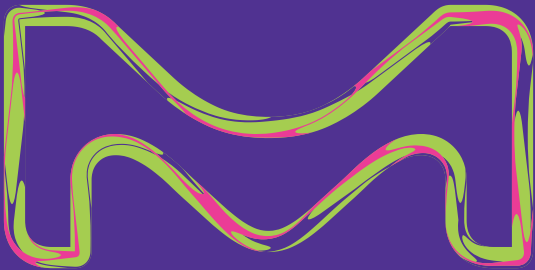




MERCK KGAA, DARMSTADT, GERMANY – Q1 2017 ROADSHOW

Investor Relations

June 2017





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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 – Expanding leadership and innovation**
- 06 Executive summary and guidance**



01

BUSINESS OVERVIEW

Group

Portfolio of three high-tech businesses



Healthcare

Leading in specialty pharma markets

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



Life Science

Leading life science company

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



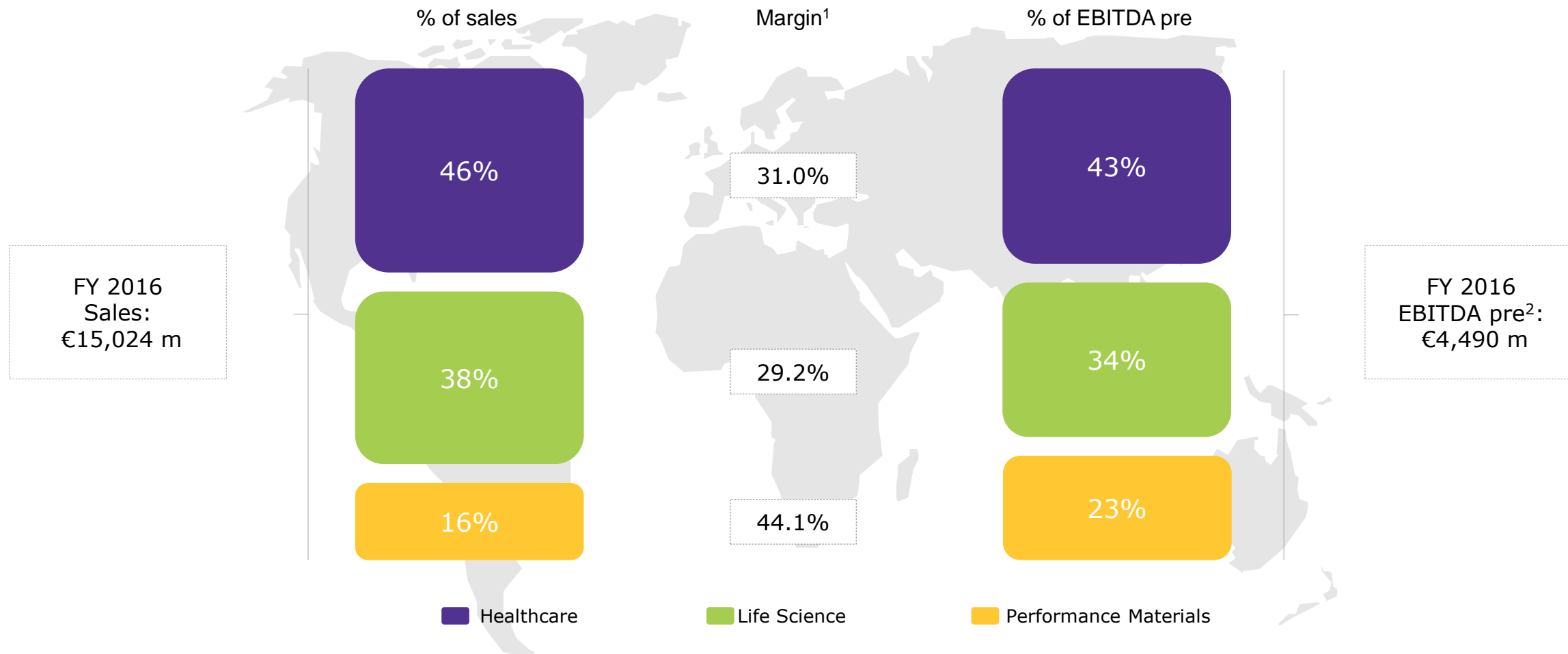
Performance Materials

Market leader in specialty materials

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

Group

Strong businesses with attractive margins



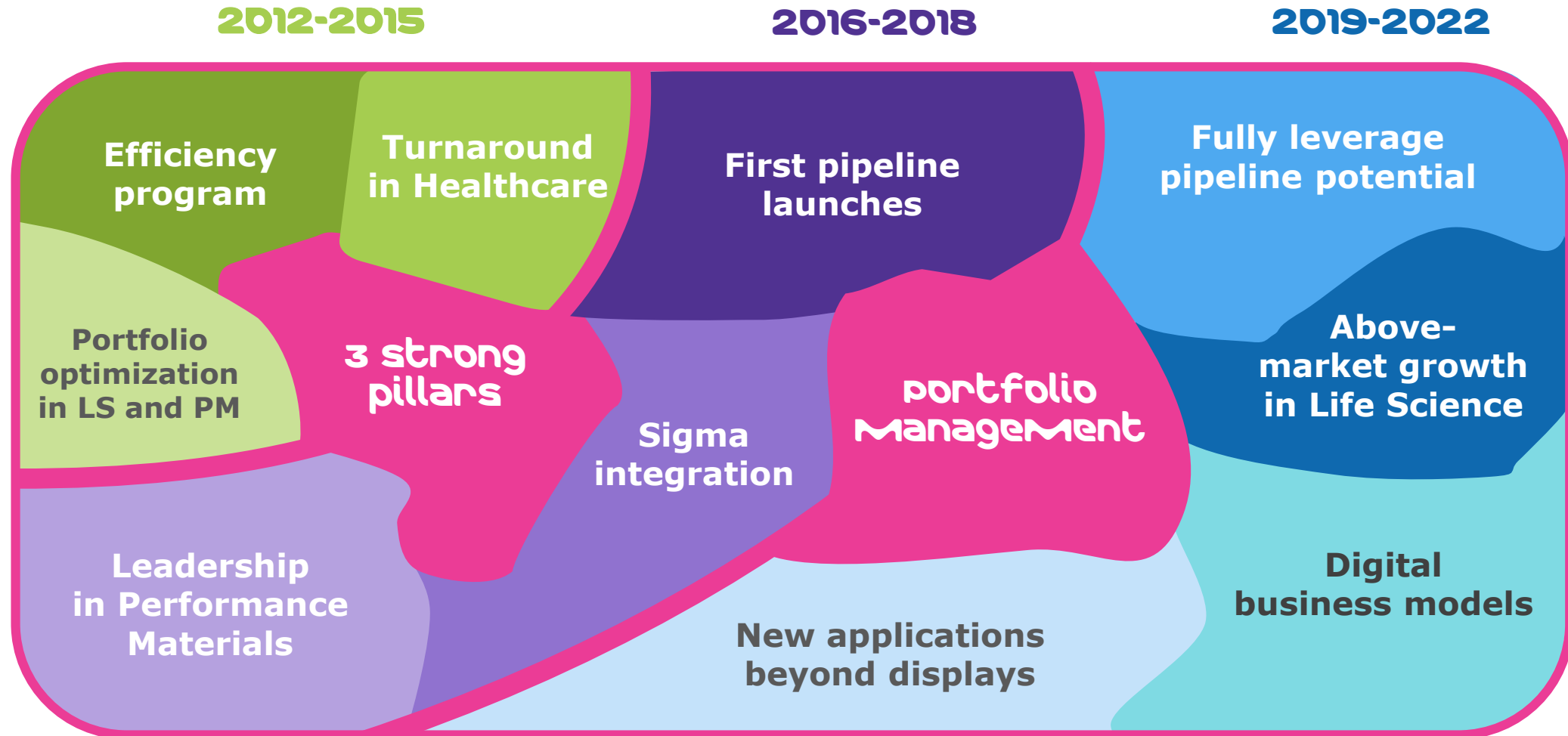
¹EBITDA pre margin in % of net sales; ²Including Corporate/Others (-€396 m)



02

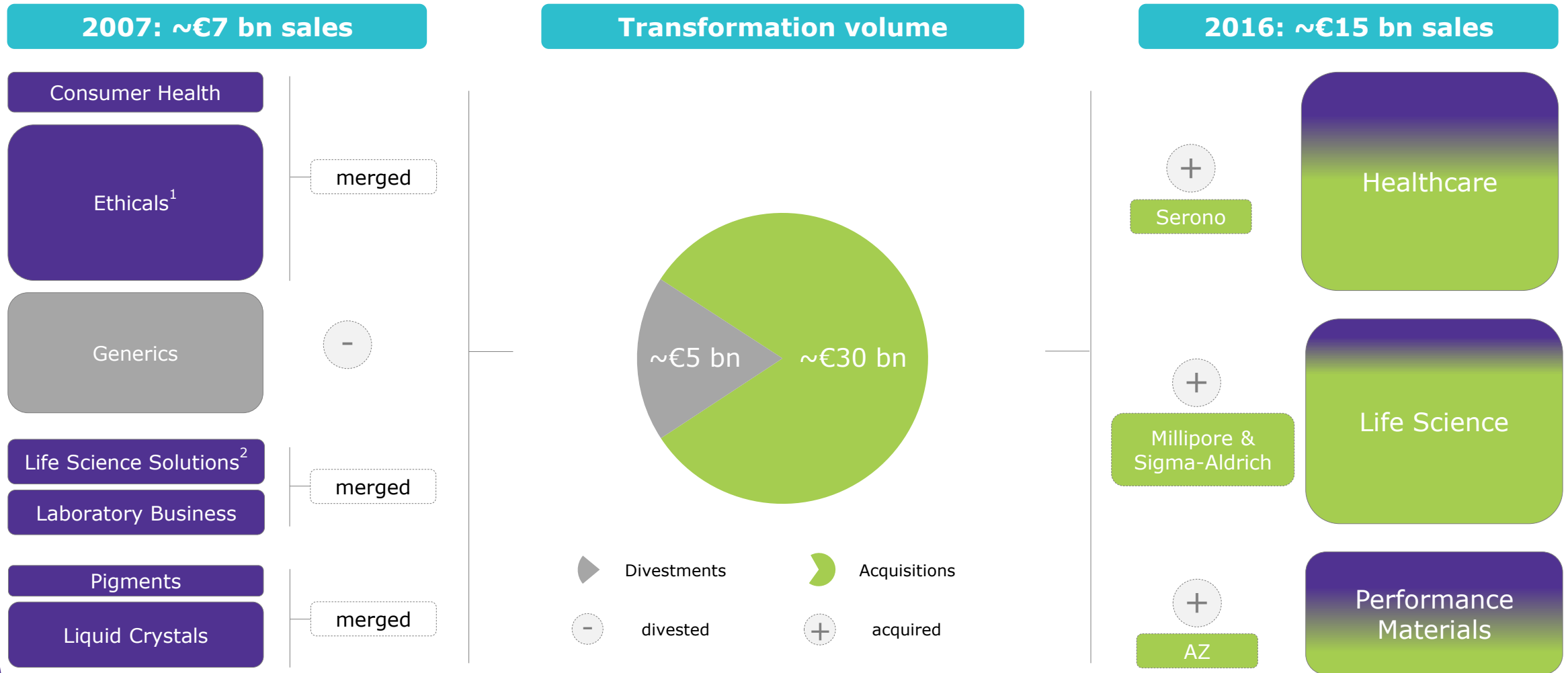
TRANSFORMING THE COMPANY

Group Strategic roadmap 2016-2022

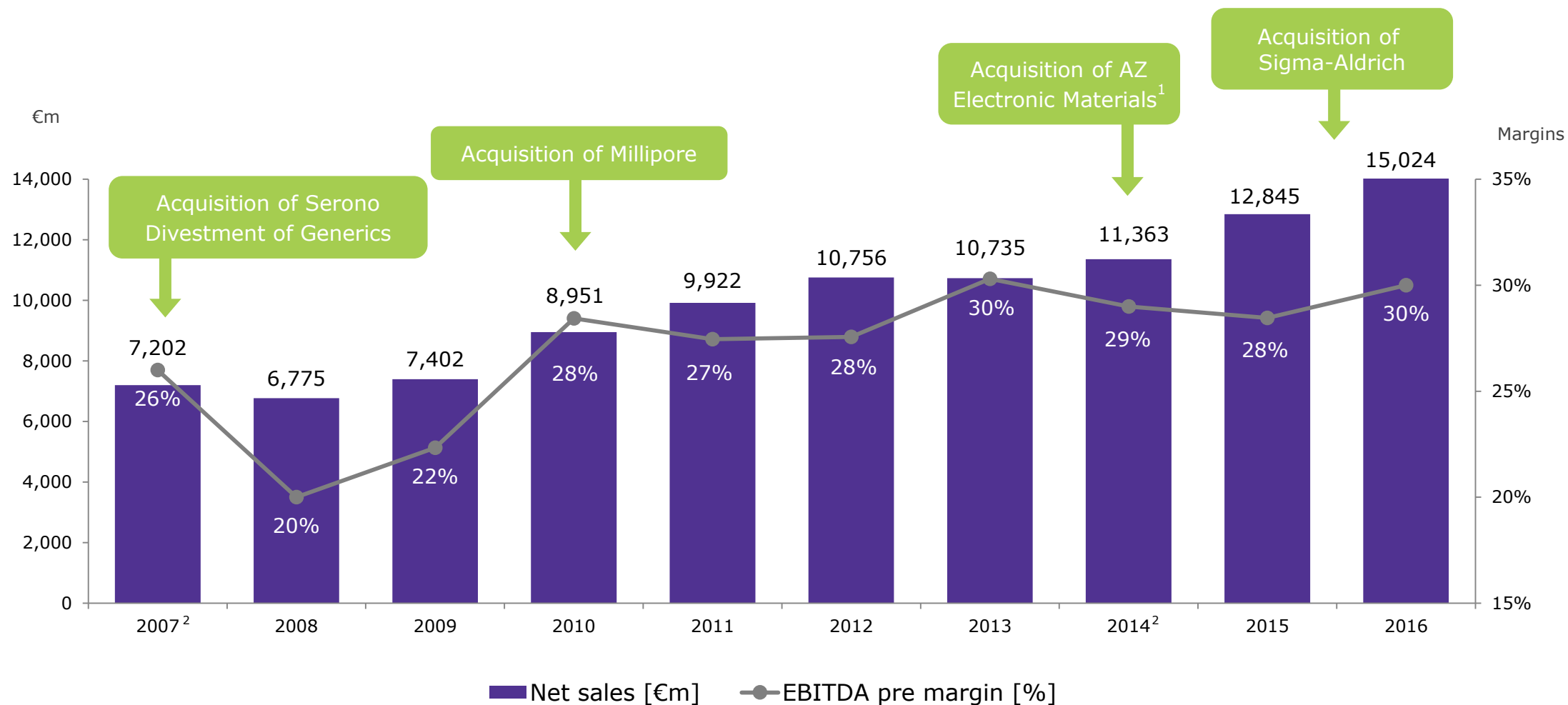


Group

We have added scale and strengthened the attractiveness of its portfolio



Group Profitability improved fundamentally



¹Included since 2 May 2014; ²2007 and 2014 EBITDA pre margin adjusted for comparability

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. 3 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

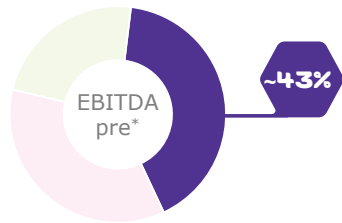
Customer focus

Group

Clear set of priority goals to be realized by 2018



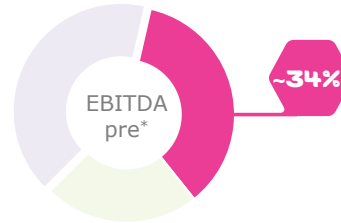
Healthcare



- Maximize growth of existing franchises
- Deliver pipeline: one product launch or indication p.a. from 2017



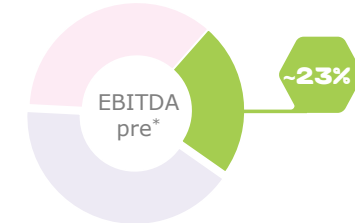
Life science



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



Performance Materials



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

Merck KGaA,
Darmstadt,
Germany

- Deleverage to <2x net debt / EBITDA pre in 2018
- No large acquisitions (>€500 m) for the next 2 years (unless financed by divestments)
- Dividend policy reflects sustainable earnings trend

Our successful regular portfolio optimization will continue

DNA

- Acquisitions and divestments are part of the company's history
- Licensing transactions remain on our agenda

Regular portfolio review and active capital allocation will continue

prerequisites

- Merck KGaA, Darmstadt, Germany is highly cash-generative with free cash flow¹ ~€2 bn p.a.
- Capital will be deployed every 2-4 years
- Financial flexibility is a prerequisite for transactions

Larger transactions will return once financial flexibility is restored

experience

- 28 transactions since 2002 for ~€38 bn²
- Track record of value-generating integration

All prior transactions earned their required cost of capital

clear criteria

- Supporting mid-term strategy and strengthening core business
- Growing in attractive markets
- Proven track record: strong ability to win
- Compelling financials

Disciplined approach to portfolio management will persist



03 HEALTHCARE – FUNDING FOR SUCCESS

Healthcare

Healthcare is set to deliver on promising pipeline candidates

Deliver
on organic growth

Focus
on pipeline



At least stable existing business



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

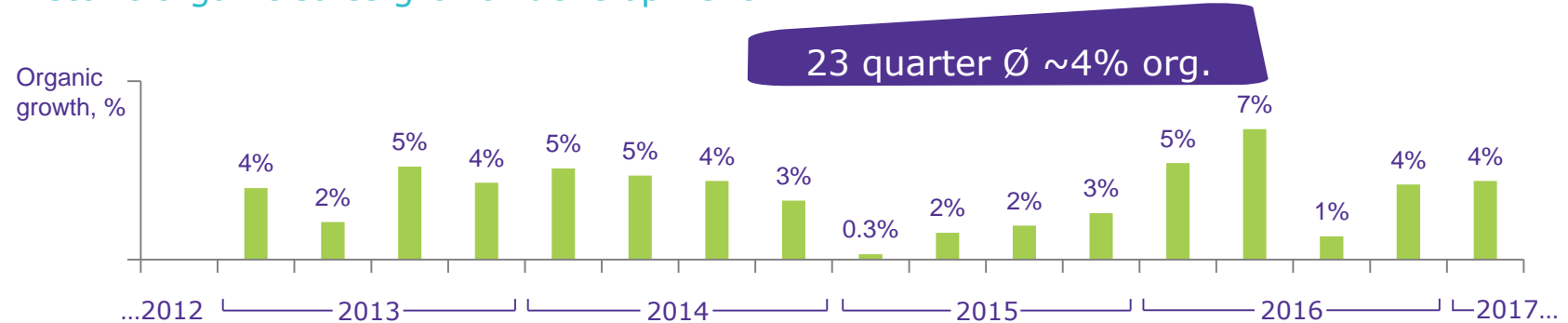


Healthcare

Operational excellence drives healthy growth of existing businesses

**Organic growth
for 23
consecutive
quarters**

Historic organic sales growth development



**Commitment to
at least stable
organic sales
until 2018**

Qualitative organic sales growth guidance per product/franchise until 2018

rebif®: Sales decline in line with interferon market

oncology: Stable sales

fertility: Mid single-digit growth

endocrinology: Low single-digit growth

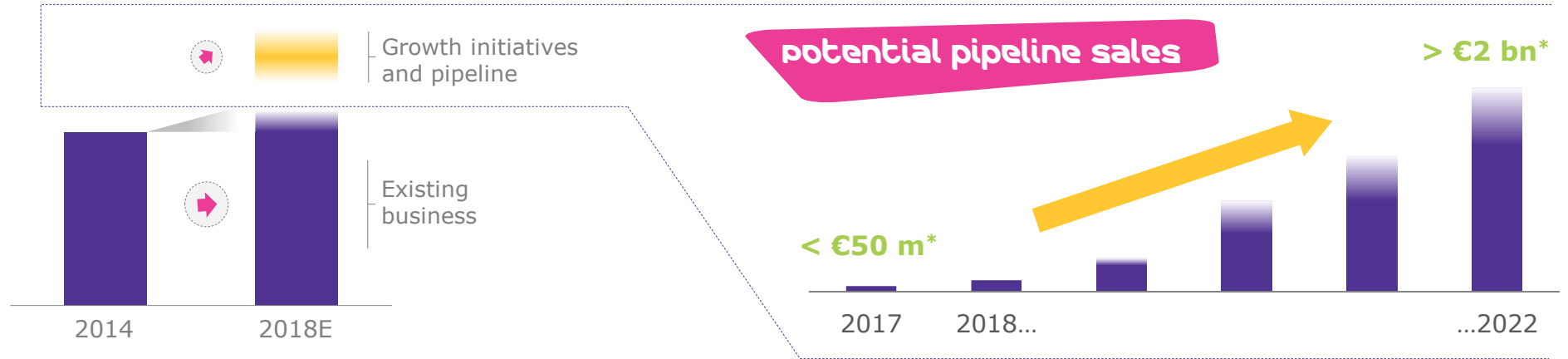
general medicine: Mid to high single-digit growth

consumer health: Mid single-digit growth

Healthcare

Well on track to deliver the pipeline

Deliver the pipeline



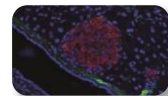
Key investments



Avelumab



BTK – inhibitor



TGF-beta trap

~€150 – 200m higher R&D costs in 2017 vs. 2016

Main moving parts:

- Phase III progress of avelumab
- Dynamics of ramp-up for TGF-beta and BTK-i
- Regular prioritization in view of market dynamics

Healthcare

Increasing R&D productivity with focus on potentially transformative assets

phase I		phase II		phase III	registration
BTK-i (hematological tumors)	Avelumab (mono/combinations)	atacept (SLE)	tepotinib (HCC/NSCLC)	Avelumab (mono/combinations)	Avelumab (MCC)
DNA-PKi / ATRi (solid tumors)	M7824/TGF-b trap (basket trial)	BTK-i (RA, SLE)	Avelumab (MCC 1L)	MSB11022* Biosimilar (chronic plaque psoriasis)	Cladribine-tablets (RRMS)
	NHS-IL 12 (solid tumors)	sprifermin (OA)	BTK-i (RRMS)		
■ Oncology		■ Immuno-Oncology		■ Immunology	■ Biosimilars
				■ Neurology	

