cis-ineligible
Unresectable	**SoC:** Chemoradiation with cisplatin Treated patients (US & EU5): 44,000	**SoC:** Chemoradiation without cisplatin (fragmented[2]) Treated patients (US & EU5): 30,000
Resectable/ High risk[1]	**SoC:** Surgery followed by (adjuvant) chemoradiation with cisplatin Treated patients (US & EU5): 18,000	**SoC:** Surgery followed by (adjuvant) radiation or chemoradiation without cisplatin Treated patients (US & EU5): 10,000

Potential target population for 2nd PhIII

Leveraging our Erbitux heritage

- LA SCCHN is a **curative setting** that requires a multi-disciplinary approach
- Surgery and/or (chemo-)radiation therapy is the standard of care, though almost 50% of patients progress
- **Limited progress in ~20 years**
  - IO has not been successful due to challenges of concurrent radiation
- **Building focused leadership in LA SCCHN**
  - Our goal is to transform LA SCCHN in combination with (C)RT with a focused PhIII program

Xevinapant – Maximizing chances for cure

[1] Low/ intermediate risk patients: SOC is Surgery followed by (adjuvant) radiation, Incidence (US + EU5): 41,000; [2] The combination of cetuximab/RT is the only approved regimen for patients ineligible to receive high-dose cisplatin. Multiple non-approved regimens are used in practice, however, with differences across geographies and depending on patient status and physician preference.

First launch expected in 2025

		2020	2021	2022	2023	2024	≥ 2025
1 **PhIII study TrilynX** (NCT04459715)	• **Cisplatin-Eligible** LA SCCHN • Xevinapant + cisplatin/RT • 700 patients[1]				IA		
2 **Additional registrational PhIII study**	• **Cisplatin-Ineligible** LA SCCHN • Xevinapant + Standard of care • In preparation			To be started H1 2022			

Additional studies evaluating Xevinapant potential across LA SCCHN and beyond under discussion

[1] multinational study, enrolling significant proportion of patients from China and Japan

Maximizing the potential of Berzosertib

CURRENT DEVELOPMENT FOCUS

Establish Berzosertib as new SoC in 2L SCLC

1. Topotecan combination (Pt-sensitive & Pt-refractory patients)
2. Combinations with other TOP-1 inhibitors (Irinotecan, Sacituzumab govitecan)
3. Further combinations (Lurbinectidin)

BERZOSERTIB POTENTIAL BEYOND SCLC

Ovarian cancer:
Biomarker studies to identify best target population for upcoming PhII study of Bersozertib/Gemcitabine[1]

Refractory GI tumors:
Berzosertib/Irinotecan combination

SCLC – Earlier treatment line:
1L Maintenance setting with IO

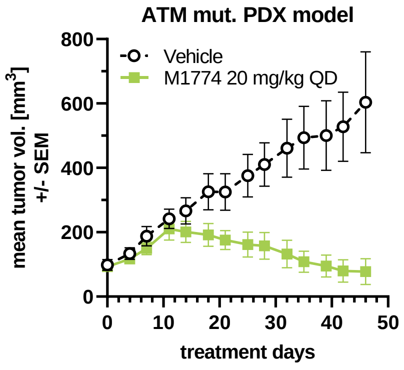
[1] Encouraging evidence of clincial efficacy; Lancet Oncology, Volume 21, Issue 7, July 2020, Pages 957-968

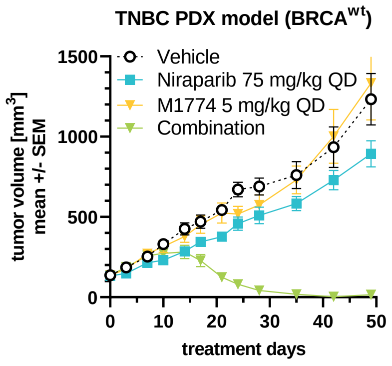
What's next:
Oral ATRi for monotherapy and PARP inhibitor combinations

ATR CORE DEVELOPMENT HYPOTHESES

1. + chemotherapy – iv ATRi Berzosertib
2. + IO – iv or oral ATRi
3. Synthetic Lethality (Mono or PARP Combination) – oral ATRi

SYNTHETIC LETHALITY MODEL DATA

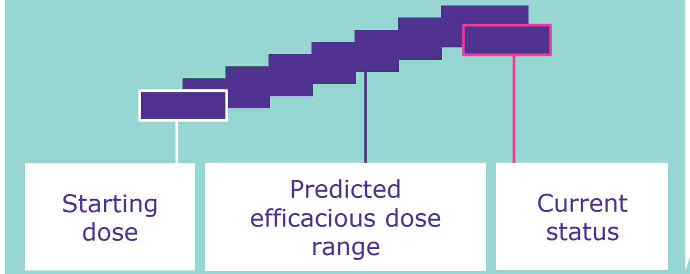




M1774 DEVELOPMENT STATUS

Dose escalation in DDRiver 301 FiH study (NCT04170153) close to completion

- Active dose-range achieved, with manageable, MoA related safety profile
- First clinical data to be reported at upcoming clinical conference in 1H 2022
- Dose finding with PARP inhibitor has commenced



Biomarker selected Monotherapy (ATM, ARID1A ATRX/DAXX aberrations)

Niraparib combination in PARP naive HRD+ TNBC

Berzosertib is lead program in our DDR pipeline

- **ATR inhibition has significant therapeutic potential with 3 distinct applications:**
  - Enhancing chemotherapy efficacy
  - Achieving synthetic lethality (monotherapy in patients with HRD alterations or combination with PARP inhibitors)
  - Combination with immunotherapy
- **Development focus for potential FIC ATR inhibitor Berzosertib is combination with chemotherapy/**topoisomerase I inhibitors
- **SCLC** is the most aggressive form of lung cancer, with poor treatment outcomes; **most patients experience rapid progression even after achieving responses**

- ✓ **Remarkable early data in rSCLC demonstrated with Berzosertib/Topotecan combination** when compared to historic control SoC Topotecan monotherapy
- ✓ 30% ORR in Pt-resistant patients (Topotecan monotherapy historic control is <10%)
- ✓ Durable responses with 67% of patients achieving >6months PFS, (Topotecan monotherapy historic control shows Pt-resistant patients relapse within a few weeks)

- **Two ongoing PhII studies:** Randomized NCI study and DDRiver SCLC 250
- **Up next: oral ATRi M1774 with development focus synthetic lethality** (monotherapy and PARPi combination); dose escalation ongoing, PhII PoC studies to initiate in 2022

From: R&D Update Call 2021 – 2021.11.22

Tepotinib (MET kinase inhibitor)

First-in-class launch in MET Exon14 sets foundation for EGFRm/ METamp opportunity and exploration in other tumor types

