



MERCK KGAA, DARMSTADT, GERMANY - BERENBERG EUROPEAN CONFERENCE USA 2016

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Agenda

- 01 Business overview
- 02 Transforming the company
- 03 Healthcare – Funding for success
- 04 Life Science – Focusing on profitable growth
- 05 Performance Materials – Maintaining superior profitability
- 06 Executive Summary and Guidance



01

BUSINESS OVERVIEW

Group

Portfolio of three high-tech businesses



**Leading in specialty
pharma markets**

- Biologics and small-molecules
- Research focus: Oncology, Immunology & Immuno-Oncology
- Over-the-counter medicine



**Leading life science
company**

- Tools and services for biotech research & production
- Tools and laboratory supply for the academic research and industrial testing



**Market leader in
display materials**

- Innovative display materials
- Effect pigments and functional materials
- High-tech materials for electronics



02

TRANSFORMING THE COMPANY

Group

Looking back: Our Ambition in 2007



Transform a mid-sized conglomerate into a world class technology leader



Create a truly global and modern company



Secure sustainable profitable growth

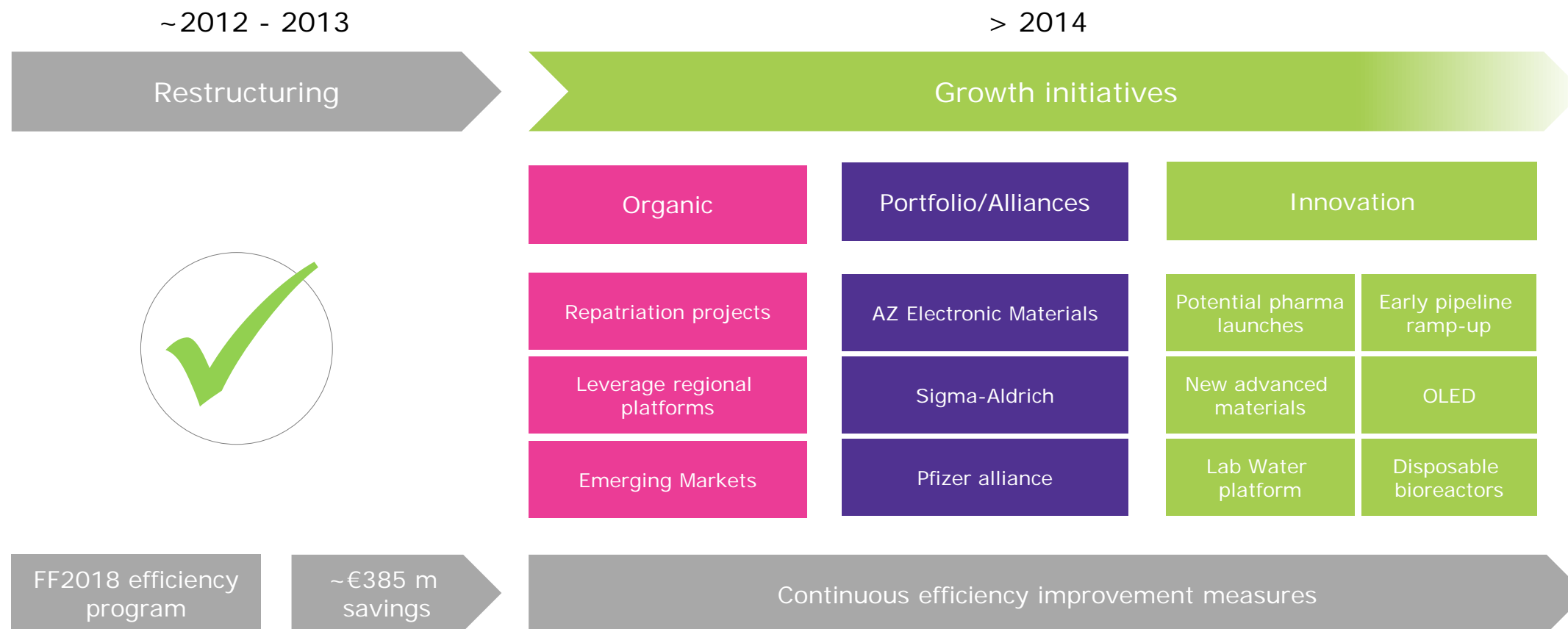


Generate value for our owners



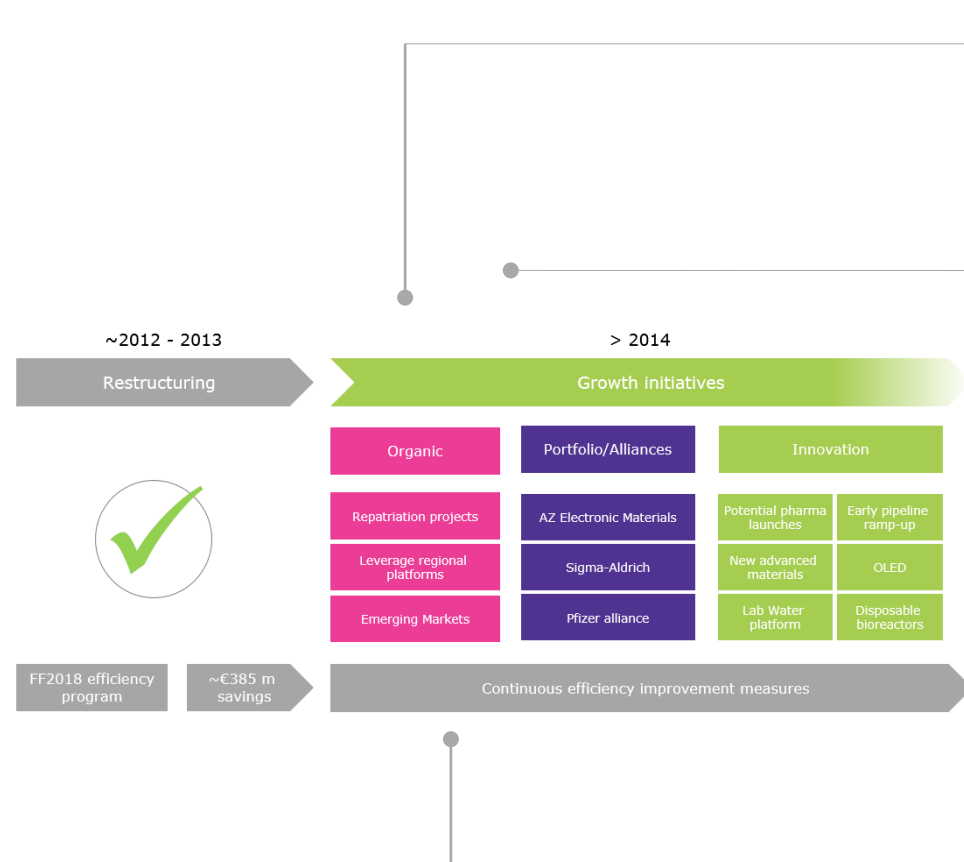
Group

Strategic agenda 2018 – milestones achieved



Group

Strategic agenda 2018 – milestones achieved



Repatriation projects:

- Glucophage and Euthyrox from Takeda in Russia
- Co-promotion agreement with BMS¹ for Glucophage in China
- Transfer of full promotional responsibilities for Erbitux in Japan

Leverage regional platforms:

- Transfer of Neurobion & Floratil to Consumer Health
- Strategic partnership with Lupin to broaden GM² portfolio

Emerging Markets:

- Healthcare focus on strategic markets such as China & Brazil
- Investments in regional sites (Nantong – China)

Portfolio and alliances:

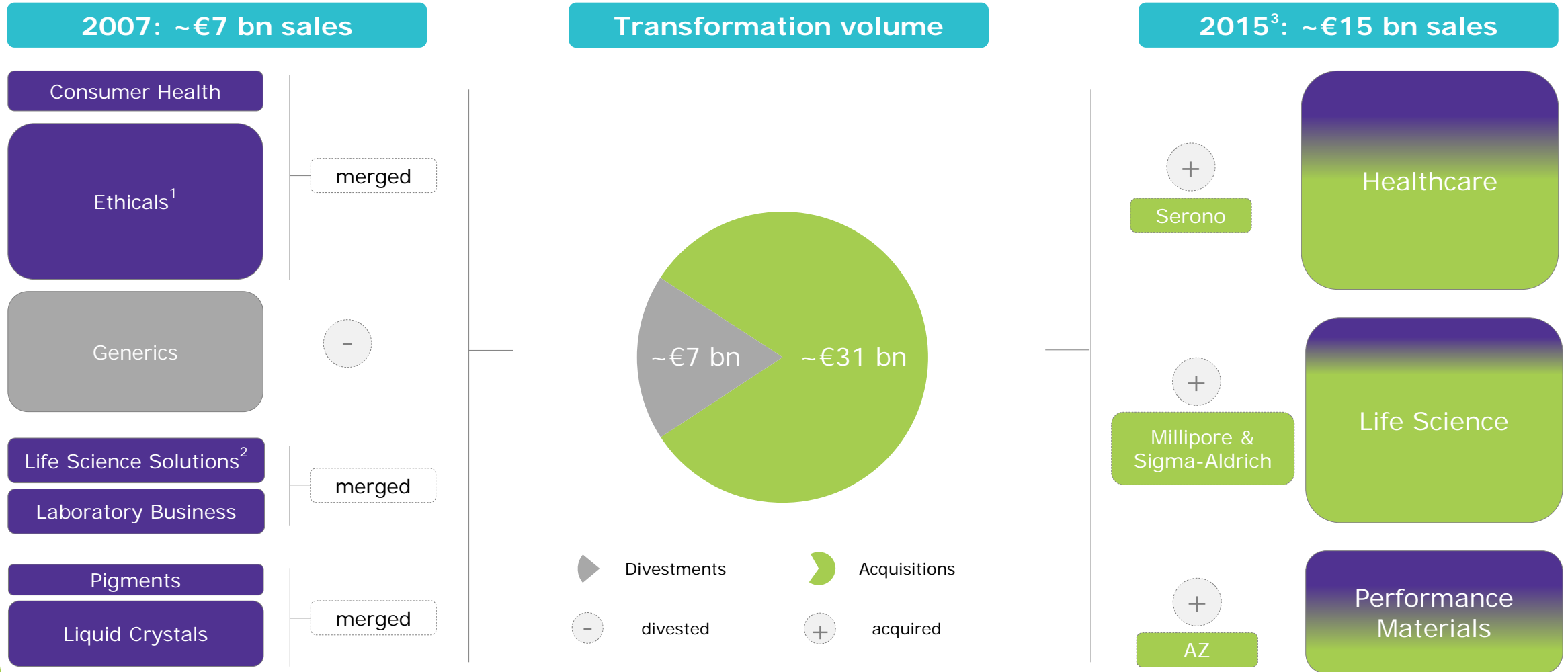
- AZ closed and integrated in 2014
- Sigma acquisition – closing on November 18, 2015
- Strategic alliance with Pfizer in immuno-oncology progressing

Innovation:

- Launch of UB-FFS as well as progress in OLED
- New innovation center in corporate HQ

Group

We have added scale and strengthened the attractiveness of its portfolio



Group

We have created three leading businesses

Healthcare

+ Serono

- Leading biotech company
- Global footprint
- Strong presence in growth markets
- Solid underlying business
- Promising pipeline assets

Life science

+ Millipore
+ Sigma

- No. 2 in the world market
- Broad and global product portfolio
- Leading eCommerce platform
- Best-in-class supply chain management

Performance Materials

+ AZ

- World market leader
- Technology and innovation leader

Science

Technology

Innovation

Specialties

Quality

Customer focus

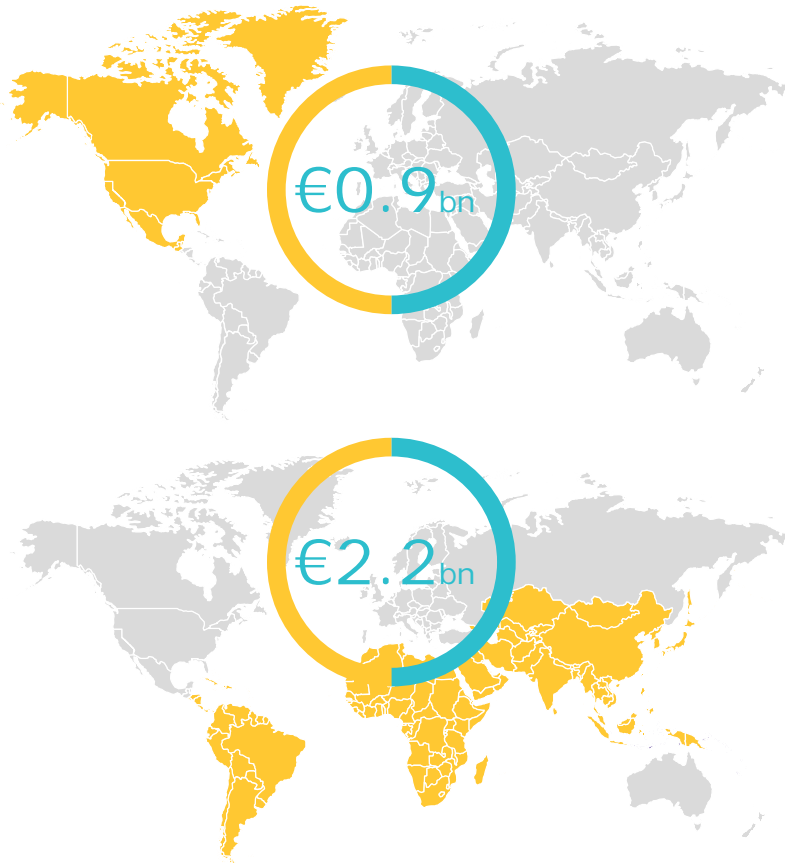
Group

North America and Emerging Markets have driven growth

Sales 2007

Initiatives

Sales 2015*



North America:

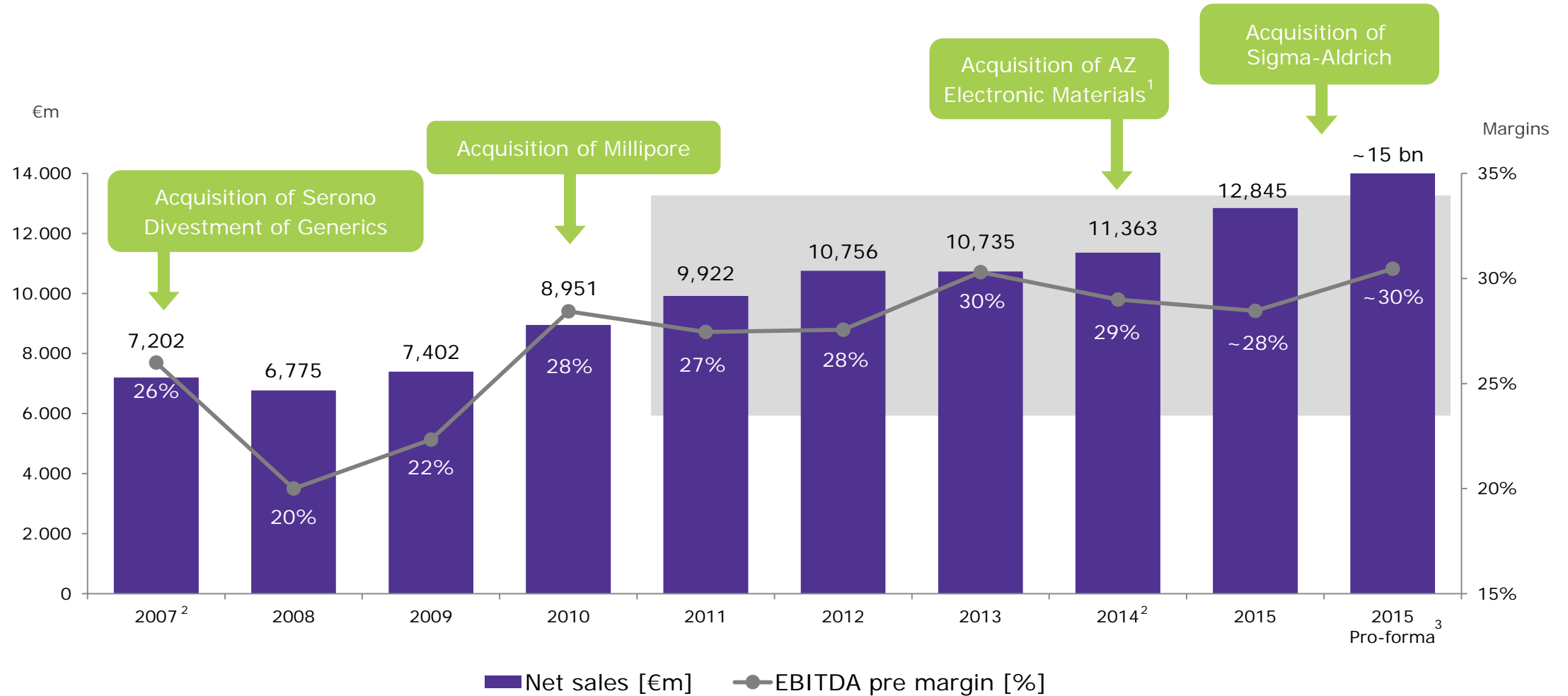
- Build presence through M&A
- Grow and defend Rebif
- Expand Fertility
- Grow Life Science

Emerging Markets:

- Drive General Medicine and Consumer Health
- Leverage Life Science portfolio
- LC and OLED leadership



Group Profitability improved fundamentally



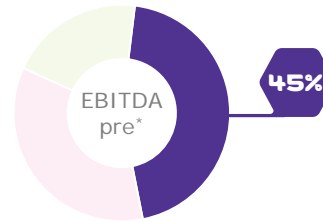
¹Included since 2 May 2014; ²2007 and 2014 EBITDA pre margin adjusted for comparability; ³Pro-forma calculation assumes 2015 full-year contribution from Sigma-Aldrich based on ThomsonReuters consensus as of November 11, 2015, and assumed 100% of realized synergies of €260m p.a.