Avelumab

- 30 clinical programs ongoing (>5,200 patients in >15 tumor types)
- Nine phase III trials and various Phase I cohorts ongoing
- For MCC, decision by EMA expected in H2 2017

TGF-b trap

- Enrolling in phase Ib cohorts (14 indications); >600 patients enrolled
- Preliminary data for selected cohorts expected end of 2017

BTK inhibitor

- Three immunology phase II trials initiated (RA, SLE, MS)
- One phase I trial in Oncology ongoing (different molecule)

DDR-Program

- Transition of in licensed ATRi and DNA-PKi compounds ongoing
- Analysis of M3814 Phase I data for RT combination expected in H2 2017

Cladribine Tablets

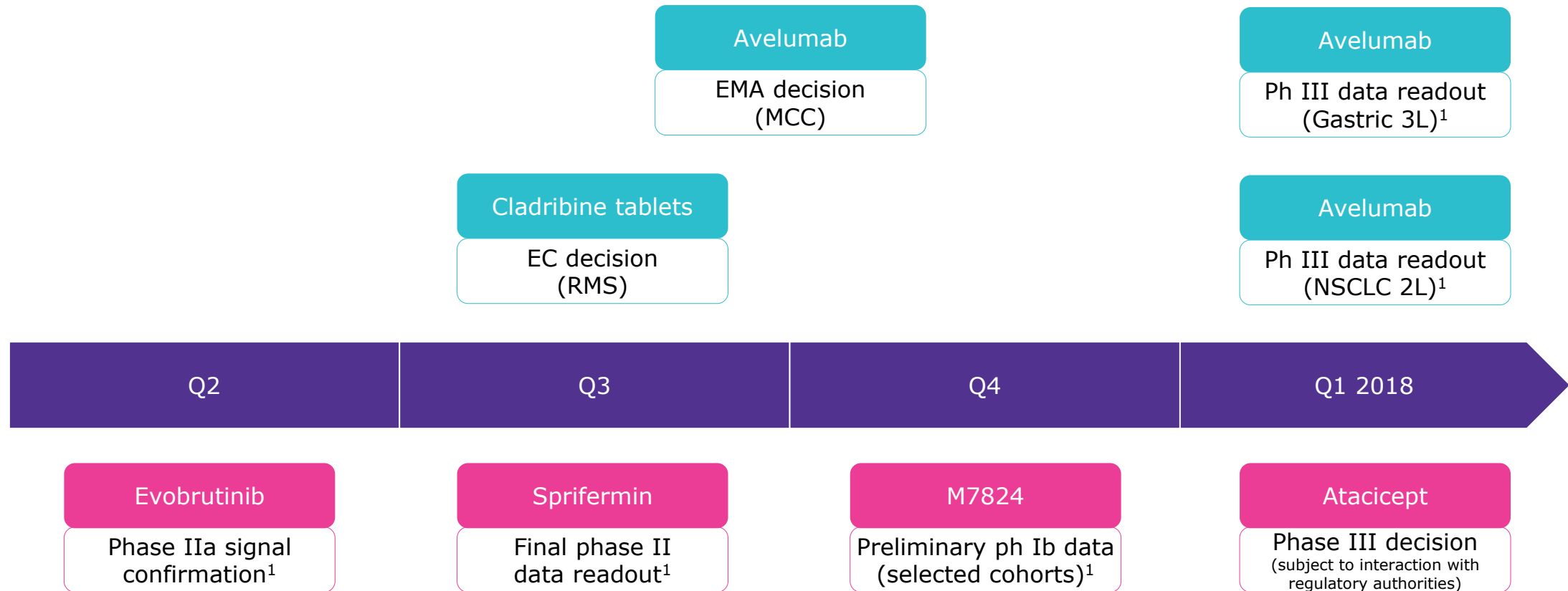
- Decision by EMA expected in Q3 2017

2017 Milestones:

- **Bavencio successfully launched in MCC and mUC in the U.S.**
- **Potential Cladribine-tablets approval**
- **Major trial updates**

Outlook

2 potential launches, 4 pivotal catalysts and major value inflection points





04

**LIFE SCIENCE –
FOCUSING ON
PROFITABLE GROWTH**

Life Science

Serving customers across the life science industry

RESEARCH



- Academic and government institutions
- Biopharma R&D
- Industry R&D

PROCESS



- Pharmaceutical companies
- Small biotech
- Contract manufacturing organizations

APPLIED



- Diagnostic manufacturers
- Clinical testing labs
- Food & Beverage manufacturers

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

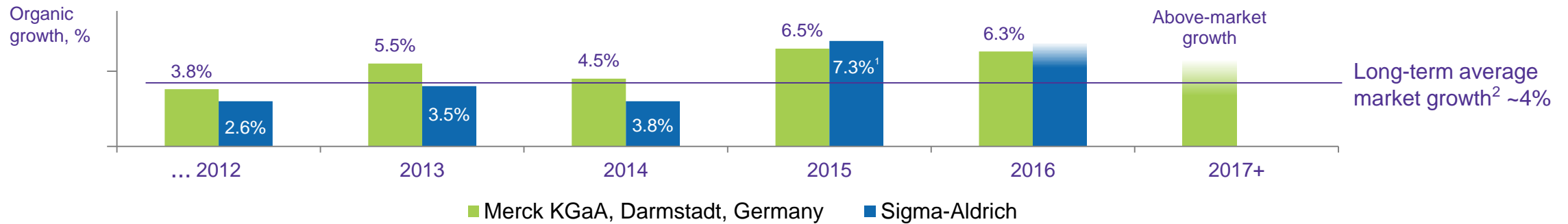
- Outstanding supply chain management (ability to deal with complexity)
- Simple e-commerce platform (customer interface with global coverage)
- Expertise to manage regulatory barriers

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

Life Science

Above-market growth to be enhanced by top-line synergies

Merck KGaA, Darmstadt, Germany and Sigma-Aldrich organic growth rates versus market growth



Sources of market outperformance

1

Portfolio composition

- Exposure to biopharma
- Highest share of consumables
- Broad product offering

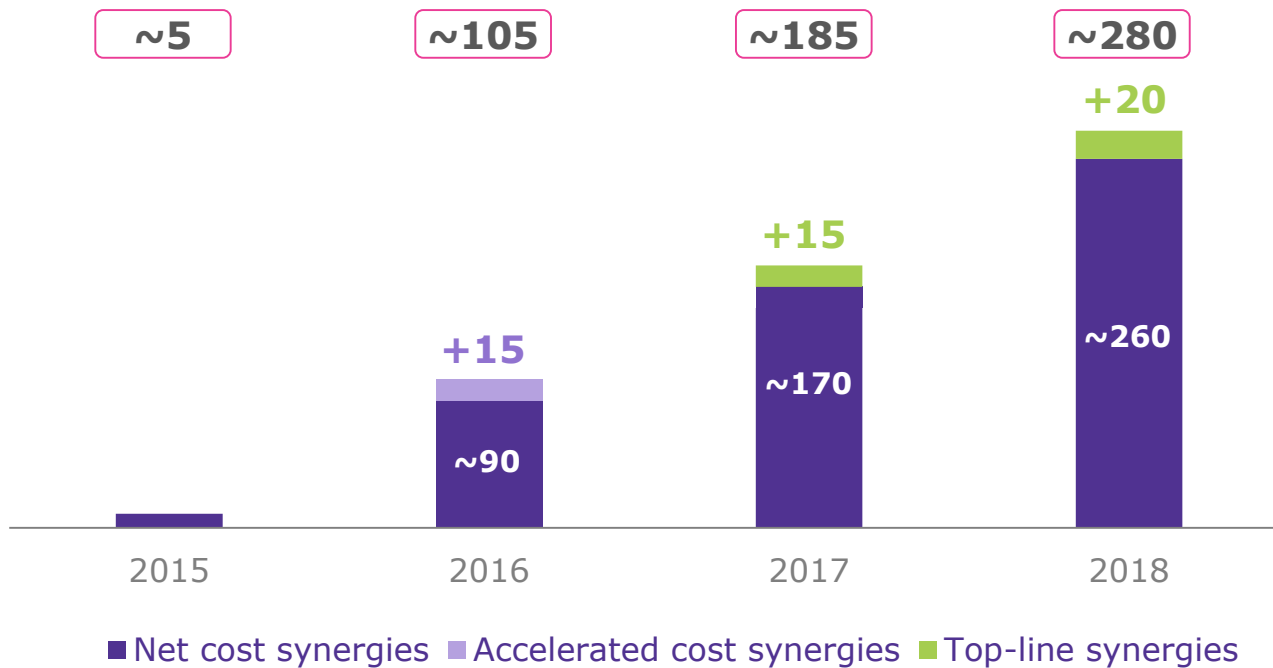
2

Top-line synergies

- Best in class eCommerce
- Excellent service capabilities
- Global reach

Synergy upgrade driven by fast 2016 execution and top-line synergies

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



Synergy upgrade of ~10% confirms strong integration capabilities

Sources

Cost synergy status (for 2016)

- **faster** implementation of synergy measures in all areas
- **2016** total cost synergies of **~€105 M**
- Integration costs remain unchanged at ~€400 m

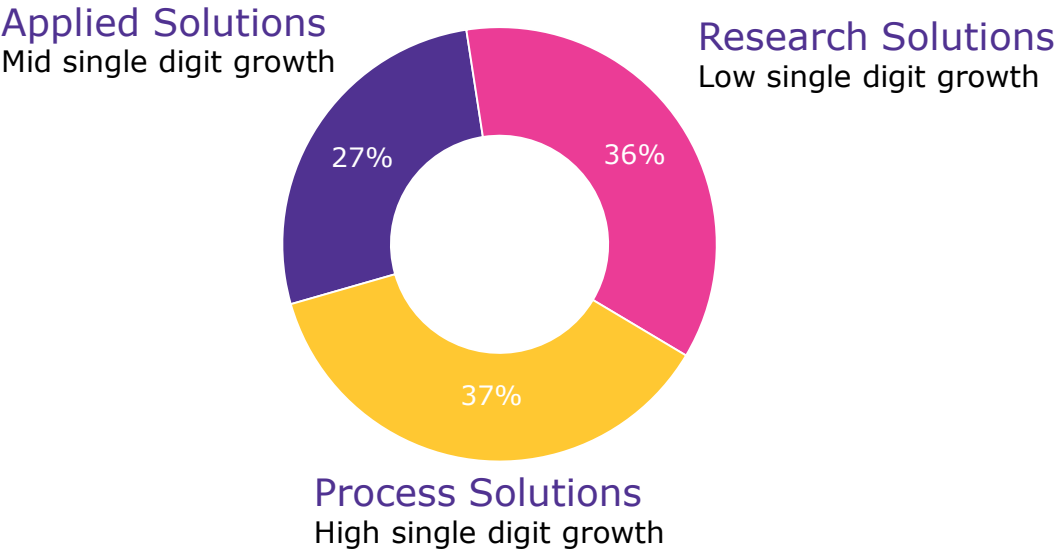
Top-line synergies (from 2017)

- Strong eCommerce and **IT capabilities** applied to existing products
- Extensive **portfolio** and **customer** complementarity in Process and Applied Solutions
- Leverage **regional** Merck KGaA, Darmstadt, Germany - Asia and Sigma - North America footprint
- Expecting **~50-100 bps** in additional **sales growth** with average EBITDA pre margin

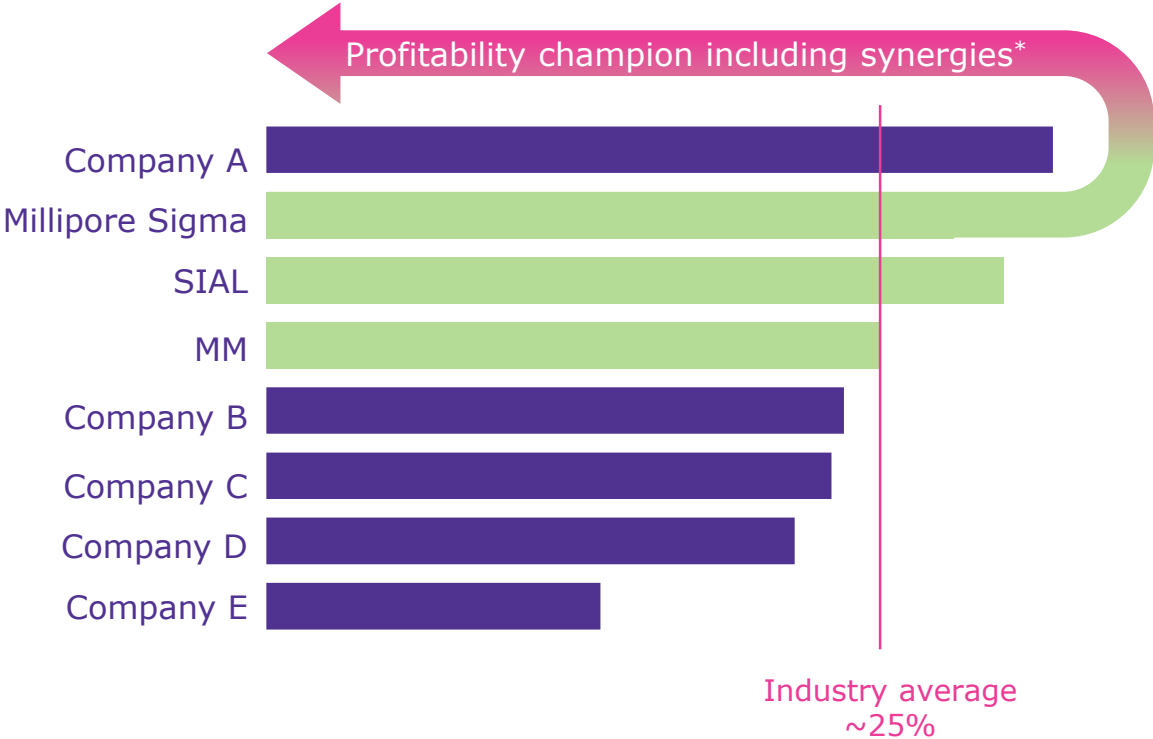
Life Science

We aim to be the profitability champion of the sector

Sales breakdown as of FY 2016



Above industry margin levels



Life Science is well set for sustainable growth and profitability















05

**PERFORMANCE
MATERIALS –
EXPANDING LEADERSHIP
AND INNOVATION**

Performance Materials

The four pillars are set for future profitable growth

Business unit	% sales	Products	Mid-term growth trend
 Display Materials	 ~50-55%	<ul style="list-style-type: none"> Liquid crystals (LC) and photoresists for TVs, smartphones and tablet computers Other display and non-display applications (e.g. LC Windows) 	
 Integrated Circuit Materials	 ~15-20%	<ul style="list-style-type: none"> Dielectrics, colloidal silica, lithography materials, yield enhancers, edge-bead removers Polyimide raw materials and printing materials 	
 Pigments and Functional Materials	 ~15-20%	<ul style="list-style-type: none"> Effect pigments and functional materials for coatings, plastics, printing and cosmetics Functional materials for cosmetics & special applications 	
 Advanced Technologies	 ~5-10%	<ul style="list-style-type: none"> Organic and inorganic light emitting diodes Functional materials for electronics and energy solutions 	

Well-founded medium-term low to mid single-digit growth profile

Four-pillar strategy and innovation power strengthen our earnings profile

Ongoing innovation

Launch of innovative products and new business models continues

Four strong pillars

Combination of four highly profitable businesses raises diversification

Market leadership

Strong market position is based on innovation power and differentiation



1 Superior profitability

2 Strong earnings resilience

3 Low to mid single-digit mid-term growth

Performance Materials

Sound platform to deliver high earnings

1 Four-pillar platform diversifies earnings stream

- Liquid Crystals remain key earnings contributor
- Integrated Circuit business growing ahead of market
- Pigments continue to grow with high-end products
- OLED is becoming a visible growth driver

2 Continuous innovation as key profitability driver

- New products contribute to growth and profitability
- Liquid crystal technology mode UB-FFS and upcoming SA-VA are the most recent examples

Balanced sales and consistently high earnings



We are the innovation leader



Diversification of portfolio and ongoing innovation lead to solid growth trajectory

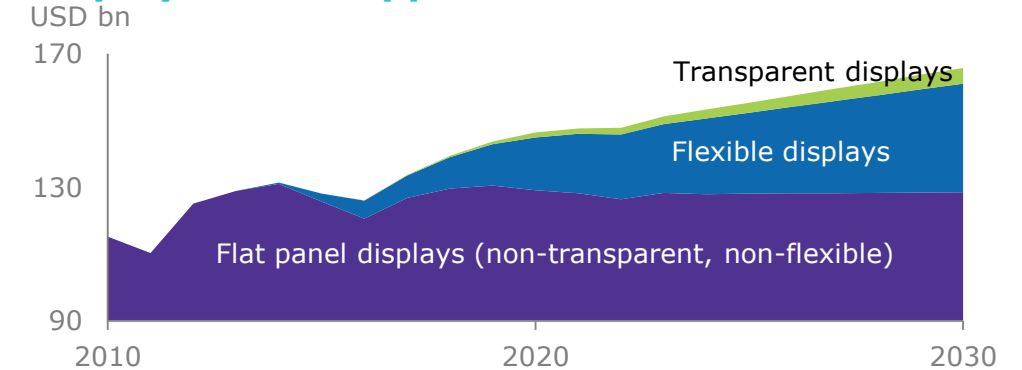
Performance Materials

Long-term growth and profitability 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, esp. in China

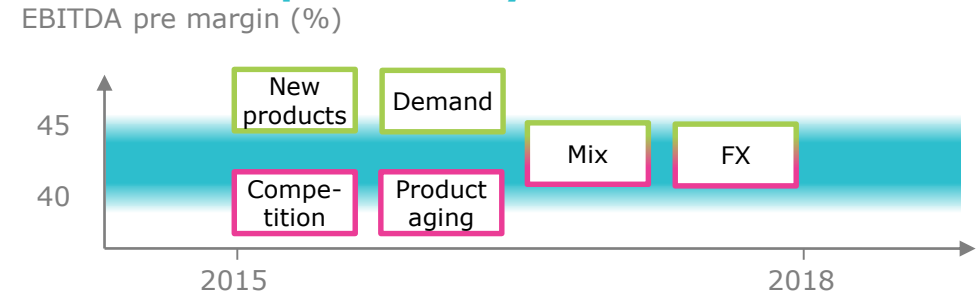
Display market opportunities continue to evolve



4 High value-added products yield superior profitability

- High market share in all relevant products
- Differentiation via innovation still possible
- Customer intimacy further supports uniqueness

Sustainable profitability drivers



Unique differentiation and market position will continue to lead to strong profitability



06

EXECUTIVE SUMMARY AND GUIDANCE

Group

We are well on track to deliver on our promises



Group

Net debt reduced by ~€1.4 bn¹
Strict financial discipline supports rating



Healthcare

Base business growing
2 avelumab indications launched



Life Science

Sigma-Aldrich synergies raised and well on track
Organic growth above market



Performance Materials

Introduce new technologies
Volatility well managed

**Important
Milestones
reached
to deliver
on our
promises**

**CMD²
December
2015**

**Q1 2017
Results**

2018

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 (or financed by divestments)
- **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 2017 guidance

▶ Net sales: ~ €15.5 – 16.0 bn ◀

▶ EBITDA pre: ~ €4,400 – 4,600 m ◀

▶ EPS pre: ~ €6.15 – 6.50 ◀





Appendix

01 Guidance details

02 Healthcare

03 Life Science

04 Performance Materials

05 Financial details



01

GUIDANCE DETAILS

2017 business sector guidance



Healthcare

Net sales

- Slight organic growth
- Ongoing organic Rebif decline
- Other franchises growing; repatriation of Glucophage/China supportive

EBITDA pre

~ €1,900 – 2,000m



Life Science

Net sales

- Organic growth slightly above market, driven by Process Solutions
- First minor contribution of top-line synergies

EBITDA pre

~ €1,780 – 1,850m



Performance Materials

Net sales

- Slight organic decline
- Volume increases in all businesses
- Further market share normalization in Liquid Crystals

EBITDA pre

~ €1,050 – 1,130m

Additional financial guidance 2017

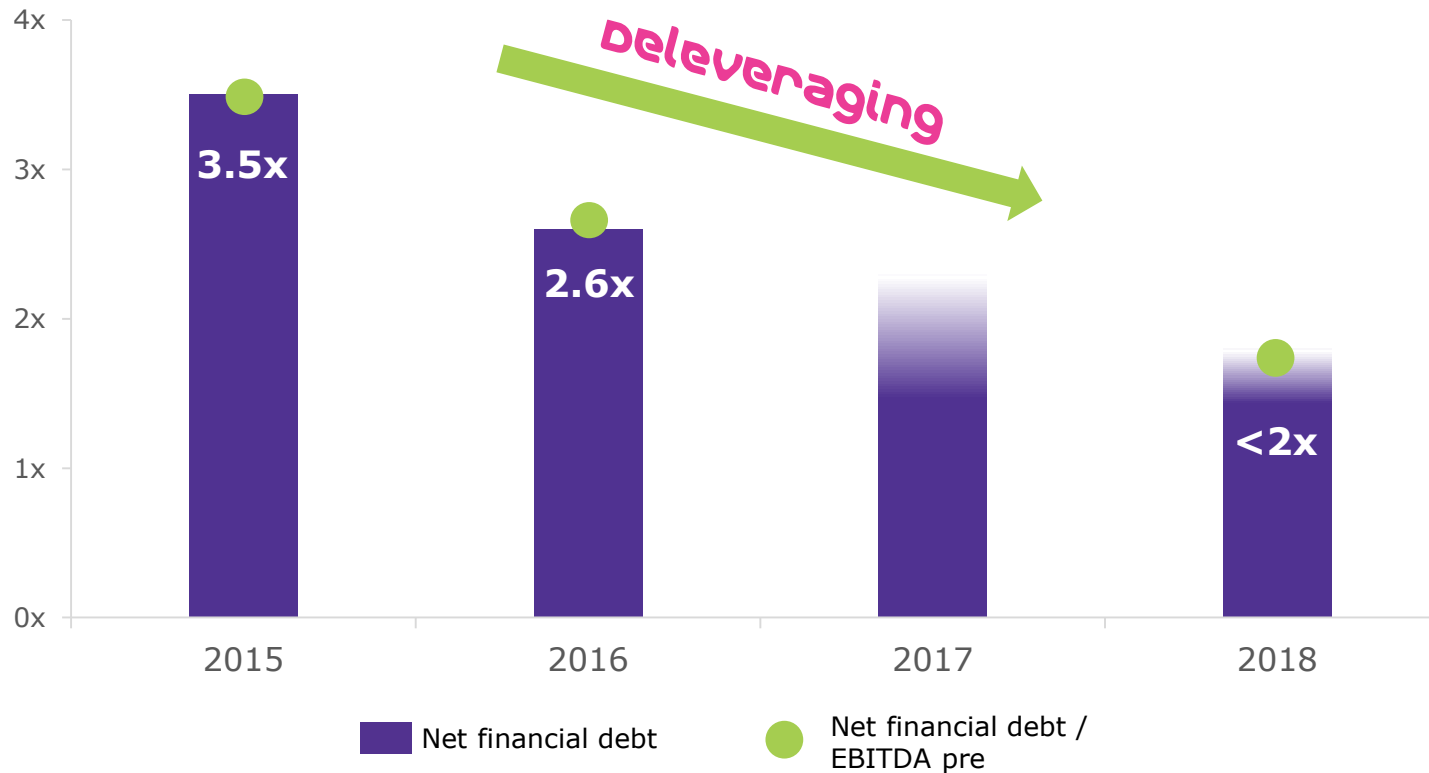
Further financial details

Corporate & Other EBITDA pre	~ -€350 – -400m
Interest result	~ -€250 – -260 m
Effective tax rate	~ 23% to 25%
Capex on PPE	~ €850 – 900 m
Hedging/USD assumption	2017 hedge ratio ~60% at EUR/USD ~ 1.11 to 1.12
2017 Ø EUR/USD assumption	~ 1.06 – 1.10