TEPMETKO® tepotinib

Lay the foundation in NSCLC – MET Exon14
(VISION study, NCT02864992
3-5% of total NSCLC population)

- **Highly competitive data** set presented at ASCO 2020 and published in New England Journal of Medicine in May 2020 (99 patients with a follow up ≥9 mths)
- **First-in-class launch[1]** in Japan[2] in March 2020, Sakigake designation[3] granted in 2018
- **Approval by US FDA[1]** received on February 3, 2021

+

Tap into a growing opportunity in NSCLC – EGFRmut/ METamp
(INSIGHT 2 study, NCT03940703
2-5% of total NSCLC population)

- **Increased EGFRm detection** with testing and treatment moving into earlier lines of therapy (ADAURA trial demonstrates a 79% reduction in the risk of death with Osimertinib in the adjuvant setting (ASCO 2020), suggesting an even greater uptake of Osimertinib)
- **METamp as the primary driver of resistance -** Some publications suggest that METamp resistance post-Osimertinib could be ~25%[4]

+

Explore EGFR resistance in CRC – Tepotinib + Erbitux® combo
(NCT04515394)

- Opportunity for **Tepotinib to address an unmet need in metastatic colorectal cancer (mCRC) together with Erbitux®**

ERBITUX CETUXIMAB

1: approved for both treatment naïve and previously treated METex14 positive NSCLC patients; 2: second largest Oncology market globally; 3: SAKIGAKE designation promotes research and development in Japan, aiming at early practical application for innovative pharmaceutical products; 4: Piotrowska et al., "Landscape of Acquired Resistance to Osimertinib in EGFR -Mutant NSCLC and Clinical Validation of Combined EGFR and RET Inhibition with Osimertinib and BLU-667 for Acquired RET Fusion", AACR Cancer Discovery 2018; Acronyms: CRC = Colorectal cancer; EGFR = Epidermal Growth Factor Receptor; NSCLC = Non-small cell lung cancer

Tepotinib (MET kinase inhibitor)

Tapping into the rapidly evolving EGFRmut/METamp market – Encouraging INSIGHT 1 data

TEPMETKO® tepotinib

INSIGHT 2 – Tepotinib + Osimertinib in Osimertinib Relapsed METamp NSCLC

Recruiting

- **Study design recently amended to reflect evolved and future standard of care:**
  - **Target population** – Inclusion criteria adjusted to focus solely on 1L Osimertinib failures
  - **Testing -** Streamline patient enrollment based on current gold standard method (TBx FISH)
  - **Increasing METamp prevalence** - Some publications suggest that METamp resistance post-Osimertinib could be ~25%[1]
- Estimated primary completion date: **November 2022**

Tepotinib + Erbitux® (Cetuximab) - Addressing a significant medical need in 2L metastatic colorectal cancer (mCRC)

Recruiting

- Opportunity for **Tepotinib to address an unmet need in CRC** together with Erbitux®
- Estimated primary completion date: **March 2023**

A solid foundation - Encouraging INSIGHT 1 data (18-months follow-up presented at WCLC 2019)[2]

Endpoint	Tepotinib + gefitinib	Chemotherapy
Primary - PFS (HR 0.13 [90% CI 0.04, 0.43])	16.6 m	4.2 m
Secondary - ORR (OR 2.67 [90% CI 0.37, 19.56])	66.7%	42.9%
Secondary - OS (HR 0.09 [CI 0.01, 0.54])	37.3 m	13.1 m

- **Proof of Concept: MET amplification can be considered a suitable biomarker** for treatment with Tepotinib
- **Safety:** generally **well-tolerated,** most adverse events mild to moderate

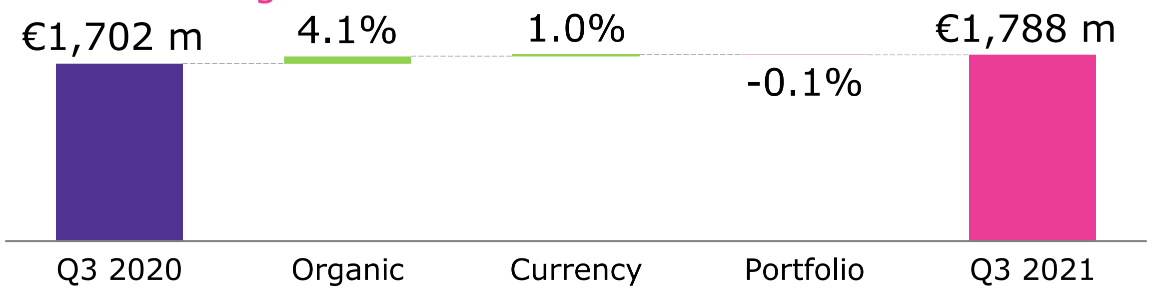
1: Piotrowska et al., "Landscape of Acquired Resistance to Osimertinib in EGFR -Mutant NSCLC and Clinical Validation of Combined EGFR and RET Inhibition with Osimertinib and BLU-667 for Acquired RET Fusion", AACR Cancer Discovery 2018; 2: Wu et al., „Long term outcomes to tepotinib plus gefitinib in patients with EGFR mutant NSCLC and MET dysregulation: 18 month follow up", presented at WCLC 2019; Acronyms: FISH = Fluorescence in situ hybridization; TBx = Tissue Biopsy

Healthcare Q3: Strong Bavencio® performance and continued Mavenclad® ramp-up drive 4% organic growth

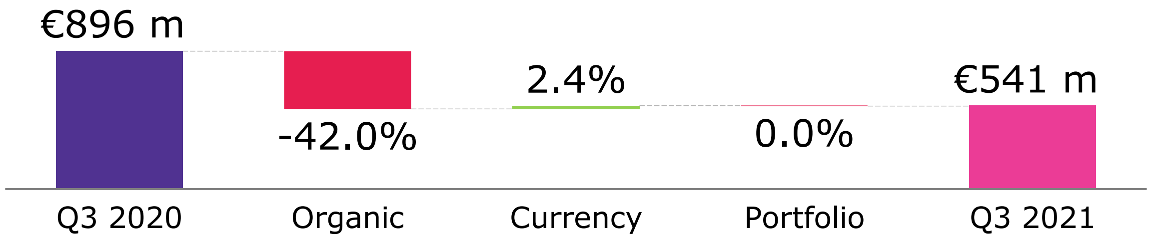
Healthcare P&L

[€m]	IFRS		Pre	
	Q3 2020	Q3 2021	Q3 2020	**Q3 2021**
Net sales	1,702	1,788	1,702	**1,788**
M&S*	-382	-386	-379	**-386**
Admin	-75	-79	-75	**-77**
R&D	-378	-486	-378	**-486**
EBIT	807	453	812	**462**
EBITDA	892	532	-	**-**
EBITDA pre	896	**541**	896	**541**
(in % of net sales)	52.7%	**30.3%**	52.7%	**30.3%**

