Driving Performance and Delivering New Growth Opportunities

Capital Markets Day
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The Pharma Market Will Remain Attractive

**Market Size 2017**

€870bn

**4 - 5%**

**Market CAGR 2018-22e**

**Major market dynamics**

- Aging population
- Accelerating pace of innovation
- Declining R&D productivity
- Technological disruption by breakthrough science
- Digitalization across the value chain
- Pressure on price for value continues to increase
- Non-traditional new entrants

Source: IQVIA Market Prognosis Update 2018-22 incl. Radiology

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Innovative Medicines in Areas of High Unmet Medical Need

Therapeutic area focus

- Cardiovascular
- Hematology
- Oncology
- Radiology
- Women’s Health
- Other

Sales 2017 €16.8bn

Emerging markets exposure

- Emerging Markets 32%
- Established Markets 68%

Sales 2017 €16.8bn

Global leadership in important therapeutic areas

- No. 1 in Retinal Diseases
- No. 1 in Women’s Health
- No. 1 in Radiology
- No. 2 in Cardiovascular
- No. 2 in Hematology

Leading Brands

- Xarelto
- Adempas
- Nexavar
- Stivarga
- Xofogo
- Eylea
- Gadovist 1.0
- Mirena

Emerging markets include Latin America, Asia (w/o Japan, Australia, New Zealand), Africa and Middle East incl. Turkey, Eastern Europe

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Continued Sales Growth and Margin Expansion

Sales growth above industry level

Successfully launched and commercialized innovative products, with Xarelto and Eylea becoming blockbuster brands

Disciplined resource allocation

2017 EBITDA margin at upper end of guidance corridor of 32-34% – achieved one year earlier than originally planned

Increase in R&D investment by ~€1 billion p.a. to c.17% of sales

Including Radiology; Sales growth currency and portfolio adjusted; EBITDA margin before special items

// Bayer Capital Markets Day // London, December 5, 2018
## Key Drivers for Growth and Margin Expansion

### Focus on key brands

- Xarelto
- Eylea
- Adempas
- Mirena
- Shvorage
- Kogenate
- Kovaltry
- Xofigo

~70% of sales growth  

### Focus on key markets

<table>
<thead>
<tr>
<th>Market</th>
<th>Sales 2017</th>
<th>2013 - 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>€3.7bn</td>
<td></td>
</tr>
<tr>
<td>PR China</td>
<td>€2.0bn</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>€2.0bn</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>€1.5bn</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>€0.6bn</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>€0.4bn</td>
<td></td>
</tr>
</tbody>
</table>

~50% of sales growth  

### Prudent cost management

<table>
<thead>
<tr>
<th>Category</th>
<th>2013 - 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>COGS</td>
<td>-400 bps²</td>
</tr>
<tr>
<td>M&amp;S</td>
<td>-700 bps²</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>+230 bps²</td>
</tr>
</tbody>
</table>

Margin¹ up 310 bps  

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¹ EBITDA margin before special items; bps: Basis points, ² as percentage of sales

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Focused Leadership Strategy to Deliver Mid-term Targets and to Ensure Long-term Success

2022 Targets for Pharma

Sales CAGR 4 - 5%  
(Basis 2018e of ~€16.8bn)  
EBITDA-margin >35%

Focused Leadership

- **Relentless Focus**
  // Stringent focus on **key brands** and **markets incl. China**
  // Achieve **category/segment leadership** within **Oncology** and **Cardiovascular**

- **Innovation**
  // Supplement organic pipeline with select **in-licensing** and **bolt-on M&A options**
  // **Transform innovation model** to ensure long-term success beyond **LoEs**

- **Excellence in Execution**
  // Maintain **operational focus**
  // Deliver on **mid-term growth and margin aspirations**
  // **Execute efficiency measures**

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2022 targets at constant currencies, not including portfolio measures; EBITDA margin before special items; LoE: Loss of exclusivity

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Xarelto – Continued Growth of a Leading Anticoagulant

// Most broadly indicated anticoagulant for use in venous and arterial thromboembolic conditions