Group

Each business sector has its specific priorities



Healthcare

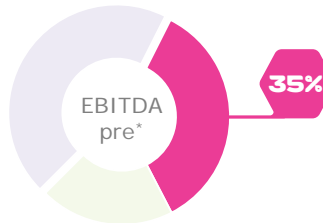


Funding for success

- Invest in pharma pipeline
- Prepare for launches
- Maintain cost discipline



Life Science

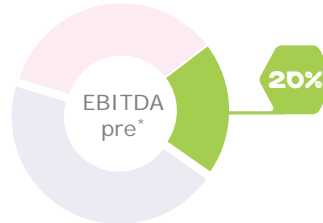


Focusing on profitable growth

- Sustain top-line momentum
- Drive underlying earnings
- Integrate Sigma and realize synergies



Performance Materials



Maintaining superior profitability

- Build on resilient four-pillar platform
- Continuously innovate
- Protect margins with high value-added products

We are set for profitable and sustainable growth

*2014 reported EBITDA pre including Sigma-Aldrich 2014 results, 100% of expected synergies, excluding Corporate & Other



03

HEALTHCARE – FUNDING FOR SUCCESS

Healthcare

Healthcare is set to deliver on promising pipeline candidates

Deliver
on organic growth

Focus
on pipeline



Stable existing business to fuel slight organic growth



Solid pipeline of oncology, immuno-oncology and immunology molecules



Transformation of R&D operating model ongoing



Competitive R&D funding in our focus areas



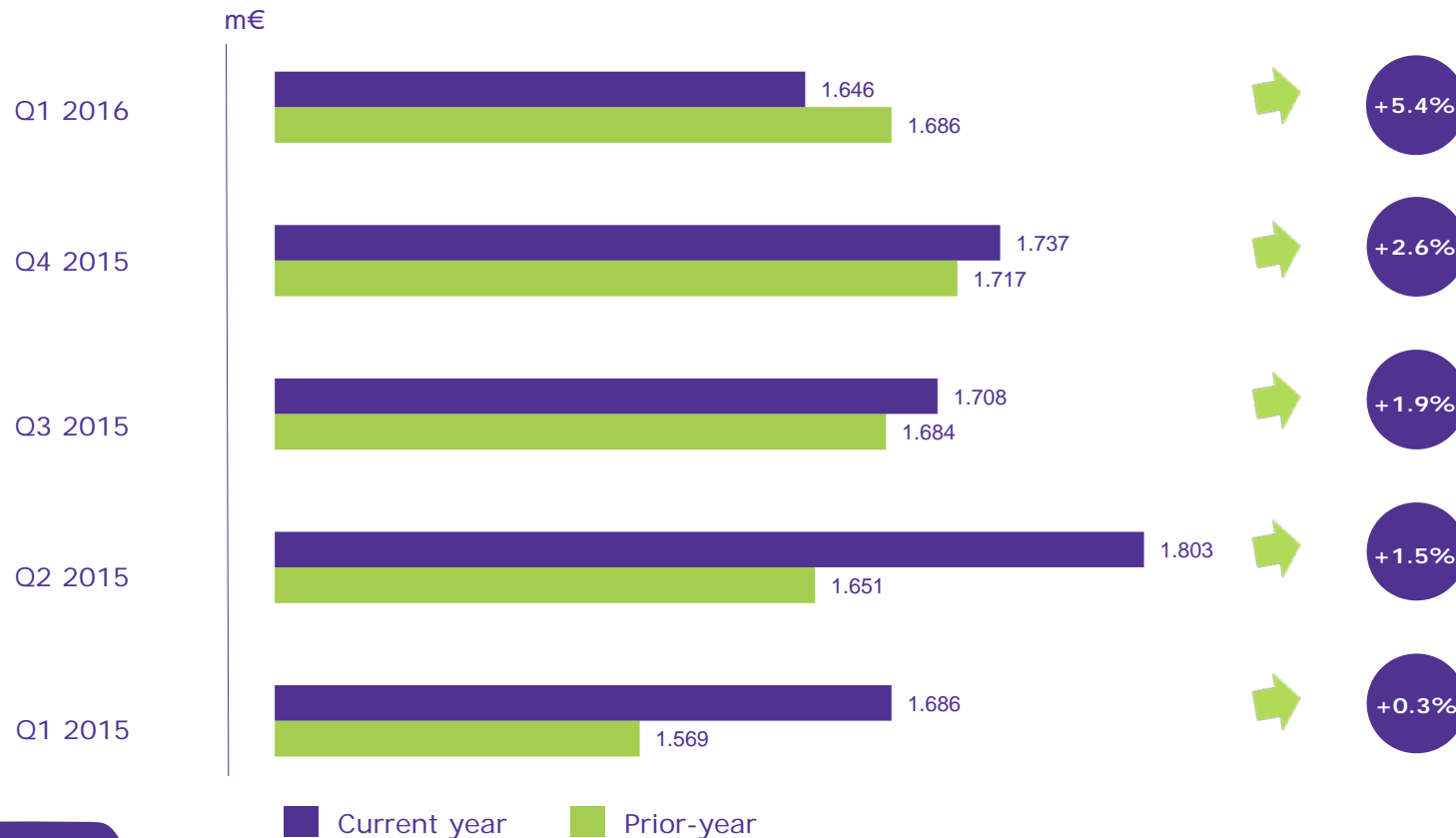
Cost discipline and efficient execution



Healthcare

Delivered organic sales growth, committed to future performance

Stable to slight organic growth



ERBITUX®
CETUXIMAB

Consumer Health

Rebif®

GONAL-f®

Pergoveris®
(hullitropin alfa and lutropin alfa for injection)

VIDREL®

Luveris®

Cetrotide®



Glucophage®

Concor®

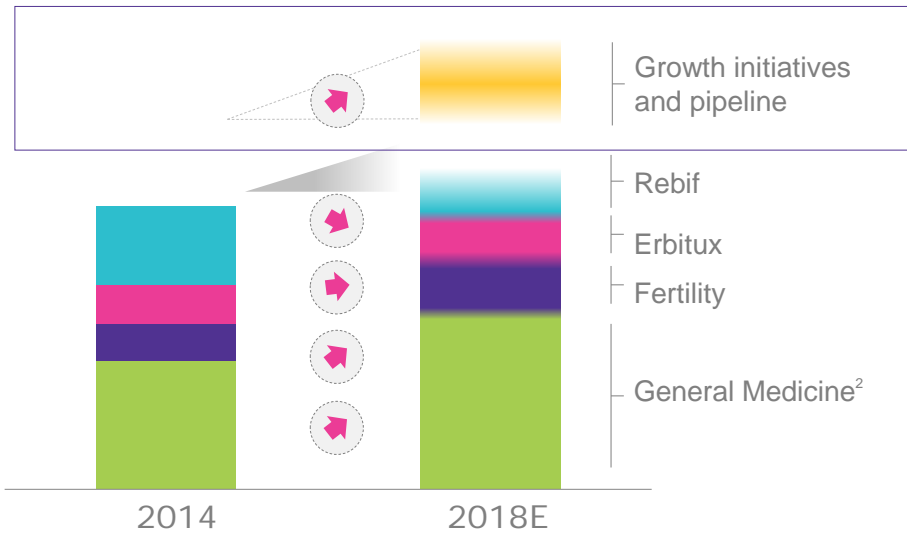
Euthyrox®

Defending the existing product portfolio is a key strength of Healthcare

Healthcare

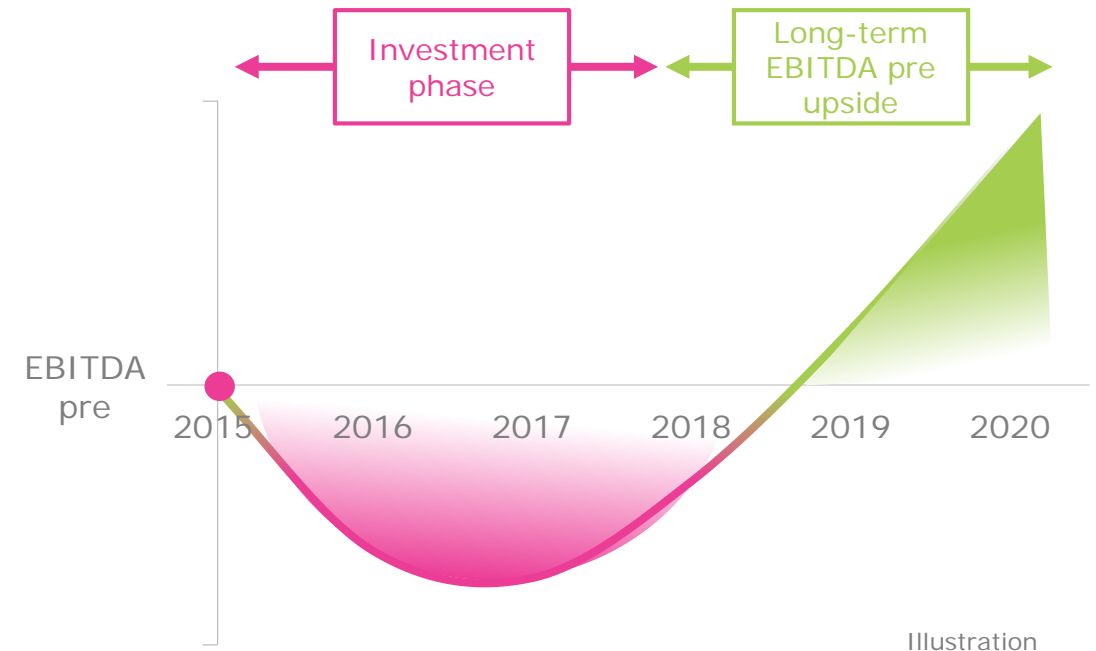
Pipeline opportunities will lead to rising investments

Stable to slightly growing¹ sales until 2018 confirmed



¹Organic; ²including Consumer Health, Cardiometabolic Care, Endocrinology, General Medicine and Others

Should pipeline catalysts materialize, investments will lead to considerable payback as of 2018+



Rising investments until 2017 to accelerate sales and earnings growth as of 2018

Healthcare

Investments in future growth

R&D*

- Immuno-Oncology: avelumab and ramp-up of earlier pipeline projects +€150-200m cost increase in 2016
- Oncology/Immunology, e.g. tepotinib, BTK inhibitor: mid to high double-digit €m cost increase in 2016

Marketing & Selling*

- Launch readiness to be ensured for avelumab and cladribine
- Costs for launch preparation in the mid to high double-digit €m range in 2016

- **Cost discipline remains high on the agenda**
- **Stringent pipeline assessments continue**
- **Investments based on sound business cases and robust clinical data**

Long-term growth investments partly mitigated by strict cost management

*For scenario that pipeline catalysts materialize



04

**LIFE SCIENCE –
FOCUSING ON
PROFITABLE GROWTH**

Life Science

Combining forces for future growth



Strategic rationale

- ▶ Broad and complementary product fit in attractive segments
- ▶ Expanding global reach and scale
- ▶ Leveraging operational excellence to deliver superior value to customers

Integration

- ▶ New organizational structure designed (Applied, Research and Process Solutions)
- ▶ Management placement completed
- ▶ Focus on seamless integration for customers and the organization

Financials

- ▶ Confirming synergies of €260 m p.a., realized by the third full year after closing
- ▶ Sigma acquisition closed on Nov 18th - consolidated for 43 days in 2015

Life Science

We create sustainable value that is based on strong strategic levers



Wide, innovative portfolio

- A combined portfolio of +300,000 products
- Integrated offerings along the life science value chain
- Complete workflow solutions



Balanced Geographic Footprint

- Increased presence in North America
- Accelerating growth momentum in Asia
- Expanded geographic reach in 60+ countries



Industry-leading Capabilities

- Outstanding supply chain management (Ability to deal with complexity)
- Simple e-commerce platform (customer interface with global coverage)
- Expertise to manage regulatory barriers

Our capabilities are the foundation for future topline growth in Life Science

Execute on integration and leverage synergy potential

Integration

- Significant restructuring and integration experience
- Deep knowledge and understanding of the life science industry
- Organizational placement completed

Synergies

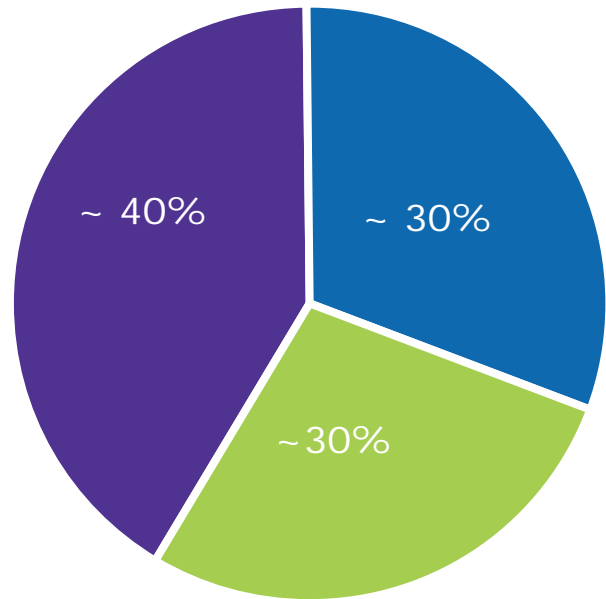
- Commitment to cost synergies of ~€260m confirmed
- Sources and timing of synergies clearly identified
- Delivery of synergies already started in 2015



Integration process well set to maximize the capabilities of both worlds

Expected synergies identified and fully confirmed

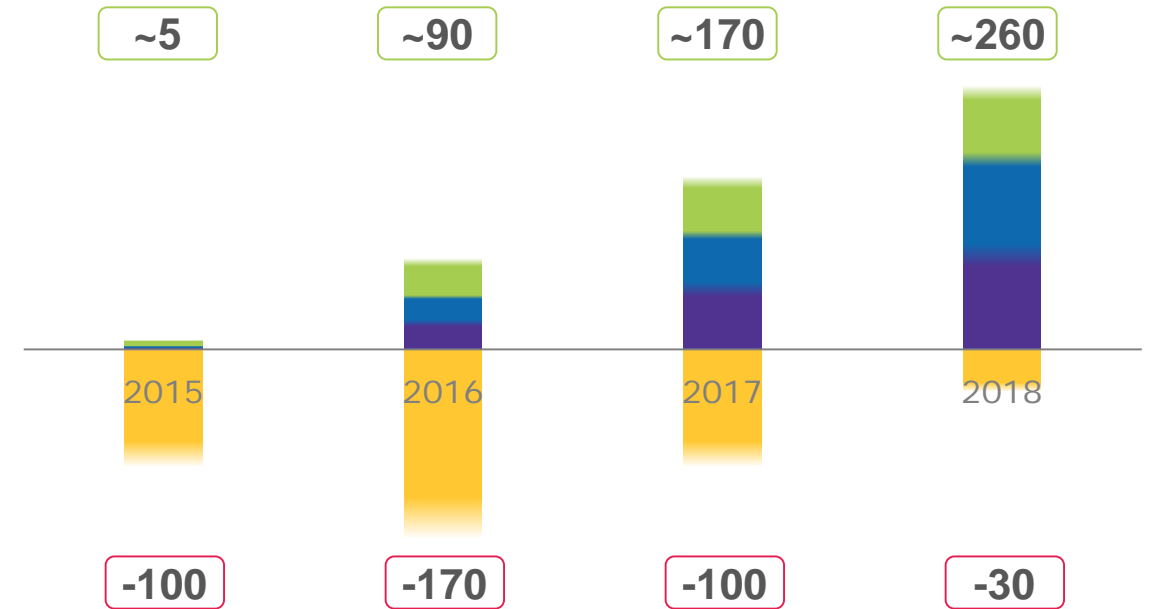
Sources of synergies (3rd full year 2018)



■ Production & Manufacturing ■ Marketing & Selling
■ Administration, R&D

Three major areas for delivering the synergies

Timing of expected synergies and related costs [€m]



■ Production & Manufacturing ■ Marketing & Selling
■ Administration, R&D ■ Integration costs

