Science For A Better Life

Investor Handout Bayer Pharmaceuticals

35th Annual J.P. Morgan Healthcare Conference

January 2017

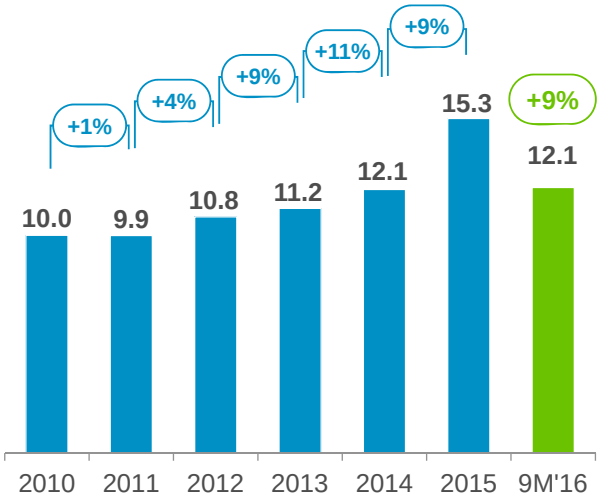
Cautionary Statements Regarding Forward-Looking Information

Certain statements contained in this communication may constitute "forward-looking statements." Actual results could differ materially from those projected or forecast in the forward-looking statements. The factors that could cause actual results to differ materially include the following: uncertainties as to the timing of the transaction; the possibility that the parties may be unable to achieve expected synergies and operating efficiencies in the merger within the expected time-frames or at all and to successfully integrate Monsanto Company's ("Monsanto") operations into those of Bayer Aktiengesellschaft ("Bayer"); such integration may be more difficult, time-consuming or costly than expected; revenues following the transaction may be lower than expected; operating costs, customer loss and business disruption (including, without limitation, difficulties in maintaining relationships with employees, customers, clients or suppliers) may be greater than expected following the announcement of the transaction; the retention of certain key employees at Monsanto; risks associated with the disruption of management's attention from ongoing business operations due to the transaction; the conditions to the completion of the transaction may not be satisfied, or the regulatory approvals required for the transaction may not be obtained on the terms expected or on the anticipated schedule; the parties' ability to meet expectations regarding the timing, completion and accounting and tax treatments of the merger; the impact of indebtedness incurred by Bayer in connection with the transaction and the potential impact on the rating of indebtedness of Bayer; the effects of the business combination of Bayer and Monsanto, including the combined company's future financial condition, operating results, strategy and plans; other factors detailed in Monsanto's Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (the "SEC") for the fiscal year ended August 31, 2016 and Monsanto's other filings with the SEC, which are available at http://www.sec.gov and on Monsanto's website at www.monsanto.com; and other factors discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. Bayer assumes no obligation to update the information in this communication, except as otherwise required by law. Readers are cautioned not to place undue reliance on these forward-looking statements that speak only as of the date hereof.

Fast-Growing Pharma Business

Sales

€ billion; Δ% yoy Fx & portfolio adj.



2015 figures restated

Successful launch of 5 products

- Xarelto® rivaroxaban — Leading novel oral anti-coagulant
- EYLEA — Success in treatment of retinal diseases
- Xofigo® radium Ra 223 dichloride injection — First-in-class α-pharmaceutical
- Adempas® riociguat — First marketed sGC modulating agent
- Stivarga® — Multi-kinase inhibitor for cancer treatment

Pharma - FY 2016 Guidance

As presented on Oct. 26, 2016

Sales Δ Fx & portf. adjusted, adj. EBITDA margin = EBITDA before special items to sales

	2015	2016 (update July)
Sales	€15.3bn	High-single-digit % increase to >€16bn
Sales of Recently Launched Products	€4.2bn	Toward €5.5bn
EBITDA before special items	€4.6bn	Low-teens % increase
Adj. EBITDA margin	30.1%	Improve

Assuming end Q3 2016 Fx rates (USD 1.12); Outlook depends on specific planning assumptions as detailed in the Annual Report; 2015 figures restated