// A leading pharma brand with global sales of €5.0bn in 2017 incl. sales at Johnson & Johnson

// New CAD/PAD indication launching in EU and the US

// Peak sales potential: >€5.0bn¹

// Further growth driven by:
// // Under-served patient populations
// // Demographics
// // Shift from warfarin
// // New indications targeting patients currently not treated with anticoagulants

0.9
1.7
2.3
2.9
3.3

2013
2014
2015
2016
2017

Sales in €bn

Relentless Focus

CAD: Coronary artery disease; PAD: Peripheral artery disease
¹Ex-US sales plus royalty from J&J as reported by Bayer
Xarelto Demonstrates Significant Therapeutic Benefits in CAD/PAD
Potential for Changing the Current Standard of Care

<table>
<thead>
<tr>
<th>Efficacy (RRR)</th>
<th>MACE</th>
<th>Stroke</th>
<th>CV Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>-24%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-42%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-22%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Combination of Xarelto 2.5 mg bid + aspirin 100 mg od compared to aspirin 100 mg od alone (COMPASS)
- Significant reduction in the relative risk for the primary composite of stroke, myocardial infarction and cardiovascular death (MACE)
- 20% improvement in net clinical benefit
- Provides a larger relative risk reduction than dual anti-platelet strategies
- Xarelto is the only oral anticoagulant that is approved for the prevention of atherothrombotic events in patients with CAD or PAD

CAD: Coronary artery disease; PAD: Peripheral artery disease; MACE: Major adverse cardiovascular events; CV: Cardiovascular; RRR: Relative risk reduction
1 Net clinical benefit was defined as the composite of stroke, cardiovascular death, myocardial infarction, fatal bleeding or symptomatic bleeding in a critical organ

Relentless Focus
Eylea – A Leader in Retinal Diseases

Sales in €bn

2013 2014 2015 2016 2017

0.3 0.8 1.2 1.6 1.9

// A leader in retinal diseases with global brand sales of €5.2bn in 2017 incl. sales at Regeneron¹

// Approved for the treatment of 5 retinal diseases: wAMD, DME, BRVO, CRVO, mCNV

// Treat and extend dosing regimen with injection intervals of up to 12 weeks or more for wAMD

// Peak sales potential: >€2.5bn²

// Further growth driven by:
  // Continued generation of real-life experience in wAMD across key markets and treatment-naïve patient share gains
  // Market expansion in DME

¹ Marketed by Bayer ex-US only; ² As reported by Bayer
wAMD: Wet age related macular degeneration; DME: Diabetic macular edema; BRVO: Branch retinal vein occlusion; CRVO: Central retinal vein occlusion; mCNV: Myopic choroidal neovascularization
Larotrectinib Provides Novel Tumor-Agnostic Precision Medicine Cancer Therapy

Precision medicine, identifying the right patient for the right treatment

- Cancer diagnosis
- Genomic testing

No NTRK gene-fusion

NTRK gene-fusion

Alternative treatments

Larotrectinib (Vitrakvi)

- Larotrectinib (Vitrakvi) is an oral, small molecule, highly selective inhibitor of tropomyosin receptor kinases (TRKs)

- NTRK gene fusions can lead to cancer and are facilitating tumor growth as oncogenic drivers

- Relevant genetic alteration is estimated to occur in about 0.5 - 1.0% of patients with solid tumors

- FDA approved for the treatment of adult and pediatric patients with solid tumors that have a neurotrophic receptor tyrosine kinase gene fusion

- Distinguished science, in-licensed from Loxo Oncology together with 2nd generation TRK inhibitor LOXO-195

- Peak sales potential of >€750 million

NTRK: Neurotrophic receptor tyrosine kinase
Larotrectinib Demonstrates Impressive Anti-Tumor Activity
Activity in a Wide Range of Tumors Associated with NTRK Gene Fusions

**Maximum change in tumor size according to tumor type (RECIST)**

**Objective response rate**

| Assessment (N=109) |  
|--------------------|---|
| Objective response rate | 81%  
| (95% CI) | (72-88%)  
| Best response |  
| Partial response | 63%  
| Complete response | 17%  