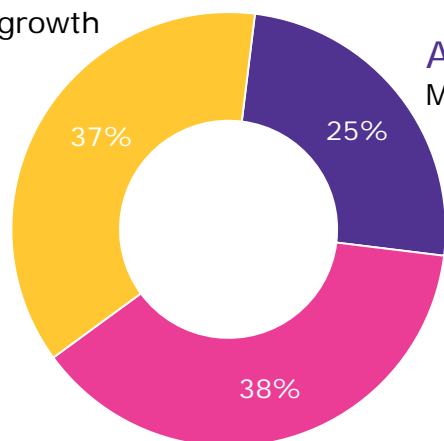
Fast synergy ramp-up to reach two thirds of target in 2017

Life Science

We aim to be the profitability champion of the sector

New sales breakdown as of Q1 2016

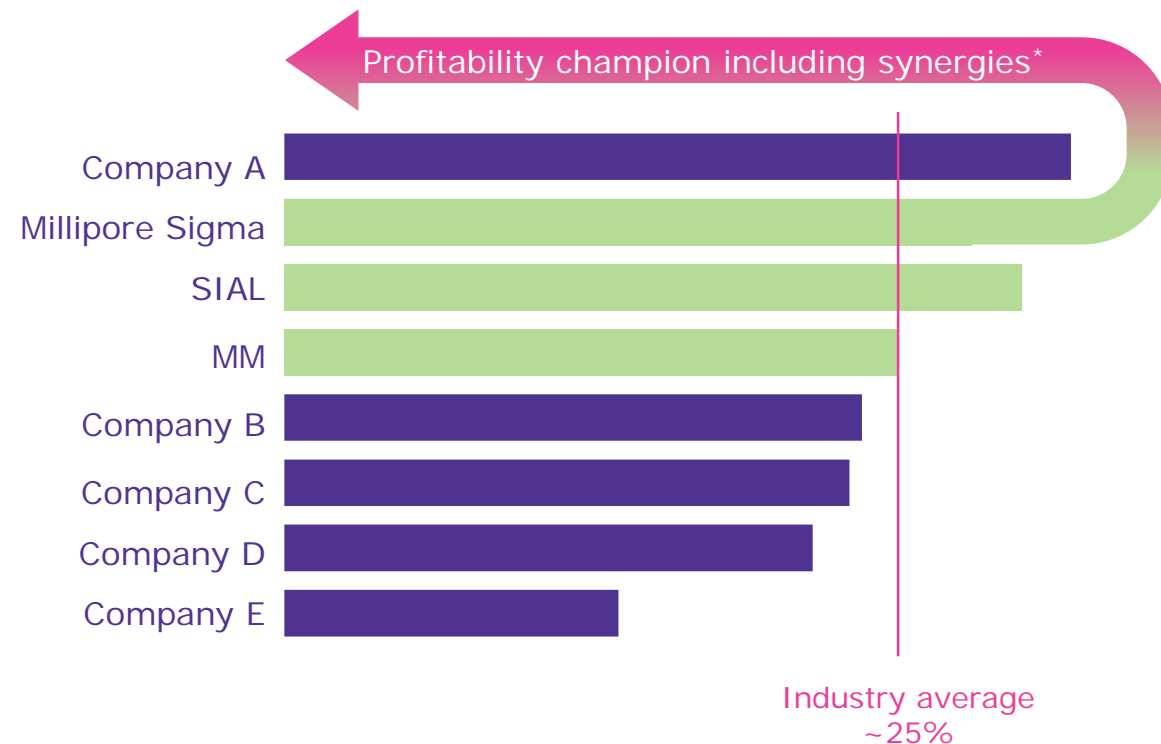
Research Solutions
Low single digit growth



Applied Solutions
Mid single digit growth

Process Solutions
High single digit growth

Above industry margin levels



Life Science is well set for sustainable growth and profitability

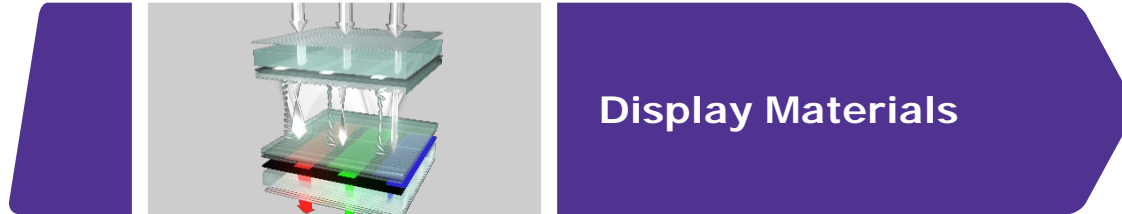


05

**PERFORMANCE
MATERIALS –
MAINTAINING SUPERIOR
PROFITABILITY**

Performance Materials

The four pillars are set for future profitable growth



~55-65% of total sales,

- liquid crystals (LC) and photoresists for TVs, smartphones and tablet computers
- other display and non-display applications (e.g. LC Windows)



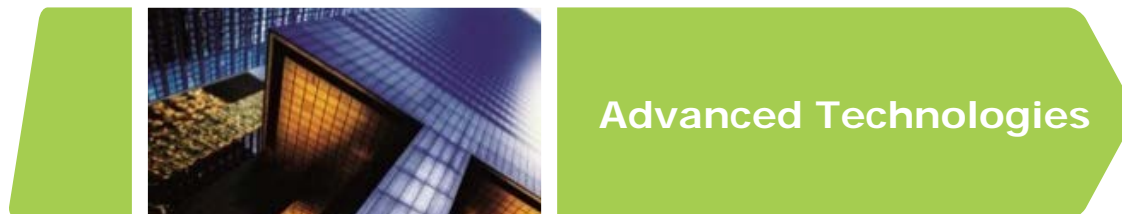
~15-20% of total sales,

- effect pigments and functional materials for coatings, plastics, printing and cosmetics
- functional materials for cosmetics and special applications



~15-20% of total sales,

- dielectrics, colloidal silica, lithography materials (photo resists), yield enhancers, edge-bead removers
- polyimide raw materials and printing materials



~5-10% of total sales,

- organic (OLED) and inorganic (LED) light emitting diodes and functional materials for electronics and energy solutions, especially OLED is providing first substantial sales

Performance Materials

Innovation leadership is the backbone of future profitability and growth

evolutionary



Incremental product adjustments - only minor investments

LC
pigments
ICM¹
advanced tech.

New singles for PSVA technology
Meoxal luminous metal effect pigments
low defect CMP² slurries
Organic Photovoltaics

revolutionary



Fundamental research - more substantial investments needed

LC
pigments
ICM¹
advanced tech.

Smart windows, smart antennas, new modes
Counterfeiting prevention applications
Directed self-assembly (DSA) in lithography
OLED printing technology

Performance Materials

Sound platform to deliver high earnings

1

Four-pillar platform diversifies earnings stream

- Liquid Crystals remain key earnings contributor
- AZ* expertise is being leveraged to develop innovative value-added solutions for customers
- OLED is becoming a visible growth driver
- Pigments continue to grow with high-end products

2

Continuous innovation as key profitability driver

- New products contribute high growth and profitability
- LC* technology mode UB-FFS* launched in 2014 is the most recent example

Diversification of portfolio and ongoing innovation lead to strong profitability

Balanced sales and consistently high earnings



We are the innovation leader



*Abbreviations: AZ = AZ Electronics, LC = Liquid crystals, UB-FFS = Ultra Brightness Fringe Field Switching, IPS = In-Plane-Switching, VA = Vertical Alignment, PS-VA = Vertical Alignment with additional polymer layer fabricated from reactive mesogenes

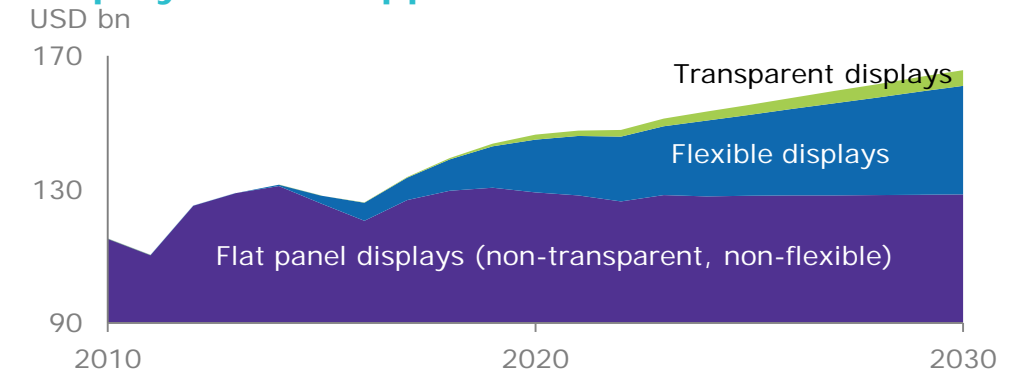
Performance Materials

Long-term growth and margin drivers are intact

3 Macroeconomics and electronics remain buoyant

- Global consumer electronics market expected to grow above GDP*
- Mobile data, Internet of Things and Big Data are key growth drivers for LC and IC
- Display market continues to grow

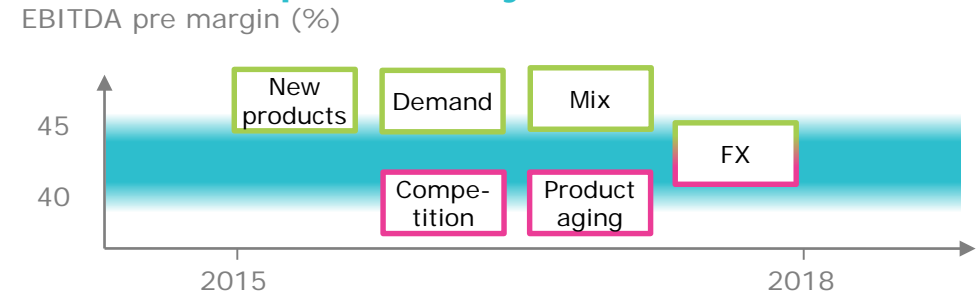
Display market opportunities continue to evolve¹



4 High value-added products yield superior profitability

- High market share in liquid crystals expected to prevail
- Strong differentiation by innovation inherent mature of business

Sustainable profitability drivers



Unique differentiation and market position will continue to lead to strong profitability and maintain low single-digit growth trajectory



06

EXECUTIVE SUMMARY AND GUIDANCE

Group

We are well set for profitable and sustainable growth



Maximize growth of existing franchises
Deliver on pipeline



Focus on seamless integration and deliver cost synergies
Leverage strategic capabilities for value creation



Drive innovation and technology leadership across all businesses
Innovate in applications beyond displays

Group

We have clear financial priorities for the next two years



Focus on **cash flow**
and **deleveraging**

- **Strong cash flow** will be used to drive down gearing to <2x net debt / EBITDA pre in 2018
- **Larger acquisitions (>€500m) ruled out** for the next two years
- **Dividend policy** reflects sustainable earnings trend



Ongoing cost discipline

- **Synergy generation** is utmost priority
- **Cost discipline** continues in all business sectors
- **Further efficiency gains** from ongoing improvement and harmonization of processes and systems



**Efficient capital
allocation**

- **All our businesses** have growth potential
- **Decisions on growth investments** are based on sound business cases and robust clinical data

Near-term financial priorities will secure our profitable growth path

Full-year 2016 guidance

Group guidance for 2016, including Sigma-Aldrich

▶ Net sales: ~ €14.8 – 15.0 bn ◀

▶ EBITDA pre: ~ €4,100 – 4,300 m ◀

▶ EPS pre: ~ €5.65 – 6.00 ◀





Appendix

- 01 Guidance Details
- 02 Sigma acquisition
- 03 Healthcare update
- 04 Financial details



01

GUIDANCE DETAILS

2016 business sector guidance



Healthcare

Net sales

- Slight organic growth
- Organic Rebif decline
- Other franchises growing

EBITDA pre

~ €1,800 – 1,900m



Life Science

Net sales

- Mid single-digit organic growth
- Main driver Process Solutions
- High double-digit contribution from Sigma

EBITDA pre

~ €1,620 – 1,670m



Performance Materials

Net sales

- Organically about stable
- Including moderate destocking in liquid crystals
- Growing demand in all businesses

EBITDA pre

~ €1,100 – 1,150m

Additional financial guidance 2016

Further financial details

Corporate & Other EBITDA pre	~ -€370 – -400 m
Interest result	~ -€270 – -300 m
Intangibles amortization from Sigma PPA	~ €250 – 300 m p.a.
Underlying tax rate	~23% to 25%
Capex on PPE	~€750 – 800 m
Hedging/USD assumption	2016 & 2017 hedge rate ~40-45% at EUR/USD ~1.10 to 1.15
2016 Ø EUR/USD assumption	~1.07 – 1.12

Strong focus on cash generation to ensure swift deleveraging

Net debt and leverage development

[Net debt/
EBITDA pre]



Focus on deleveraging

- Commitment to swift deleveraging to ensure a strong investment grade rating and financial flexibility
- Strong cash flow will be used to drive down leverage to expected <2x net debt/EBITDA pre in 2018
- Larger acquisitions (>€500 m) ruled out for the next two years
- Interest result in 2016: ~-€270 – -300 m

High cost base in strong currencies and hedging losses partially offset FX tailwinds



Sales

- Global presence
- ~40% of sales in Europe

Costs

- High Swiss franc cost base due to manufacturing sites
- R&D hub and notable sales force in U.S.

FX Impact



Sales

- Balanced regional sales split between EU, NA and RoW

Costs

- Extensive manufacturing and research footprint in the U.S.
- Global customer proximity requires broad-based sales force

FX Impact



Sales

- ~80% of sales in Asia-Pacific
- Industry is USD-driven

Costs

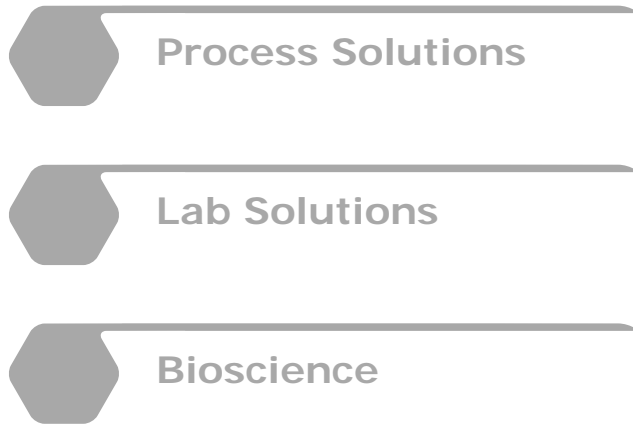
- Main production sites in Germany
- Several R&D and mixing facilities in Asia

FX Impact



Life Science: New reporting structure reflects customer-centric approach

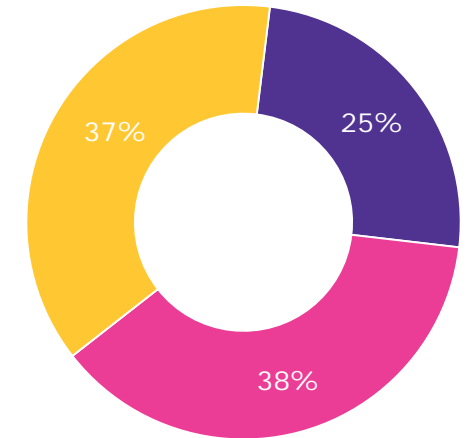
2015 product-centric structure



New 2016 customer-centric structure



New sales breakdown as of Q1 2016

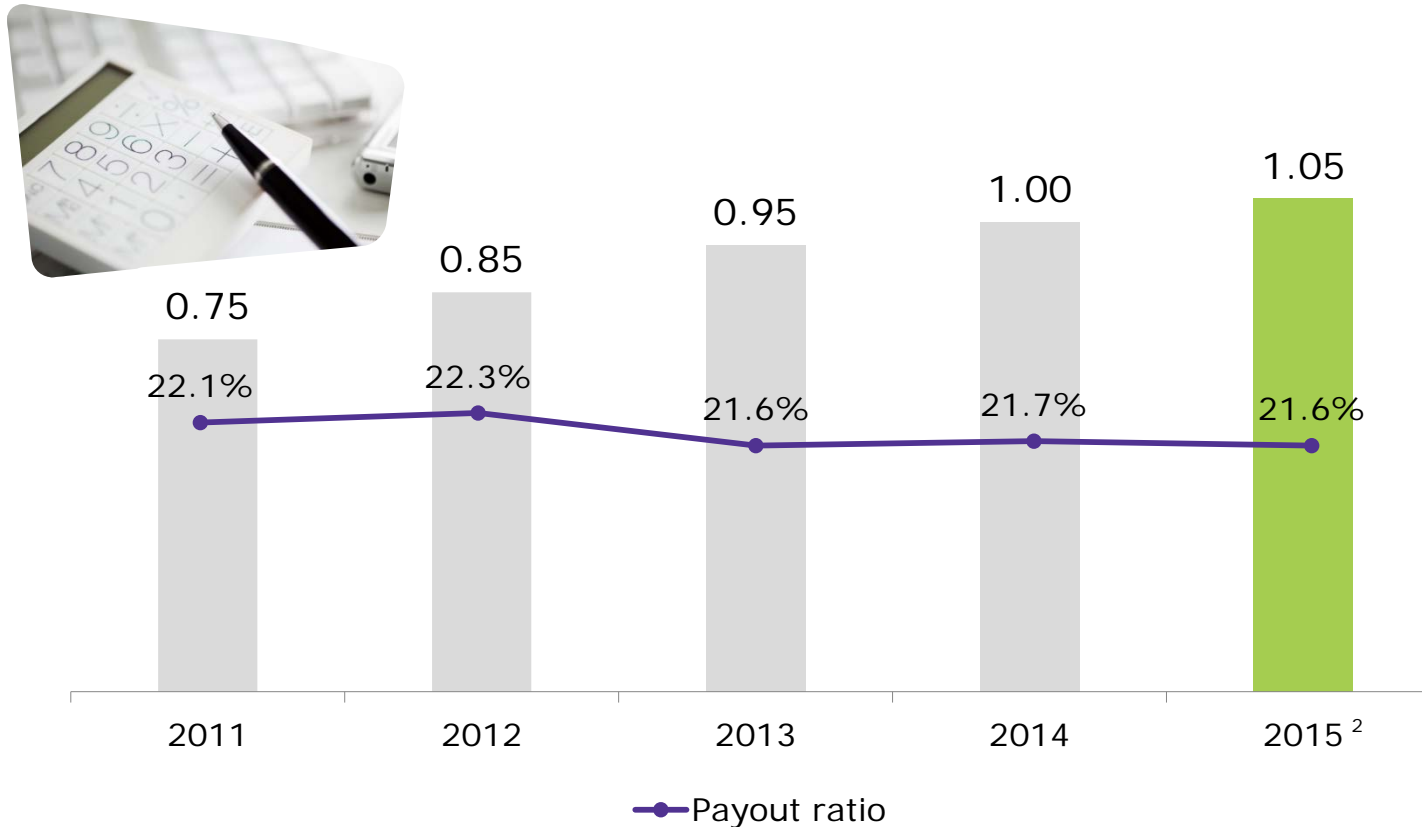


Customer-centric business approach:

- Enhanced emphasis on customers' unique needs
- Customized solutions for the specific needs of each segment from the start of product development to its completion

Sustainable dividend development

Dividend¹ development 2011-2015



2015 dividend and policy

- Dividend of €1.05 per share proposed² for 2015
- Last year's dividend constitutes the minimum level³
- Development of dividends in line with business performance and earnings progression
- Aiming for a corridor of 20%-25% of EPS pre

¹Adjusted for share split, which has been effective since June 30, 2014; ²Final decision subject to Annual General Meeting approval;

³Assuming a stable economic environment



02

SIGMA ACQUISITION

Sigma Aldrich acquisition – A compelling transaction rationale

Strategic and operational fit

- Increasing scale – expanding position in attractive life science industry
- Enhancing value for our customers
 - Broadens product range and ease of doing business for Laboratories & Academia
 - Complements Process Solutions product offering
- Closing the gap in U.S. – adequate presence in all geographies
- Leveraging existing platforms for global innovation rollout

Financial fit

- Further diversification of revenue stream
- Substantial synergy potential
- Immediately accretive to EPS pre* and EBITDA margin
- Solid investment grade rating will be maintained

Sigma-Aldrich – A leading life science consumables supplier

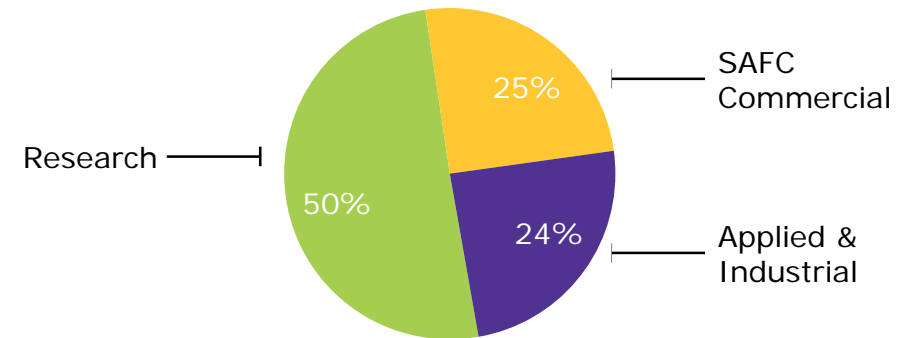
Business

- Total revenues of \$2.8 billion in 2014
- ~9,000 employees including ~3,000 scientists and engineers
- Headquartered in St. Louis, MO
- Chemical and biochemical products, kits and services provider to laboratories and pharma production
- No. 1 eCommerce platform in the industry; ~1,600 sales people

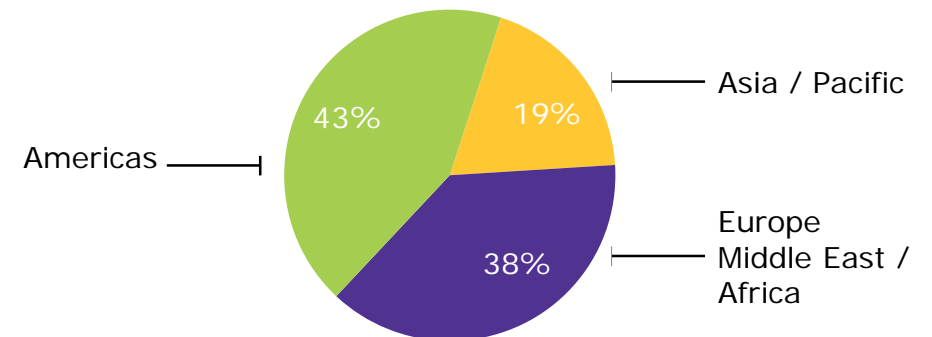
Footprint

- Balanced regional exposure; strength in North America
- Operations in ~40 countries; products available in ~160 countries

Sales by division FY 2014^{*}



Sales by region FY 2014^{*}



Together serving the attractive >€100bn life science industry

>€100 bn life science industry

Research Solutions

~€42 bn industry



Low single digit growth

Process Solutions

~€38 bn industry



High single digit growth

Applied Solutions

~€45 bn industry



Mid single digit growth

Market trends

- Academic/government, pharma and contract research
- Rising volume of experiments
- Capped by slow funding growth

- Small molecule and biologics production
- High growth in biologics market
- Stable small molecule market

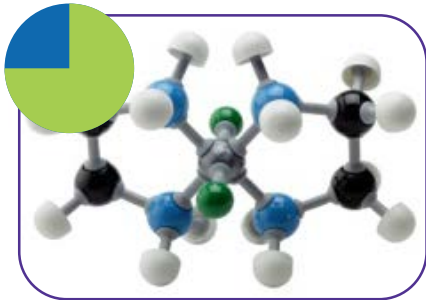
- Clinical testing, environmental, diagnostics, food and beverage
- Food safety, environmental testing requirements increasing
- Uptake of in-vitro diagnostics testing

Attractive industry EBITDA margin of ~25%

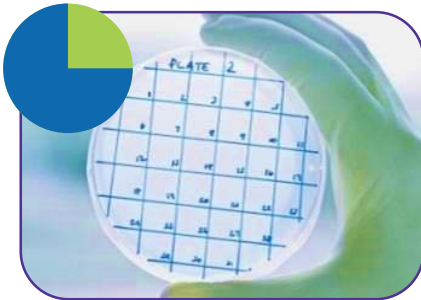
Broad and complementary product fit in attractive segments

Laboratory & Academia*

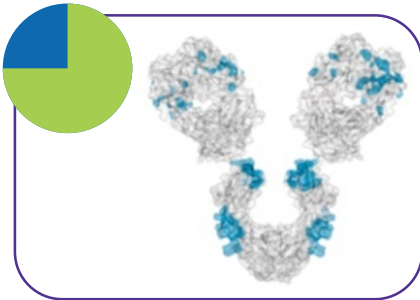
Analytical standards



Microbiology



Antibodies



Biochemicals

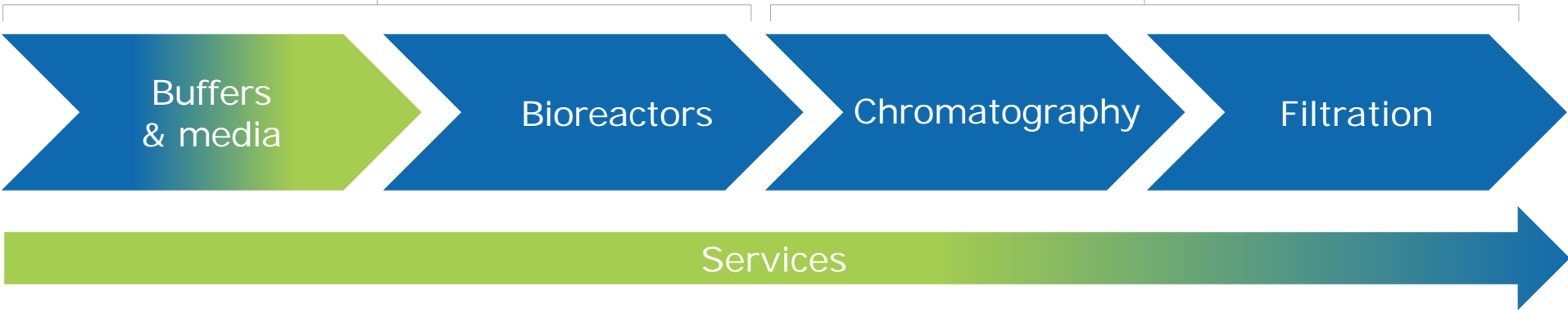


Merck KGaA, Darmstadt, Germany Sigma-Aldrich

BioPharma production

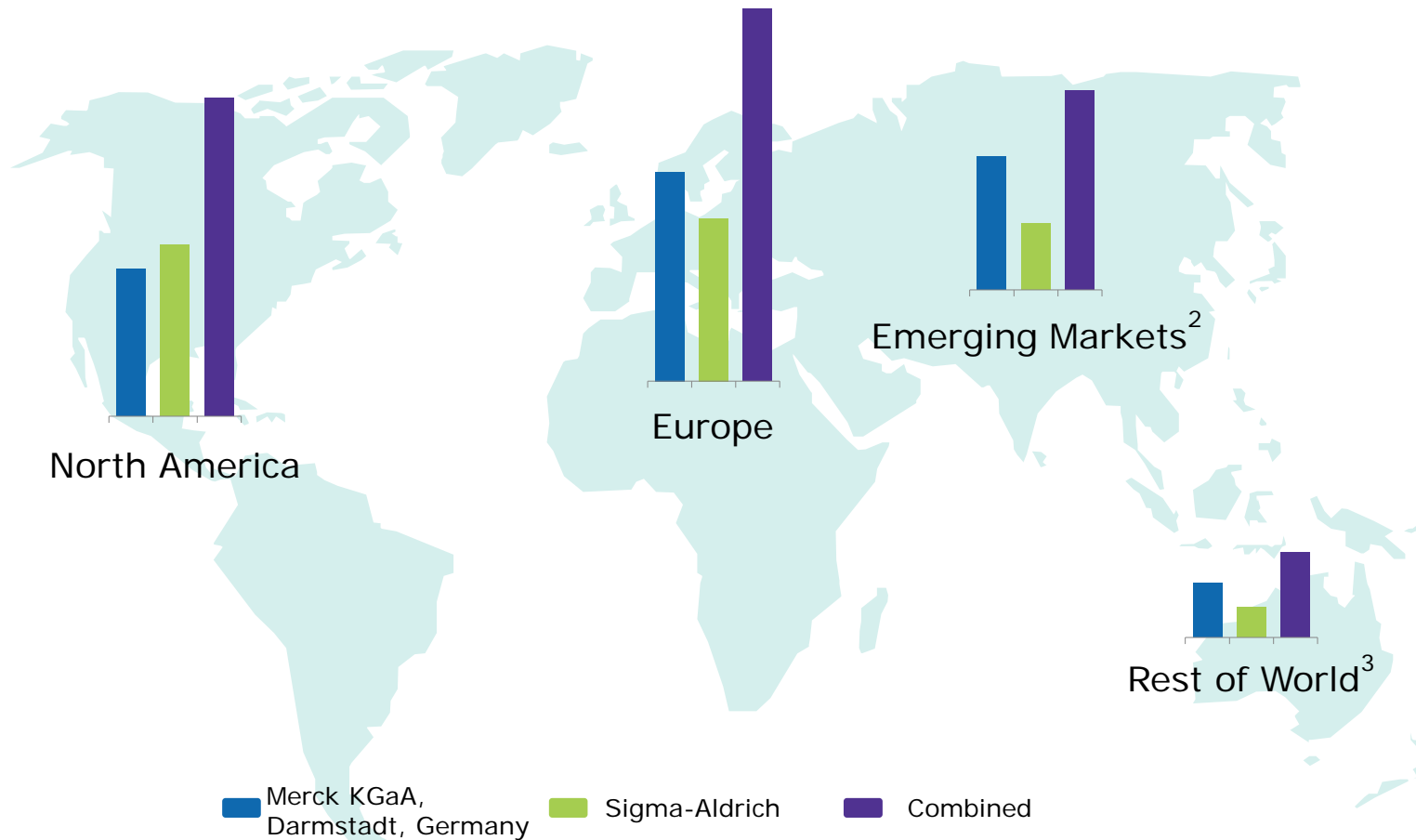
Upstream process

Downstream process



Expanding global reach and scale

Global sales¹ footprint of both businesses



Increased presence in North America

- Benefiting from a leading position in U.S. Laboratory sector
- Increased access to U.S. academia

Exposure to fast-growing Asia

- Accelerating growth momentum
- Opportunity to leverage eCommerce platform

Leveraging operational excellence to deliver superior value to customers

Product innovation

- Delivering innovative workflow solutions to increase customers' efficiency
- Broad technology and platforms
- Recurring winners of renowned innovation awards



Mobius FlexReady



Duolink



Amnis

Process innovation

- Efficient supply chain for >300,000 products
- Best in class customer experience; e.g. 24 hour delivery in major markets
- Top-notch customer interface supported by eCommerce platform



eCommerce platform



Supply chain

Efficient work flow solutions and unique customer experience

Sigma-Aldrich – Business and transaction financials

Overview of financial data¹

US\$ m	2012	2013	2014 ⁴
Revenue	2,623	2,704	2,785
% YoY at constant FX	+3%	+3%	+4%
EBITDA (adjusted)	809	821	847
% of sales	31%	30%	30%
D&A	136	138	132
% of sales	5%	5%	5%
Net financial debt (period end)	-41	-357	-513
No. of shares (diluted, m)	122	121	120

Proposed transaction details²

- Equity value ~US\$17 bn (€13.1 bn)
- Enterprise value (EV) ~€12.7 bn including net cash ~€360 m⁵
- Financing through cash and debt; no equity
- Assumed synergies: ~€260m
- In line with core acquisition criteria
 - Immediately accretive to EPS pre
 - Solid investment grade rating will be maintained

Implied forward transaction multiples³

	2013	2014
EV/Sales	6.1x	5.9x
EV/EBITDA	20.1x	19.4x
EV/EBITDA pro-forma incl. synergies ³	14.3x	13.9x

¹Source: Company reports; ²FX conversion: EUR/USD 1.30; ³"Pro-forma" calculation based on 100% expected synergies; ⁴FY 2014 results; ⁵at time of announcement (Sept. 2014)



03

HEALTHCARE UPDATE

The road to maximizing our existing franchises is clear



Continue to drive front-line mCRC share by increasing patient testing and expanding head and neck coverage



Capitalize on strong efficacy and new smart devices to maximize differentiation and defend franchise



Build on No.1 position and ART¹ channel access with embryo diagnostics and other innovative technologies



Harness strengths of existing business and build a new focus area driven by innovative devices and services for patients



Build on existing track record in Emerging Markets, drive brand and life-cycle management and expand business including asset repatriation



Portfolio management: Differentiating across diverse business models

General Medicine portfolio



- Limited risk with high cash generation
- Sustainable steady growth fueled by Emerging Markets



Biologicals portfolio



- Moderate risk and reward profile
- Economies of scale due to state-of-the-art production capabilities
- Emerging Markets gain importance