As presented on Sept. 20, 2016

Pharma - Mid-Term Aspirations 2018

	2015	Aspiration 2018
Sales	+9.1% to €15.3bn	~6% CAGR (2015-2018)
Adj. EBITDA margin	30.1%	32 - 34% *despite dilution through RAD and significant investment in R&D*

Sales Δ Fx & portf. adjusted, EBITDA before special items
Outlook depends on specific planning assumptions outlined in the Interim Report Q2 2016
2015 figures restated; RAD: radiology business – became part of Pharma effective January 1, 2016

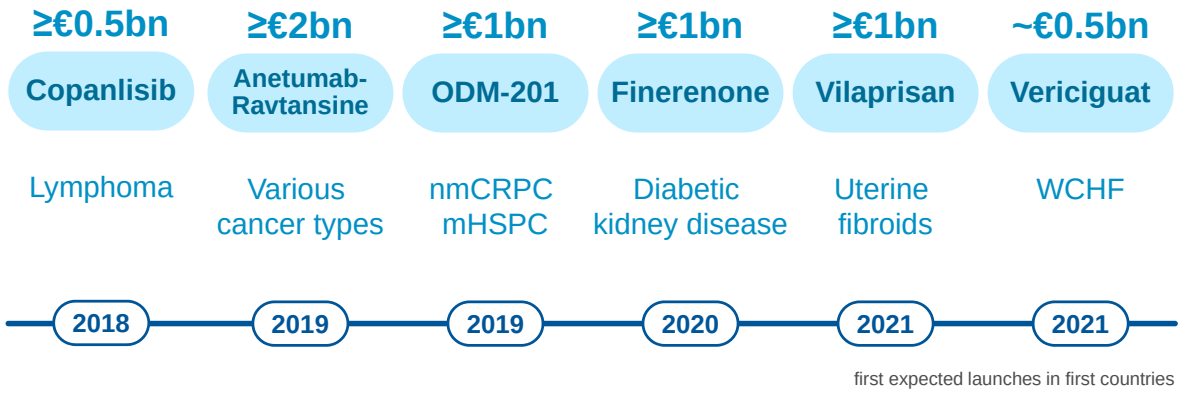
Combined Peak Sales Potential of Recently Launched Products Raised to >€10bn

	Old		Current
Xarelto rivaroxaban	~€3.5bn	• Continued successful performance and LCM	>€5bn
EYLEA	≥€1.5bn	• Continued successful performance	>€2.5bn
Xofigo radium Ra 223 dichloride injection	≥€1bn	• Continued successful performance • Broadened LCM activities	>€1bn
Stivarga	≥€1bn	• Positive phase III in 2nd line HCC • Phase III in adjuvant CRC initiated	≥€1bn
Adempas riociguat	≥€0.5bn	• Multiple LCM activities including non-PH indications	>€0.5bn

Combined peak sales potential for Xarelto, Stivarga, Eylea, Xofigo and Adempas assuming approvals and launches as planned;
LCM: life cycle management; CRC: colorectal cancer; HCC: hepatocellular cancer; PH: pulmonary hypertension

Fully Realize Pipeline Potential

Combined* Peak Sales Potential ≥€6bn



first expected launches in first countries

* Combined peak sales potential for assets as above assuming approvals and launches as planned; nmCRPC: non-metastatic castration resistant prostate cancer; mHSPC: metastatic hormone-sensitive PC; WCHF: worsening chronic heart failure

Focused Leadership Strategy for Pharma

Build on leading positions in

- Cardiology / Thrombosis
- Woman's HealthCare
- Hemophilia

Establish focused segment leadership positions in Oncology

- Realize blockbuster potential for marketed drugs Xofigo and Stivarga
- Focus and reinforce Oncology R&D

Fully realize pipeline potential

Leading Cardiovascular Portfolio

Thrombosis
- Xarelto performance excellent – peak sales estimate raised to >€5bn
- Continue to invest in Xarelto LCM and launch preparations of LCM indications
- Pursue FXI/FXIa inhibition approach

Heart Failure
- Ph3 program of Vericiguat (HFrEF) in collaboration with Merck & Co. Inc.
- Pursue development of Neladenoson (Partial A1agonist) in HFrEF and HFpEF in parallel
- Continue to advance chymase inhibitor and dual vasopressin receptor antagonist to PoC