Strong focus on cash generation to ensure swift deleveraging

Net financial debt* and leverage development

[Net financial debt/
EBITDA pre]



Focus on deleveraging

- Commitment to swift deleveraging to ensure a strong investment grade credit 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 (or financed by divestments)

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

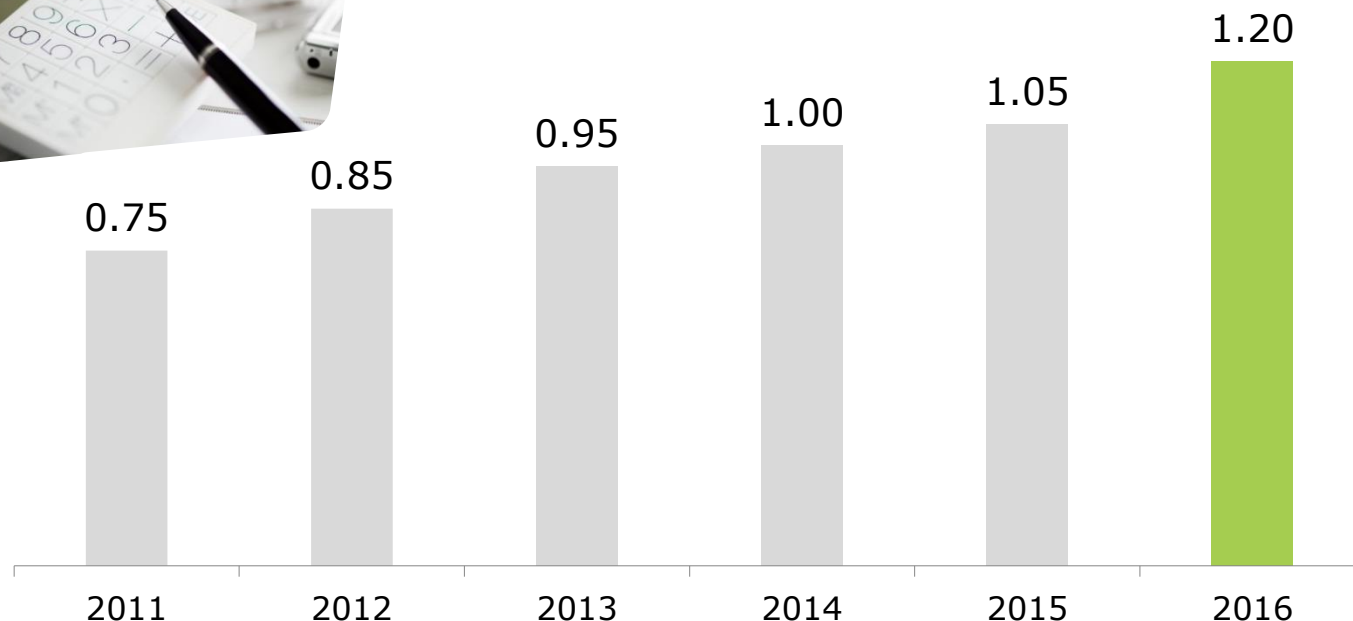
- Main production sites in Germany
- Several R&D and mixing facilities in Asia

FX Impact



Sustainable dividend development

Dividend¹ development 2011-2016



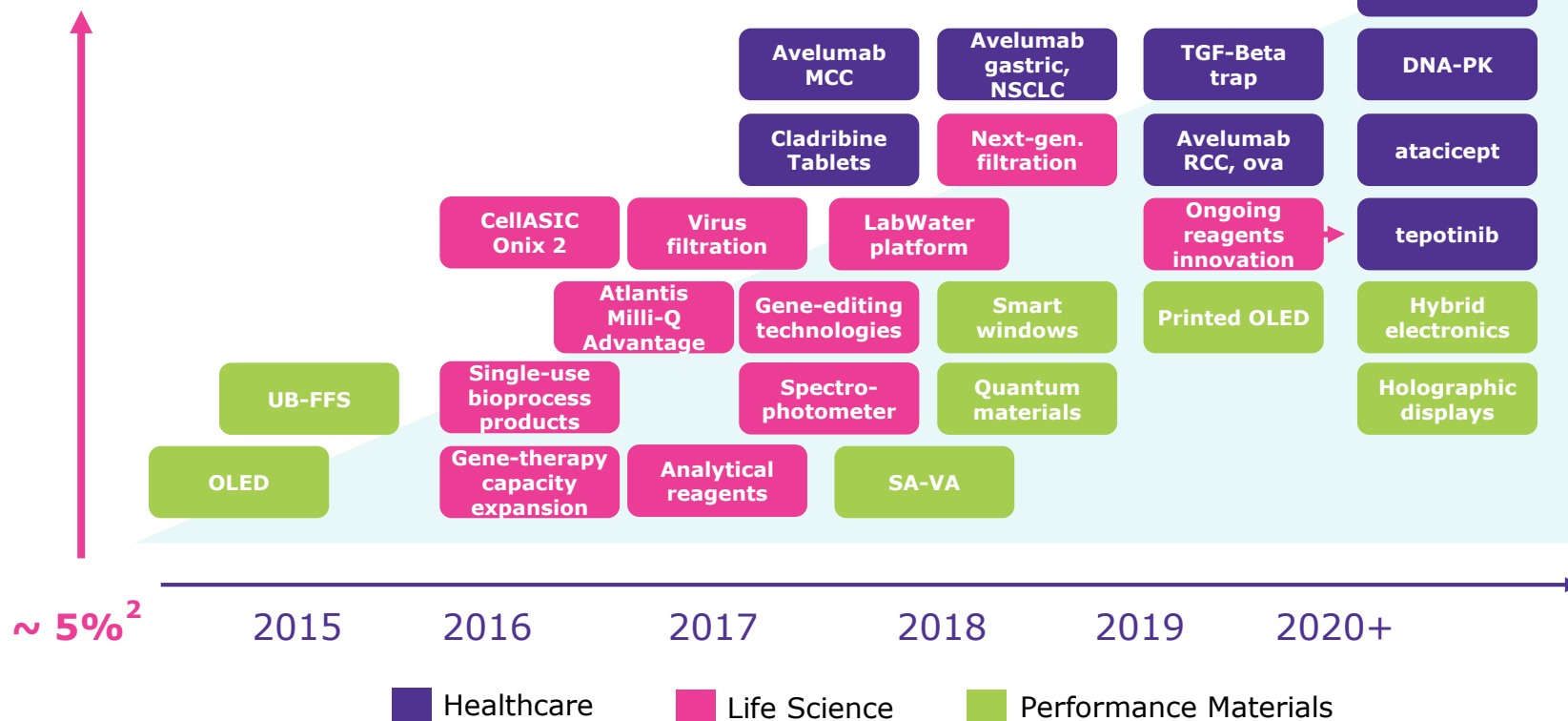
2016 dividend

- Dividend of €1.20 per share for 2016, reflecting 19.3% of EPS pre
- Dividend development in line with business performance and earnings progression
- Dividend yield² of 1.21%

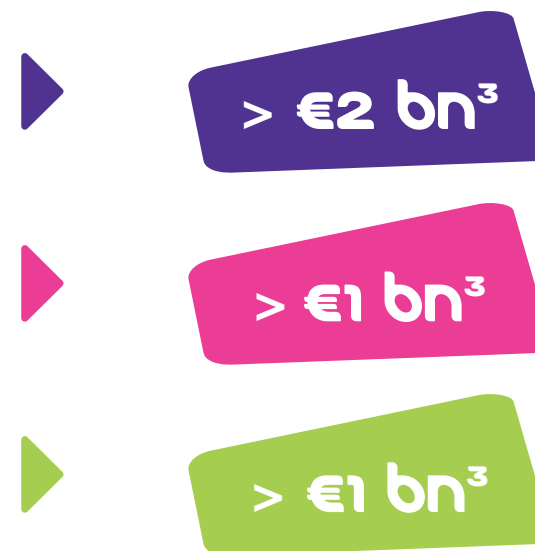
Our strong innovation capabilities will drive growth

New product launch cadence¹ by business sector

~ 20%²



New product sales³ potential 2022



Our rich pipeline will strongly drive sales

¹Illustration: timelines may change as product introductions are subject to customer adoption and implementation; pharma pipeline products are under clinical investigation and there is no guarantee any product will be approved in the sought-after indication; ²Share of total Group net sales from new products launched over the past 5 years, risk-adjusted; ³risk-adjusted



02 HEALTHCARE

Portfolio management: Differentiating across diverse business models

General Medicine portfolio



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



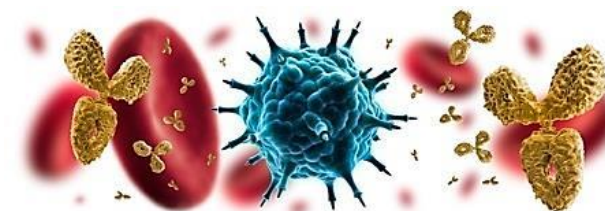
Biologicals portfolio



- 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

The road to maximizing Healthcare's existing franchises is clear

	Continue to drive mCRC* share by increasing patient testing and expanding head and neck coverage
	Ongoing 3x3 growth strategy implementation to strengthen sales and marketing activities delivering above-market organic sales growth
	Capitalize on strong efficacy and new smart devices to maximize differentiation and defend franchise
	Build on No.1 position and ART* 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 lifecycle management and expand business including asset repatriation



Clinical pipeline

Phase I

M2698 – p70S6K & Akt inhibitor
Solid tumors

M3814 – DNA-PK inhibitor
Solid tumors

M9831 (VX-984) – DNA-PK inhibitor
Solid tumors

M6620⁷ (VX-970) – ATR inhibitor
Solid tumors

M4344 (VX-803) – ATR inhibitor
Solid tumors

M7583 – BTK inhibitor
Hematological malignancies

Avelumab – Anti-PD-L1 mAb
Solid tumors

Avelumab – Anti-PD-L1 mAb
Hematological malignancies

M9241 (NHS-IL12)
Cancer immunotherapy
Solid tumors

M7824 – anti-PD-L1/TGF-beta trap
Solid tumors

M1095⁹ (ALX-0761)
Anti-IL-17 A/F nanobody
Psoriasis

Phase II

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

Tepotinib
c-Met kinase inhibitor
Hepatocellular cancer

Avelumab – Anti-PD-L1 mAb
Merkel cell carcinoma 1L¹

Sprifermin
Fibroblast growth factor 18
Osteoarthritis

Atacicept
Anti-Blys/anti-APRIL fusion protein
Systemic lupus erythematosus

Atacicept
Anti-Blys/anti-APRIL fusion protein
IgA nephropathy

Evobrutinib
BTK inhibitor
Rheumatoid arthritis

Evobrutinib
BTK inhibitor
Systemic lupus erythematosus

Abituzumab
anti-CD 51 mAb
Systemic sclerosis with interstitial lung disease

Evobrutinib
BTK inhibitor
Multiple sclerosis

Phase III

Avelumab – Anti-PD-L1 mAb
Non-small cell lung cancer 1L¹

Avelumab – Anti-PD-L1 mAb
Non-small cell lung cancer 2L²

Avelumab – Anti-PD-L1 mAb
Gastric cancer 1L^{1M}

Avelumab – Anti-PD-L1 mAb
Gastric cancer 3L³

Avelumab – Anti-PD-L1 mAb
Urothelial cancer 1L^{1M}

Avelumab – Anti-PD-L1 mAb
Ovarian cancer platinum resistant/refractory

Avelumab – Anti-PD-L1 mAb
Ovarian cancer 1L¹

Avelumab – Anti-PD-L1 mAb
Renal cell cancer 1L¹

Avelumab – Anti-PD-L1 mAb
Locally advanced head and neck cancer

MSB11022⁸
Proposed biosimilar of Adalimumab
Chronic plaque psoriasis

Registration

Cladribine⁴ Tablets –
Lymphocyte targeting agent
Relapsing-remitting multiple sclerosis

Avelumab⁵ – Anti-PD-L1 mAb
Merkel cell carcinoma

Recently registered

Avelumab⁵ – Anti-PD-L1 mAb
Merkel cell carcinoma

Avelumab⁶ – Anti-PD-L1 mAb
Urothelial cancer 2L²

- Neurology
- Oncology
- Immunology
- Immuno-Oncology
- Biosimilars

Pipeline as of May 11th, 2017

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.

¹ 1st line treatment; ^{1M} First Line maintenance treatment; ² 2nd line treatment; ³ 3rd line treatment; ⁴ European Medicines Agency (EMA) accepted Marketing Authorization Application (MAA) from Merck KGaA, Darmstadt, Germany in July 2016; ⁵ EMA accepted MMA from Merck KGaA, Darmstadt, Germany in July 2016 and on March 23, 2017, the US FDA has approved avelumab for the treatment of adults and pediatric patients 12 years and older; ⁶ On May 9, 2017 the US FDA approved avelumab for the treatment of patients with locally advanced or metastatic urothelial carcinoma who have disease progression during or following platinum-containing chemotherapy therapy, or who have disease progression within 12 months of neoadjuvant or adjuvant treatment with platinum-containing chemotherapy; ⁷ Includes expansion cohorts in non small cell lung cancer, small cell lung cancer and triple negative breast cancer; ⁸ On April 24, 2017 Merck KGaA, Darmstadt, Germany announced the divestment of its Biosimilars business to Fresenius, closing is expected in H2 2017, subject to regulatory approvals and other conditions; ⁹ As announced on March 30, 2017 in a agreement with Avillion, anti-IL-17 A/F nanobody will be developed by Avillion for plaque psoriasis and commercialized by Merck KGaA, Darmstadt, Germany

Oncology

Strategy anchored on four foundational pillars

1	Avelumab	<ol style="list-style-type: none"> 1. Monotherapy as a basis for combinations 2. Establish immunogenic priming in combination or sequence with CT/RT¹ 3. Proprietary novel combinations 4. Establish value of unique molecular characteristics (ADCC) 	<ol style="list-style-type: none"> 1. MCC, UC 2L, Gastric 3L, NSCLC 1L/2L, 2. Maintenance in UC 1L, gastric 1L, ovarian 1L 3. Avelumab + Inlyta (RCC 1L), plus 5 phase 1 combinations 4. DLBCL, NSCLC 1L (high intensity), unique combinations leveraging ADCC
2	IO bi-functionals	Engineer or access platforms where biology is best addressed by a bi-functional approach	<ul style="list-style-type: none"> • anti-PD-L1/TGF-beta trap • anti-PD-L1/anti-LAG-3 • NHS-IL 12
3	DNA Damage Response (DDR)	Establish leadership in DDR and leverage synergies across portfolio (immuno-oncology plus emerging platforms)	<ul style="list-style-type: none"> • DNA-PK-i • ATR-i • ATM-i
4	Emerging Platforms	Invest in complementary discovery areas	<ul style="list-style-type: none"> • Antibody-Drug-Conjugates (ADC, e.g. partnership with Mersana/Sutro) • Oncogenic signaling • Bi-functional fusion proteins • Bi-specific antibodies

External Innovation

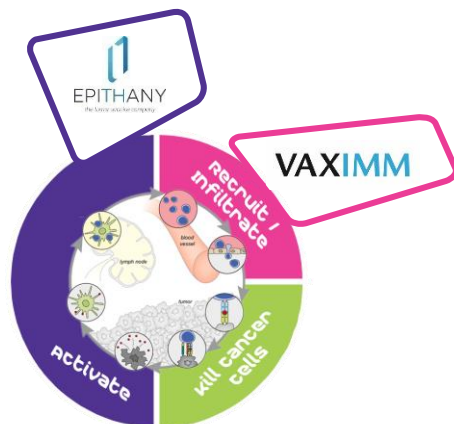
2017 deal activity aligned with strategic pillars

1

Clinical collaborations for avelumab combinations

expand across the immunity cycle

- **EpiThany:** EP-101 STEMVAC vaccine (breast cancer)
- **Vaximm:** Oral T-cell immunotherapy (glioblastoma, colorectal cancer)

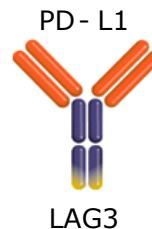


2



Leading bi-specific platform

- **Option deal**
- **Bi-specific antibodies** (promising lead asset **Anti-LAG3/ PD-L1**)
- FS118 shows superior activity pre-clinically (**expected in clinic 2018**)
- Potential in PDx-refractory setting
- Four additional mAb2 programs



3



strengthen DDR platform

- **Acquisition (license) deal**
- **Leadership** in DDR-i
- Combination of Vertex' Oncology and Merck's KGaA, Darmstadt, Germany DNA-PK inhibitor programs

Vertex

- Two **ATR-inhibitors**
- One **DNA-PK inhibitors**
- Two pre-clinical programs

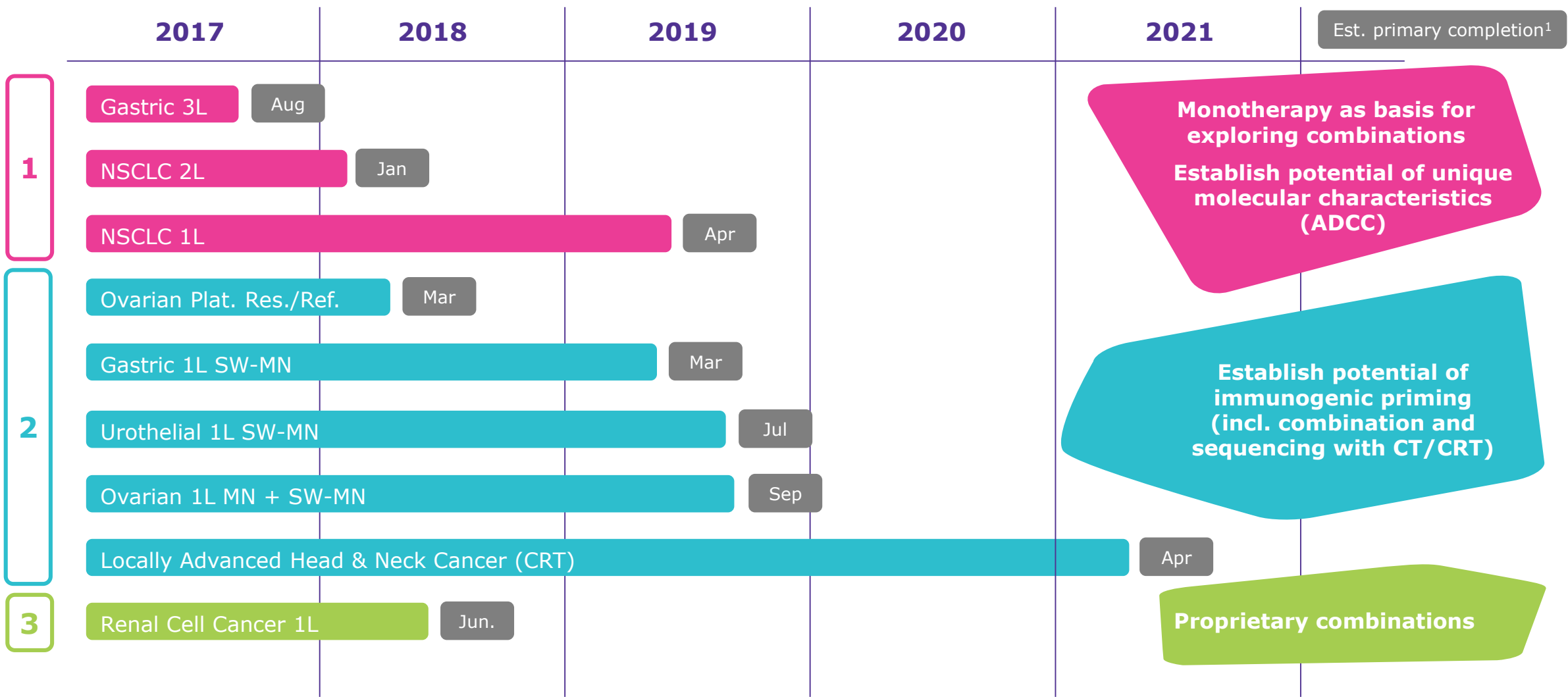
Merck KGaA, Darmstadt, Germany

- DNA-PK inhibitor
- **ATM-inhibitor** (preclinical)

1

Avelumab

Nine ongoing pivotal studies with differentiation potential



¹ Estimated primary completion date according to Clinicaltrials.gov.
 Acronyms: CT: Chemotherapy | CRT: Chemoradiotherapy | Plat. Res./Ref.: Platinum Resistant/Refractory | MN: Maintenance | SW: Switch



Avelumab

Clinical results support avelumab as therapeutic option for metastatic Merkel cell carcinoma