Net sales bridge



EBITDA pre bridge



Comments

- Mavenclad® grows +33 % organically to highest quarter at €197 m, more than offsetting organic Rebif® decline of -16%
- Oncology up +26%; Bavencio® grows +147% fueled by continued UC 1L ramp-up in key markets; Erbitux® growing across all regions (+6% org.)
- VBP[1] impact on Glucophage® drives decline in CM&E (-3% org.) which is fully compensated by Fertility growth (+7% org.)
- Lower M&S as % of sales vs. Q3 2020 despite higher level of face-to-face activities amid progressing adaptation to pandemic situation
- Higher absolute R&D driven primarily by Bintrafusp study termination accrual (~€70 m), largely offset by accelerated recognition of Bintrafusp deferred other income (~€50 m)
- EBITDA pre and margin decline driven by Q3 2020 Biogen litigation provision reversal of €365 m, underlying EBITDA pre about stable

[1] Volume Based Procurement

* Marketing and selling expenses
Totals may not add up due to rounding

Healthcare Pipeline

November 22, 2021

Phase I

M1231
Bispecific MUC1xEGFR ADC
Solid tumors

M1774
ATR inhibitor
Solid tumors[1]

M4076
ATM inhibitor
Solid tumors

peposertib
DNA-PK inhibitor
Solid tumors[2]

M6223
anti-TIGIT mAb
Solid tumors[3]

enpatoran
TLR7/8 antagonist
Systemic lupus erythematosus / Cutaneous lupus erythematosus

M5717
PeEF2 inhibitor
Malaria

Phase II

berzosertib
ATR inhibitor
Small-Cell Lung Cancer[4]

tepotinib
MET kinase inhibitor
Non-small cell lung cancer, *EGFR* mutant, *MET* amplified[5]

bintrafusp alfa
TGFbeta trap/anti-PD-L1
Cervical cancer 2L

Phase III

xevinapant
IAP inhibitor
Locally advanced squamous cell carcinoma of the head and neck[6,7]

avelumab
anti-PD-L1 mAb
Non-small cell lung cancer 1L

evobrutinib
BTK inhibitor
Relapsing multiple sclerosis

arpraziquantel
anthelmintic
Pediatric schistosomiasis

Registration

tepotinib
MET kinase inhibitor
Non-small cell lung cancer, *MET*ex14 skipping[8]

- Oncology
- Immuno-Oncology
- Immunology
- Neurology
- Global Health

ADC: Antibody Drug Conjugate; 1L: first-line treatment; 2L: second-line treatment

[1] Study as monotherapy and in combination with niraparib. [2] Study in combination with avelumab. [3] Includes study in combination with bintrafusp alfa. [4] Includes studies (phase I/II) in collaboration with/ sponsored by external partners, e.g. US National Cancer Institute (NCI). [5] In combination with osimertinib. [6] In combination with cisplatin and radiotherapy in unresected LA SCCHN patients eligible for cisplatin. [7] On March 01, 2021, Merck KGaA, Darmstadt, Germany announced a worldwide in-licensing agreement with Debiopharm, Switzerland, for the development and commercialization of xevinapant (Debio 1143). [8] As announced on November 26, 2020, the European Medicines Agency (EMA) has validated for review the application for tepotinib for the treatment of adult patients with advanced non-small cell lung cancer.

Additional information: Several combination studies (phase II) of avelumab with talazoparib, axitinib, ALK inhibitors or chemotherapy ongoing under sponsorship of Pfizer.
Unless noted otherwise, clinical programs conducted in collaboration with external partners are not shown unless Merck KGaA, Darmstadt, Germany has co-ownership of data. In such case the indication is shown in *Italics*.

Pipeline products are under clinical investigation and have not been proven to be safe and effective. There is no guarantee any product will be approved in the sought-after indication.

electronics

Electronics
Targets attractive markets – especially in the electronics space

Electronics Market

Market size[1]:
~€1,800 bn
CAGR 20-25:
~5%

- Driven by digital disruptions and megatrends such as digitalization
- Heterogeneous end-user applications
- Semiconductors as the engine of all electronic systems

Electronics sales by end market

Automotive Market

Market size:
~€2,000 bn

- Driven by world GDP growth
- Increasing demand in emerging markets

Cosmetics Market

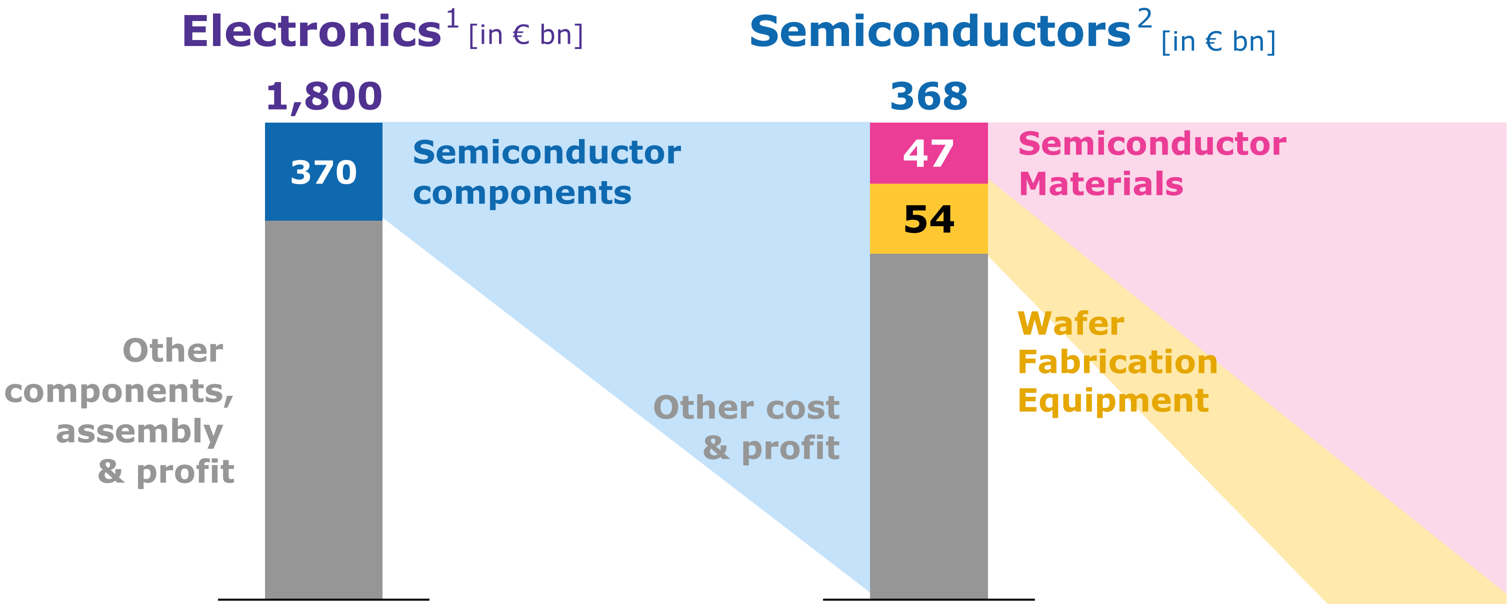
Market size:
~€400 bn

- Driven by world GDP growth
- Rising living standards and higher disposable income