Kidney
- Fully support Finerenone in DKD to build a leadership position in nephrology
- Develop Molidustat in Japan only
- Advance early pipeline projects to establish franchise

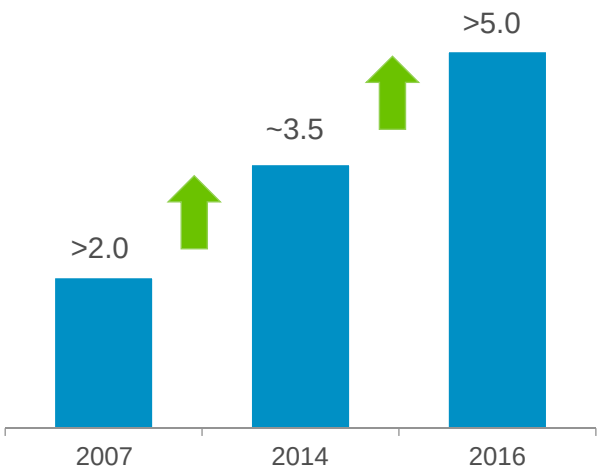
Mature Brands
- Adalat – a cornerstone in CV disease treatment
- Glucobay – continued growth expected in Emerging Markets, especially China
- Aspirin Cardio – continued growth expected

LCM: life cycle management; HFrEF: heart failure with reduced ejection fraction; HFpEF: HF with preserved EF;
PoC: proof of concept; DKD: diabetic kidney disease; CV: cardiovascular

Xarelto – Peak Sales Potential Estimates Raised - Again

Peak Sales Estimates

€ billion



- Continued excellent performance – Xarelto now a TOP 10 global Pharma brand[1]
- >23 million patients treated since launch[2]
- Further growth potential driven by:
  - Under-served patient populations in launched indications
  - Demographics
  - Shift from warfarin
  - New indications targeting patients currently not treated with anticoagulants

1: according to IMS; 2: calculation based on IMS Health MIDAS database

Xarelto Life Cycle Management Program Addressing The Full Range of Unmet Need

Stroke Prevention

- **Patients with Atrial Fibrillation**
  - COMPLETE ROCKET AF
  - ONGOING PIONEER AF-PCI
  - COMPLETE X-VERT
  - NEW XARENO
- **Patients without Atrial Fibrillation**
  - ONGOING NAVIGATE ESUS
  - NEW GALILEO

Arterial Thromboembolism

- **Patients with acute CAD/PAD**
  - COMPLETE ATLAS ACS 2 TIMI
  - ONGOING VOYAGER PAD
- **Patients with chronic CAD/PAD**
  - ONGOING COMMANDER HF
  - ONGOING COMPASS

Venous Thromboembolism

- **Patients with venous thromboembolism**
  - COMPLETE EINSTEIN
  - ONGOING EINSTEIN CHOICE
  - ONGOING EINSTEIN JUNIOR
- **Patients in need for VTE prevention**
  - ONGOING MARINER
  - NEW CALLISTO
  - NEW CASSINI
  - NEW COSIMO

CAD: coronary artery disease; PAD: peripheral artery disease; VTE: venous thromboembolism

Rivaroxaban PIONEER Phase III Data*

Results from **PIONEER AF-PCT** in patients with non-valvular atrial fibrillation after percutaneous intervention with stent placement indicate that:

- Both rivaroxaban dose strategies investigated significantly reduced risk of bleeding compared to a VKA + DAPT
  - Rivaroxaban 15 mg o.d. in combination with single antiplatelet therapy reduced rate of clinically significant bleeding by 41per cent*
  - Rivaroxaban 2.5 mg twice daily in combination with DAPT reduced the rate of clinically significant bleeding by 37 per cent*
  - Similar rates for exploratory efficacy endpoint (CV death, MI, stroke and stent thrombosis) – however, study not powered for stat. significance on efficacy