Lassen, U. et al., ESMO 2018
NTRK: Neurotrophic receptor tyrosine kinase; RECIST: Response evaluation criteria in solid tumors

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China is a Growth Engine for Pharma

Sales in PR China in €bn

- 2013: 1.3
- 2015: 1.8
- 2017: 2.0
- 2022 target: ~3.0

- ~13% CAGR cpa

Ranked among the top 5 multi-national pharma companies in China

Targeting sales of ~€3bn in PR China by 2022

Portfolio of established and innovative drugs matches China’s needs

Strong growth of key products

Xarelto and Nexavar entered the National Reimbursement Drug List in 2017

Glucobay, Adalat, Nimotop, Bayaspirin and Ciprobay listed on China’s Essential Drug List

cpa: Currency and portfolio adjusted

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Successful Track Record in Innovation

Growth driver
- Above industry average output in terms of product sales from pipeline assets launched over last 10 years

Pipeline quality
- 100% success rate for phase III development of new molecular entities since 2008
- ~50 projects in clinical development
- More than 70 clinical trials underway with ~28,000 patients enrolled

Scientific leadership
- Major success with state-of-the-art anticoagulant Xarelto
- Pioneering sGC-modulators with Adempas as first-in-class product
- Delivered first marketed targeted alpha-therapy, Xofigo

Stringent focus
- Focus on areas with greatest potential for breakthrough impact on the lives of patients - Cardiovascular Diseases and Cancer
- Selective R&D activities in Hemophilia, Women’s Health, and Ophthalmology

sGC: Soluble guanylate cyclase
Addressing High Unmet Medical Need and Attractive Markets

Cardiovascular Diseases are Still the “Biggest Killers”, While Oncology is the Fastest Growing Market

Main causes of death (2016)

- Ischemic heart disease
- Stroke
- COPD
- LRT infections
- Dementias
- Lung cancer
- Diabetes mellitus
- Road injuries
- Diarrhoeal diseases
- Tuberculosis

Deaths (000s)

Global market size ($bn)

Top 5 therapeutic categories

- Oncology: 9.3%
- CNS: 2.8%
- CV: 1.8%
- MS/P: 1.6%
- Anti-infectives: -0.9%

WHO Global Health Observatory Data 2018; Decision Resources Group
COPD: Chronic obstructive pulmonary disease; LRT: Lower respiratory tract; CNS: Central nervous system; CV: Cardiovascular; MS/P: Musculoskeletal/Pain

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# Late-stage Pipeline with Progress in Oncology

Darolutamide met Primary Endpoint in Phase III-trial and FDA-approval of Larotrectinib

<table>
<thead>
<tr>
<th>Indication</th>
<th>Status</th>
<th>Commercial Potential</th>
<th>Clinical Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Larotrectinib</strong></td>
<td>TRK-fusion Cancer</td>
<td>FDA approved / in registration</td>
<td>Clinical program ongoing</td>
</tr>
<tr>
<td><strong>Darolutamide</strong></td>
<td>Prostate Cancer (nmCRPC)</td>
<td>Phase III (mHSPC)</td>
<td>PSP &gt;€1bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Completed (ARAMIS, nmCRPC)</td>
<td>Aug 2022e (ARASENS, mHSPC)</td>
</tr>
<tr>
<td><strong>Copanlisib</strong></td>
<td>Lymphoma</td>
<td>Launched in the US</td>
<td>PSP &gt;€0.5bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>May 2020e (CHRONOS-3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sep 2021e (CHRONOS-4)</td>
</tr>
<tr>
<td><strong>Finerenone</strong></td>
<td>Diabetic Kidney Disease</td>
<td>Phase III</td>
<td>PSP &gt;€1bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>May 2020e (FIDELIO-DKD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jul 2021e (FIGARO-DKD)</td>
</tr>
<tr>
<td><strong>Vericiguat</strong></td>
<td>Chronic Heart Failure</td>
<td>Phase III (HFrEF)</td>
<td>PSP ~€0.5bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phase II (HFpEF)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jan 2020e (VICTORIA, HFrEF)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oct 2019e (VITALY, HFpEF)</td>
</tr>
</tbody>
</table>