[1]Prismark 2021

Updated in Q1 2021

Semiconductor Solutions – **integrated materials player, well positioned to serve the need of customers in semiconductor fabrication**



Semiconductor Solutions

- Silicon wafers
- Patterning materials
- Thin film materials
- Planarization materials
- Cleans
- Specialty gases
- Bulk gases
- Packaging materials
- Parts & equipment
- Applications & services
- Other Consumables[4]

Dell[3], Apple[3]

- Smartphones
- PCs & Laptops
- Servers
- Communication
- Wearables
- Smart devices
- …

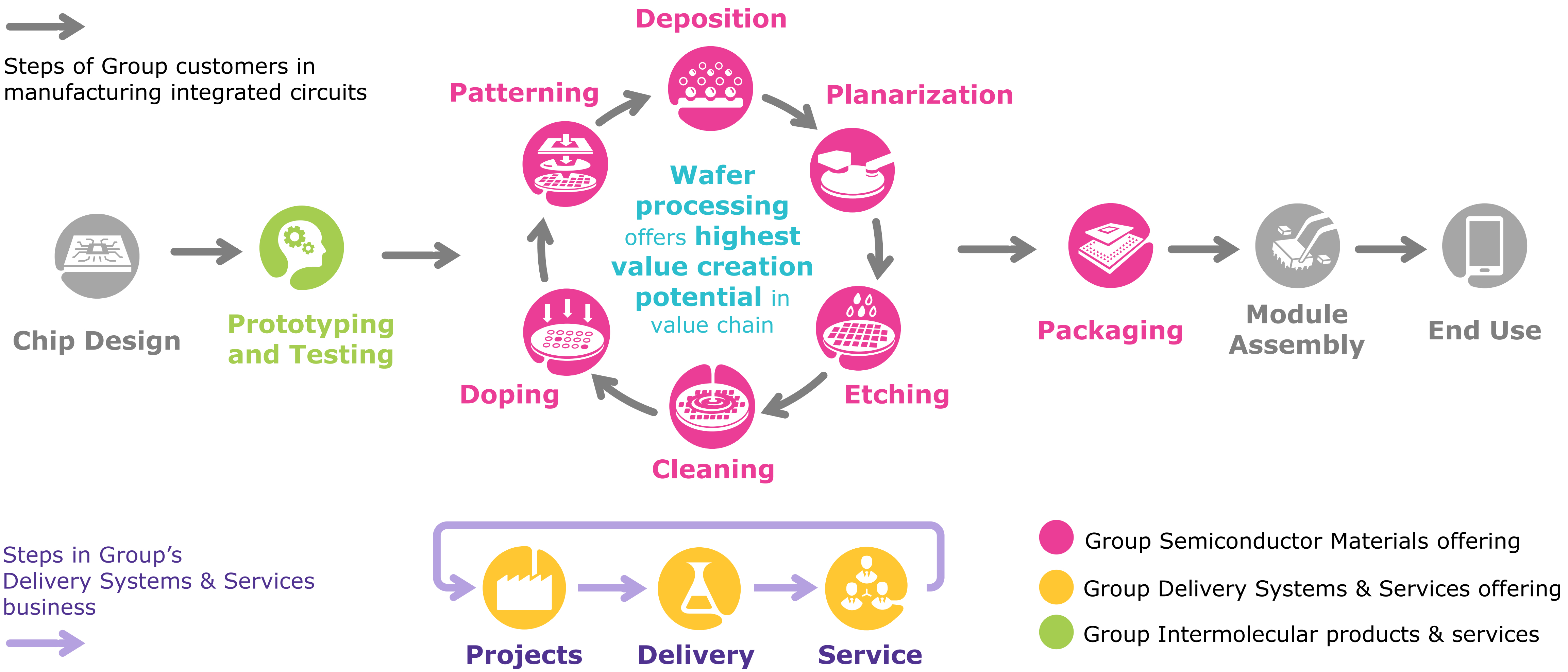
SK hynix[3], intel[3]

- CPUs / logic chips
- Memory chips (SSD, RAM)
- Sensor chips
- Communication chips
- …

Group Semiconductor Materials offering | Group DS&S offering | No Group offering

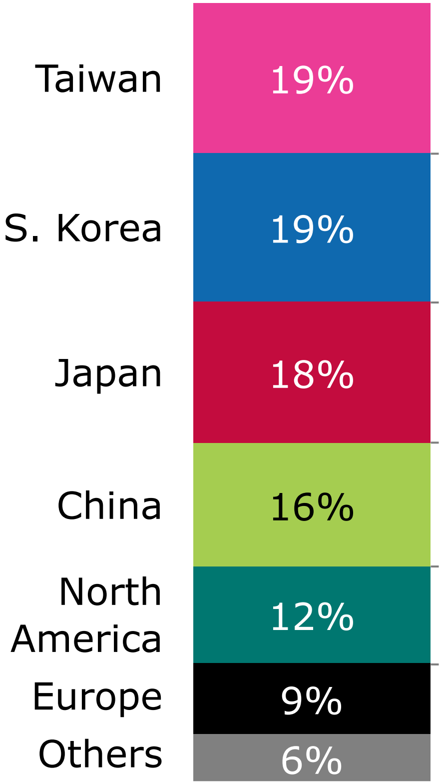
llustrative Industry P&Ls based on Sources: [1]Prismark 2021, [2]Prismark 2021 & WSTS/SIA & SEMI Q1 2020; [3]Representative player in the industry, non-exclusive list, not based on any underlying criteria; [4]e.g. Filters, Pads, etc.; CPU = Central Processing Unit; RAM = Random Access Memory; SSD = Solid State Disk; CMOS = Complementary metal-oxide semiconductor

Unique comprehensive products and services portfolio offers end-to-end solutions, well-placed in high growth segments



Beyond a comprehensive portfolio Semiconductor Solutions also has an industry spanning customer base, supplying various end markets

2019 wafer capacity by region[1]



Selected customers per region[2]