Data presented in a late-breaking clinical trial session at AHA 2016 on Nov 14th, simultaneously published in NEJM
VKA: Vitamin K antagonist, DAPT: Dual antiplatelet therapy
*stat. significant

Vericiguat – Potential First-in-Class Treatment for Chronic Heart Failure

Novel approach targeting the critical cGMP cardiovascular pathway that is impaired in CHF patients

- A lack of sGC stimulation leads to the reduced activity of the “nitric oxide-sGC-cGMP” pathway, causing coronary dysfunction and progressive myocardial damage
- By directly stimulating the critical enzyme sGC, Vericiguat restores this pathway and in turn may improve heart and vascular function
- Phase III (VICTORIA) trial assesses a potential reduction in mortality and morbidity on top of standard of care in HFrEF patients
- VICTORIA trial ongoing[1]

1: study sponsor: Merck Sharp & Dohme Corp; cGMP: cyclic guanosine monophosphate; sGC: soluble guanylate cyclase; CHF: chronic heart failure; HFrEF: heart failure with reduced ejection fraction

Finerenone – Opportunity to Lead in Diabetic Kidney Disease

Finerenone

- Finerenone is a novel non-steroidal MRA with a differentiated profile
- Steroidal MR antagonists are not approved for kidney diseases
- A Finerenone phase IIb (ARTS-DN) study in Diabetic Nephropathy was successfully completed

Diabetic Kidney Disease

- Market for chronic kidney disease estimated at ~$14bn in 2024
- Resulting complications from Diabetes accounting for 35% of CKD
- ~40% of new cases of end-stage renal disease (ESRD) are due to Diabetes Mellitus (DM)
- Patients with Type II DM and CKD are at high risk of cardiovascular (CV) death

→ Significant need for innovative therapies

→ Phase III program in DKD progressing as planned

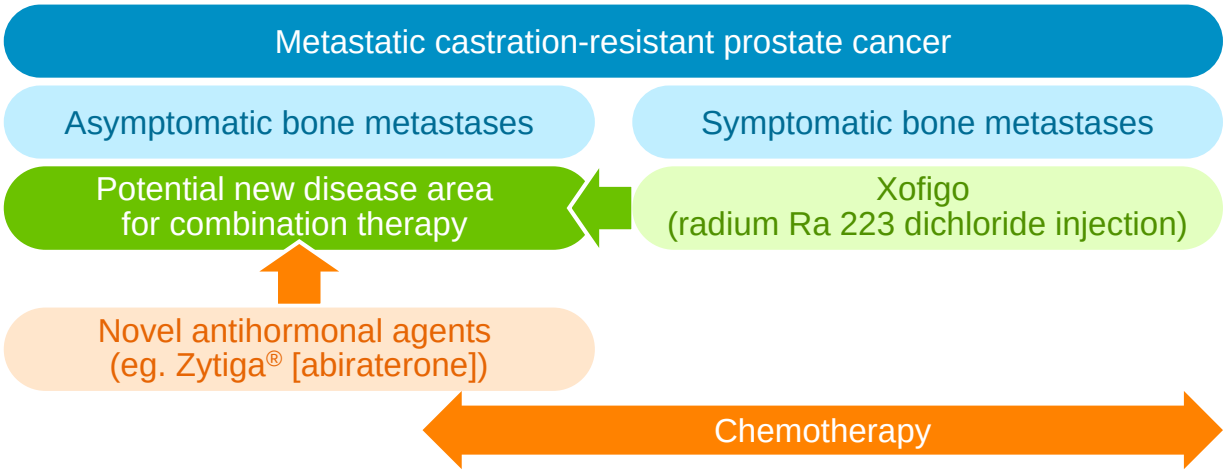
DKD: diabetic kidney disease; CKD chronic kidney disease; MRA: mineralocorticoid receptor antagonist