Oncology & Immunology innovation portfolio



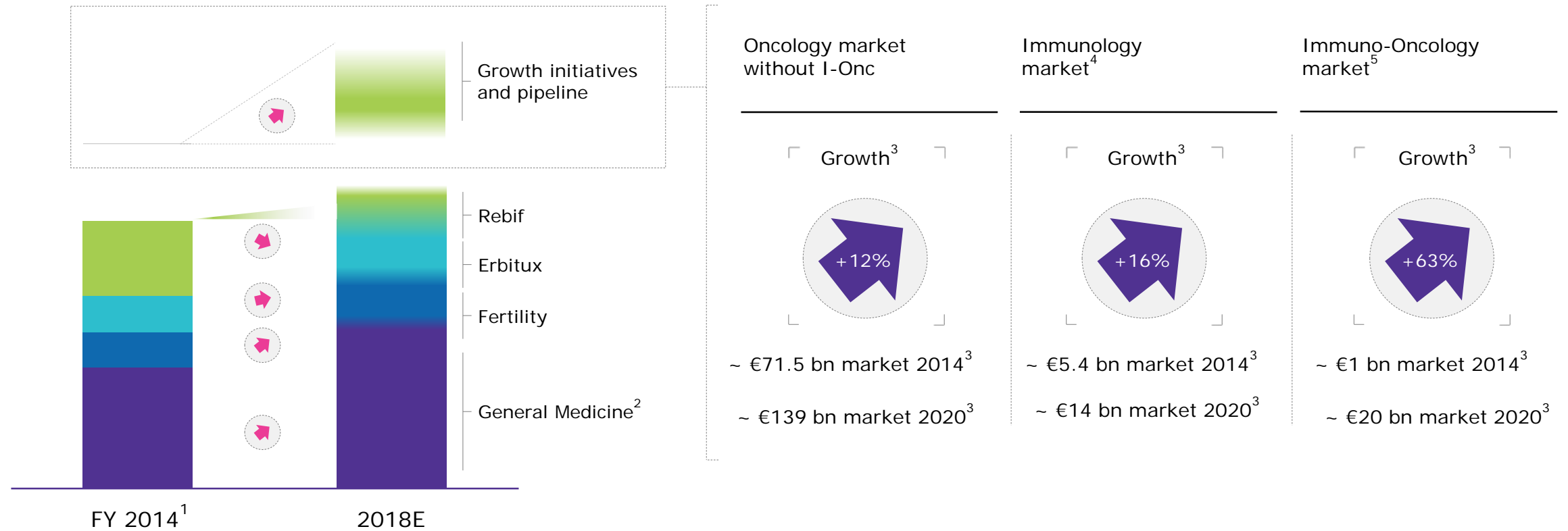
- High reward at high risk
- Innovation key success factor – high R&D spend
- Promising pipeline projects



Mid-term, all parts of the portfolio need to earn their cost of capital

We are pursuing attractive growth opportunities with our pipeline

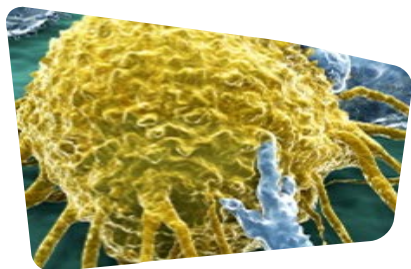
Healthcare investments focused on three attractive market segments



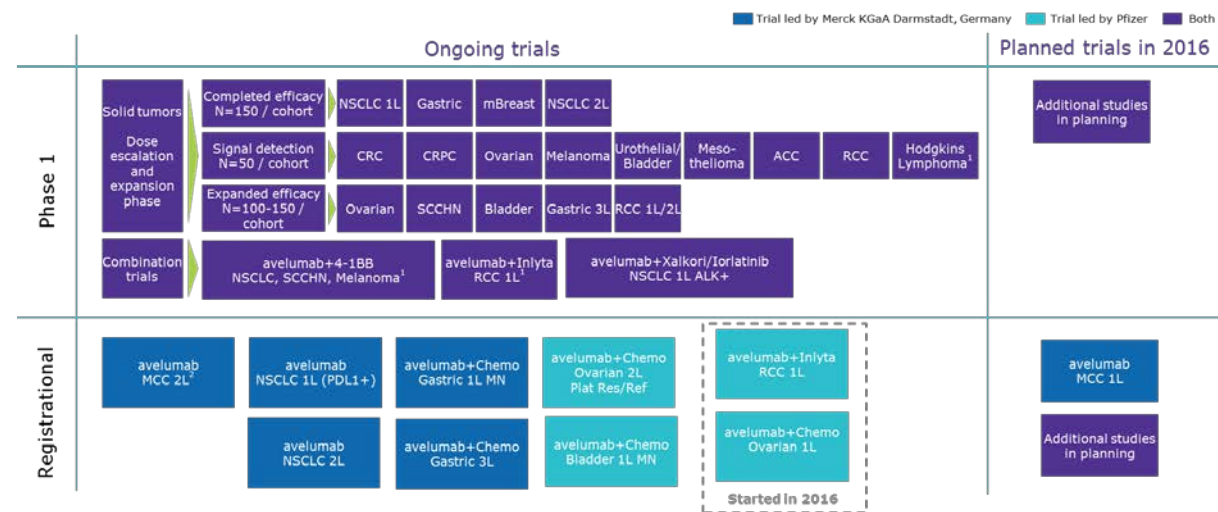
¹adapted to new Healthcare business sector to include Consumer Health; ²including Consumer Health, Cardiometabolic Care, Endocrinology, General Medicine and Others; ³Data for global market 2014, CAGR for 2014-2020; Source: Sales data according to EvaluatePharma®, accessed August 2015; ⁴Immunosuppressants Therapeutic Class as defined by EvaluatePharma, excluding ustekinumab; ⁵Immuno-oncology (PD-L1, PD-1, CTLA-4, OX-40, IDO, CAR T cells)

New revenue streams from pipeline expected from 2017/2018 onwards

AVELUMAB

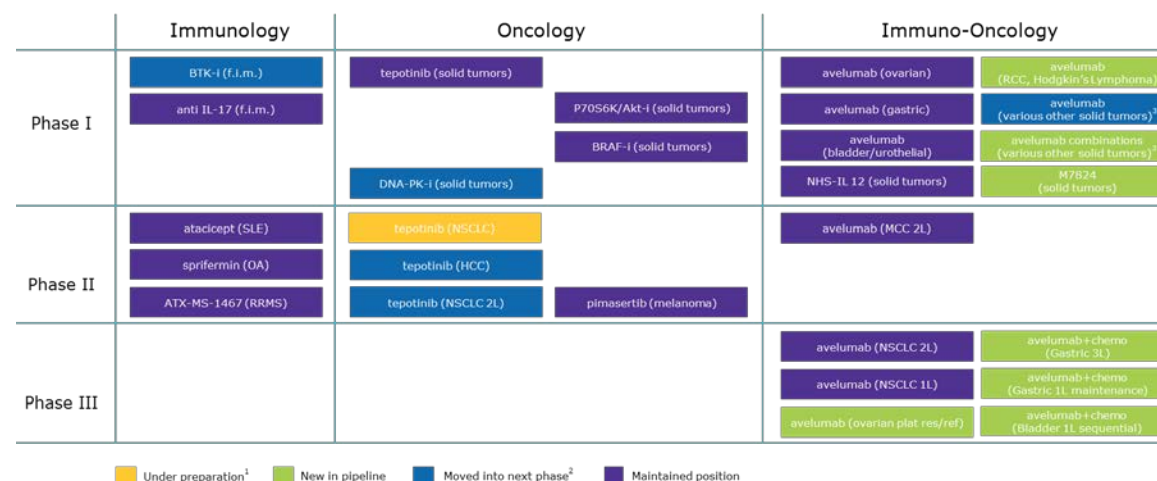
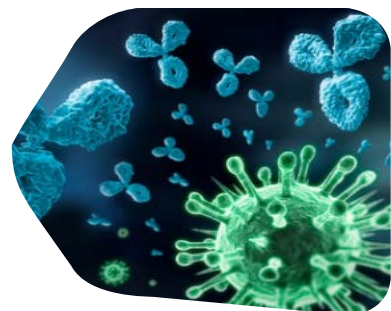


- 6 pivotal trials initiated in 2015 (NSCLC 1L/2L, ovarian platinum resistant/refractory, gastric 1L/3L, bladder 1L)
- Breakthrough therapy and Fast track designations (US) for mMCC received, Orphan Drug Designation (US and EU)
- Initiation of more than 20 clinical programs together with Pfizer across more than 15 tumor indications in 2015
- Collaboration with Syndax evaluating avelumab in combination with entinostat in ovarian cancer



selected R&D projects

- Atacicept**: study enrolment completed ahead of schedule, data readout Phase II in H2 2016
- BTK inhibitor**: explore options for partnering
- M7824**: Phase I dose escalation for our first in class bi-functional fusion-protein targeting PD-L1 and TGF-β
- Tepotinib**: Phase II data in hepatocellular carcinoma expected in H2 2016
- Cladribine**: EU filing expected in H1 2016, other geographies under review



Going forward, the differentiation strategy for the alliance is fueled by the potential for combination



2015

- Phase II 2L MCC BTD, ODD and FTD received
- Phase III 1L and 3L gastric cancer
- Phase III 1L and 2L NSCLC
- Phase I Hodgkins Lymphoma

CHEMOTHERAPY

- Phase III 1L Bladder maintenance
- Phase III Ovarian Plat res/ref

NOVEL/NOVEL

- Phase I avelumab combined with 4-1BB in NSCLC, SCCHN and Melanoma
- Phase I 1L NSCLC ALK/ROS+

2016

- Initiation of phase III 1L MCC
- Further studies under preparation

- Initiation of phase III 1L ovarian cancer
- Further phase III studies under preparation

- Start of Syndax collaboration for a phase Ib/II in ovarian cancer
- Further exploratory and pivotal trials under preparation

Future

Fast to market with monotherapy

Expansion with combinations
Next generation combinations

ASCO: We look forward to presenting the results from our avelumab trials at the upcoming scientific meeting in further detail*

1

MCC (2L+)

- Largest trial of a PD(L)1 agent in Merkel cell carcinoma as of today
- Clinical activity with durable responses in high unmet-need patient population (previously treated with chemotherapy)

2

NSCLC (1L)

- Single-agent avelumab showed clinical activity
- Higher trend in PD-L1+ patients suggested
- Phase 3 trial is underway (JAVELIN LUNG 100)

3

Ovarian

- Single-agent avelumab showed clinical activity in heavily pre-treated patients
- Largest reported dataset of patients with advanced ovarian cancer treated with anti-PD-L1 as of today
- Phase 3 trials are underway (JAVELIN OVARIAN 100 and 200)

4

Gastric (1L MN & 2L)

- Treatment with avelumab as a 1st line maintenance and 2nd line treatment showed clinical activity
- Largest reported dataset of patients with advanced gastric cancer treated with anti-PD-L1 as of today
- Disease control rate was also observed in a SwM (switch-maintenance therapy) group

5

Urothelial / Bladder

- Treatment with avelumab showed clinical activity
- Phase 3 trial is underway (JAVELIN BLADDER 100)

6

Mesothelioma

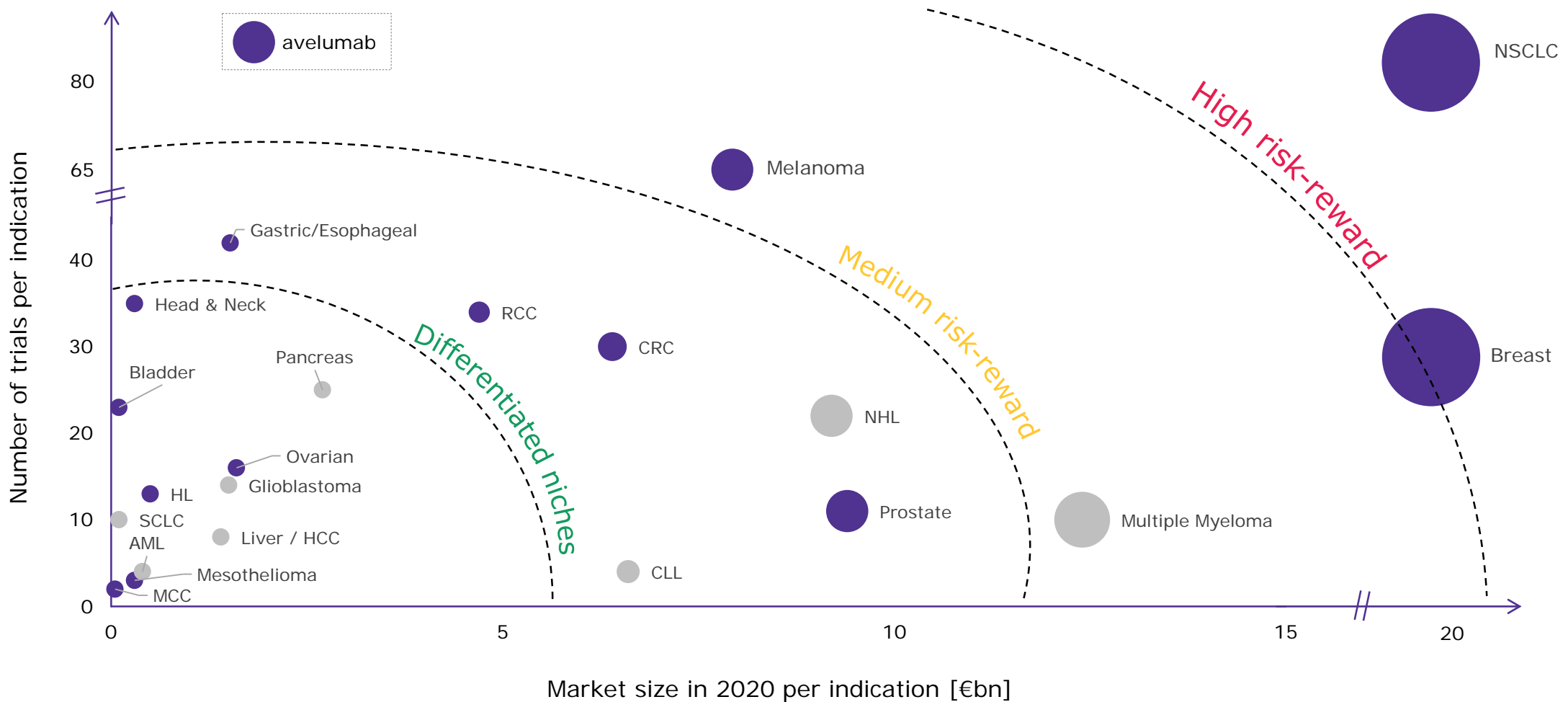
- Largest reported dataset of patients with advanced unresectable tumors treated with anti-PD-(L)1 as of today
- Treatment with avelumab showed clinical activity in pre-treated patients

7

mACC

- First study to date of an anti-PD-(L)1 agent in this rare tumor type (advanced adrenocortical carcinoma)
- Treatment with avelumab showed clinical activity in pre-treated patients

Avelumab plays predominantly in attractive and differentiated niches



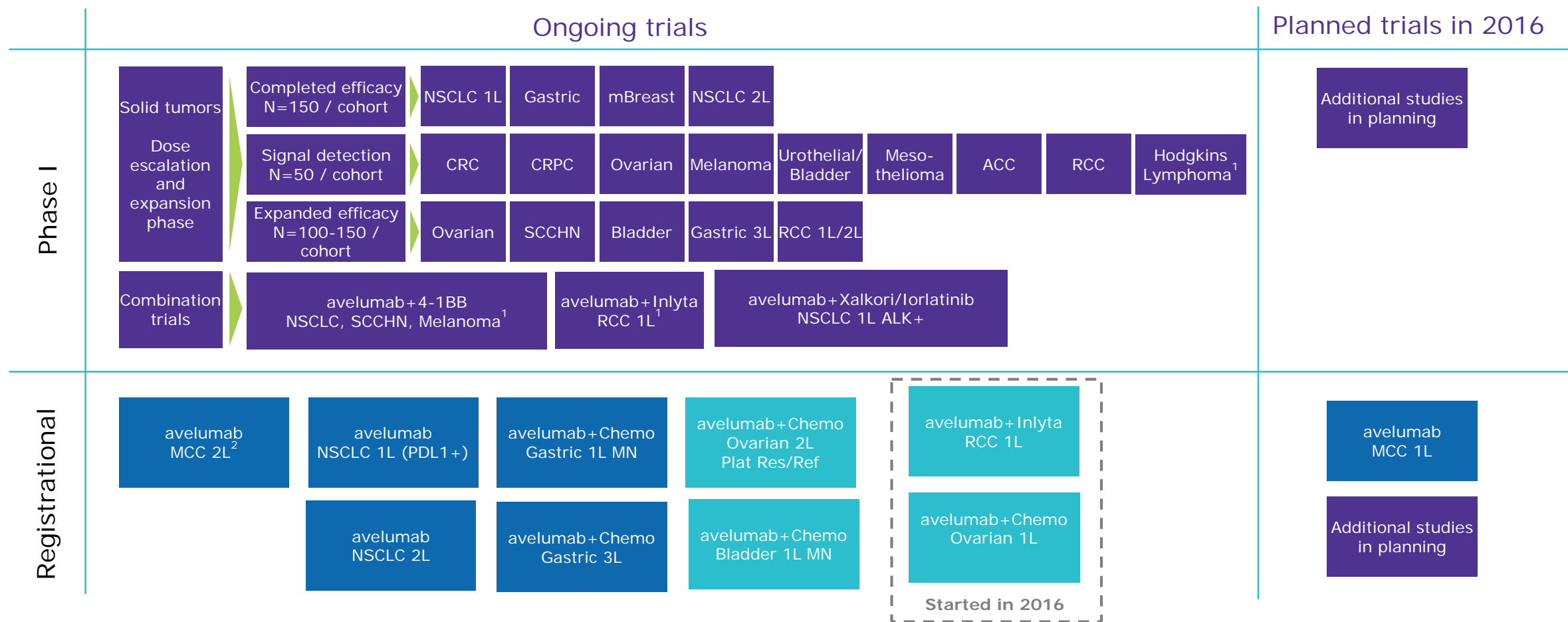
Sources: Trialtrave and Cortellis as of September 2015, Boston Consulting Group, Evaluate Pharma forecast 2020
 Acronyms: SCLC = Small Cell Lung Cancer; HL = Hodgkins Lymphoma; NHL = Non Hodgkins Lymphoma; AML = Acute Myeloid Leukaemia