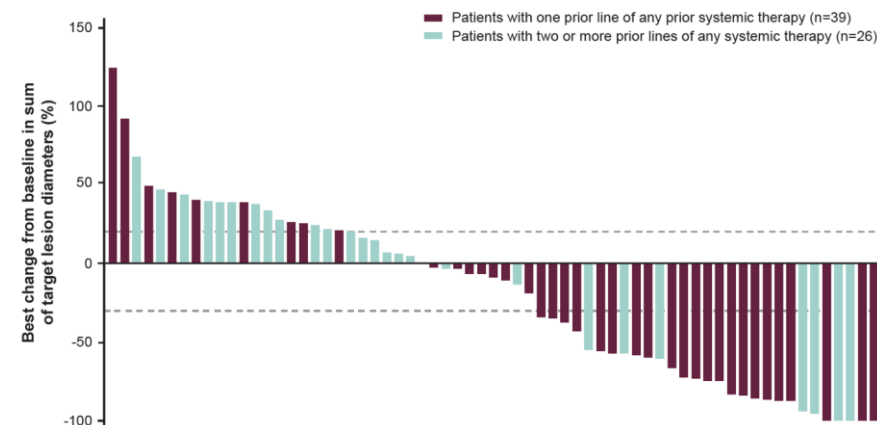
Encouraging response rates¹

- ORR: 31.8%
 - 9.1% complete response
 - 22.7% partial response
 - Rapid (78.6% responding within 7 weeks of treatment)
 - Durable (82.1% still responding at time of analysis)
- 6-mo OS: 69% (median OS: 11.3 months)
- 6-mo PFS rate: 40%
- Manageable safety profile; no unexpected safety signals



Potential for differentiation

- Largest international multicenter, open-label study of anti-PD-L1/PD-1 reported in this patient population (88 patients) – Responses observed in large number of patients
- Improved response rates observed when used earlier, i.e. fewer lines of prior chemotherapy appeared to be associated with better response to avelumab in MCC 2L and beyond
 - ORR of 40.4% for patients with one prior systematic treatment
 - ORR of 19.4% for patients with two and more prior treatments



Key ASCO abstracts at a glance (two oral presentations)

MCC (1L)

- Initial results from a cohort of chemotherapy-naïve pts with mMCC (ongoing study)
- Manageable safety profile, consistent with findings for 2L+ cohort
- **Unconfirmed ORR: 64.0%** (≥6 weeks follow-up) / **Confirmed ORR: 56.3%** (≥3 months follow-up)
- Avelumab is associated with early responses; preliminary results suggest that responses mature to become durable

NSCLC

- Exposure-response and PD-L1 expression analysis of NSCLC 2L (Phase I cohort)
- Patients in upper half of increased exposure ($C_{troughfirst}$ -dose quartiles Q3-Q4) showed increasing ORR (by higher PD-L1-staining level); **ORR: 25% (≥1%); 26% (≥5%); 33% (≥50%); 43% (≥80%)***
- Analysis provides rationale for the modification of the NSCLC 1L Phase III trial

Urothelial

- Updated efficacy and safety data of avelumab in metastatic urothelial carcinoma 2L (pooled Phase Ib)
- Durable responses in heavily pretreated patients, irrespective of tumor PD-L1 expression status
- **Confirmed ORR: 17.4%;** 6.2% CR (≥6m follow-up)

RCC (oral presentation)

- First line avelumab + Inlyta therapy in patients with advanced renal cell carcinoma 1L (Phase Ib)
- Preliminary findings confirm manageable safety profile and consistent with agents administered as monotherapy
- **Confirmed ORR: 58.2%,** based on 3 CR and 32 PR (follow-up ongoing)

Anti PD-L1/ TGF-beta trap (oral presentation)

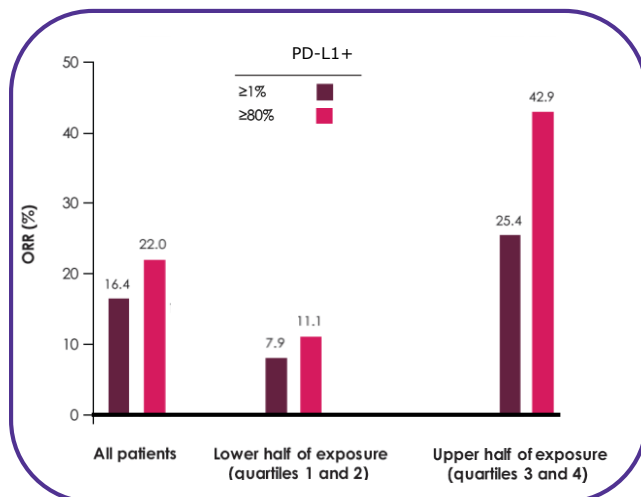
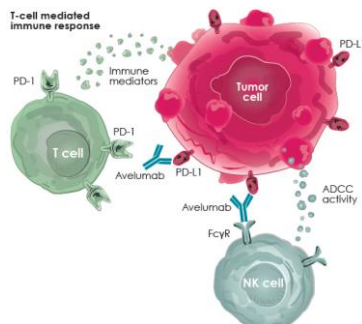
- Preliminary results from Phase I dose-escalation study (bifunctional fusion protein targeting PD-L1 and TGF-β)
- Manageable safety profile in patients with heavily pre-treated advanced solid tumors
- Early signs of clinical efficacy: **1 ongoing confirmed CR** (cervical), **1 durable PR** (pancreatic), **1 unconfirmed PR** (anal)
- A 25% reduction in the sum of diameters of target lesions after 2 doses of M7824 (cervical), and 2 cases of prolonged stable disease (pancreatic; carcinoid).

1

Avelumab

NSCLC 1L: Assessing potential efficacy upside in mono-therapy¹

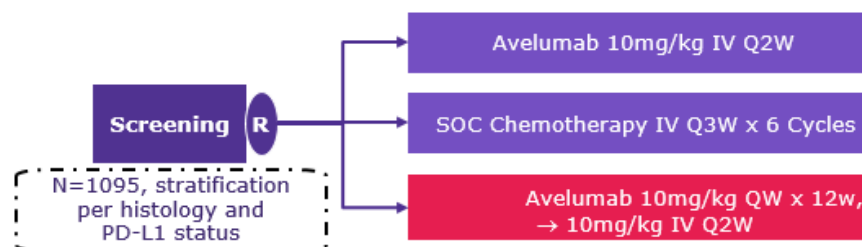
NSCLC 2L+: exposure response



NSCLC 1L: testing hypothesis of higher efficacy/intensity correlation

Hypothesis : higher drug intensity may result in greater efficacy (potentially driven by ADCC)

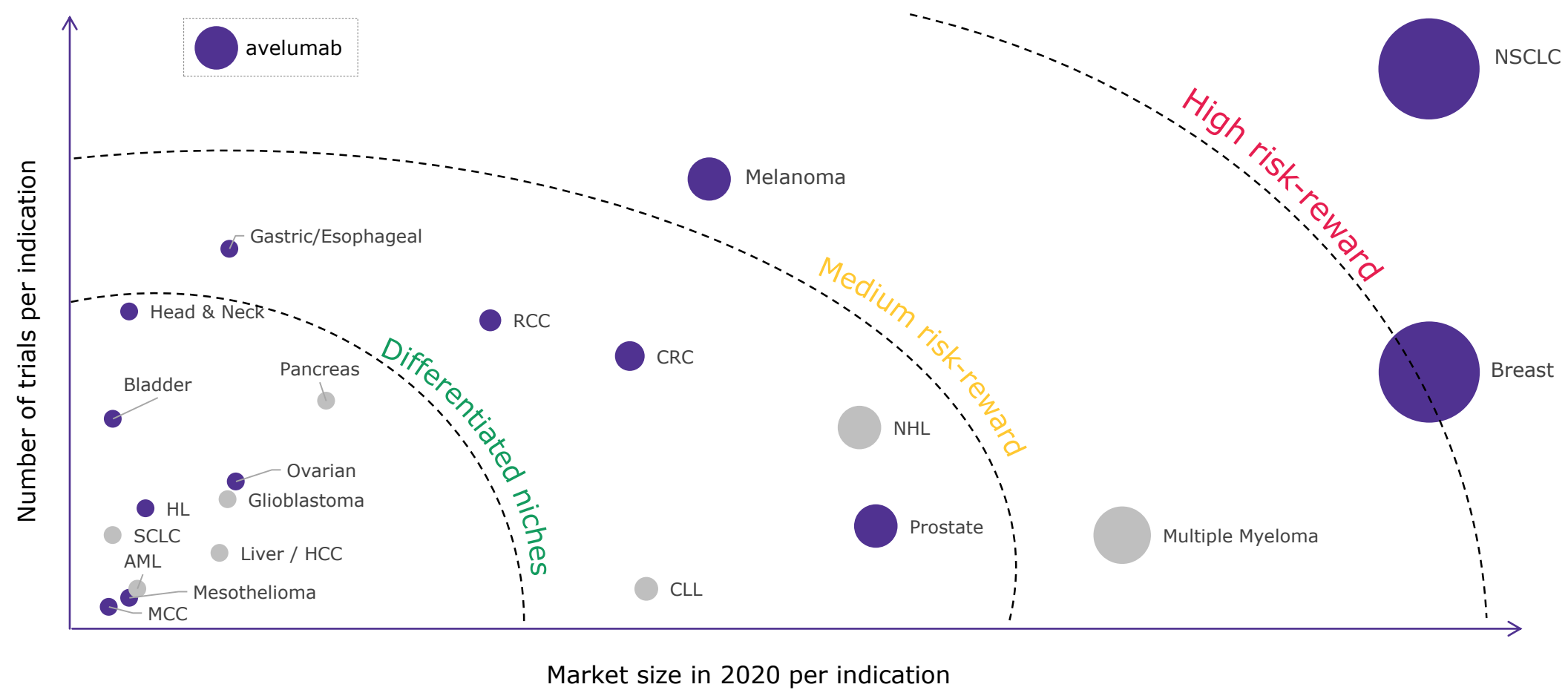
- Potential association between **higher ORR** and **higher avelumab exposure**
- ORR highest in patients with both higher avelumab **exposure** and tumors with higher levels of **PD-L1 expression**
- **NSCLC 1L phase III trial amended** to leverage high-intensity hypothesis (est. primary completion Apr 2019)



- **Primary endpoints:** PFS & OS @ high PD-L1-expression
- **Secondary endpoints:** PFS & OS @ moderate and low PD-L1-expression (BOR, DOR, Safety, QoL)
- **Hierarchical ordered hypothesis**

1 Avelumab

Avelumab plays predominantly in attractive and differentiated niches





Avelumab

Differentiation strategy varies according to chosen target indication and market

1

**Unsaturated
and / or niche
indications**

- Ambition to lead in niche indications (e.g. Merkel cell) or markets (e.g. Asia for gastric)
- Quick to market strategy (e.g. BTM designation for MCC)
- Small, but less crowded markets and sales potential with notable impact for us
- Strategic strength of Healthcare in niche markets

2

**Saturated
and / or major
indications**

- Learn from experience of incumbents/early movers in major indications (e.g. NSCLC, Bladder)
- Potential for combinations given breadth of combined development pipelines
- Differentiate in trial design and explore application of further biomarkers



1 Avelumab

Combinations will drive differentiation strategy

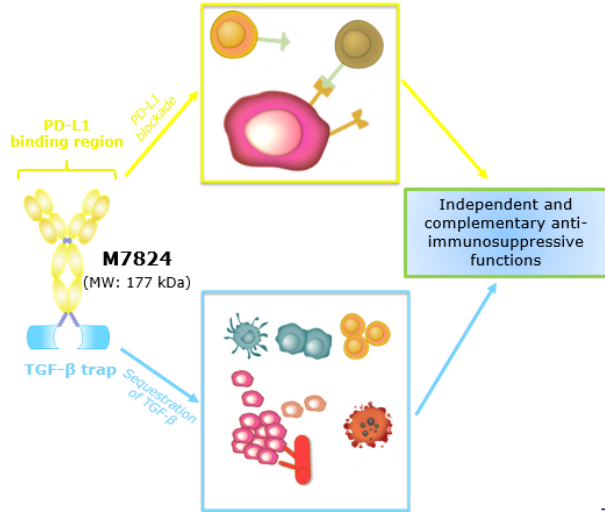


- **In registration: metastatic Merkel Cell (EU)**
- Phase III: Ovarian (1L & Plat. Res. Ref.)¹
- Phase III: Gastric (1L MN & 3L)
- Phase III: NSCLC (1L & 2L)
- Phase III: Urothelial (1L MN)
- Phase III: SCCHN (Locally advanced, Front line)
- Phase II: Merkel Cell (1L)
- Multiple other tumor types

- **Phase III: Ovarian 1L & Plat. Res. Ref.**¹
(Avelumab + Chemotherapy)
- **Phase III: Renal 1L**
(Avelumab + Inlyta)
- **Phase III: L/A Head and Neck**
(Avelumab + Chemoradiation)
- **Phase I: DLBCL**²
(Avelumab + various agents)
- **Phase I/II: Advanced malignancies**
(Avelumab + 4-1BB / + OX40)
- **Phase Ib/II: Ovarian**
(Avelumab + Entinostat; Syndax)
- **Phase I/Ib: Ovarian**
(Avelumab + VS-6063; Verastem)
- **Phase I/II: SCCHN**
(Avelumab + TG4001; Transgene)
- **Phase Ib/II: NSCLC**
(Avelumab + VX15/2503; Vaccinex)
- **Phase I/Ib: NSCLC**
(Avelumab + Debio1143; Debiopharm)
- **Phase I/Ib: Glioblastoma and Colorectal**
(Avelumab + VXM01; VAXIMM)

2

Anti-PD-L1/TGF-β trap Dose escalation completed, showing first signs of clinical activity¹



- **Innovative first-in-class bifunctional fusion protein** designed to simultaneously target two immune suppressive pathways (blocking PD-L1 and reducing TGF-β signaling)
- **Manageable safety profile** (patients with heavily pretreated advanced solid tumors)
- **Saturated peripheral PD-L1 and sequestered all released plasma TGF-β1, -β2, and -β3¹**

Patients with metastatic or locally advanced solid tumors for which no standard effective therapy exists or standard therapy has failed (N = 19)

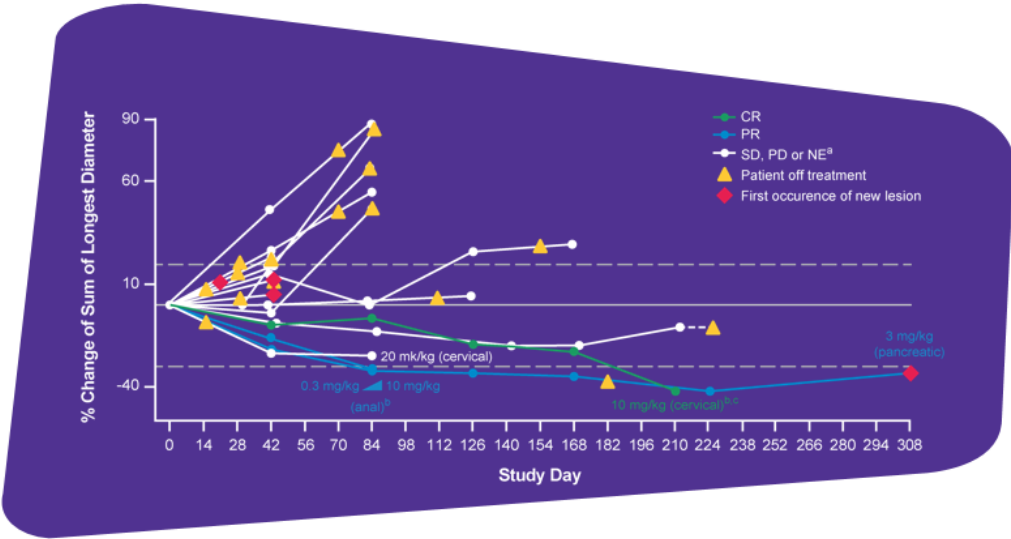
Dose Q2W, mg/kg	n
0.3 ▲ 10	3
1	3
3	3
10	3
20	7

Primary endpoints

- TEAEs
- DLTs
- Treatment-related AEs

Secondary endpoints

- PK
- M7824 immunogenicity
- BOR

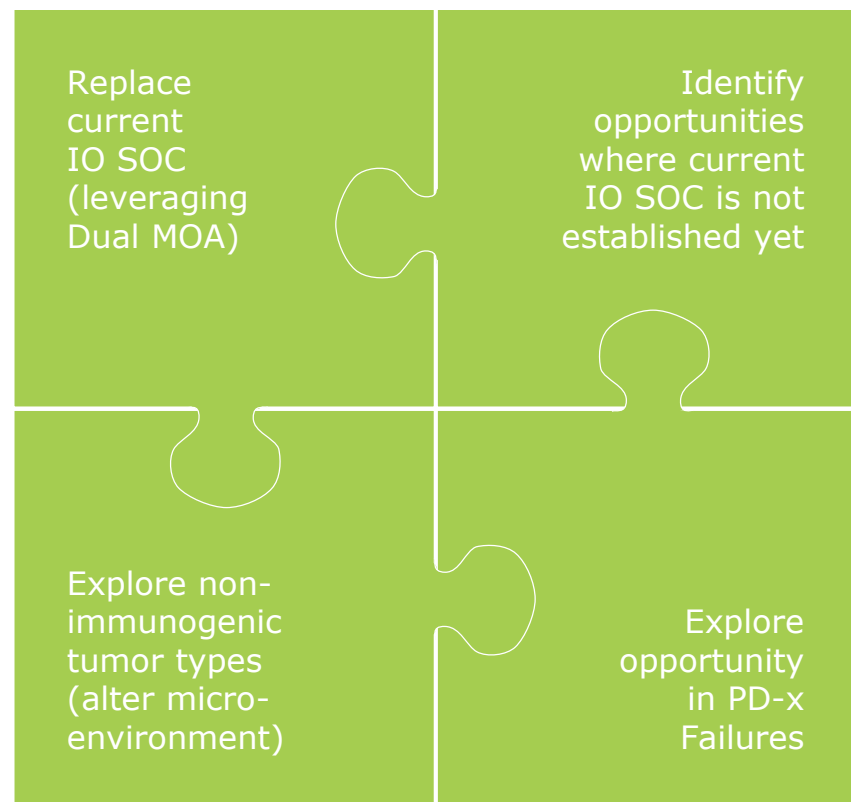


2

Anti-PD-L1/TGF- β trap

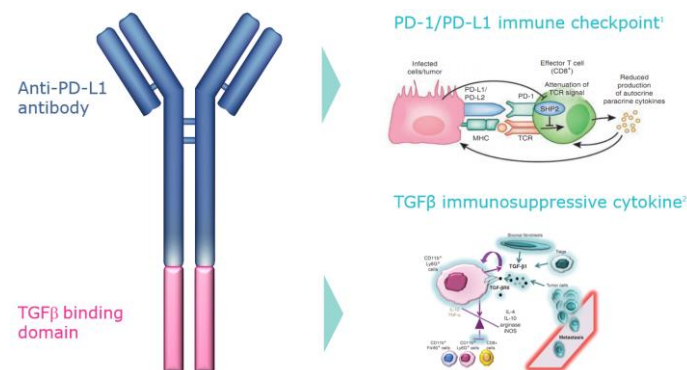
PD-L1–TGF-beta indicates potential to move beyond checkpoint inhibitors

Four focus areas for exploration



Status and next steps

- Novel, first-in-class bifunctional immunotherapy
- Bifunctional mode should result in broader application vs. respective mono-functional agents
- Great potential when combined with Standard of Care, immunotherapy and internal pipeline drug candidates
- Dose level finding of Phase I completed
- Recruiting into Ib expansion cohorts started in Q3 2016



2 Anti-PD-L1/TGF- β trap Cohort data will enable decision per indication/category

Dose escalation completed¹

14 cohorts in recruitment

Defined criteria allow timely decision

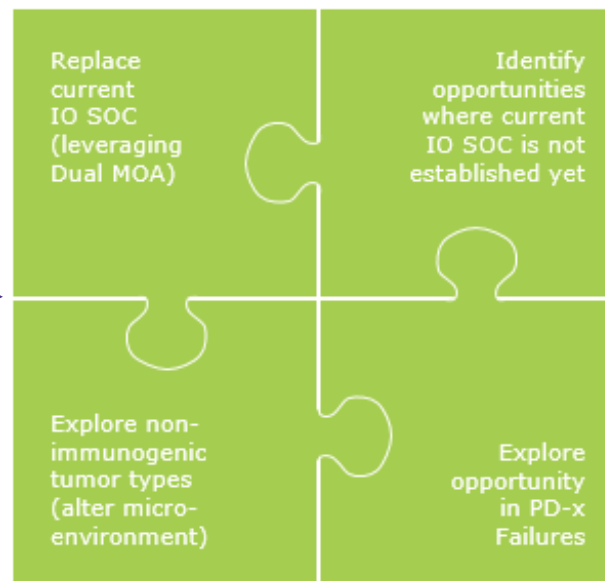
Preliminary results from a phase 1 trial of M7824 (MSB0011359C), a bifunctional fusion protein targeting PD-L1 and TGF- β , in advanced solid tumors

J. L. Gulley¹, C. R. Heery², J. Schlom³, R. A. Madan⁴, L. Cao¹, E. Lamping⁴, J. L. Marte¹, L. M. Cordes⁵, O. Christensen⁶, C. Helwig⁷, J. Strauss¹

¹National Cancer Institute at the National Institutes of Health, Bethesda, MD; ²Laboratory of Tumor Immunology and Biology, National Cancer Institute at the National Institutes of Health, Bethesda, MD; ³National Cancer Institute, Bethesda, MD; ⁴Gastrointestinal Malignancies Branch, National Cancer Institute, NIH, Bethesda, MD; ⁵National Institutes of Health, Bethesda, MD; ⁶EMD Serono, Billerica, MA; ⁷Merck KGaA, Darmstadt, Germany

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- **Ongoing confirmed CR** (cervical, 10 mg/kg)
- **Durable confirmed PR** (pancreatic, 3 mg/kg)
- **Unconfirmed PR** (anal, 0.3 mg/kg 10 mg/kg)
- **Near-PR** (cervical, 20 mg/kg)
- **Prolonged SD** (pancreatic, 3 mg/kg)
- **Prolonged SD** (carcinoid, 1 mg/kg)