Establish Focused Leadership Positions in Oncology

Xofigo	• Target “agent of choice” status - clear survival benefit for patients with bone metastases in prostate cancer demonstrated • Expand in additional cancer types beyond prostate cancer
Stivarga	• Build position in hepatocellular carcinoma (HCC) • Strengthen position in colorectal cancer through LCM in adjuvant setting
Nexavar	• Reinforce leadership in liver cancer through capitalizing on optimal treatment continuum / sequence for Nexavar & Stivarga in HCC
Focus Oncology R&D	• Differentiation for leadership in selected areas (Thorium platform; ADC’s) • Focus on differentiated programs
Execute launch pipeline	• Stivarga HCC 2L → launch 2017e • Copanlisib iNHL → launch 2018e • Anetumab R. mesothelioma → launch 2019e • Xofigo additional indications/uses → first launch 2019e • ODM-201 in nmCRPC → launch 2019e

nmCRPC: non-metastatic castration resistant prostate cancer; LCM: life cycle management; ADC: antibody-drug conjugate; iNHL: indolent Non-Hodgkin’s lymphoma

Expanding Xofigo’s Position in Castration-Resistant Prostate Cancer Treatment



- Combination therapy with abiraterone, an inhibitor of testosterone synthesis
- Expansion to earlier disease stages enhances accessible patient population
- A delay of skeletal-related events is of major clinical importance

For details on approved indications see respective product labels;
Zytiga® is a trademark of Johnson & Johnson

ODM-201 – A Novel, New-Generation Nonsteroidal AR Antagonist

- ODM-201 is a **potent and full AR antagonist**
- **Promising efficacy profile demonstrated in previous studies**
  - Inhibits growth of prostate cancers in preclinical studies
  - Significantly decreases PSA levels in patients with progressive CRPC
  - Sustained PSA reduction was observed at higher dose levels
- ODM-201 antagonizes mutant ARs linked to resistance to other AR antagonists (ie, bicalutamide, enzalutamide)
- **Phase III program ongoing** addressing
  i. hormone sensitive metastatic prostate cancer
  ii. non-metastatic CRPC

AR: androgen receptor; CRPC: castration-resistant prostate cancer; PSA: prostate-specific antigen

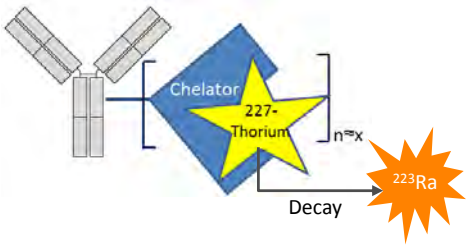
Stivarga - Oral Multikinase Inhibitor with Distinct Profile

- **Stivarga is approved* in:**
  - >90 countries for metastatic colorectal cancer (mCRC) and in
  - >80 countries for advanced gastrointestinal stromal tumors (GIST)
- **Regorafenib submitted for 2L HCC in US, EU and Japan**
- **Ongoing clinical development activities include**
  - Phase III study in adjuvant CRC (ARGO study)

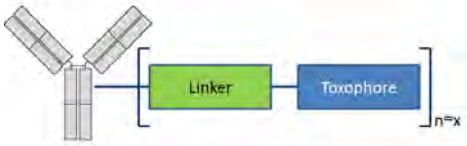
* as of September 2016
HCC: hepatocellular cancer; (m)CRC: (metastatic) colorectal cancer

R&D Differentiates Through Targeted Alpha-Pharmaceuticals and Novel Toxophor ADCs

Targeted Thorium Conjugates (TTCs)

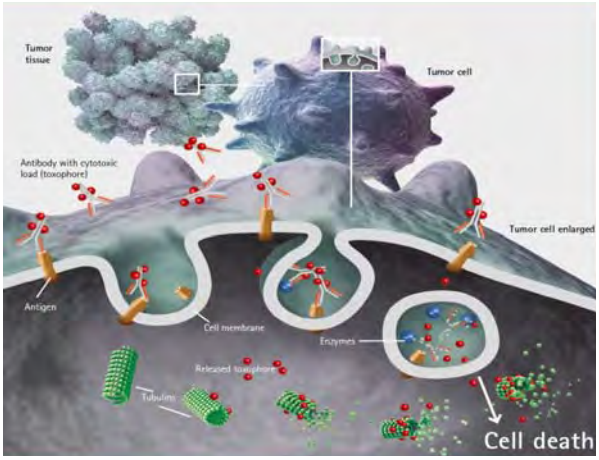


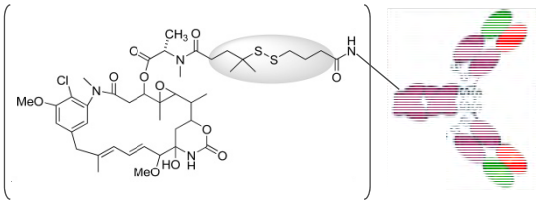
Antibody Drug Conjugates (ADCs)