- Taiwan: tsmc, UMC
- S. Korea: Samsung Electronics, SK hynix
- Japan: KIOXIA, SONY
- China: SMIC, Yangtze Memory
- North America: intel, Micron
- Europe: ST life.augmented, Infineon

Semiconductor Solutions has

over 100 customers

supplying all top 10 chip makers and virtually all of the top 100[3]

- Focus on logic chips
- Focus on memory chips
- Focus on other chips

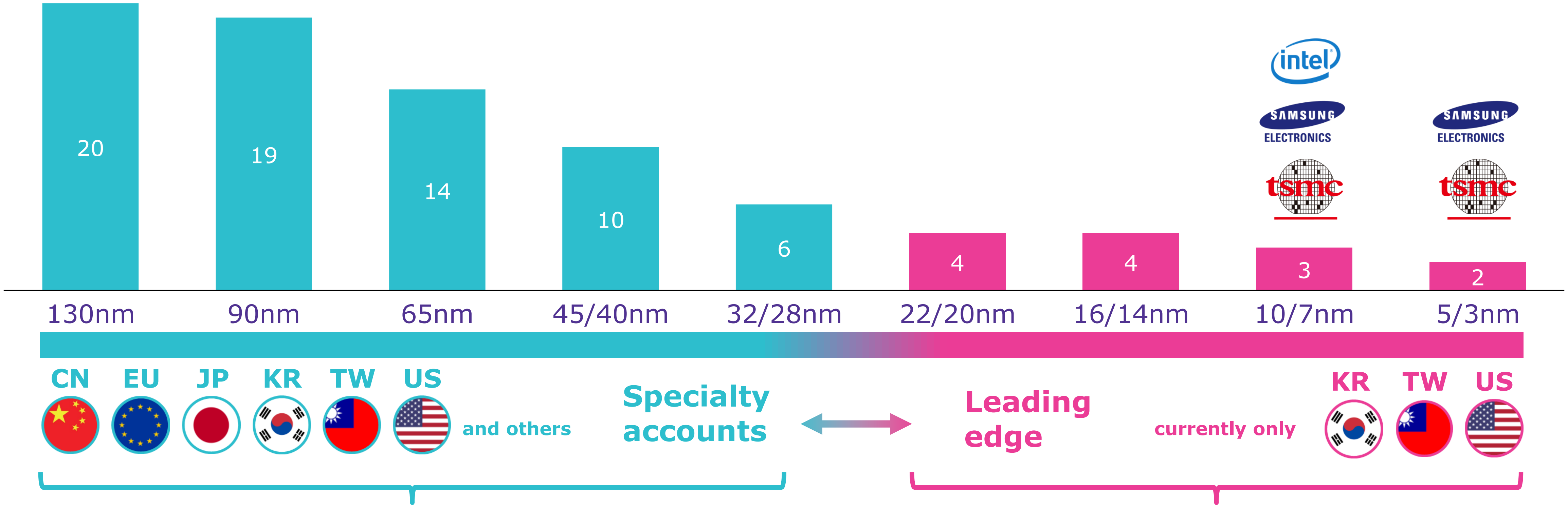
[1] SEMI World Fab Forecast Q3 2020 - Dec 2019 capacity,

[2] Representative, non-exclusive list, not based on any underlying criteria

[3] Based on H1 2020 Sales

Only 3 companies are currently running volume production ≤10nm These companies have the largest market shares across all nodes

Number of companies currently running volume production per logic chip node[1]



Primary focus on operation efficiency

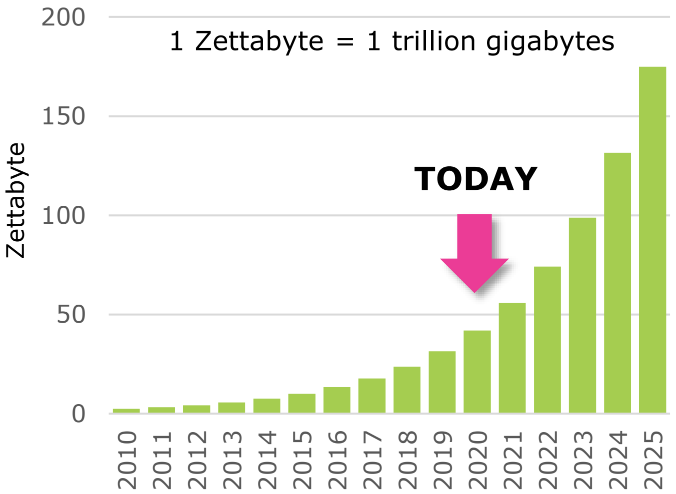
Primary focus on innovation efficiency

[1]Source: Wikichip.org and own data; volume production as of Sep 2020; countries are listed in alphabetical order

Technology trends inevitably drive exponential data growth… …more chips needed to generate, transfer, process & store data

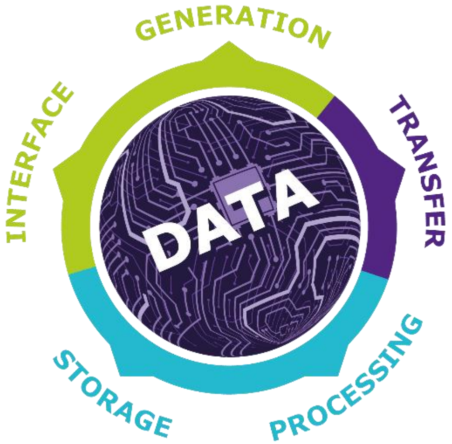
Data created worldwide is growing +30% annually

Size of global data sphere



Source: IDC DataAge 2025 Whitepaper

All segments of data application are affected by global data growth



Technology trends strongly impact relevance of data application segments

Technology market growth - examples

5G Technology[1]
>122% CAGR

Artificial Intelligence[2]
>33% CAGR

IoT Sensors[3]
>24% CAGR

Data Center Services[4]
>13% CAGR

Autonomous Driving[5]
>18% CAGR

Semiconductor Solutions supports growth trend as part of "**the company behind the companies**, advancing digital living"

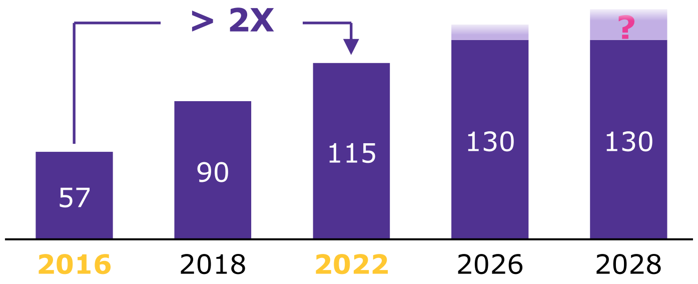
1) alliedmarketresearch.com, Prismark 2020, CAGR 2021-2026; 2) fortunebusinessinsights.com, post-gazette.com, CAGR 2018-2026; 3) mordorintelligence.com, computerweekly.com, CAGR 2020-2025; 4) mordorintelligence.com, Prismark 2020; CAGR 2020-2025; 5G = 5th-generation cellular wireless; IoT = Internet of Things 5) mordorintelligence.com, autonomous car market value CAGR 2020-2025