NTRK: Neurotrophic receptor tyrosine kinase; nmCRPC: Non-metastatic castration resistant prostate cancer; mHSPC: Metastatic hormone sensitive prostate cancer; HFrEF: Heart failure with reduced ejection fraction; HFpEF: Heart failure with preserved ejection fraction; PSP: Peak sales potential
Darolutamide is a novel non-steroidal androgen receptor antagonist in development for the treatment of prostate cancer.

- Met primary endpoint of metastasis-free survival in the ARAMIS trial in non-metastatic CRPC
- Phase III trial in metastatic HSPC (ARASENS) ongoing
- Potential for differentiation:
  - Differentiated chemical structure
  - Higher binding affinity
  - Negligible blood-brain barrier penetration

CRPC: Castration resistant prostate cancer; HSPC: Hormone sensitive prostate cancer; EBRT: External beam radiation therapy; LHRH: Luteinizing hormone-releasing hormone; ADT: Androgen deprivation therapy; ¹ based on pre-clinical data in collaboration with Orion Pharmaceuticals.
# Expected Launches of Key Pipeline Assets

<table>
<thead>
<tr>
<th>Year</th>
<th>Cardiovascular</th>
<th>Oncology</th>
<th>HEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td><strong>Xarelto</strong> CAD/PAD</td>
<td><strong>Larotrectinib</strong> TRK-fusion cancer</td>
<td><strong>Damocctocog</strong> Hemophilia A</td>
</tr>
<tr>
<td></td>
<td><strong>Finerenone</strong> Diabetic kidney disease</td>
<td><strong>LOXO-195</strong> TRK-fusion cancer</td>
<td><strong>Anti-TFPI</strong> Hemophilia</td>
</tr>
<tr>
<td></td>
<td><strong>Vericiguat</strong> Heart failure (HFrEF)</td>
<td><strong>Darolutamide</strong> nmCRPC</td>
<td><strong>FVIII Gene Therapy</strong> Hemophilia A</td>
</tr>
<tr>
<td>2019</td>
<td>VOYAGER PAD</td>
<td><strong>Prostate cancer label expansion (mHSPC)</strong></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>Ped. VTE treatment (EINSTEIN JUNIOR)</td>
<td><strong>Heart failure label expansion (HFpEF)</strong></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2023+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

First launch in first indication

NTRK: Neurotrophic receptor tyrosine kinase; nmCRPC: Non-metastatic castration resistant prostate cancer; mHSPC: Metastatic hormone sensitive prostate cancer; HFrEF: Heart failure with reduced ejection fraction; HFpEF: Heart failure with preserved ejection fraction, iNHL: Indolent Non-Hodgkin Lymphoma  TFPI: Tissue factor pathway inhibitor; WH: Women’s Health; HEM: Hematology
Bayer Has Unique Access to Targeted Thorium Conjugates, a New Approach for Cancer Treatments

Components:
- **Antibody**: Targeting the tumor cell
- **Chelator**: Forming highly stable complexes with Thorium
- **Thorium-227**: Killing the tumor cell through $\alpha$-radiation

$\alpha$-radiation is highly energetic and may induce DNA damage leading to cell death.

Other than $\beta$-radiation, $\alpha$-radiation is active over a very short distance only which may increase tissue specificity.

Targeted Thorium conjugates direct $\alpha$-radiation to tumor cells by specific antibodies.

Thorium-227 is the only commercially viable $\alpha$-radionuclide for antibody targeted therapy.

Thorium-227 forms highly stable complexes with chelators.

Efficacy is independent of antibody internalisation.