The alliance met its ambitious goal in 2015: the initiation of 6 pivotal trials

AMBITION			
1 Ovarian Plat res/ref	<ul style="list-style-type: none">Estimated patient enrolment: 550Comparator: Pegylated liposomal doxorubicinEstimated primary completion: H1 2018*	✓	Smart leader
2 Bladder 1L maint.	<ul style="list-style-type: none">Estimated patient enrolment: 668Comparator: Best supportive careEstimated primary completion: H1 2019*	✓	Smart follower
3 Gastric 1L maint.	<ul style="list-style-type: none">Estimated patient enrolment: 629Comparator: Physician's choice of chemotherapy/BSCEstimated primary completion: H2 2018*	✓	Smart leader
4 Gastric 3L	<ul style="list-style-type: none">Estimated patient enrolment: 330Comparator: Physician's choice of chemotherapy/BSCEstimated primary completion: H1 2018*	✓	Smart leader
5 NSCLC 1L	<ul style="list-style-type: none">Estimated patient enrolment: 420Comparator: Physician's choice of platinum containing chemotherapyEstimated primary completion: H1 2018*	✓	Smart follower
6 NSCLC 2L	<ul style="list-style-type: none">Estimated patient enrolment: 650Comparator: docetaxel/chemotherapyEstimated primary completion: H2 2021*	✓	Smart follower

Avelumab: JAVELIN clinical development program initiated as of Oct 2015 and continuously expanded to further indications in 2016

■ Trial led by Merck KGaA Darmstadt, Germany ■ Trial led by Pfizer ■ Both



Acronyms: CRC = colorectal cancer; CRPC = Castrate Resistant Prostrate Cancer; ACC = Adrenocortical Cancer; SCCHN = Squamous Cell Carcinoma of the Head and Neck; RCC = Renal Cell Carcinoma; Avelumab is an investigational agent. Avelumab is the proposed non-proprietary name for the anti-PD-L1 monoclonal antibody (MSB0010718C); ¹ Trials currently initiating; ² Phase II trial

Clinical pipeline

Phase I

Tepotinib
c-Met kinase inhibitor
Solid tumors
M2698
p70S6K & Akt inhibitor
Solid tumors
M3814
DNA-PK inhibitor
Solid tumors
Beigene-283
BRAF inhibitor
Solid tumors

Avelumab¹
Anti-PD-L1 mAb
Solid tumors
M9241 (NHS-IL12)²
Cancer immunotherapy
Solid tumors
M7824
Bifunctional immunotherapy
Solid tumors

M1095 (ALX-0761)
Anti-IL-17 A/F nanobody
Psoriasis
M2951
BTK inhibitor
Systemic lupus erythematosus

Phase II

M2736 (ATX-MS-1467)
Immune tolerizing agent
Multiple sclerosis

Tepotinib
c-Met kinase inhibitor
Non-small cell lung cancer
Tepotinib
c-Met kinase inhibitor
Hepatocellular cancer

Avelumab¹
Anti-PD-L1 mAb
Merkel cell carcinoma

Sprifermin
Fibroblast growth factor 18
Osteoarthritis
Atacicept
Anti-Blys/anti-APRIL fusion protein
Systemic lupus erythematosus

Phase III

Avelumab¹ – Anti-PD-L1 mAb
Non-small cell lung cancer 1L³
Avelumab¹ – Anti-PD-L1 mAb
Non-small cell lung cancer 2L⁴
Avelumab¹ – Anti-PD-L1 mAb
Gastric cancer 1L³
Avelumab¹ – Anti-PD-L1 mAb
Gastric cancer 3L⁵
Avelumab¹ – Anti-PD-L1 mAb
Bladder cancer 1L³
Avelumab¹ – Anti-PD-L1 mAb
Ovarian cancer platinum resistant/refractory
Avelumab¹ – Anti-PD-L1 mAb
Renal cell carcinoma 1L³

MSB11022
Proposed biosimilar of Adalimumab
Chronic plaque psoriasis

Registration

Cladribine Tablets⁶ –
Lymphocyte targeting agent
Relapsing-remitting multiple sclerosis

- Neurodegenerative Diseases
- Oncology
- Immunology
- Immuno-Oncology
- Biosimilars

Pipeline as of May 19, 2016

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.

¹Avelumab is the proposed International Non-proprietary Name (INN) for the anti-PD-L1 monoclonal antibody (previously known as MSB 0010718C);

²Sponsored by the National Cancer Institute (USA); ³1st line treatment; ⁴2nd line treatment; ⁵3rd line treatment

⁶As announced on September 11, 2015 Merck KGaA Darmstadt, Germany is preparing a regulatory submission to the European Medicines Agency

Newsflow: Upcoming pipeline catalysts

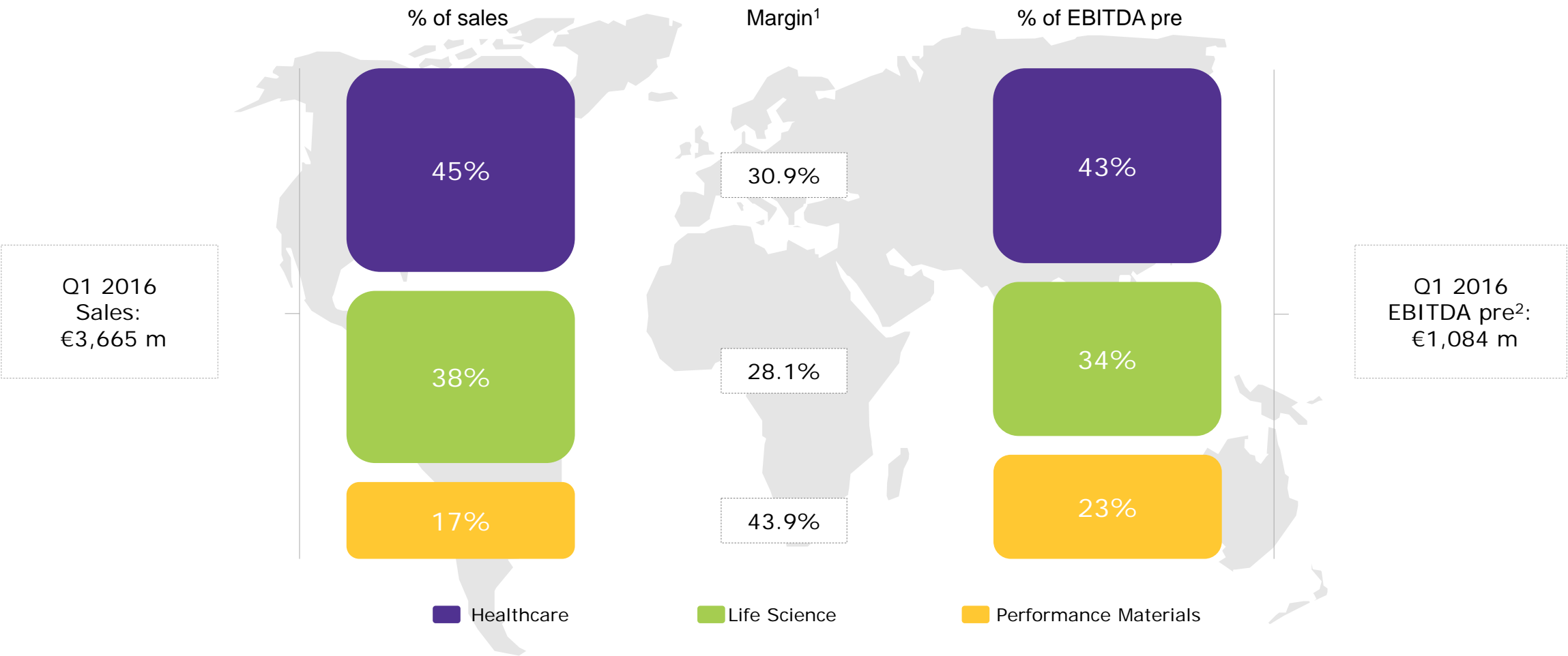
avelumab	▶ Data readout Phase II MCC	▶ H1 2016
cladribine	▶ Expected EMA filing	▶ H1 2016
sprifermin	▶ Data readout Phase II	▶ H2 2016
atacicept	▶ Data readout Phase II	▶ H2 2016
M7824 (PD-L1 – TGF-beta)	▶ Dose escalation outcome	▶ H2 2016
tepotinib	▶ Data readout Phase II	▶ H1 2017



04

FINANCIAL OVERVIEW

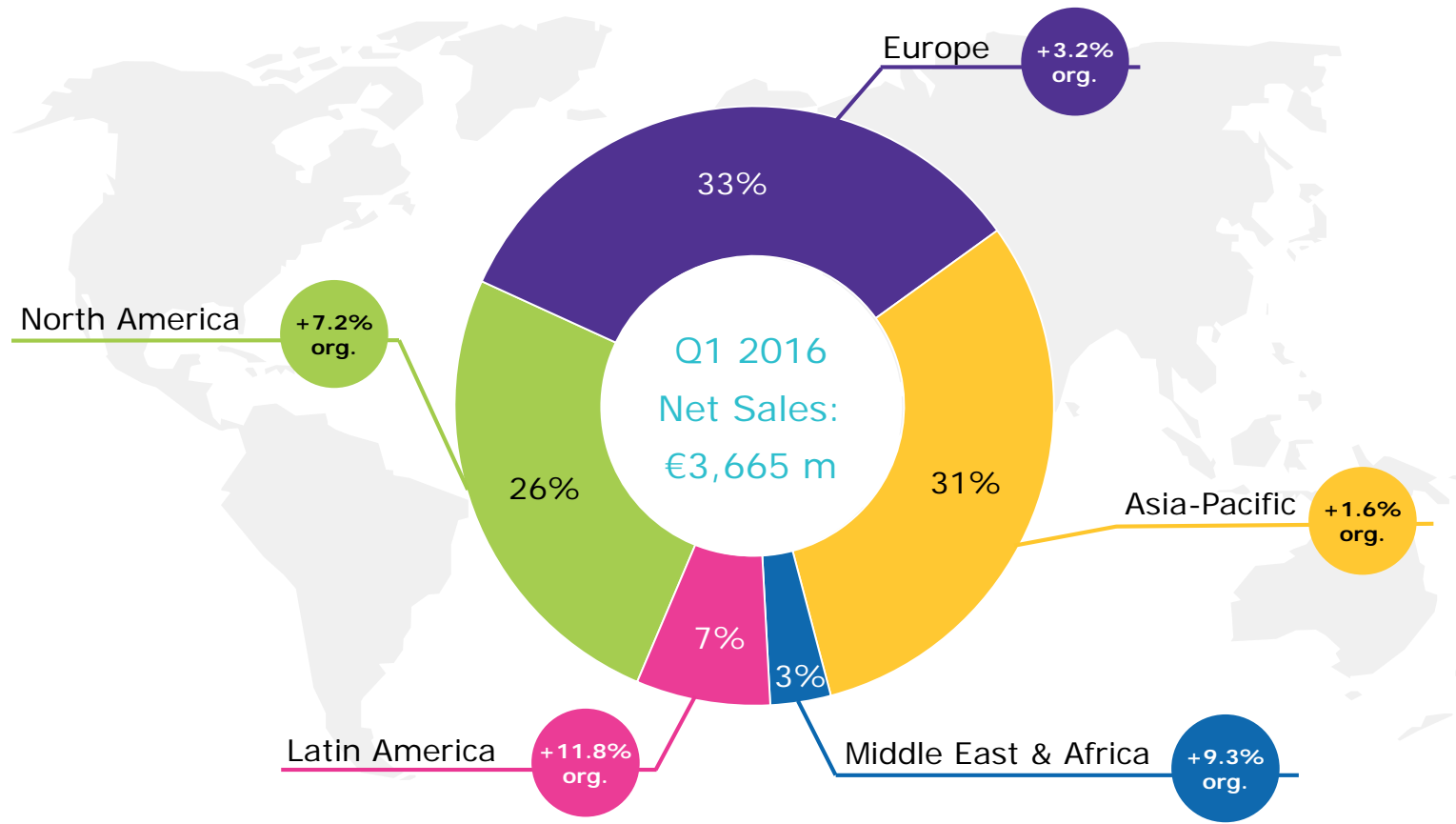
Strong businesses with attractive margins



¹EBITDA pre margin in % of net sales; ²Including Corporate/Others (-€91 m)

Organic growth in all regions

Regional breakdown of net sales [€ m]



Regional development

- Organic growth in Europe driven by Life Science, partially offset by Rebif
- North America benefits from strong Fertility franchise and Life Science as well as Rebif price increases
- Asia-Pacific shows slight organic growth as good demand in Fertility is offset by display supply chain destocking
- Strong organic growth in LatAm driven by Consumer Health and new reimbursement for Rebif in Brazil

Q1 2016: Overview

Key figures

[€m]	Q1 2015	Q1 2016	Δ
Net sales	3,041	3,665	20.5%
EBITDA pre	853	1,084	27.0%
Margin (in % of net sales)	28.0%	29.6%	
EPS pre	1.12	1.54	37.5%
Operating cash flow	279	352	26.5%

[€m]	Dec. 31, 2015	March 31, 2016	Δ
Net financial debt	12,654	12,072	-4.6%
Working capital	3,448	3,726	8.0%
Employees	49,613	50,262	1.3%

Comments

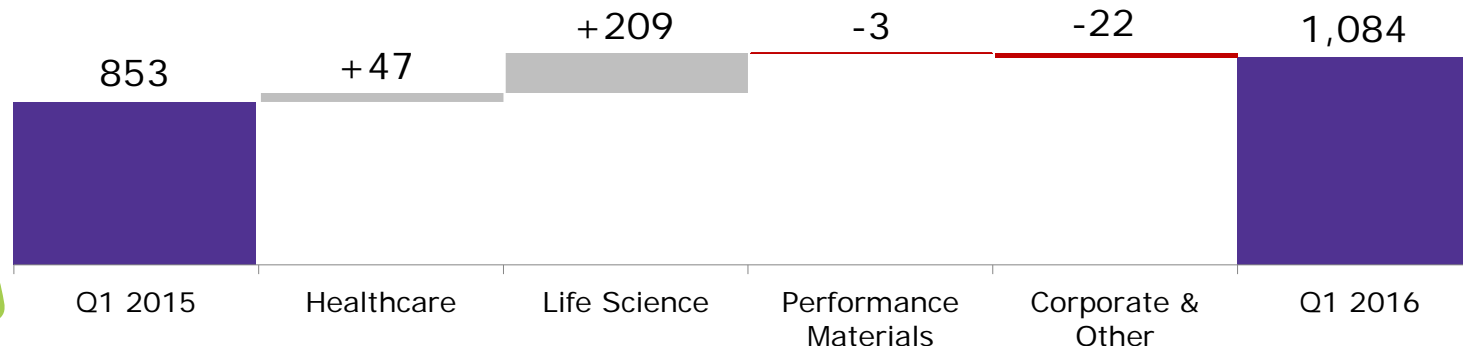
- EBITDA pre & margin increase driven by Sigma, end of Rebif commission expenses and organic performance
- Strong EPS pre growth due to higher EBITDA pre; LY financial result burdened by LTIP* charges
- Operating cash flow reflects strong business performance; LY impacted by one-time tax payment
- Net financial debt reduction driven by cash-in for Kuvan & operating cash flow
- Working capital reflects increase in business activity

Life Science and Healthcare drive increase in EBITDA pre

Q1 2016 YoY net sales

	Organic	Currency	Portfolio	Total
Healthcare	5.4%	-6.8%	-1.0%	-2.4%
Life Science	8.9%	-1.3%	81.6%	89.3%
Performance Materials	-2.4%	0.5%	2.7%	0.9%
Group	4.7%	-4.0%	19.8%	20.5%

Q1 YoY EBITDA pre contributors [€ m]