“Level Up” Scale - Expanding in synch with customer demand

A **partner of choice,** in step for **higher demand**

Semiconductor industry

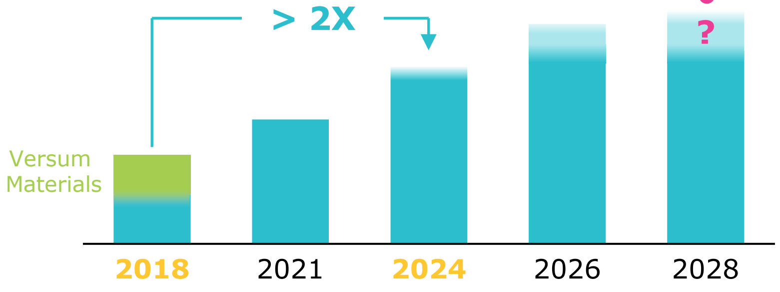
CAPEX p.a.[1] [bn€]



Investing in lock-step with customers’ investments (**+approx. 2-year ramp-up time)**

Electronics

CAPEX illustrative [majority in Semi]



Further investment depending on customer demands

1) McClean March 2021, Company announcements; FX rate: 1.18 $/€; 2) incl. IT

Smart localization, investing close to customers

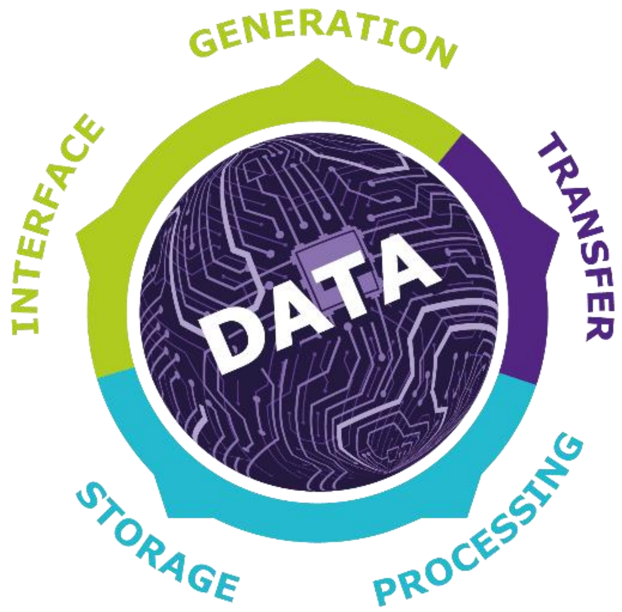
	Share of semi material market[1]	Key investments
Taiwan	**~25%**	▪ **Additional large site** ensuring supply for key customers ▪ Further **expand R&D footprint**
Korea	**~25%**	▪ **Expand** strong **footprint,** even higher customer proximity
China	**~15%**	▪ **Become most localized** multi-national ready for growth ▪ Expand **production and R&D**
USA	**~10%**	▪ Expand capacity for **global & local supply** ▪ Enable **new sites of key customers**

1) Source: Linx Consulting – only relevant segments, 2020; 2) Aggregated spend 2021-25, total spend: ~€2.1 bn, thereof ~11% (~ €250 m) in Germany, also to fund global programs

“Level Up” Tech – delivering today and enabling tomorrow

Strong portfolio of silicon & optical technologies empowering today’s applications

Solutions empowering customers to make **smaller**, **faster**, **more energy efficient** & **more sustainable** devices in various applications across the entire **data sphere**



Data Generation
Sensors, MEMs

Data Transfer
Network chips, interconnects, antenna

Data Processing
Logic chips: CPUs, GPUs

Data Storage
Memory Chip: DRAM, 3D NAND

Data Interface
Displays: TV and mobile (LC, OLED)

And enabling tomorrow’s leading-edge technologies

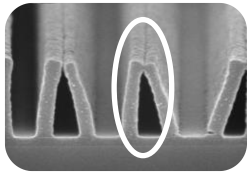
Selected future applications	Our contribution
Next-Gen image sensors	Leverage semiconductor & display knowledge for new & optimized sensors
Smart Antennas	New LC, enabling beam forming, replacing bulky mechanical antennas
Transition to nanosheets	Novel etchants & dopants allowing higher scaling & lower power consumption
3D NAND with >300 layers	ALD[1] materials that help minimize cross talk between memory cells
Foldable displays	Broad set of materials from encapsulation to the OLED stack

1) Atomic Layer Deposition

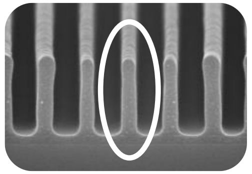
Electronics

Expanding the limits of how small you can go

Pattern collapse

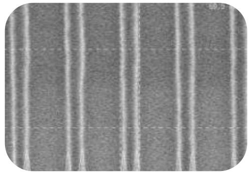


AZ® rinse materials



As lines get narrower and closer together in advanced chip generation, lines tend to “stick” due to surface tension.

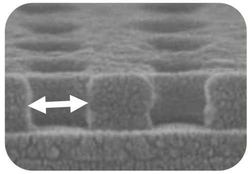
Lithography limitation



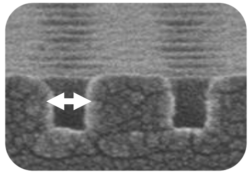
Directed self-assembly (DSA)

Block copolymer can generate small lines or contact holes by self-assembly. This allows miniaturization without expensive new equipment.

Wide features



AZ® shrink materials



Shrink materials “shrink” the gap between lines and, hence, allow the manufacture of narrower features otherwise not possible.