No known mechanism for resistance to $\alpha$-radiation.
Targeted Thorium Conjugate Platform May Have Potential in Several Oncology Settings

<table>
<thead>
<tr>
<th>Project</th>
<th>Indication</th>
<th>Status</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-22-TTC</td>
<td>CD-22+ NHL</td>
<td>Phase I</td>
<td>Significant need for new therapeutic options for the treatment of r/r NHL (DLBCL, FL)</td>
</tr>
<tr>
<td>Mesothelin-TTC</td>
<td>Solid tumors expressing mesothelin</td>
<td>Phase I</td>
<td>Mesothelin is overexpressed in the vast majority of pancreatic adenocarcinomas, mesotheliomas and adenocarcinomas of the lung, ovary and the stomach</td>
</tr>
<tr>
<td>PSMA-TTC</td>
<td>mCRPC</td>
<td>Phase I ready</td>
<td>PSMA as a predictive biomarker with high and specific overexpression in prostate cancer cells</td>
</tr>
<tr>
<td>HER2-TTC</td>
<td>HER2+ cancer</td>
<td>Pre-clinical</td>
<td>Potential for treatment of patients resistant/refractory to approved HER2-targeting therapies</td>
</tr>
</tbody>
</table>

// Novel approach for radio-immunotherapies with local effect at the tumor

// Tumor specificity defined by antigen/antibody selection, making TTC a flexible technology platform

// Potential to leverage experience with Xofigo

TTC: Targeted Thorium conjugate; NHL: Non-Hodgkin’s lymphoma; DLBCL: Diffuse large b-cell lymphoma; FL: Follicular lymphoma; mCRPC: Metastatic castration resistant prostate cancer; PSMA: Prostate specific membrane antigen; HER2: Human epidermal growth factor receptor 2
## Re-alignment of R&D-activities to Increase Sustainable R&D Productivity

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>// <strong>Broad set of indications</strong> in Oncology, Cardiovascular Diseases and Gynecological Therapies</td>
<td>// <strong>Focus on select areas</strong> with high unmet medical need in Oncology, Cardiovascular Diseases and Gynecological Therapies</td>
</tr>
<tr>
<td>// Focus on <strong>functional and technical expertise</strong></td>
<td>// Focus on <strong>deep disease understanding</strong></td>
</tr>
<tr>
<td>// Strong reliance on <strong>small molecules</strong></td>
<td>// <strong>Broader mechanistic approach</strong> beyond therapeutic area focus</td>
</tr>
<tr>
<td>// Majority of <strong>assets sourced internally</strong></td>
<td>// Invest in <strong>new technologies and capabilities</strong></td>
</tr>
<tr>
<td>// Highly <strong>concentrated geographical footprint</strong></td>
<td>// Continue to explore potentially <strong>game-changing innovations</strong> through LEAPS</td>
</tr>
<tr>
<td>// Internally <strong>oriented</strong> resource model</td>
<td>// Increased portion of R&amp;D <strong>assets to be sourced externally</strong> in the future</td>
</tr>
<tr>
<td></td>
<td>// Evolve footprint with <strong>more co-location in science hubs</strong></td>
</tr>
<tr>
<td></td>
<td>// Adapt internal cost base to <strong>free up funds for sourcing inorganic opportunities</strong></td>
</tr>
</tbody>
</table>
External Innovation and Partnering are Essential Components of Success at Pharma

### Joint Labs
- Joint Labs: e.g. German Cancer Research Center (DKFZ), Broad Institute

### Consortia
- Innovative Medicines Initiative (IMI)
- Structural Genomics Consortium (SGC)

### Arm’s Length
- Accelerator: e.g. Grants4-Initiatives
- Incubator: CoLaborator

### Research Collaborations
- Multiple projects: e.g., Evotec, Tsinghua University, Peking University, Vanderbilt University, MD Anderson

### License Agreements
- Pipeline assets: Darolutamide, Larotrectinib, Loxo-195, Vericiguat, FXI-Antisense
- Launched products: Nexavar, Stivarga, Eylea, Adempas

Examples only

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First Wave of Breakthrough Investments by LEAPS

Biotech with Bayer and CRISPR Therapeutics as major investors
- $300 million over 5-6 years, associated with $70 million equity of Bayer in CRISPR Therapeutics
- Awarded “No. 1 Most Valuable Pharma Deal 2016” by Pharma Dive