Expand cohort and/or explore single-arm path-to-registration

Expand cohorts to confirm signal and/or follow with randomized comparative trial

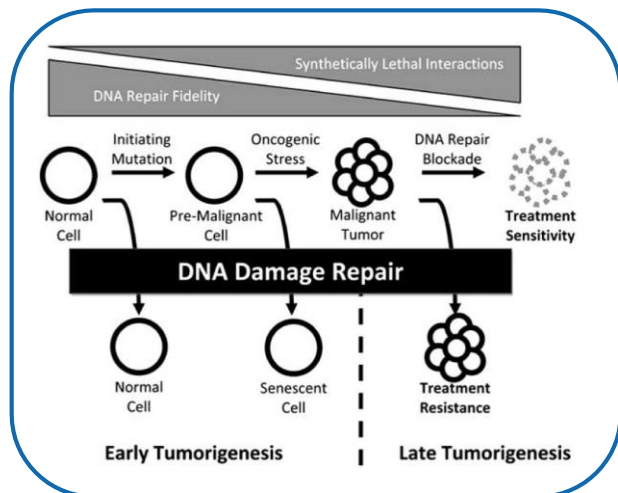
Explore biomarker driven pan-tumor opportunities

De-prioritize cohort

3

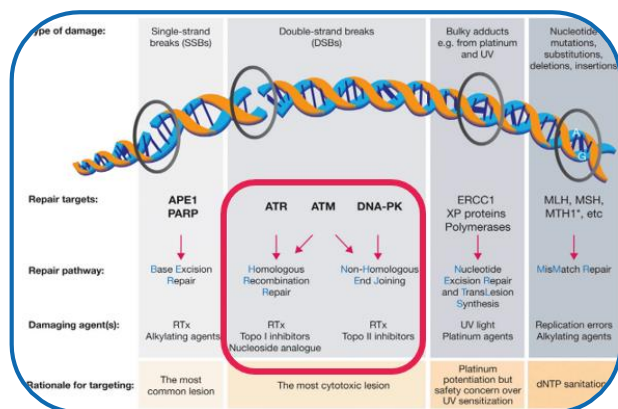
DNA damage response (DDR)

Complete portfolio supporting leadership in a potentially disruptive class



Genomic instability: a hallmark of late stage cancers¹

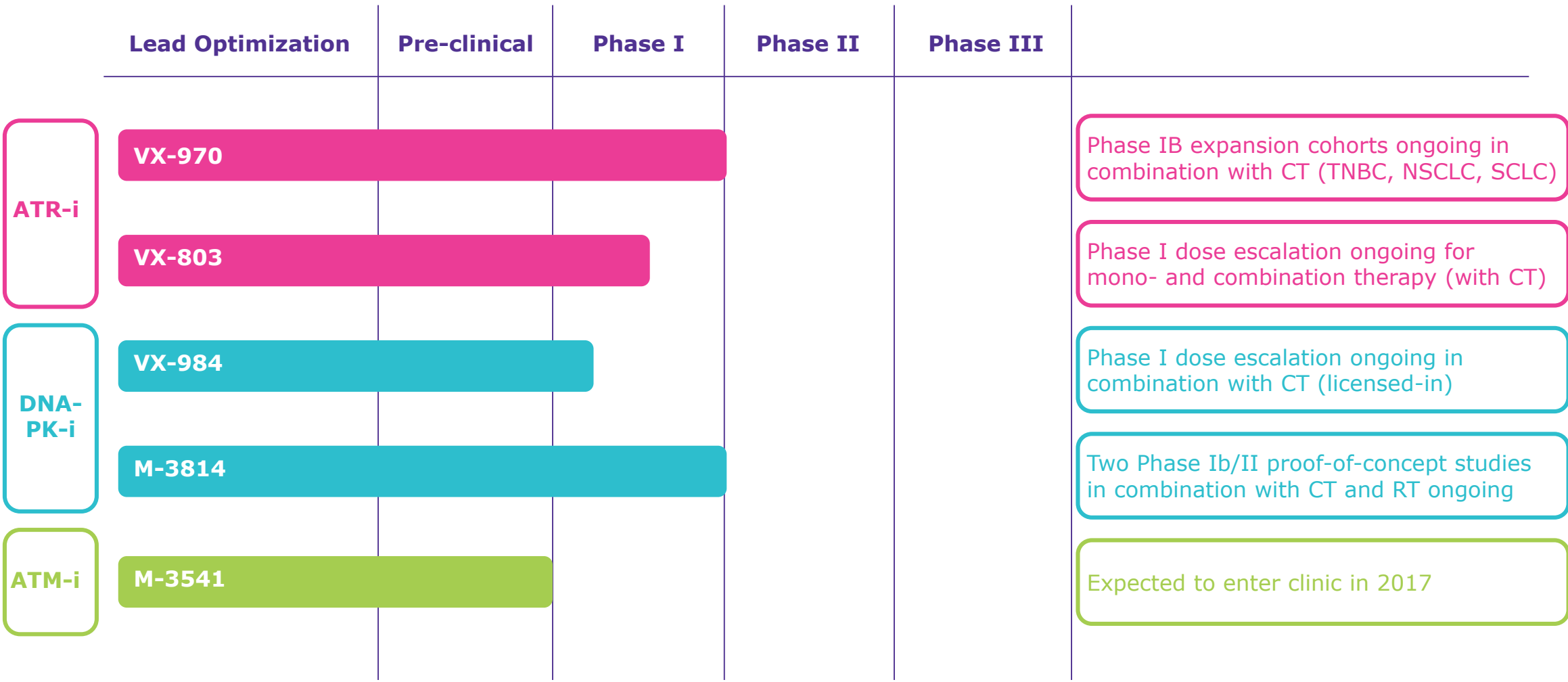
- DNA damage response (DDR) keeps genetic information intact
- In many cancers DDR pathways are defected, leading to greater dependency on remaining functional DDR pathways
- Preferentially inhibiting remaining DDR pathways can result in cancer cell death ("synthetic lethality")



Amplifying cytotoxic effects of conventional and novel cancer treatments potentially bears combination potential

1. Inhibitor portfolio targets all three leading pathways of double stranded breaks – enabling unique synergies
2. ASCO 2017: leading DNA-PK-I (M3814) found safe and tolerable in a phase I study, with limited single-agent activity (20% of patients with stable disease for at least 18 weeks)²

3 DNA damage response (DDR) Clinical program targets all three DDR pathways, in mono- and combination



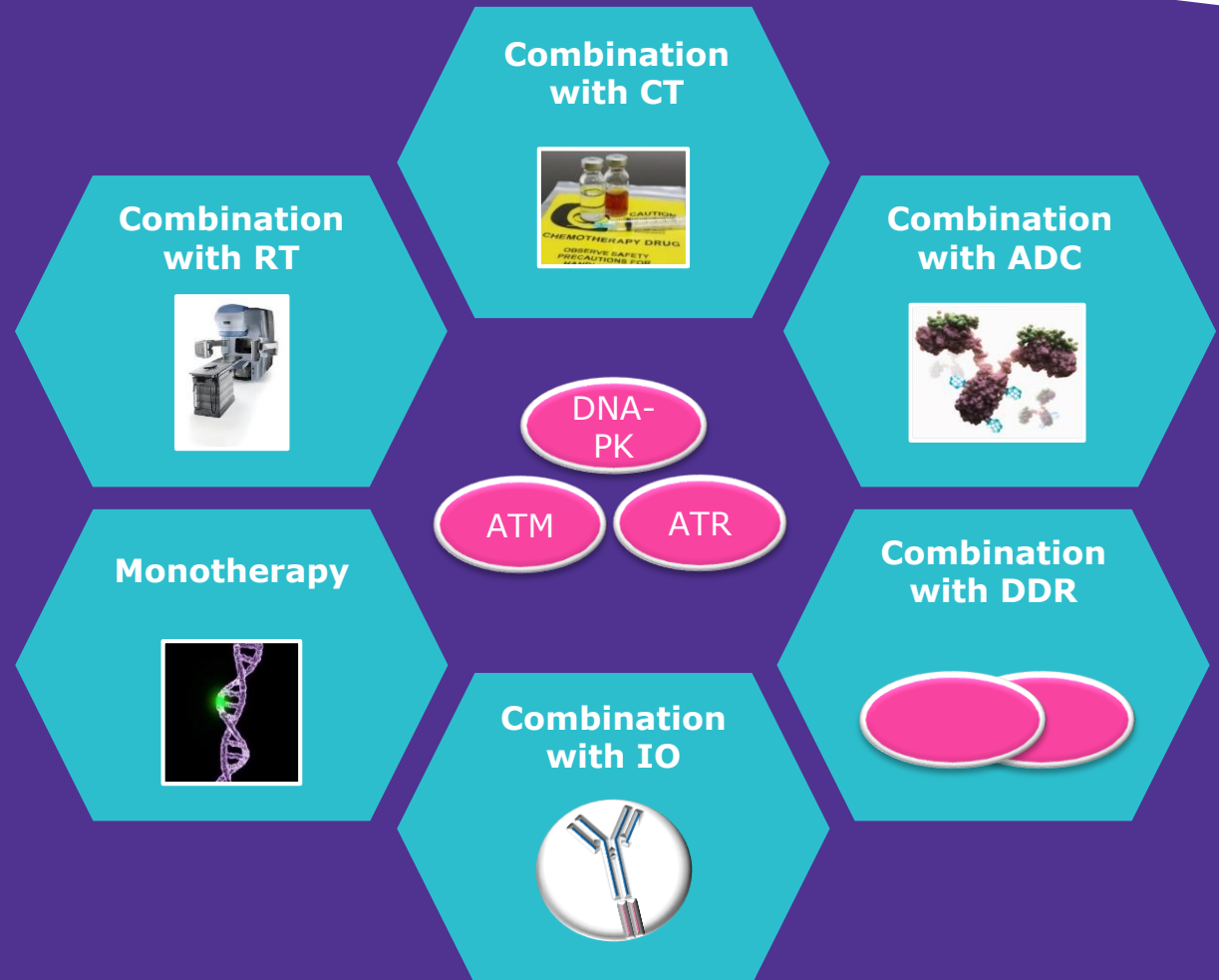
Acronyms: ATM: ataxia-telangiectasia mutated | ATR: ataxia telangiectasia and Rad3 | DNA-PK: DNA-dependent protein kinase | CT: Chemotherapy | RT: Radiotherapy | NSCLC: non-small cell lung cancer | SCLC: small cell lung cancer | TNBC: triple negative breast cancer | Note: timelines are event-driven and may change

3 DNA damage response (DDR) Broad combination potential across multiple mechanisms

At least **50%** of all cancer patients receive some type of **RADIATION** therapy (NCI 2016)

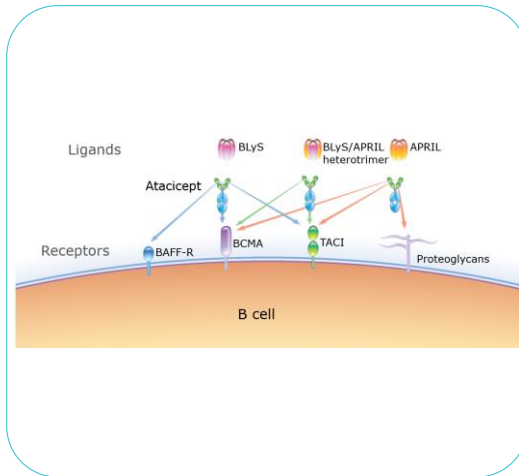
At least **70%** of all cancer patients receive some type of **CHEMOTHERAPY** (NCI 2016)

Significant share of patients to be treated with **CHECKPOINT INHIBITORS**



Update on selected assets

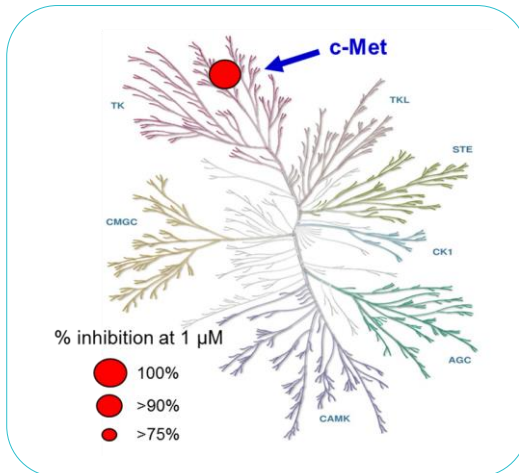
Atacicept



- Binds to receptors of two cytokines regulating maturation, function, and survival of B cells (B-lymphocyte stimulator (BLyS) & a proliferation-inducing ligand (APRIL))
- ADDRESS II (Phase IIb) in SLE patients (n=306):
- Primary endpoint not met, but analyses of predefined subpopulation with high disease activity (HDA; n=158) demonstrated statistically significant treatment effects (e.g. SRI-6 response at week 24 significantly greater with atacicept 150 mg vs. placebo); both doses led to significant reductions in BILAG A and SFI flares

Phase III decision subject to interactions with authorities

Tepotinib

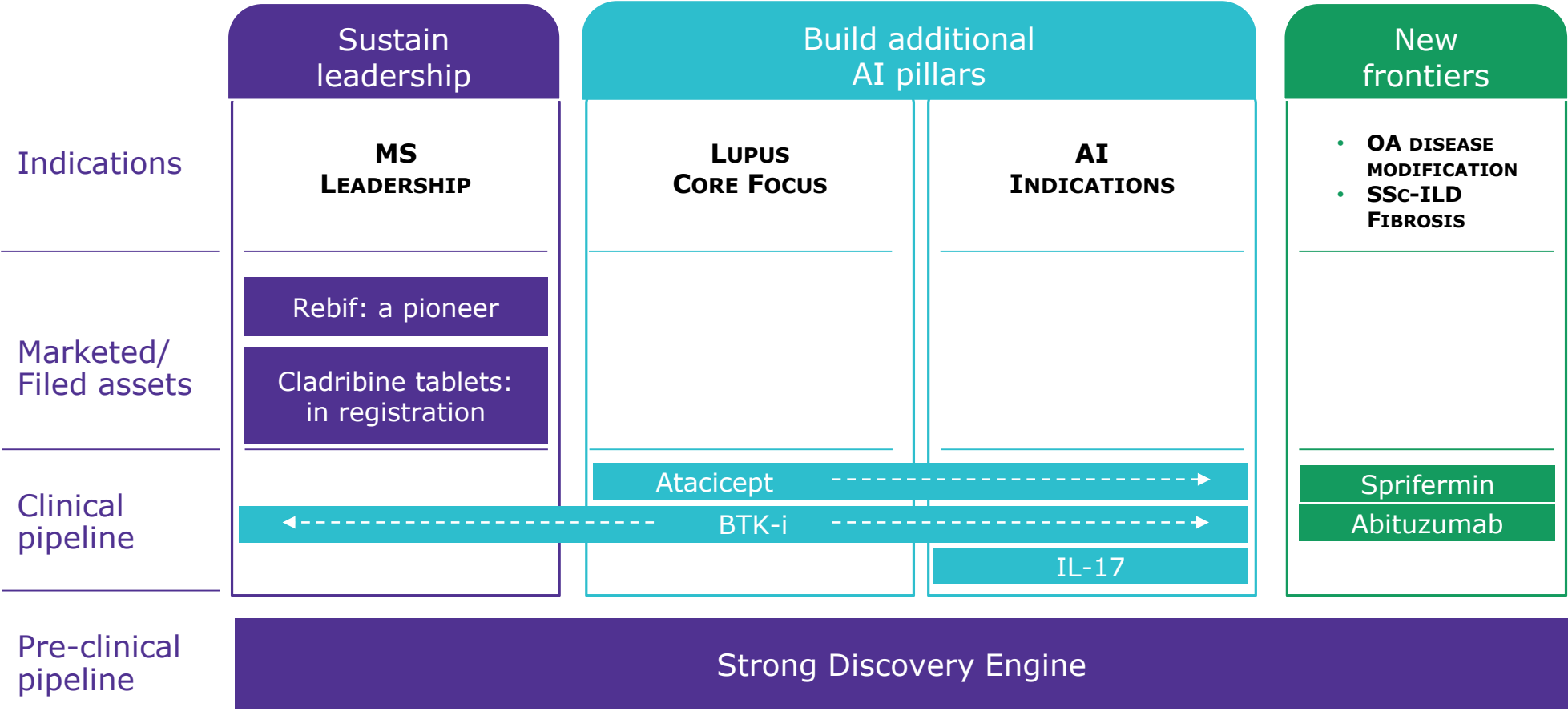


- Highly selective small molecule c-Met inhibitor
- Active in ligand-dependent and ligand-independent tumor models
- Biomarker-driven approach for patient selection
- Preliminary data show encouraging signs of anti-tumor activity in c-Met positive patients in NSCLC and HCC^{2,3}
- Phase II trials in progress in NSCLC and HCC

Analysis of Phase II data for HCC and NSCLC expected in H1 2018

Immunology

Strategy anchored on leadership in selected disease areas



Cladribine tablets – MAA submission accepted by EMA in July 2016

Background

- Targets lymphocytes (both B and T cells), integral to MS pathogenesis
- Two Phase III and one Phase IIIb extension studies conducted in RRMS and early MS^{1,2,3}; Phase II study in patients failing IFN beta therapy⁵
- Substantial new efficacy & safety characterization including data from long-term follow up (>10,000 patient-years)
- Most recent analyses provide relevant information on benefit/risk profile of cladribine tablets in RRMS:
 - ARR reduction (58%)
 - Risk of disability progression (33% reduction)
 - Relative reduction in mean number of lesion (86% reduction in T1 gadolinium-enhanced lesions)
 - 47% of patients experience NEDA over 2 years⁴

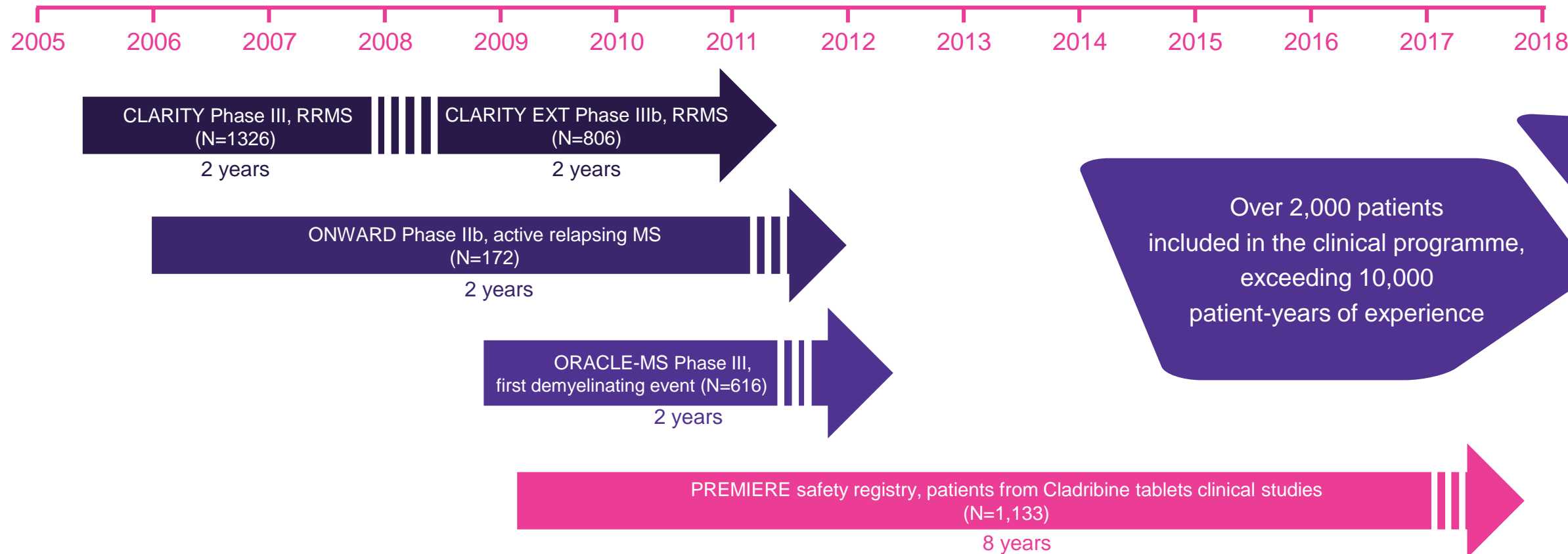
Potential for differentiation

- Merck KGaA, Darmstadt, Germany aims to address significant unmet needs for agents delivering high efficacy with favorable safety profile in a convenient dosing regimen
- Administered orally (tablet formulation)
- Extremely short treatment courses (8–10 days per year) leading to long-term efficacy¹

Note: timelines are event-driven and may change

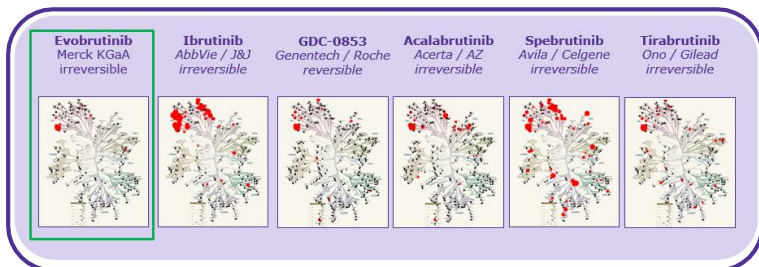
EMA = European Medicines Agency; ARR = Annualized Relapse Rate; MAA = Marketing Authorization Application; MS = multiple sclerosis; NEDA = no evidence of disease activity; RRMS = relapsing-remitting multiple sclerosis. ¹ Giovannoni G et al. New Engl J Med 2010;362:416–26; ² Giovannoni G et al. 65th annual meeting of the American Academy of Neurology 2013. P07.119. ³ Leist TP et al. Lancet Neurol 2014;13:257–67. ⁴ Giovannoni G et al. Lancet Neurol. 2011;10:329–37. ⁵ Montalban X et al. 65th annual meeting of the American Academy of Neurology 2013. P07.099.