- Thorium-platform unique to Bayer
- Thorium-platform offers to deliver alpha emitters to every tumor
- Thorium-platform offers synergies with Xofigo with respect to manufacturing and supply chain
- Advanced and broad ADC program established
- Synergies between Thorium – and ADC platforms with respect to antigens, antibodies, linker technologies, etc.

Anetumab Ravtansine Program Advancing





Mode of action:

- ADC targeting tumor-associated antigen mesothelin, and delivering toxophore DM4, which acts on proliferating cells (tubulin inhibitor)

Potential spectrum of indications determined by mesothelin expression pattern:

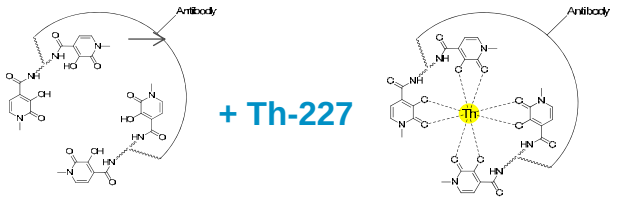
- mesotheliomas (100%)
- pancreatic cancer (~80-100%) and
- ovarian adenocarcinomas (~80%)

Clinical program:

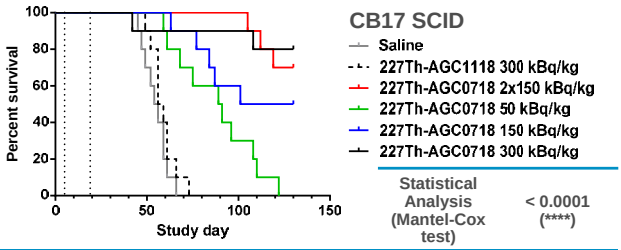
- Phase I* with promising results including duration of treatment of > 1,000 days
- Registrational phase II in metastatic pleural mesothelioma ongoing

* Blumenschein et al. ASCO 2016; ADC: antibody drug conjugate

Targeted Thorium Conjugates – Expanding the Alpha-Pharmaceuticals Platform



Preclinical disseminated AML tumor model



Animals treated 5 days after inoculation of HL60 (AML)

For all surviving animals **no tumors** were found on dissection

AML: acute myeloid leukemia

- Alpha particle emitter – high energy, heavy charged particle
  - Half-life 18.7 days – suitable for tumor delivery by mAbs
- Significant efficacy demonstrated in preclinical model
- Fast proof of concept targeted – Phase I for α-CD22 Th-227 conjugate progressing
- Next steps initiated to explore Thorium platform in solid tumors

Summary

- Projecting future growth for Pharma
- Peak sales estimates for recently launched products increased to > €10bn
- Pipeline holds promise with a peak sales potential* of selected assets of ≥ €6bn
- Build on existing leading positions in key therapeutic areas
- Expand successful cardiovascular business
- Focus Oncology portfolio and build leading segment positions
- Mid-stage Pipeline progressing

* Combined peak sales potential for Copanlisib, Anetumab Ravtansine, Finerenone, Vericiguat, Vilaprisan and ODM-201 assuming approvals and launches as planned

Date	Event	Publication
Wednesday, February 22, 2017	Investor Conference Call	2016 Annual Report
Wednesday, March 15, 2017	Meet Management in London	Investor Conference
Thursday, April 27, 2017	Investor Conference Call	Q1 2017 Interim Report
Friday, April 28, 2017	Annual Stockholders' Meeting	
Thursday, July 27, 2017	Investor Conference Call	Q2 2017 Interim Report
Thursday, October 26, 2017	Investor Conference Call	Q3 2017 Interim Report

Reporting Events

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