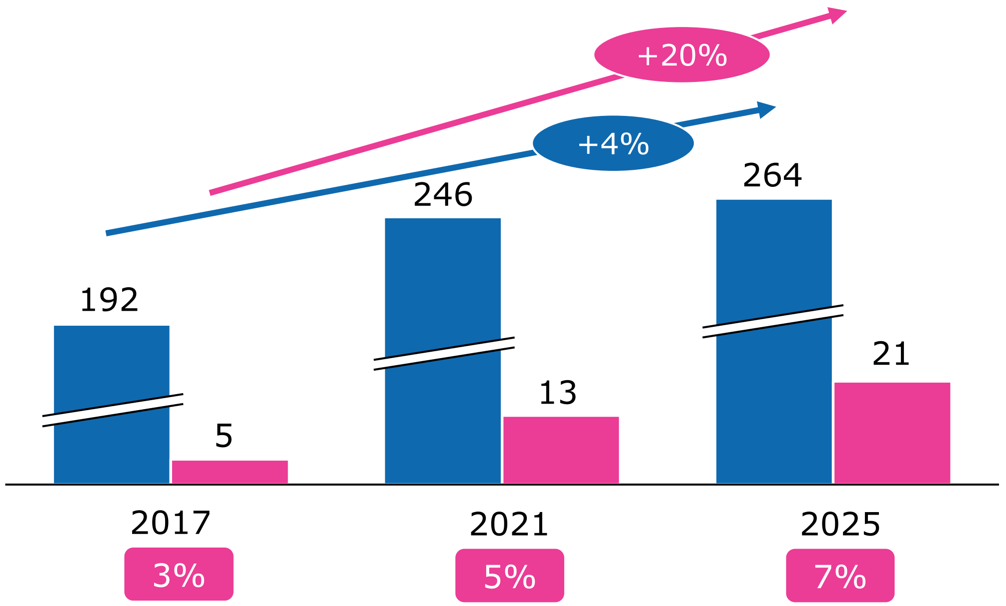
Group delivers highly innovative solutions for complex customer problems

Electronics

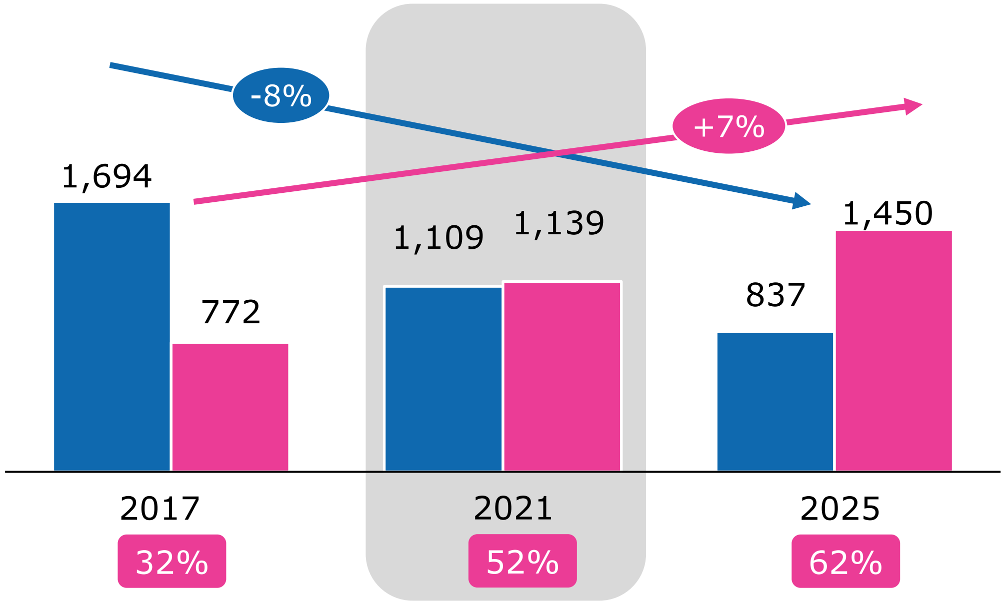
Display Solutions - OLED material market to exceed LC material market already in 2021

x% OLED shipment area / addressable material market [in % of total] | Liquid Crystals | OLED

Display shipment area[1] [km²]



Addressable material market[2] [€m]



- **Continued growth** across all technologies
- **OLED growing faster than LCD,** but **LCD to command 90+% area share** for foreseeable future

- **Material value** per OLED display **higher** than in LCD
- **OLED material market** to **exceed LC material market by 2021**, but market split between **many more players**

[1]Omdia; [2]Internal Business Intelligence; Acronyms: LCD = Liquid-Crystal Display, OLED = Organic Light Emitting

Electronics

Strategic roadmap materializing

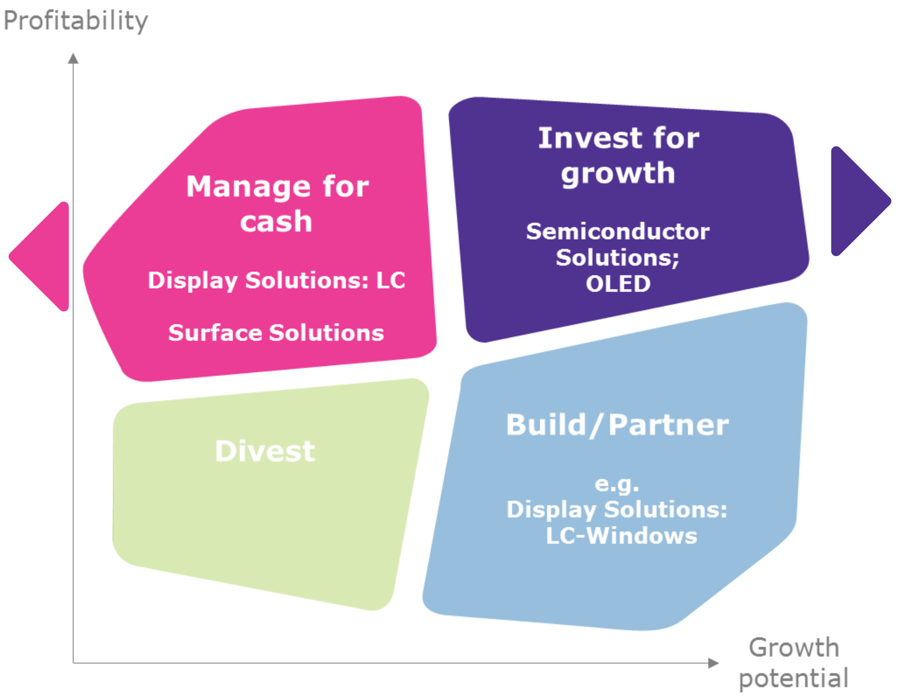
Measures for a bright future

Darmstadt
- In Darmstadt focus on R&D and production
- Immediate bottom line contribution from 2019 onwards
- Reduce the number of FTEs by ~15% = ~400 FTEs

Chilworth
- Chilworth site during September 2019 successfully closed

Atsugi
- Shut down of Electronics activities at Atsugi site started (to be completed during 2021)
- R&D and production activities in Atsugi transferred and consolidated in other PM locations in Asia
- Consolidation of site structure in Japan