Cladribine tablets supported by 10,000 patient years of experience collected over 13 years including an 8 year safety registry



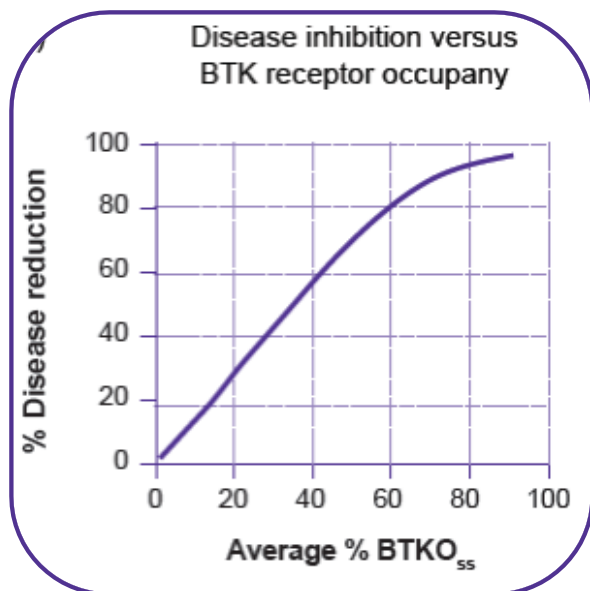
Evobrutinib

Highly selective BTK-i to be explored as chronic therapy



Safety: promising kinase selectivity minimizing off-target effects¹

- Greater selectivity vs. in-class competitors in kinase screen (>270 kinases)
- Besides BTK, two more kinases inhibited (vs. 25 off-target kinases by others)
- Kinase selectivity may result in lower AE rate vs. existing treatments

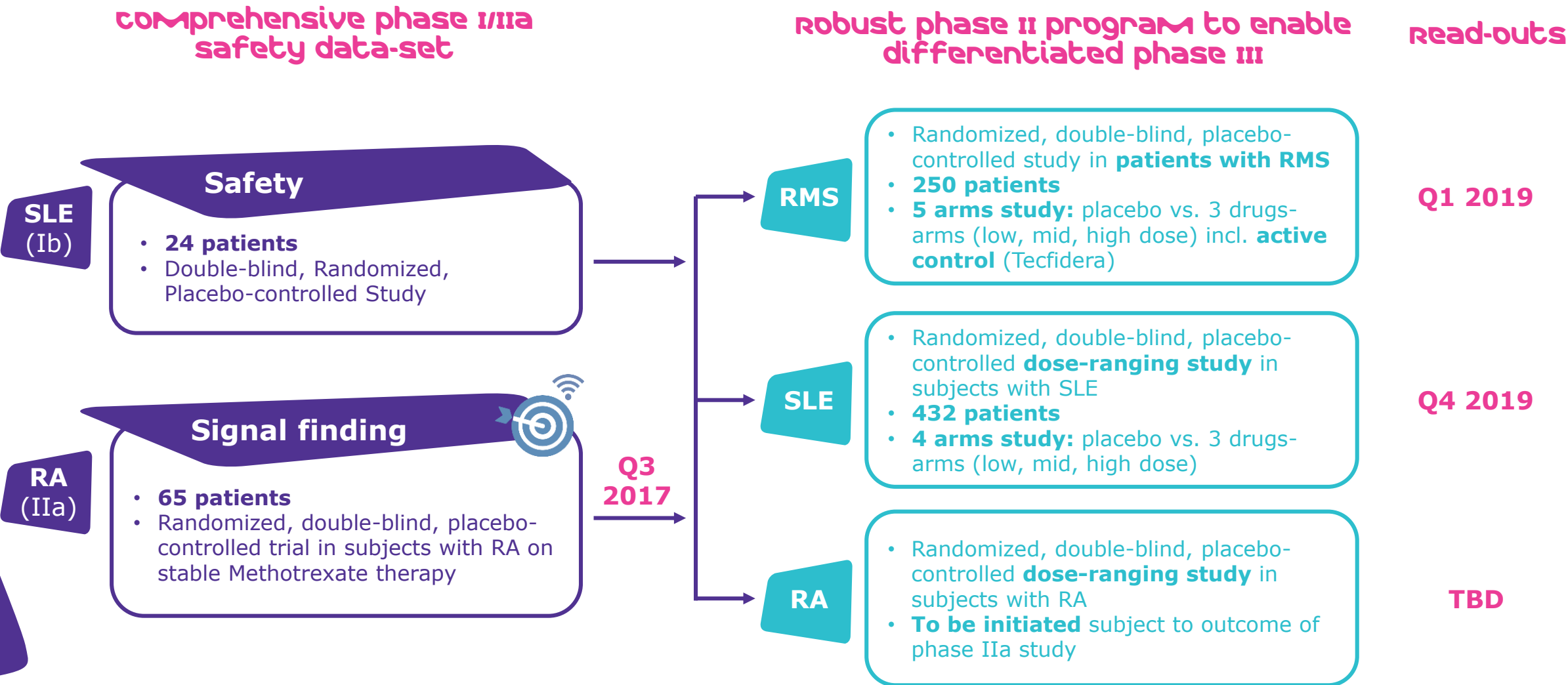


Efficacy: oral, highly efficacious in pre-clinical models¹

- Evobrutinib (irreversible antagonist) inhibiting signal transduction until protein is naturally degraded (no B-cell depletion)
- Occupancy/efficacy correlation: average BTK occupancy of >80% correlated with near complete inhibition of disease activity¹
- Clinical benefit of addressing B cell biology demonstrated by anti-CD20 targeting agents
- Insights from phase IIa trial (RA) leveraged in broad clinical development program (three phase II trials ongoing in MS, SLE, and RA)

Evobrutinib

Comprehensive development plan across immune-mediated diseases



Outlook

Healthcare is well set for future growth

Stable existing
business



Base business delivering solidly with stable outlook

R&D pipeline
optionality



High quality assets across all three areas continuously complemented with short- and longer term optionalities

Innovative
partnerships



Joint investments and innovative deals models to maximize potential of assets and maintain focus

Disciplined
execution



Systematic pipeline review and timely decision making ensure efficient resource and budget allocation

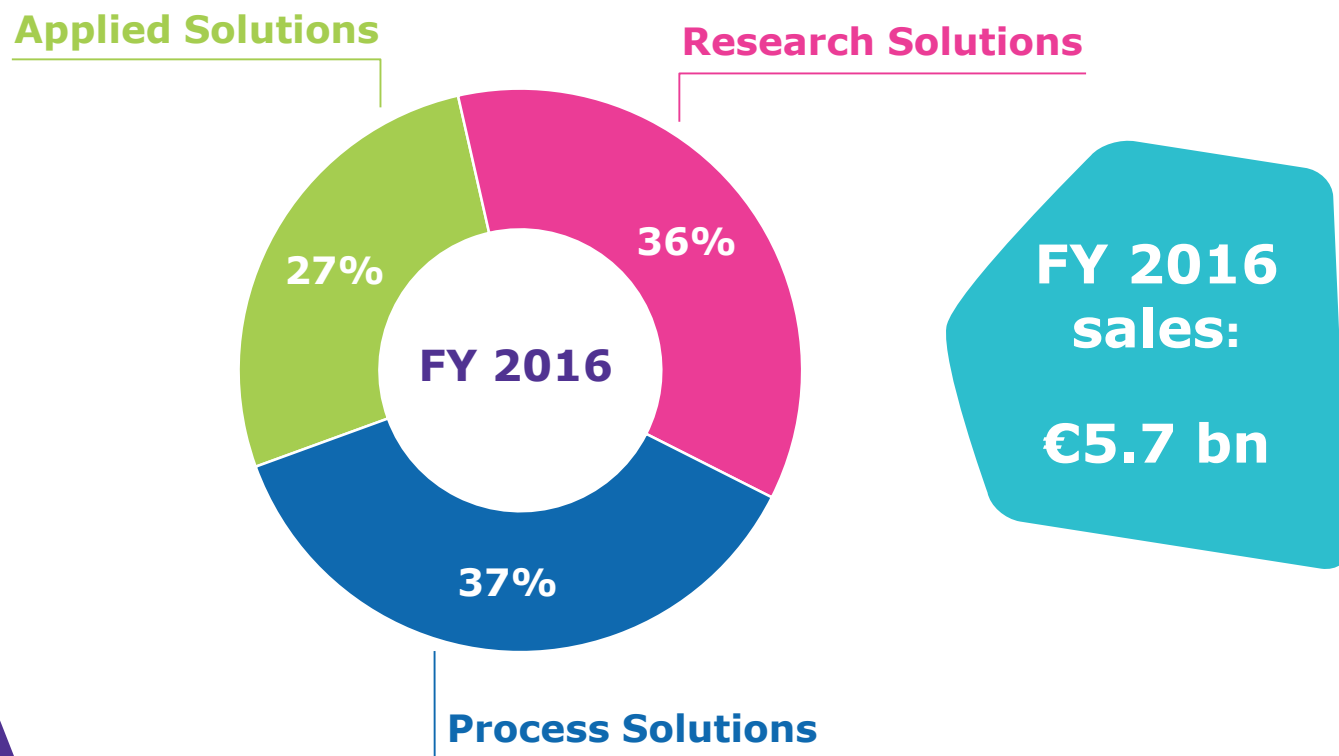




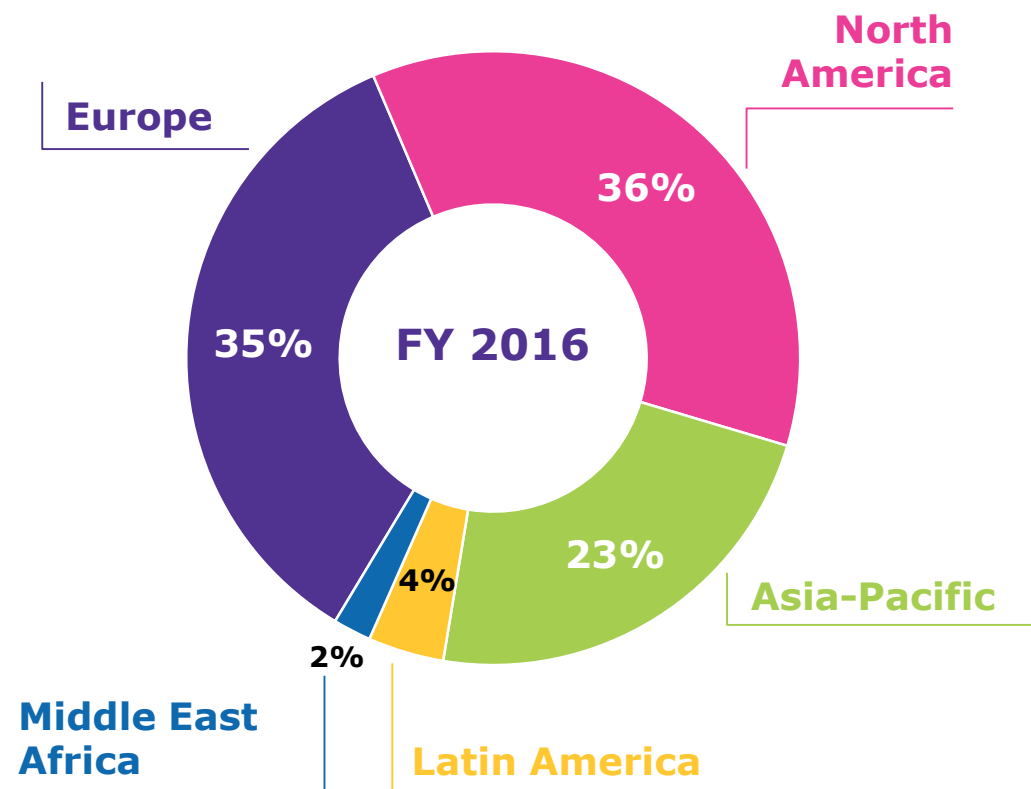
03 LIFE SCIENCE

A balanced portfolio and geographic presence

Sales by business unit



Sales by region



Life Science is an attractive market

RESEARCH

~€42 bn

Low single digit



- Growth in volume of experiments
- Mild growth in academic funding
- Investment in industry R&D

PROCESS

~€38 bn

High single digit



- Drug volume growth
 - from biologics
 - from emerging modalities
- Continued shift to single-use

APPLIED

~€45 bn

Mid single digit



- Volume growth from
 - Population growth
 - Increased testing needs

Success driven by portfolio breadth and differentiation, a customer-centric approach and world-class capabilities

RESEARCH



Broad, relevant and innovative portfolio

Simple customer interface

Ability to manage complexity across organization (e.g., reliability of supply)

PROCESS



Developed market:
Deep expertise in each unit operation

Emerging market:
Broad portfolio

Demonstrated quality & regulatory leadership

APPLIED



Customized workflows for specific applications

Ability to manage complexity across organization (e.g., reliability of supply)

Demonstrated quality & regulatory leadership

Process Solutions

Our end-to-end portfolio for manufacturing mAbs



MAKE

Produce antibodies



PURIFY

Remove cell debris, virus, etc.



FORMULATE

Final drug product



EX-CELL®
Advanced™
CHO Fed-batch
Medium
**Cell culture media
to enhance cell
growth**



2000L CellReady
bioreactor
**Tank for
cultivating cells**



Clarisolve®
clarification
filters
**Removing cell
debris**



FlexReady®
chromatography
Purifying mAbs



Viresolve® Pro
solution
**Removing viruses
from protein
solutions**



Pellicon®
cassette filters
**Washing and
removing cells,
lipids, particles**



Opticap® capsules
Sterile filtration

Provantage®

BioReliance®

EMPROVE®

cGMP SOLUTIONS & SERVICES

#1 website in research life science industry

Industry leading e-commerce platform and supply chain capability



SEARCH



Hundreds of thousands of products at your fingertips



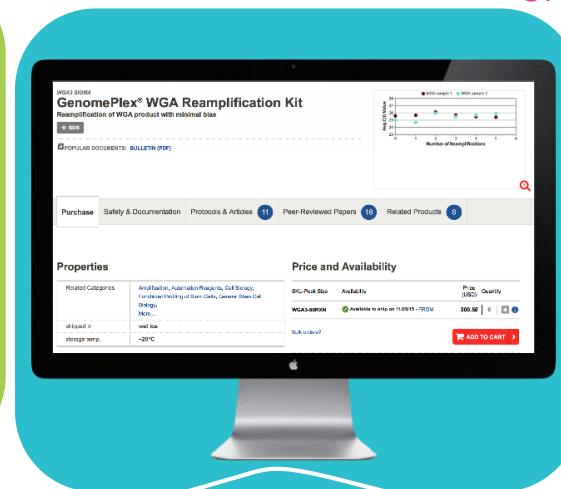
CONTENT



Online leader in scientific content: articles, protocols and peer reviewed papers



ORDER



Real-time pricing and availability



Convenient and simple customer interface: no more than 2 clicks from shopping cart

Life Science delivers synergies and integrates as planned

synergies

Delivery of 2016 synergy target of €105 m:

- HQ measures complete
- >50% of headcount targets met
- 4 site closures in progress
- Procurement actions moving
- Preparing distribution consolidation



integration

Smooth integration ongoing with early achievements:

- Organization structure implemented
- High engagement from organization
- Common definition and implementation of processes well underway, e.g. pricing, customer excellence

No disruption of growth momentum during integration

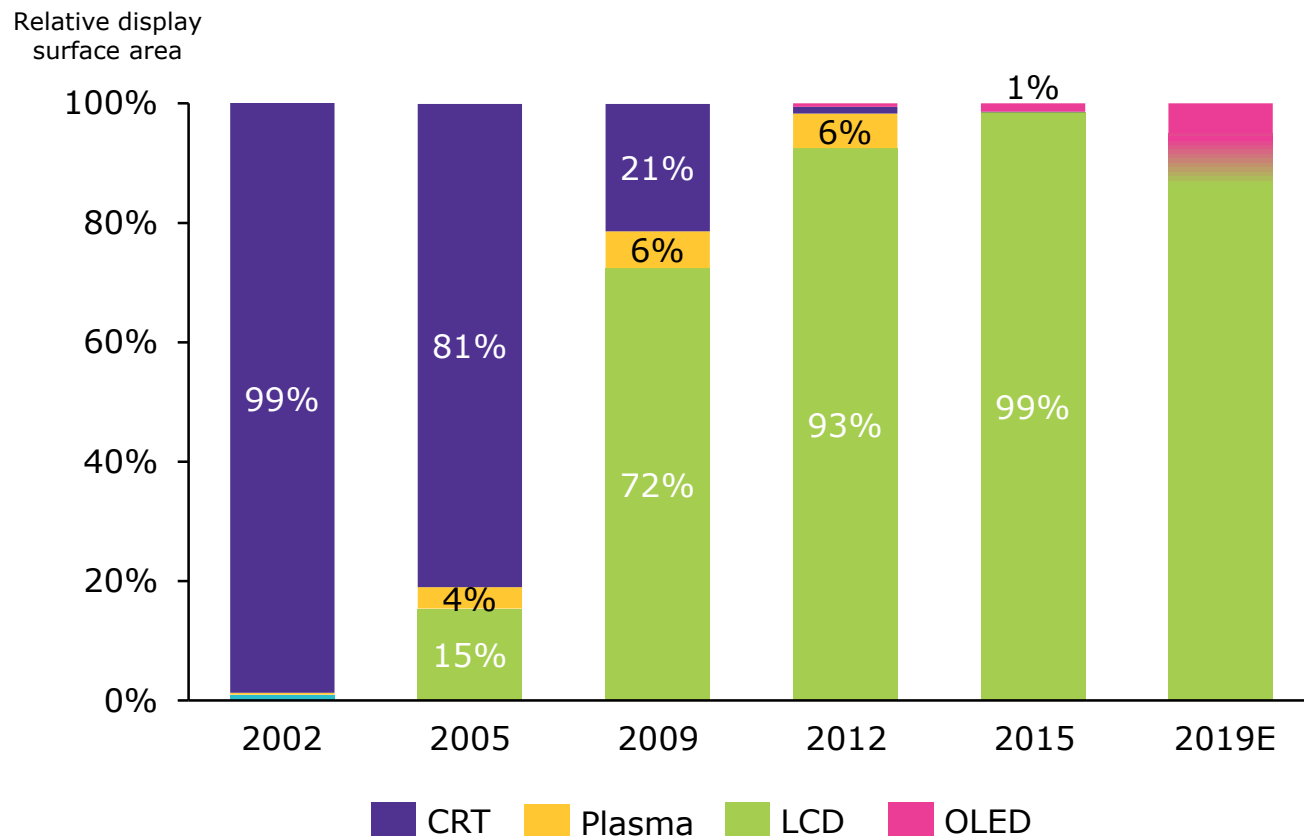


04

PERFORMANCE MATERIALS

Liquid crystals are clearly the dominant display technology

Market share by display technology



Rationale for LCD leadership

For consumers:

- Price
- Thinner frames
- Higher resolution in all sizes
- Proven track record of extreme reliability

For manufacturers:

- Price and scalability
- Production costs and capacities

LCD progress creates higher technological and commercial entry barriers

OLED share will increase in mobile applications

Our leading OLED business is well set to exploit display market opportunities

Market position

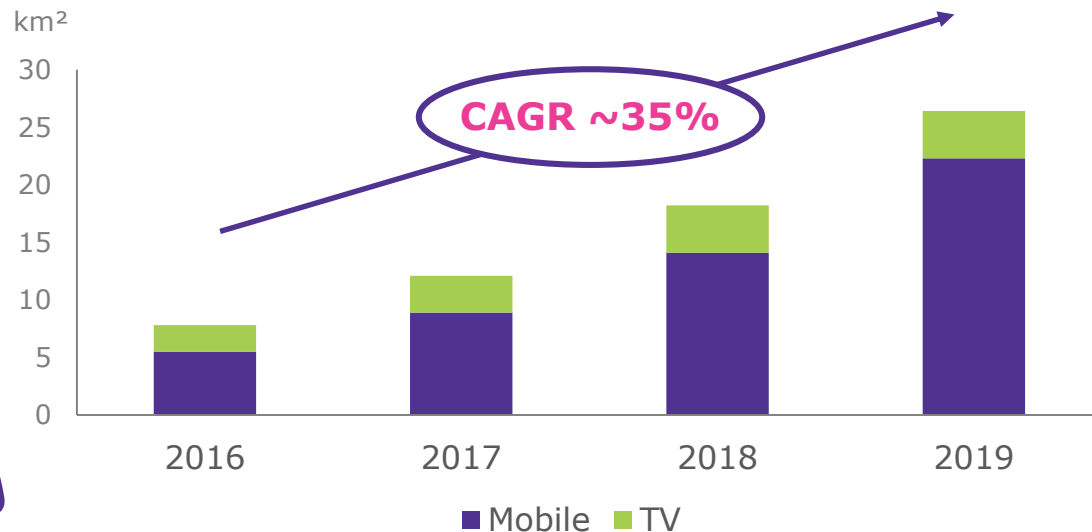
- Among top 3 OLED material provider
- Unrivalled experience and expertise in displays
- Long & intimate relationships with all display producers
- Recent capacity expansion to serve growing demand

our ambition

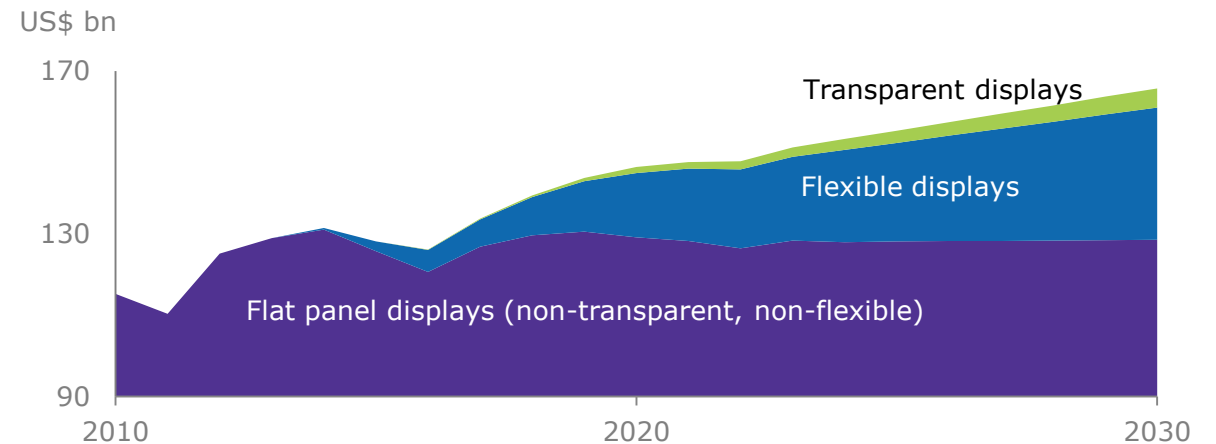
solution provider

- Supplier of all OLED stack layers
- Excellence in vapor & printable materials
- In-house testing of materials
- Tailor-made solutions for customers

Announced OLED capacity expansion¹



Display market development¹



Liquid crystals OFFER a variety of opportunities



1

3

4

5

2

6

1. Adaptive lighting for automotive
2. Adaptive lighting for architecture
3. Smart antenna
4. Liquid crystal windows for architecture
5. Holography
6. Free form LCD