*General Medicine and CardioMetabolic Care
Totals may not add up due to rounding

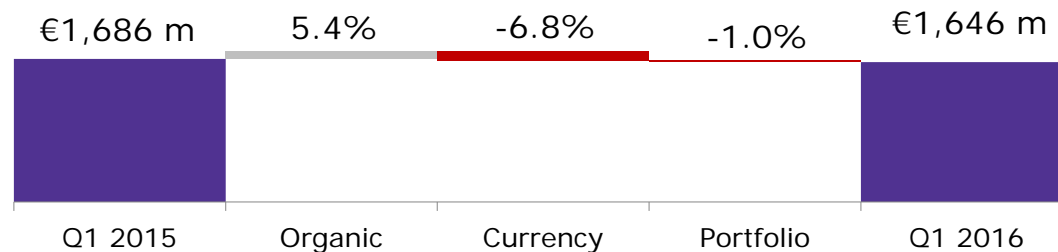
- Healthcare growth reflects strong Fertility, GM* and CH as well as Xalkori commissions
- Strong organic growth in Life Science driven by Process Solutions
- Slight organic decline in Performance Materials confirms expected destocking in display supply chain
- Portfolio reflects Sigma and Kuvan
- HC benefits from solid organic growth, Rebif commission savings and R&D phasing
- Life Science driven by Sigma, strong organic growth and positive product mix
- Performance Materials slightly lower due to product mix
- Corporate EBITDA pre contains hedging and investments in corporate initiatives

Healthcare: Good organic sales growth amid ramp-up in R&D investments

Healthcare P&L

[€m]	Q1 2015	Q1 2016
Net sales	1,686	1,646
Marketing and selling	-660	-613
Administration	-66	-71
Research and development	-348	-378
EBIT	268	641
EBITDA	449	829
EBITDA pre	461	508
Margin (in % of net sales)	27.3%	30.9%

Net sales bridge

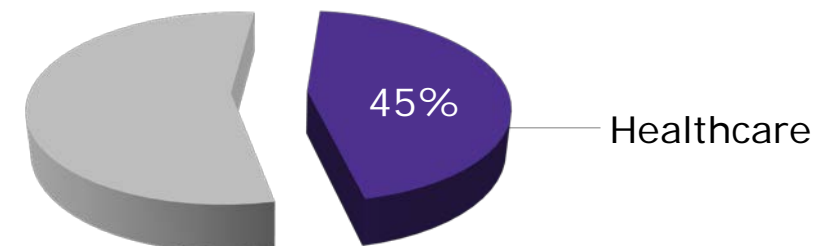


*Productive Development Partnership
Totals may not add up due to rounding

Comments

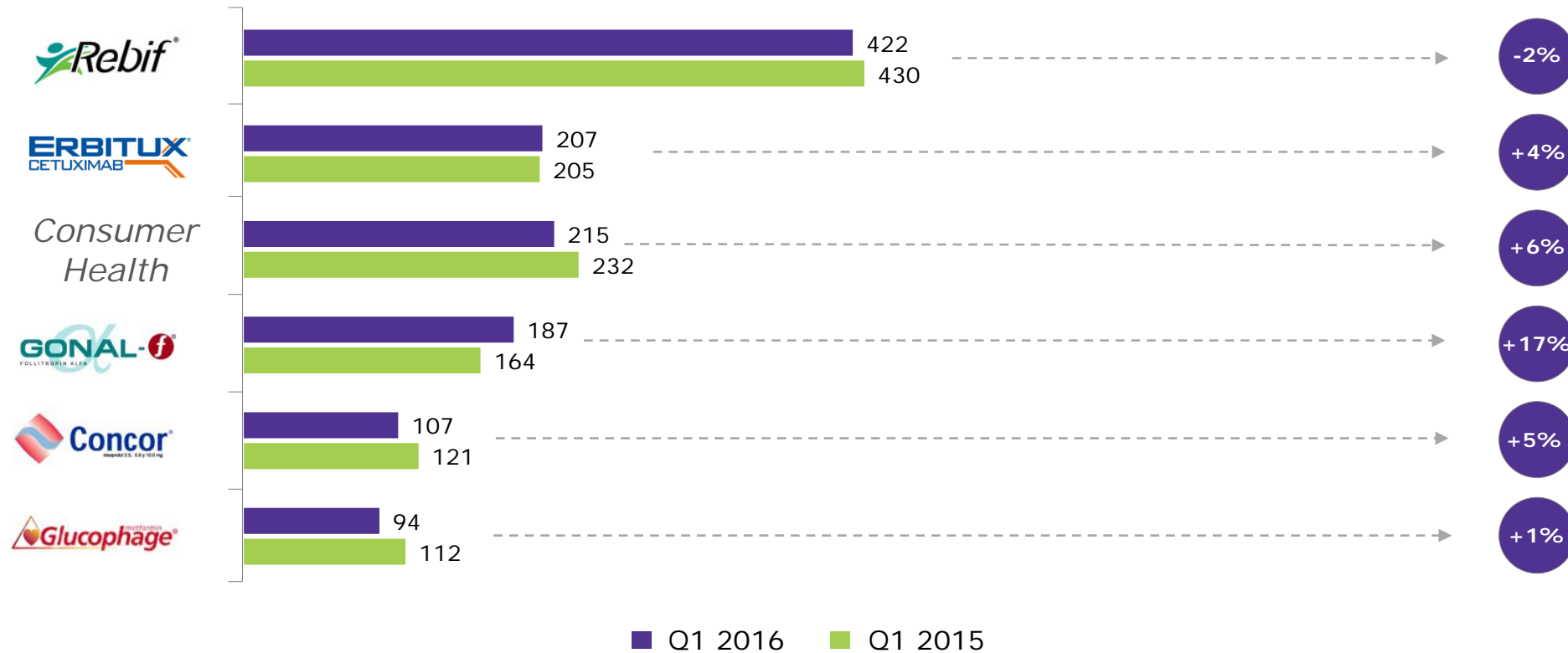
- Organic growth driven by strong Fertility, GM, CH and Xalkori
- Rebif still impacted by ramp-up of orals in Europe, while U.S. pricing and first contribution from PDP* in Brazil support performance
- Erbitux shows moderate organic growth benefiting from pick-up in Brazil, but also low comparables; EU remains competitive
- Marketing & selling reflect end of commission expenses for Rebif (U.S.) partially offset by reinvestments in sales force & launch preparations
- R&D spend starts to increase as avelumab Phase III trials progress
- EBIT reflects Kuvan disposal gain of €324 m
- Profitability improves mainly due to good organic growth, ceased Rebif commission expenses amid phased R&D cost ramp-up

Q1 2016 share of group net sales



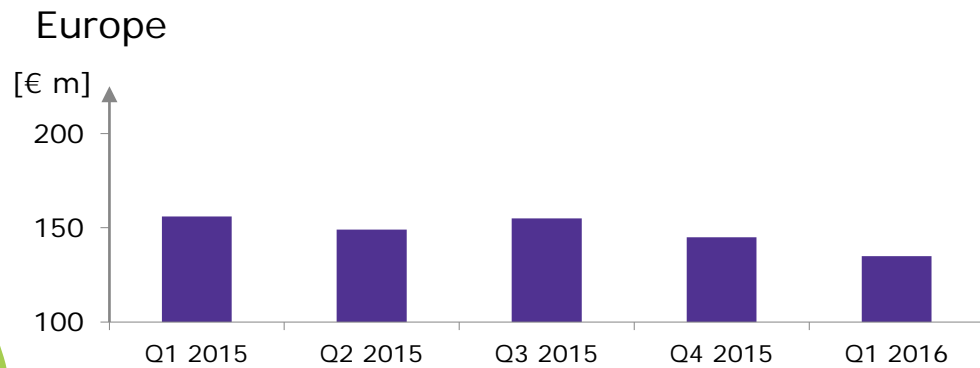
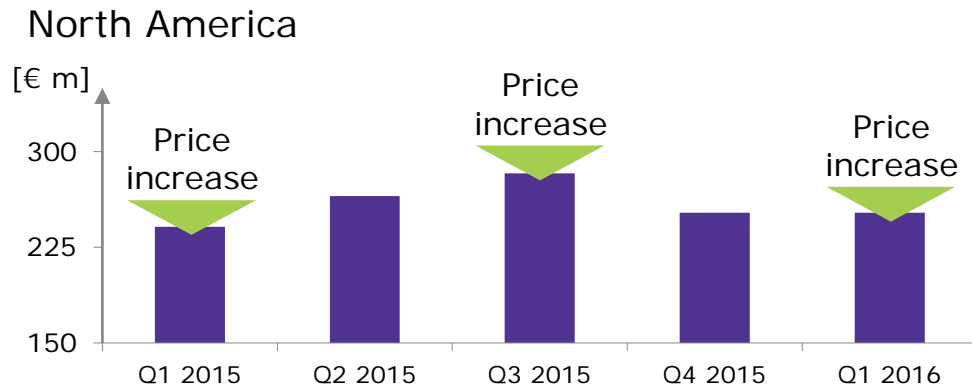
Healthcare organic growth by franchise/product

Q1 2016 organic sales growth [%] by key franchise/products [€ m]



Rebif: Relief in the U.S. – competitive ramp-up in Europe ongoing

Rebif sales evolution



Q1 drivers
1.6% org.

- Price
- Volume
- FX

Q1 drivers
-13.1% org.

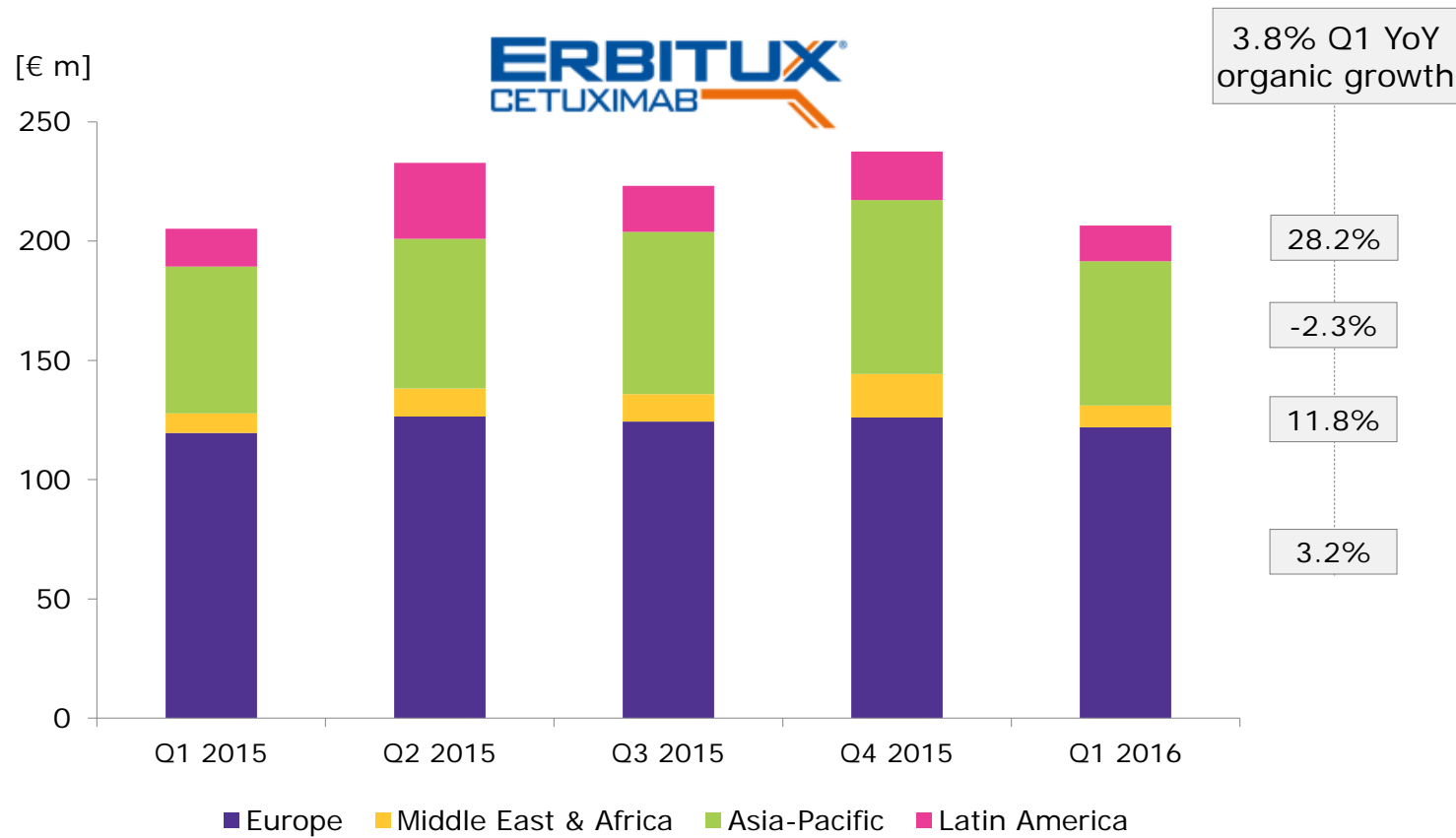
- Price
- Volume

Rebif performance

- Rebif sales of €422 m in Q1 2016 reflect organic decline of -1.5% and negative FX effects from LatAm
- Market shares within interferons stable due to high retention rates and known long-term track record
- U.S. price increases and market share stabilization outweigh decline of interferon class
- Phased market entry of orals in Europe causes ongoing volume decline
- Initiation of Productive Development Partnership (PDP) in Brazil supports Rebif growth

Erbitux: A challenging market environment

Erbitux sales by region



Erbitux performance

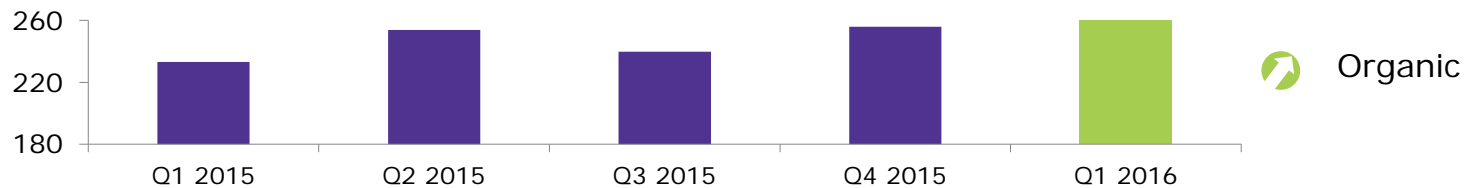
- Sales increase to €207 m due to solid volume development, but low base last year
- Europe impacted by mandatory price cuts & increasing competition offset by uptake in Russia
- Latin America shows strong growth esp. in Brazil after weak 2015
- APAC mainly reflects reduction of patient population due to label change in Japan (April 2015)

Strong organic growth in Fertility, General Medicine and Endocrinology

Sales evolution

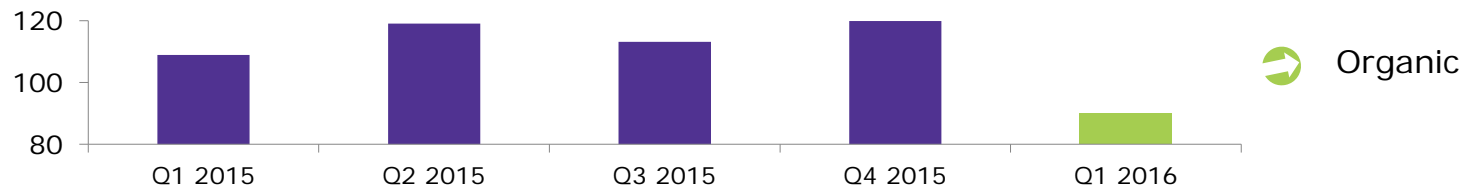
Fertility

[€ m]



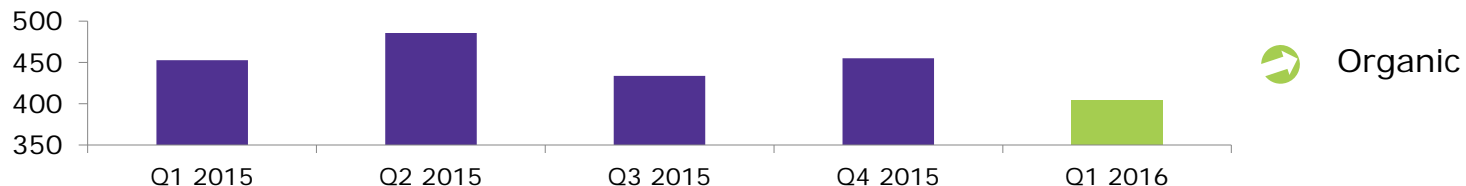
Endocrinology

[€ m]



General Medicine*

[€ m]



Q1 drivers

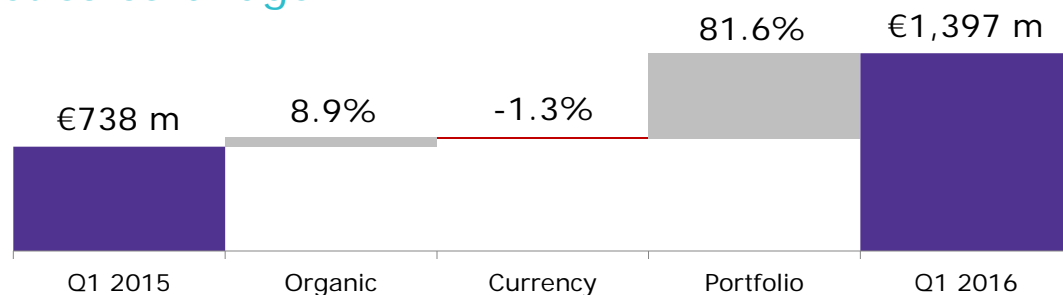
- Record quarter for Fertility (17% org.) driven by favorable competitive situation in U.S. and strong China
- Sales drop in Endocrinology reflects Kuvan divestment; remaining portfolio (Saizen, Serostim) growing organically
- General Medicine sales burdened by FX headwinds from LatAM, organic performance sustainably healthy
- Euthyrox posts strong growth driven by ongoing demand from China
- Glucophage benefits from successful repatriation in Russia; very strong comparables last year