Bottom-line management to support margin ambition of 30% in the long-term



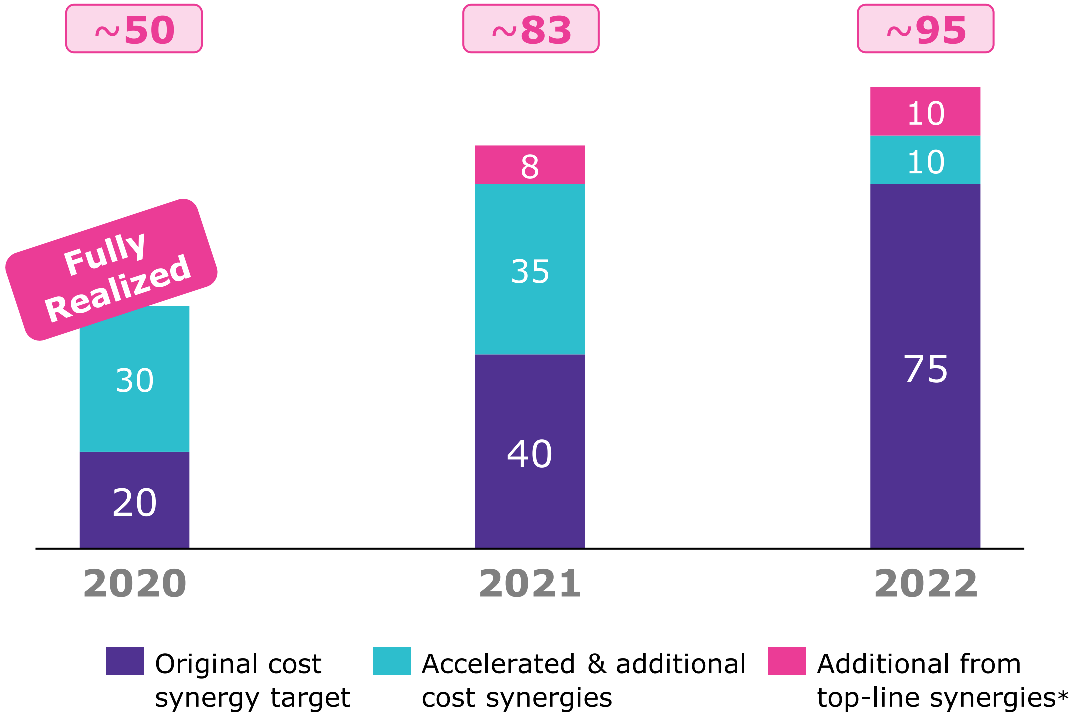
VERSUM MATERIALS
- Leading supplier of high-purity process chemicals, gases and equipment serving semiconductor manufacturers
- Track record of accelerated growth and industry leading profitability
- ➢ Creating a **leading electronic materials player** with **attractive long-term prospect**

INTERMOLECULAR®
- Leading in advanced materials innovation
- Acquisition to strengthen semiconductor technology offering
- ➢ Application specific **materials expertise with** that **perfectly complement** Group's business and technology portfolio

Both transactions successfully closed

Electronics
Successful integration drives substantial synergy upgrade and acceleration

EBITDA pre impact of synergy ramp-up [€ m]



Original target for 2022 is now being addressed for 2021

Sources of synergies

Business optimization
- Transform country setup
- Streamline duplicate structures

Procurement and supply chain
- Optimize production and supply chain network
- Achieve savings through joint procurement

Corporate and administrative functions
- Integrate corporate & administrative functions
- Cost savings due to U.S. company delistings

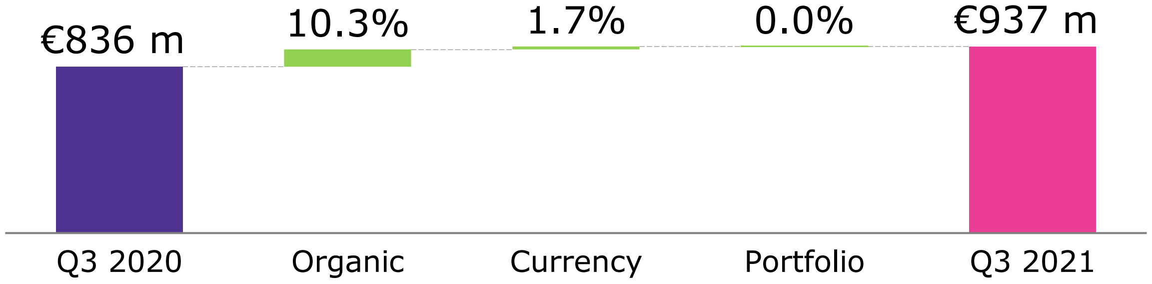
*Top-line synergies from cross-selling, new products introductions and overarching initiatives

Electronics Q3: 21% growth in Semi continue to drive double-digit organic sales growth

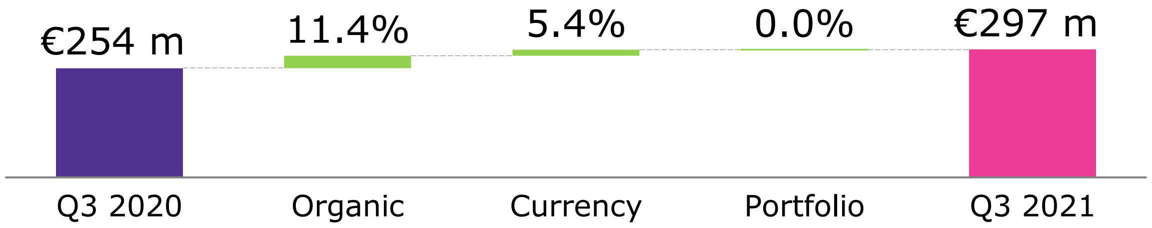
Electronics P&L

[€m]	IFRS		Pre	
	Q3 2020	Q3 2021	Q3 2020	**Q3 2021**
Net sales	836	937	836	**937**
M&S*	-133	-147	-132	**-145**
Admin	-38	-39	-36	**-28**
R&D	-65	-72	-65	**-72**
EBIT	75	125	104	**163**
EBITDA	227	277	-	**-**
EBITDA pre	254	**297**	254	**297**
(in % of net sales)	30.4%	**31.7%**	30.4%	**31.7%**

Net sales bridge



EBITDA pre bridge



Comments

- Semiconductor Solutions: another record quarter of absolute sales and organic growth (+21%), driven by materials and DS&S projects
- Display Solutions: down -7% organically, LC decline partly offset by high growth in OLED
- Surface Solutions: growing +10% organically vs. still pandemic-impacted Q3 2020; particularly strong cosmetics business recovery
- M&S flat as percentage of sales, despite higher logistic costs, reflecting diligent cost management amid Bright Future transformation and Versum integration synergies
- R&D flat as percentage of sales, absolute increase virtually fully driven by investments in Semiconductor Solutions
- EBITDA pre (+11% org.) again exceeding sales growth, further supported by +5% FX tailwinds

* Marketing and selling expenses
Totals may not add up due to rounding

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