We have a strong position and will benefit further from complex technological advances and underlying market trends

Market drivers and technological trends

Miniaturization: Devices are becoming smaller with better performance

- Need for enabling materials to reduce size (Moore's law)

Mobility: Everyone is continuously connected without direct power supply

- More chips needed for local energy production
- Energy storage → smaller batteries with higher density

Internet of Things: Everything is continuously connected

- More gadgets and devices that include chips
- Increasing amount of communication and sensor chips

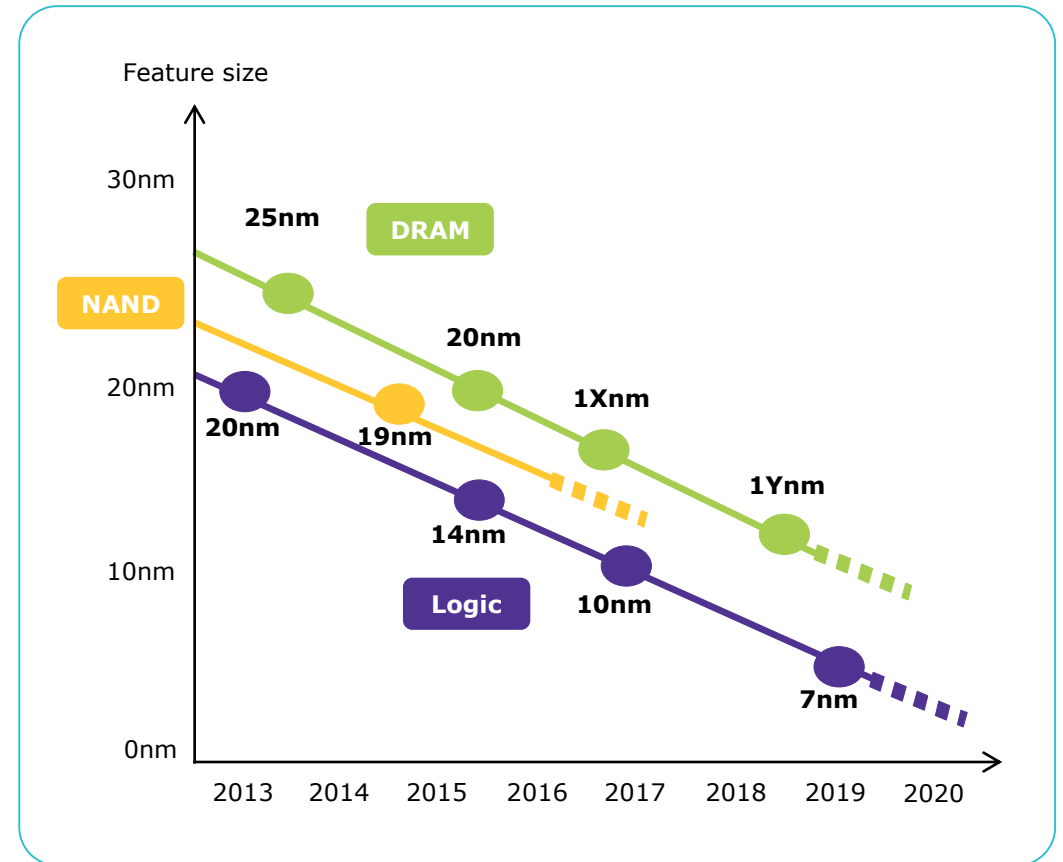
Big Data: Increasing need for intelligent data storage

- Switch from hard disk drives (HDD) to solid state drives (SSD)

Selected competitors

- Tokyo Ohka Kogyo
- Dow Electronic Materials
- Nissan Chemicals
- JSR

Feature sizes develop as predicted by Moore's law



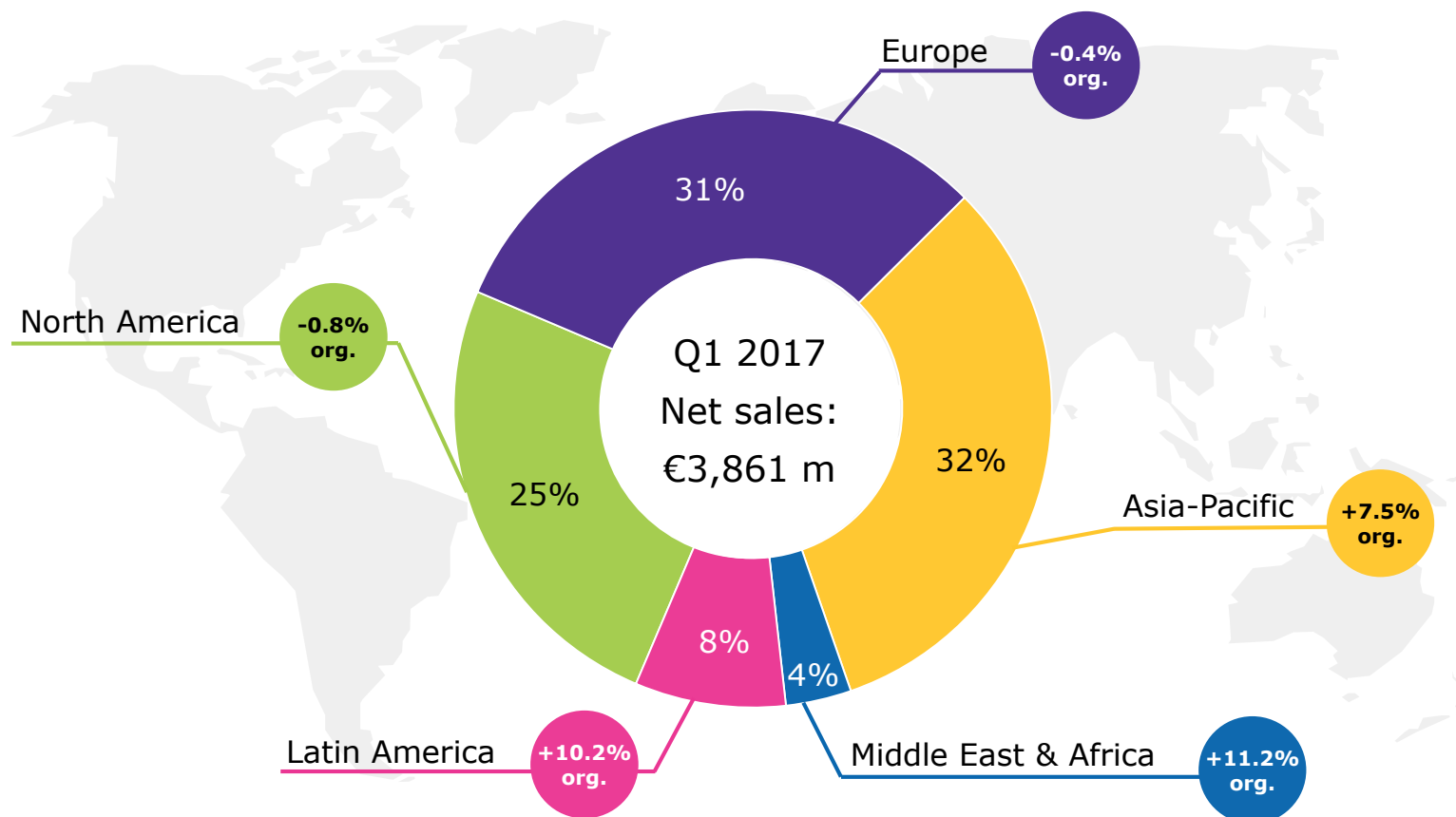


05

FINANCIAL OVERVIEW

Organic growth driven by APAC, LATAM and MEA

Regional breakdown of net sales [€ m]



Regional organic development

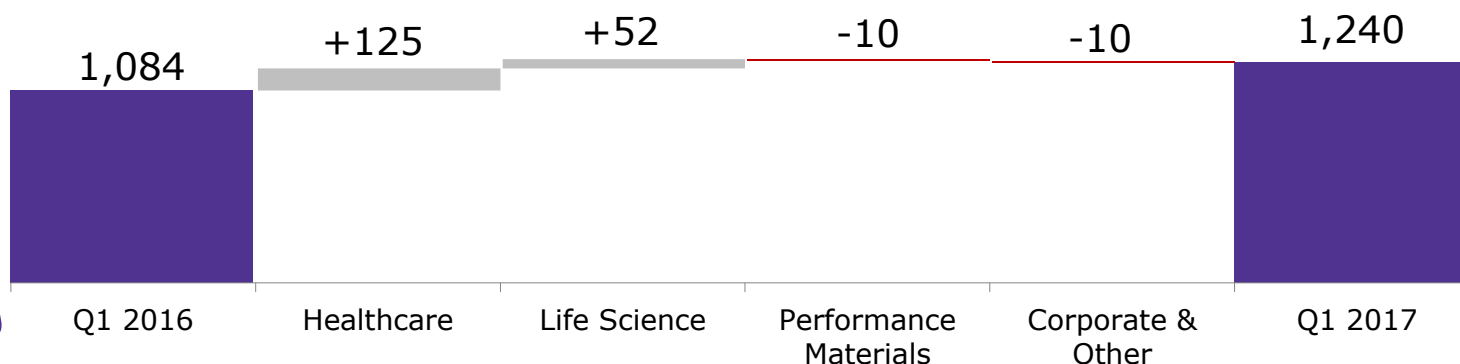
- Slight decline in Europe reflects competition for Rebif, Erbitux and Gonal-f, mitigated by solid demand in Life Science
- North America lower as growth in Life Science is more than offset by Rebif decline and tough Gonal-f comparables
- Good growth in Asia-Pacific mainly driven by Glucophage repatriation in China, strong demand in Process Solutions
- Strong performance in LATAM and MEA across all major businesses

Healthcare and Life Science fuel increase in EBITDA pre

Q1 2017 YoY net sales

	Organic	Currency	Portfolio	Total
Healthcare	4.4%	2.0%	-1.0%	5.4%
Life Science	3.3%	2.4%	0.4%	6.1%
Performance Materials	-0.9%	4.5%	0.0%	3.6%
Group	3.1%	2.6%	-0.3%	5.3%

Q1 YoY EBITDA pre contributors [€ m]



- Healthcare reflects strong growth in General Medicine, especially Glucophage China
- Organic performance in Life Science driven by all business units
- Strong growth of Integrated Circuit Materials and Pigments mitigates LC decline
- HC benefits from first approval milestone, net benefit from royalty swap (~€100m) and organic performance
- Life Science driven by organic growth and ongoing synergy realization
- Performance Materials slightly lower due to business mix and higher R&D
- Corporate EBITDA pre contains hedging and investments in corporate initiatives

Q1 2017: Overview

Key figures

[€m]	Q1 2016	Q1 2017	Δ
Net sales	3,665	3,861	5.3%
EBITDA pre	1,084	1,240	14.5%
Margin (in % of net sales)	29.6%	32.1%	
EPS pre	1.54	1.80	16.9%
Operating cash flow	352	777	120.6%

[€m]	Dec. 31, 2016	March 31, 2017	Δ
Net financial debt	11,513	11,113	-3.5%
Working capital	3,486	3,953	13.4%
Employees	50,414	51,480	2.1%

Comments

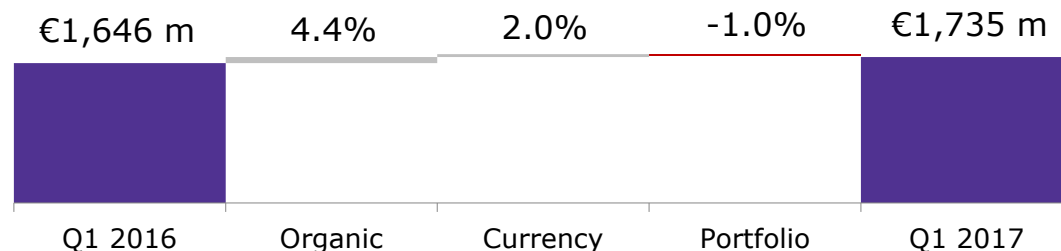
- EBITDA pre & margin increase mainly driven by royalty income swap
- Strong EPS pre growth due to higher EBITDA pre
- Operating cash flow reflects high profit and positive tax effects
- Net financial debt reduction driven by strong operating cash flow
- Working capital reflects increased receivables mainly due to Glucophage repatriation
- Higher headcount due to investments in growth markets and takeover of temporary workers

Healthcare: Solid base business and one-time gains supporting margin

Healthcare P&L

[€m]	Q1 2016	Q1 2017
Net sales	1,646	1,735
Marketing and selling	- 613	-656
Administration	- 71	-77
Research and development	- 378	-376
EBIT	641	445
EBITDA	829	629
EBITDA pre	508	633
Margin (in % of net sales)	30.9 %	36.5%

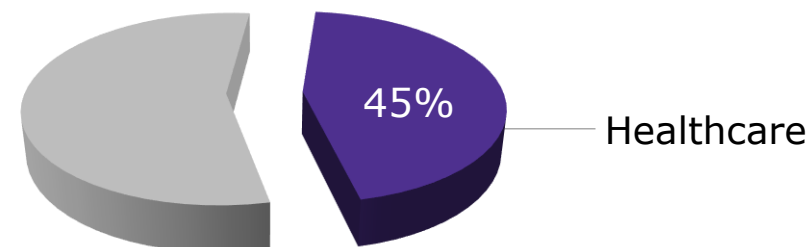
Net sales bridge



Comments

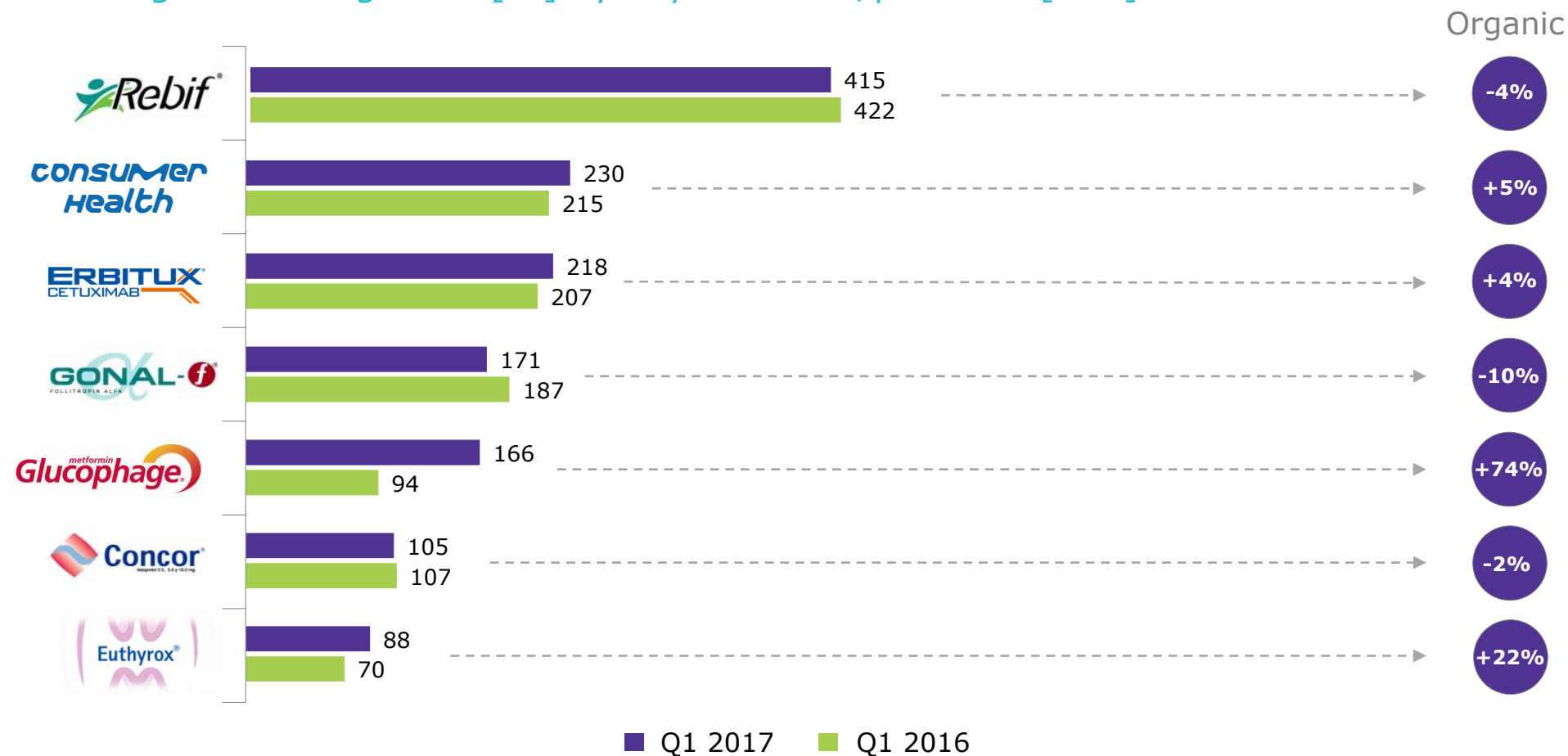
- Organic growth supported by Glucophage repatriation in China
- Rebif with ongoing volume and price declines in Europe outweighing U.S. pricing and contribution from PDP* in Brazil
- Erbitux shows moderate organic growth benefiting from demand in growth markets; competitive pressure in Europe persists
- Marketing & selling reflects investments for launch preparations and costs for Glucophage repatriation in China
- R&D costs phased – ramp-up towards coming quarters
- EBIT last year contained Kuvan disposal gain of €324 m
- Profitability spike mainly driven by net benefit of royalty income swap (~€100m) and Bavencio milestone, outweighing negative product mix

Q1 2017 share of group net sales



Healthcare organic growth by franchise/product

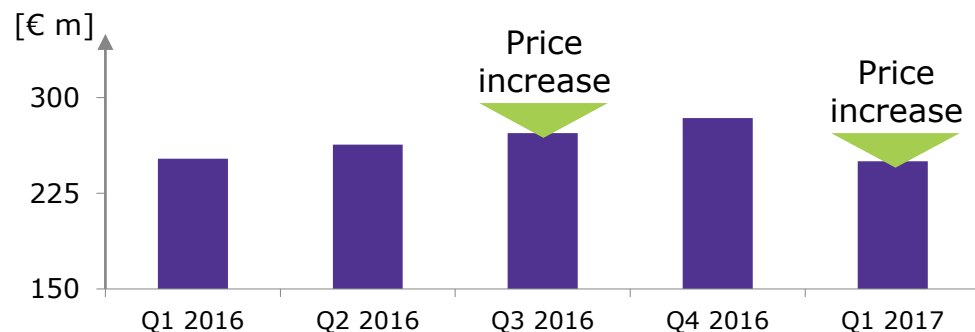
Q1 2017 organic sales growth [%] by key franchise/products [€ m]



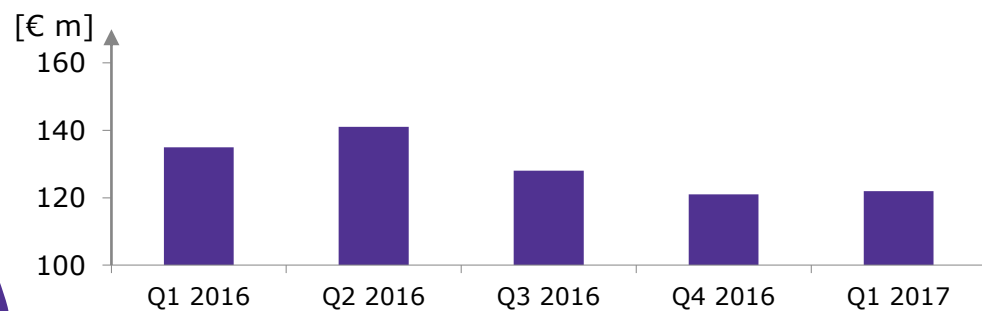
Rebif: Relief in the U.S. – competitive ramp-up in Europe ongoing

Rebif sales evolution

North America



Europe



Q1 drivers

-4.6% org.

- Price
- Volume
- FX

Q1 drivers

-9.3% org.