Life Science: A strong start to 2016

Life Science P&L

[€m]	Q1 2015	Q1 2016
Net sales	738	1,397
Marketing and selling	-233	-421
Administration	-31	-63
Research and development	-45	-62
EBIT	83	105
EBITDA	164	284
EBITDA pre	184	393
Margin (in % of net sales)	25.0%	28.1%

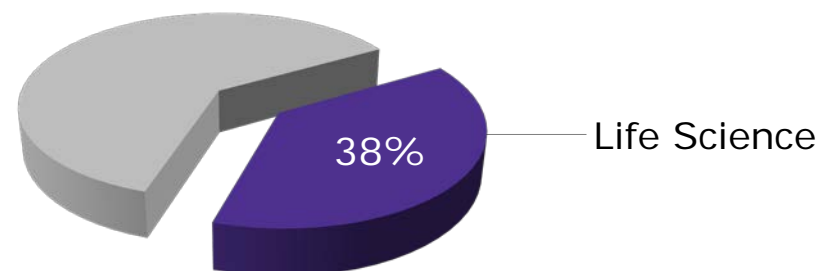
Net sales bridge



Comments

- Very strong growth of Process Solutions driven by increasing production of large molecules across global and regional accounts
- Applied Solutions shows moderate organic growth, driven by bio-monitoring products for pharma & demand for analytical testing
- Research Solutions benefits from increased research on biologics as well as solid demand for high-value chemicals
- Absolute costs higher due to Sigma, but improve in relation to sales
- Profitability reflects Sigma, favorable product mix and synergies

Q1 2016 share of group net sales

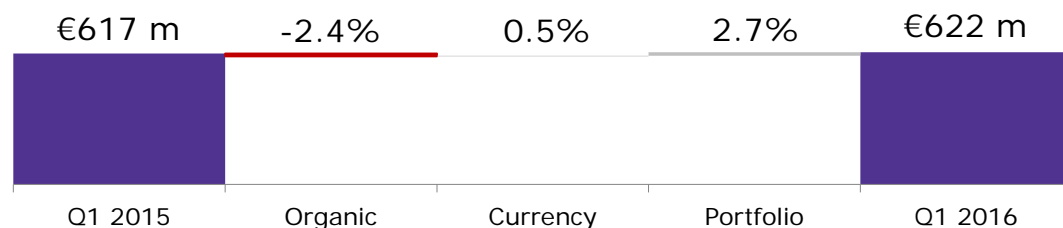


Performance Materials: Healthy profitability amid destocking of display industry inventories

Performance Materials P&L

[€m]	Q1 2015	Q1 2016
Net sales	617	622
Marketing and selling	-46	-58
Administration	-18	-16
Research and development	-47	-48
EBIT	214	207
EBITDA	273	267
EBITDA pre	277	273
Margin (in % of net sales)	44.8%	43.9%

Net sales bridge

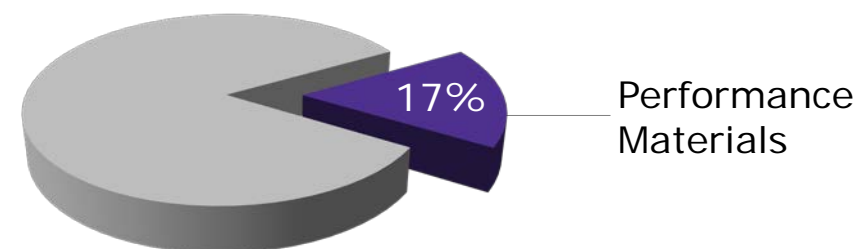


*Active pharmaceutical ingredient
Totals may not add up due to rounding

Comments

- Organic growth of OLED, ICM, and Pigments mitigates LC softness
- Liquid Crystals impacted by indicated inventory correction in supply chain
- OLED continues to grow on industry capacity expansion & investments
- Integrated Circuit Materials (ICM) show solid growth mainly driven by dielectric materials for chip production
- Pigments & Functionals post moderate growth esp. due to cosmetic API*
- Marketing & selling reflect contribution from Sigma's SAFC Hitech and sales force IT initiative
- Healthy profitability reflects leading market position with highly differentiated products, despite destocking and negative mix effects

Q1 2016 share of group net sales



Reported figures reflect solid business performance and Kuvan divestment

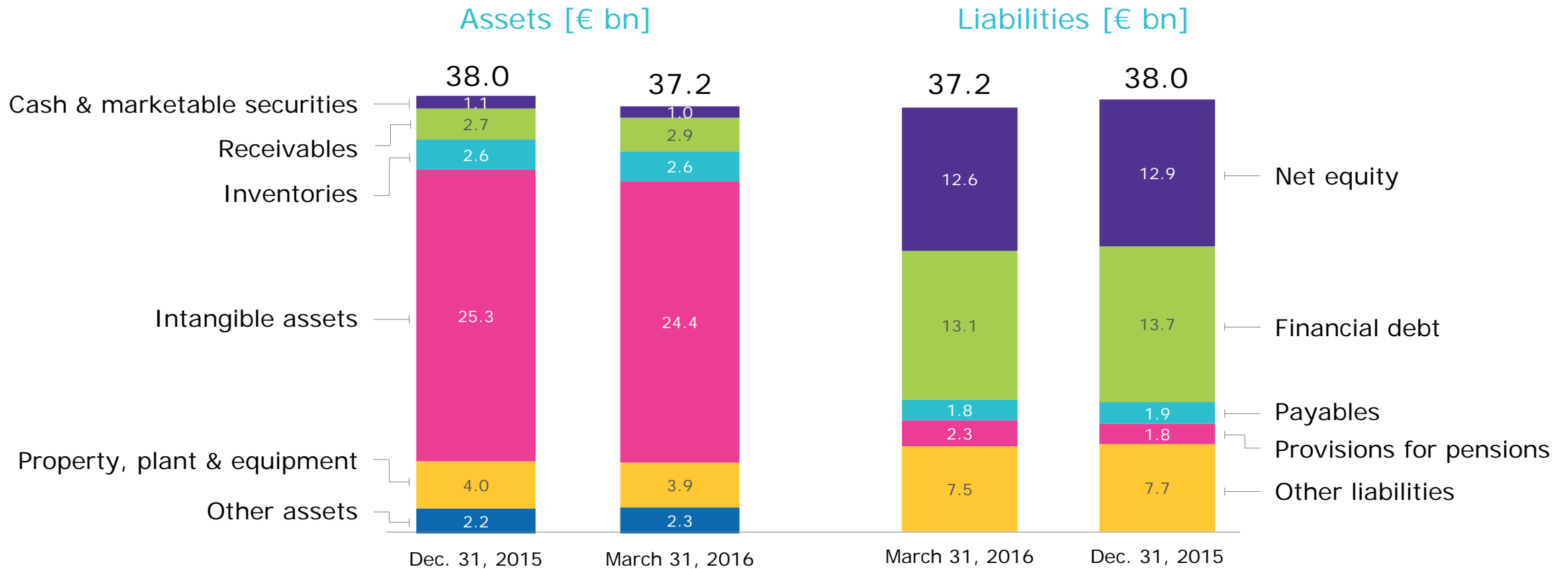
Reported results

[€m]	Q1 2015	Q1 2016	Δ
EBIT	480	849	76.8%
Financial result	-101	-68	-32.1%
Profit before tax	379	780	>100%
Income tax	-94	-187	99.2%
<i>Tax rate (%)</i>	24.8%	24.0%	
Net income	282	591	>100%
EPS (€)	0.65	1.36	>100%

Comments

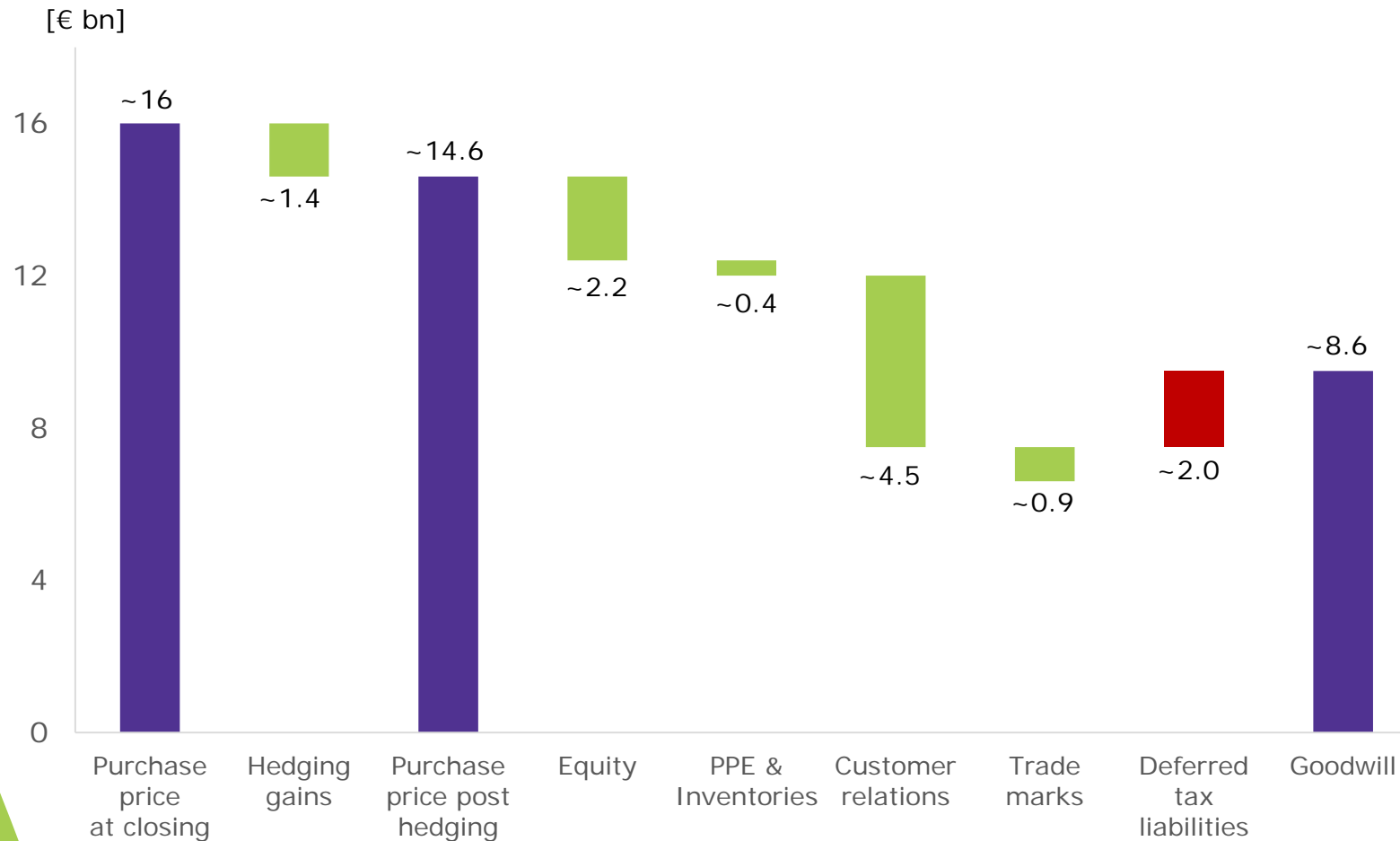
- EBIT reflects increased EBITDA pre and Kuvan disposal gain amid integration costs and D&A from Sigma
- Financial result contains Sigma financing interest expenses; last year adversely affected by LTIP
- Tax rate within guidance range of ~23-25%

Balance sheet – deleveraging initiated after Sigma acquisition



- Total assets decline by 2.2%, equity ratio remains at 33.8%
- Reduction of intangible assets reflects D&A (€0.3 bn) and FX (€0.6 bn)
- FX development accounts for ~€0.6 bn total equity decrease
- Net financial debt reduced by €0.6 bn
- Decline of interest rates increases pension provisions

Hedging optimized Sigma balance sheet effects



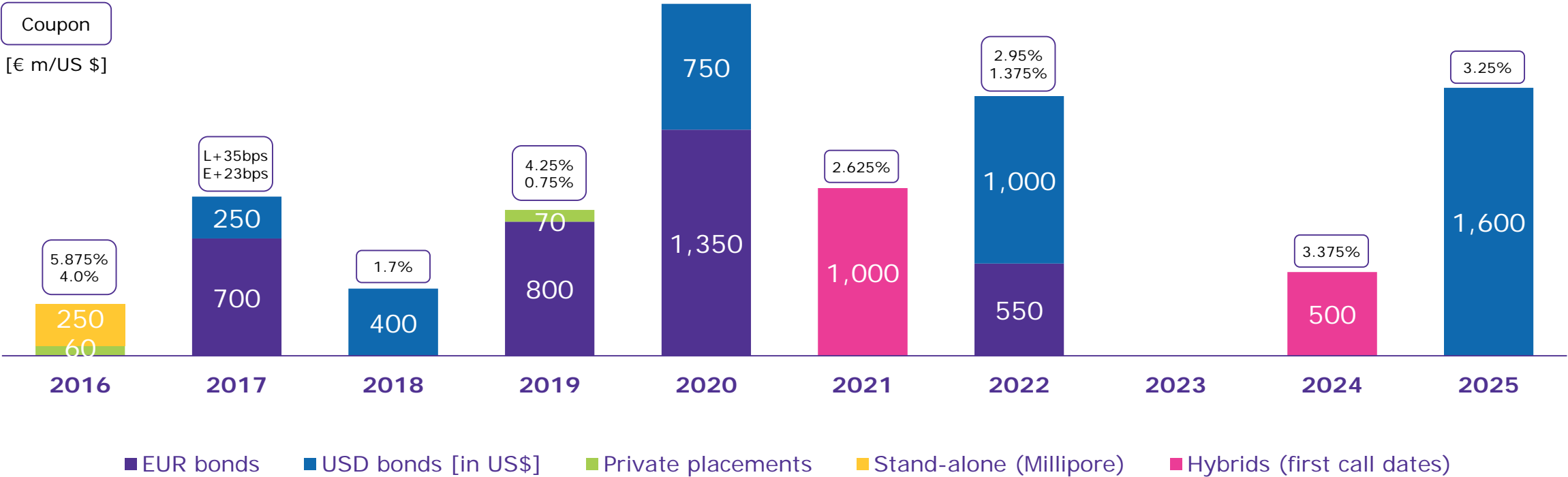
Purchase price breakdown

- Purchase price fully hedged against EUR/USD movements
- Sizable cash position indicates Sigma's cash generative business and reflects delayed closing
- Intangibles amortization from Sigma PPA*: ~€250 – 300 m p.a.

Figures as of November 18, 2015
*Purchase price allocation

Well-balanced maturity profile reflects capital markets transactions related to Sigma-Aldrich

Maturity profile as of March 31, 2016



Financing structure enables flexible and swift deleveraging

Healthy operating cash flow enables first deleveraging measures

Q1 2016 – cash flow statement

[€m]	Q1 2015	Q1 2016	Δ
Profit after tax	285	593	308
D&A	325	433	108
Changes in provisions	90	21	-69
Changes in other assets/liabilities	-231	-34	197
Other operating activities	-20	-394	-374
Changes in working capital	-172	-266	-94
Operating cash flow	279	352	73
Investing cash flow	392	284	-108
thereof Capex on PPE	-75	-160	-85
Financing cash flow	2,288	-572	-2,860

Cash flow drivers

- Profit after tax includes gain from Kuvan divestment, which is neutralized in other operating activities
- D&A increases due to Sigma
- Tax payment (Pfizer upfront) burdened changes in other assets/liabilities LY
- Changes in working capital reflect lower payables (Pfizer-Rebif) and higher R&D receivables from Pfizer (avelumab)
- Investing cash flow contains increased Capex and Kuvan divestment; LY with sale of financial assets
- Financing cash flow reflects first re-payments of Sigma-related bank loans; LY contains USD bond issuance

Exceptionals in Q1 2016

Exceptionals in EBIT

[€m]	Q1 2015		Q1 2016	
	Exceptionals	thereof D&A	Exceptionals	thereof D&A
Healthcare	12	0	-321	0
Life Science	20	0	109	0
Performance Materials	4	0	6	0
Corporate & Other	12	0	7	0
Total	48	0	-198	0

Financial calendar

Date	Event
June 20, 2016	R&D Update Call
August 4, 2016	Q2 2016 Earnings release
November 15, 2016	Q3 2016 Earnings release



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