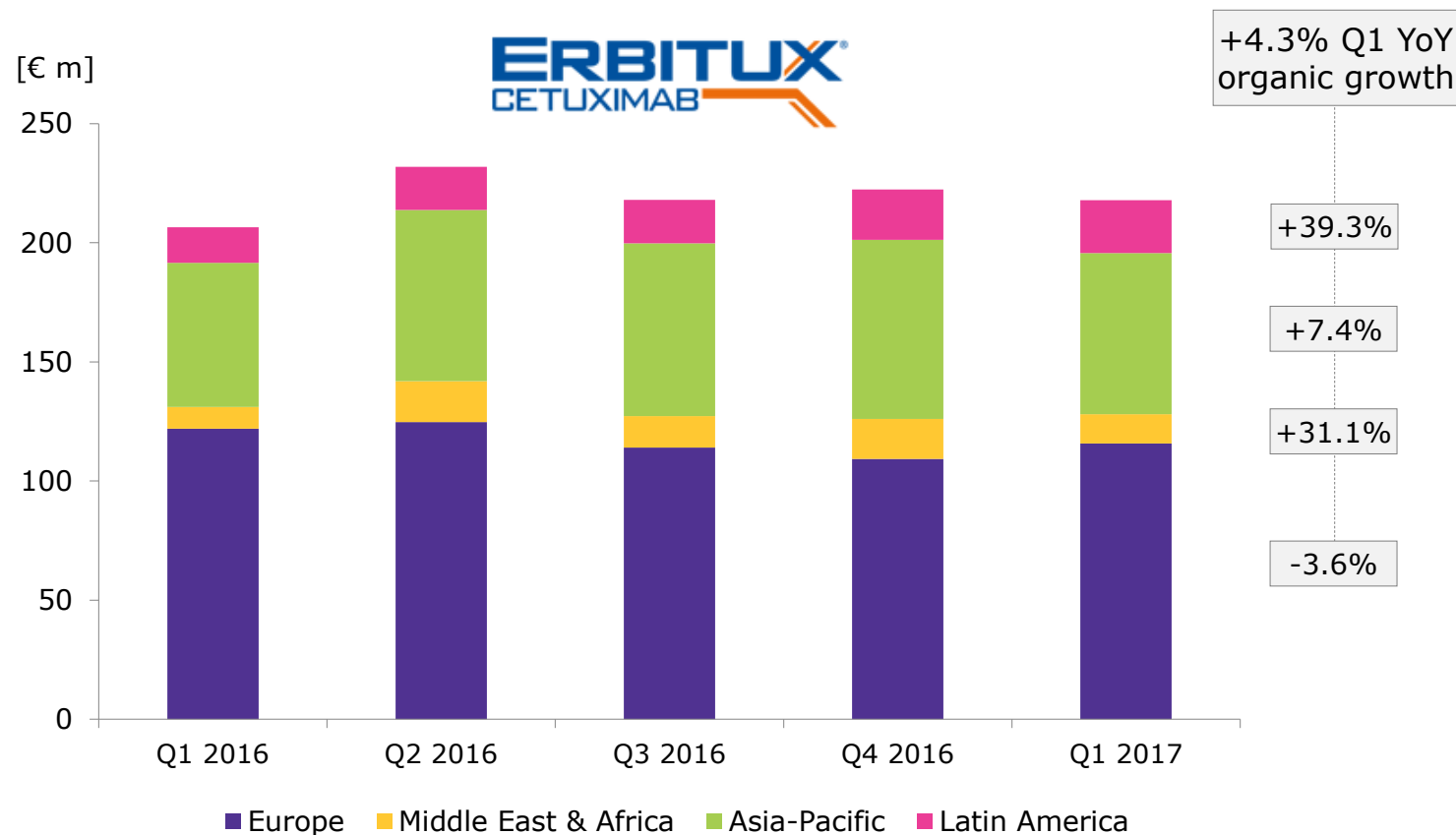
- Price
- Volume

Q1 2017 Rebif performance

- Rebif sales of €415 m in Q1 2017 reflect organic decline of -4.0% and positive FX effects from the U.S.
- U.S. price increase in January, partially offsets U.S. volume erosion
- Market shares within interferons stable due to high retention rates and known long-term track record
- Phased market entry of orals and mandatory price cuts in Europe cause ongoing organic decline
- Productive Development Partnership (PDP) in Brazil supports Rebif growth in LATAM

Erbitux: A challenging market environment

Erbitux sales by region



Q1 2017 Erbitux performance

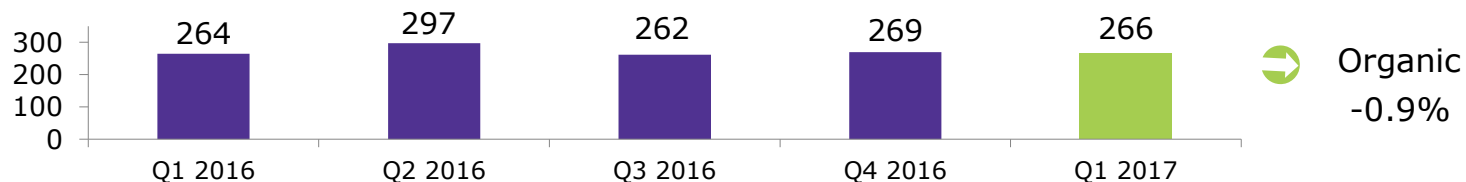
- Sales increase to €218m due to solid volume development in growth markets and slight FX tailwinds
- Europe impacted by competition and shrinking market size due to increasing Immuno-Oncology trials
- APAC with healthy organic growth driven by higher volumes in China
- LATAM and MEA shows strong growth from higher demand, but also benefited from tender phasing

Strong organic growth of General Medicine driven by Glucophage repatriation

Sales evolution

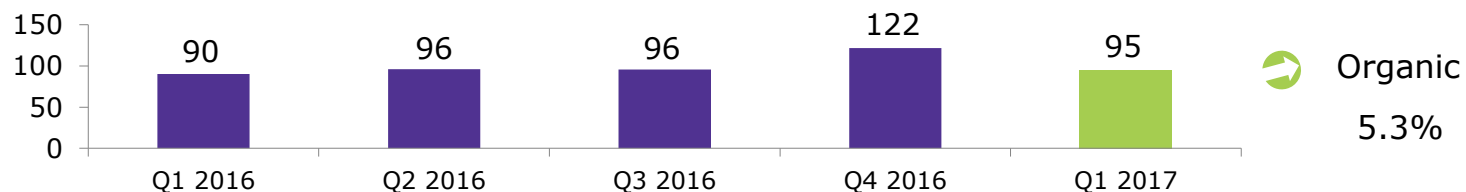
Fertility

[€ m]



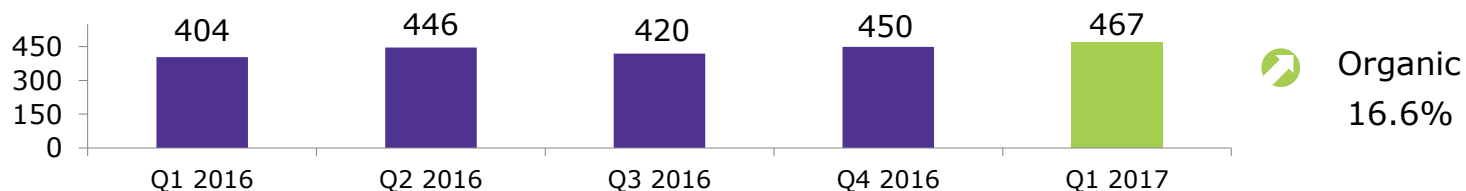
Endocrinology

[€ m]



General Medicine*

[€ m]



Q1 2017 organic drivers

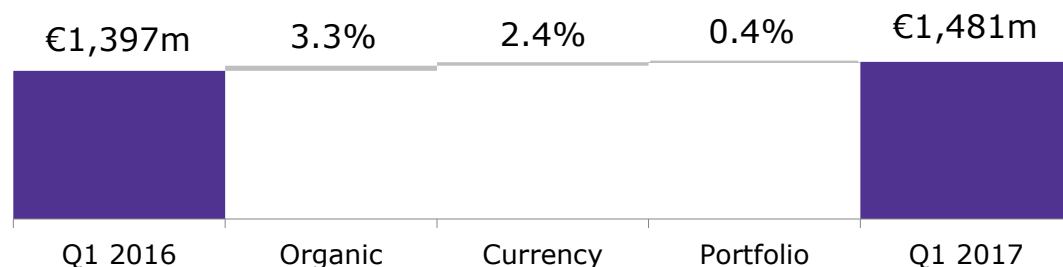
- Fertility slightly lower, mainly due to Gonal-f facing tough comps and competition from biosimilars in Europe
- Other fertility drugs continue to grow across all major regions
- Release of accruals for rebates for Saizen supports Endocrinology growth
- General Medicine growth benefits from Glucophage China repatriation
- Euthyrox posts strong growth driven by ongoing strong demand from China
- Concor slightly negative due to order phasing in Russia

Life Science: Ongoing synergy realization drives margin progression

Life Science P&L

[€m]	Q1 2016	Q1 2017
Net sales	1,397	1,481
Marketing and selling	- 421	-449
Administration	- 63	-70
Research and development	- 62	-62
EBIT	105	236
EBITDA	284	430
EBITDA pre	393	445
Margin (in % of net sales)	28.1 %	30.1%

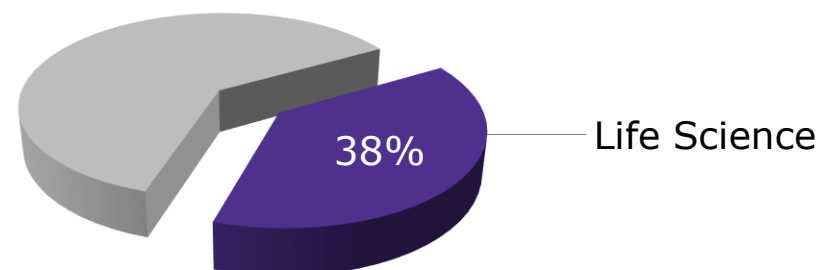
Net sales bridge



Comments

- Process Solutions benefits from robust demand for single-use and upstream, but against tough comps & soft start at some larger accounts
- Applied Solutions shows solid organic growth, fueled by robust demand for food & beverage testing and lab water platform
- Research Solutions posts slight organic growth from solid demand in growth markets outweighing challenging U.S. market environment
- Marketing & selling increase in line with sales progression
- Q1 2016 EBIT affected by inventory step-up for Sigma-Aldrich
- Profitability reflects ongoing synergy realization and organic growth

Q1 2017 share of group net sales

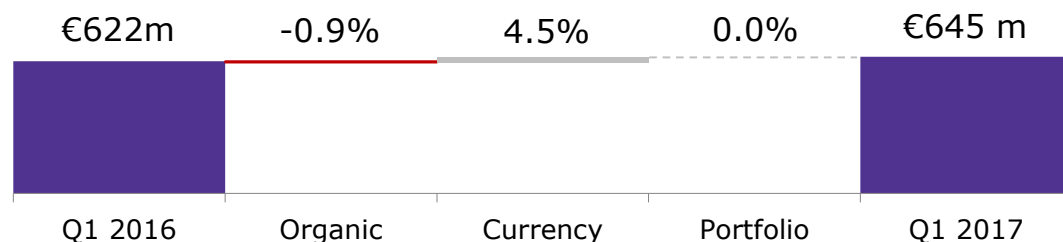


Performance Materials: Top line recovery despite still declining Liquid Crystals

Performance Materials P&L

[€m]	Q1 2016	Q1 2017
Net sales	622	645
Marketing and selling	-58	-62
Administration	-16	-18
Research and development	-48	-58
EBIT	207	195
EBITDA	267	257
EBITDA pre	273	263
Margin (in % of net sales)	43.9 %	40.9%

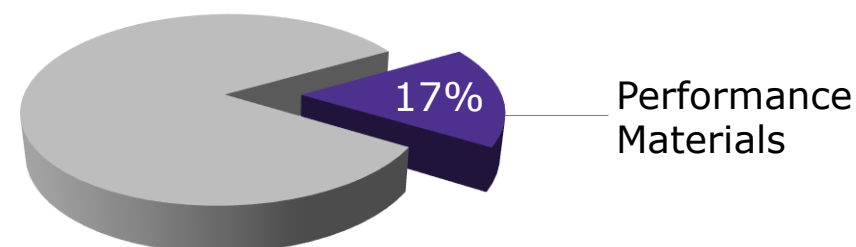
Net sales bridge



Comments

- Organic growth of Integrated Circuit Materials, Pigments and OLED mitigate LC softness
- Liquid Crystals impacted by further market share normalization
- Integrated Circuit Materials with record quarter and above market growth due to strong demand from key accounts
- Pigments & Functionals post solid organic growth mainly driven by coatings applications especially automotive
- R&D increase reflects investments in LC technologies beyond displays
- Sound profitability despite negative business mix & higher R&D

Q1 2017 share of group net sales



Reported figures reflect solid business and royalty income swap

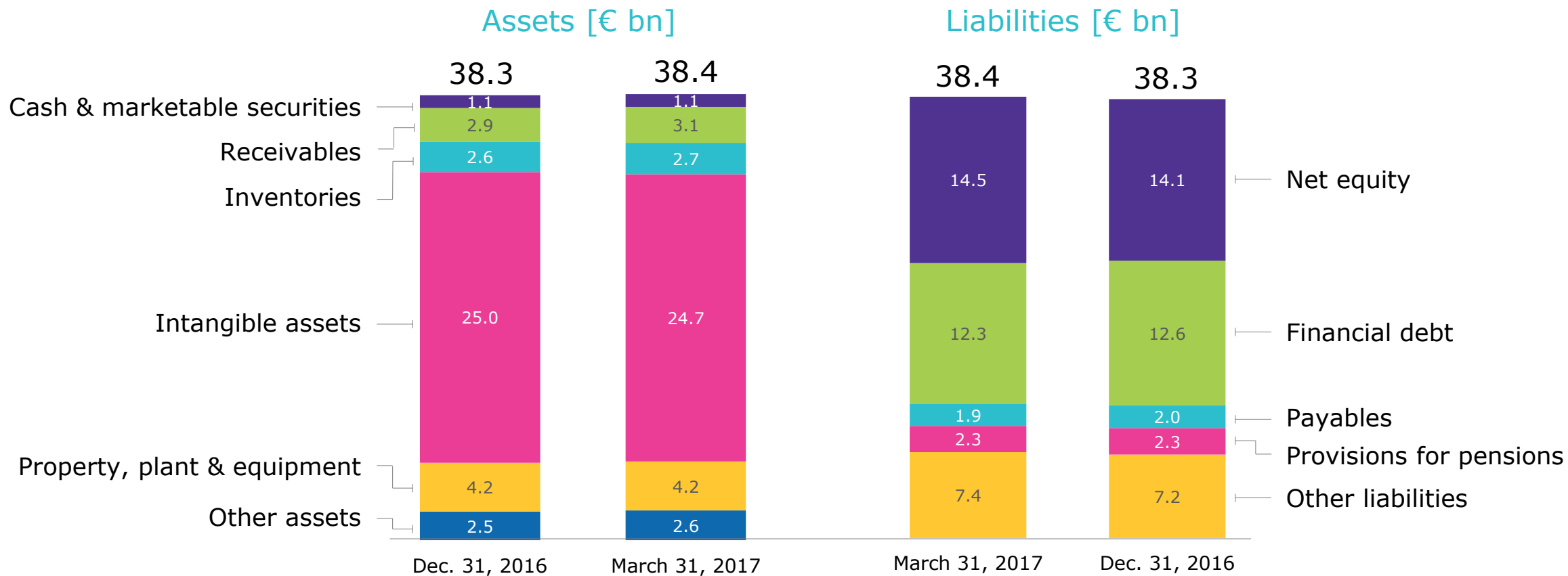
Reported results

[€m]	Q1 2016	Q1 2017	Δ
EBIT	849	755	-11.1%
Financial result	-68	-71	3.6%
Profit before tax	780	684	-12.4%
Income tax	-187	-161	-14.1%
<i>Effective tax rate (%)</i>	<i>24.0 %</i>	23.5%	
Net income	591	521	-11.8%
EPS (€)	1.36	1.20	-11.8%

Comments

- EBIT decline reflects income from Kuvan sale LY
- Stable financial result – deleveraging compensated by higher interest rates and positive LTIP effect LY
- Effective tax rate within guidance range of ~23-25%

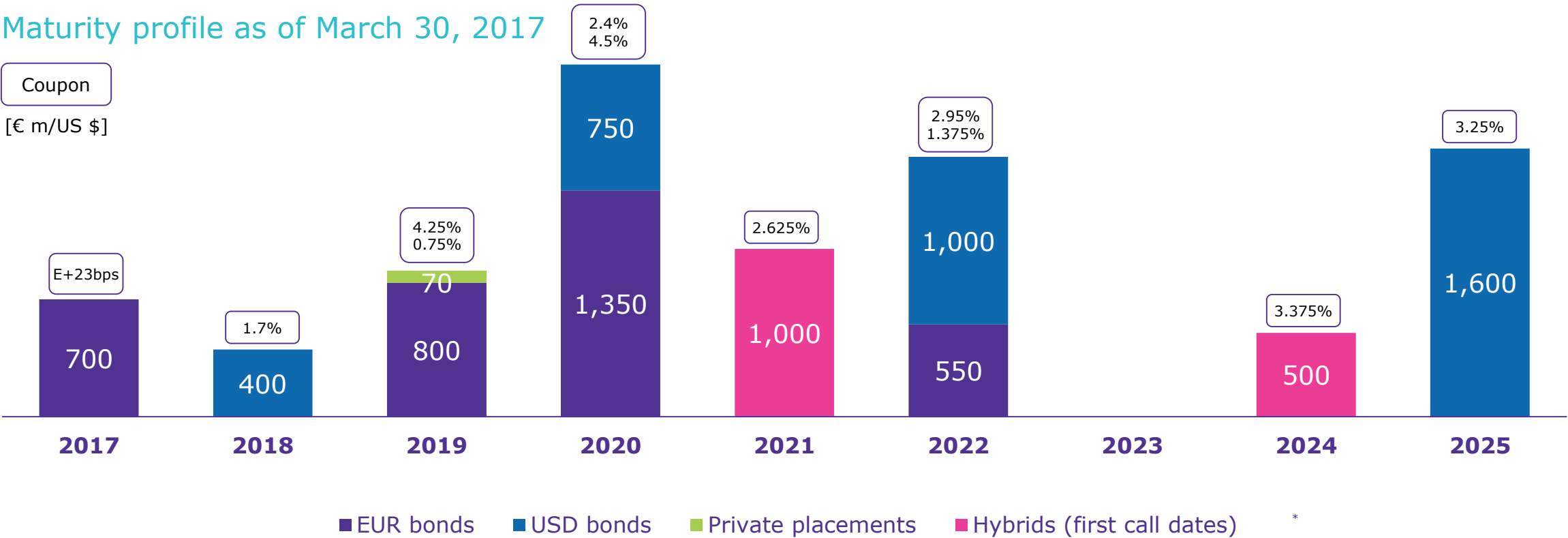
Balance sheet – focus on rapid deleveraging



- Total assets about stable, while equity ratio increases to 37.8%
- Reduction of intangible assets reflects D&A and FX, more than offsetting new assets from Vertex licensing deal

- Net equity increase driven by profit after tax
- USD250 m bond repayment reduces financial debt

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



Financing structure enables flexible and swift deleveraging

Strong operating cash flow benefits from royalty swap and tax effects

Q1 2017 – cash flow statement

[€m]	Q1 2016	Q1 2017	Δ
Profit after tax	593	523	-70
D&A	433	448	15
Changes in provisions	21	51	30
Changes in other assets/liabilities	-34	134	168
Other operating activities	-394	-11	383
Changes in working capital	-266	-368	-102
Operating cash flow	352	777	425
Investing cash flow	284	-402	-686
thereof Capex on PPE	-160	-201	-41
Financing cash flow	-572	-290	282

Cash flow drivers

- LY profit after tax includes gain from Kuvan sale, which is neutralized in other operating activities
- Changes in other assets/liabilities benefit from positive tax effects
- Changes in working capital reflect new Glucophage China business and higher R&D receivables from Pfizer
- Investing cash flow contains increased Capex and Vertex licensing deal; LY included sale of Kuvan
- Financing cash flow reflects repayment of USD250 m bond

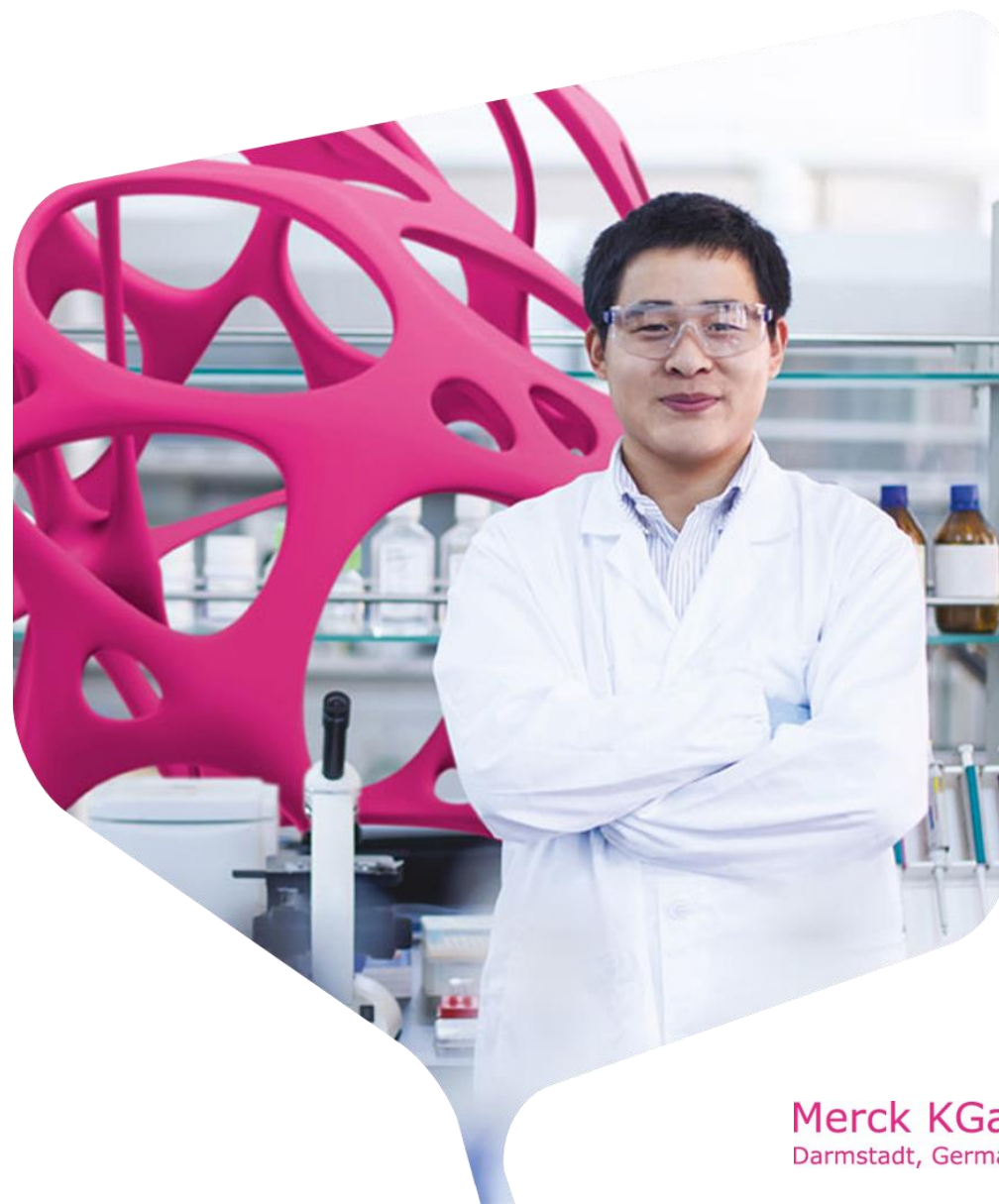
Exceptionals in Q1 2017

Exceptionals in EBIT

[€m]	Q1 2016		Q1 2017	
	Exceptionals	thereof D&A	Exceptionals	thereof D&A
Healthcare	-321	0	4	1
Life Science	109	0	16	0
Performance Materials	6	0	7	0
Corporate & Other	7	0	15	3
Total	-198	0	41	4

Financial calendar

Date	Event
June 12, 2017	R&D Update Call
August 3, 2017	Q2 2017 Earnings release
November 9, 2017	Q3 2017 Earnings release
March 8, 2018	Q4 2017 Earnings release
April 27, 2018	Annual General Meeting
May 15, 2018	Q1 2018 Earnings release



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