CRISPR/Cas-based DNA-editing
- Research focus:
  I. Cardiology
  II. Ophthalmology
  III. Hematology (non-malignant)
  IV. Autoimmune diseases
  V. Ear diseases
  VI. Metabolic diseases

Biotech with Bayer and Versant Ventures as major investors
- $225 million over 4-5 years
- BlueRock selected to Top-30 World Game Changer companies (CB Insights Game Changer Report)

Best-in-class induced pluripotent stem cell therapies using an industry-leading platform
- Vision is to cure diseases with significant cell loss and diminished self-repair potential
- (Initial) research focus on:
  I. Cardiology (heart muscle regeneration after MI or with HF)
  II. Neurology (Parkinson's disease)

Mi: Myocardial infarction; HF: Heart failure

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Further Growth in Sales and Profitability

<table>
<thead>
<tr>
<th>Pharma</th>
<th>2018e</th>
<th>Indicative Guidance 2019</th>
<th>Target 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales/Sales growth</td>
<td>~€16.8bn</td>
<td>~4%</td>
<td>CAGR 4-5%</td>
</tr>
<tr>
<td>EBITDA/EBITDA margin</td>
<td>~€5.6bn</td>
<td>~34%</td>
<td>&gt;35%</td>
</tr>
</tbody>
</table>

2022 targets at constant currencies, not including portfolio measures
EBITDA / EBITDA margin based on EBITDA before special items
We Are Confident for Pharma Also Beyond 2022

<table>
<thead>
<tr>
<th>Until 2022</th>
<th>2022+</th>
</tr>
</thead>
<tbody>
<tr>
<td>// Delivering on <strong>mid-term growth and margin aspirations</strong></td>
<td>// Realizing the <strong>full value of the portfolio</strong> until LoEs</td>
</tr>
<tr>
<td>// Maximizing the <strong>potential of the existing portfolio</strong> to ensure short-</td>
<td>// <strong>China</strong> to become our largest pharma market</td>
</tr>
<tr>
<td>to mid-term growth</td>
<td>// Growth of <strong>Larotrectinib, Darolutamide, Finerenone, Vericiguat</strong></td>
</tr>
<tr>
<td>// Continued focus on <strong>cost management</strong></td>
<td>// Sourcing of <strong>external innovation</strong></td>
</tr>
<tr>
<td>// <strong>Re-alignment of R&amp;D activities</strong> to sustain long-term growth beyond LoEs</td>
<td>// Appropriate <strong>management of resources</strong></td>
</tr>
<tr>
<td></td>
<td>// Expect business to <strong>return to market growth</strong> after LoE impact</td>
</tr>
</tbody>
</table>

LoE: Loss of exclusivity
Key Takeaways
Driving Performance and Delivering New Growth Opportunities

1. Mid-term targets project further growth and margin improvement
2. China is a growth engine for Pharma
3. Late-stage pipeline with progress in Oncology
4. Re-alignment of R&D activities to increase sustainable R&D productivity
5. Accelerating sourcing of external innovation

LoE: Loss of exclusivity; nmCRPC: Non-metastatic castration resistant prostate cancer
Experienced Pharmaceuticals Executive Leadership Team

1 Stefan Oelrich will additionally take over the lead for PH Strategic Marketing on an interim basis; 2 Additional role as Chief Medical Officer for Bayer AG

---

1 Stefan Oelrich
President, Pharmaceuticals

---

Reinhard Franzen
Commercial Operations
Europe, Middle East & Africa

Sebastian Guth
Commercial Operations
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/// Bayer Capital Markets Day /// London, December 5, 2018
Our Pipeline Contains ~50 Projects in Clinical Development

**Phase I (26)**
- Cancer / TRK Inhibitor (LOXO-195)
- Cancer / Rogaratinib (pan-FGFR Inhibitor)
- Cancer / PTEfB Inhibitor
- Cancer / mIDH1 Inhibitor
- Cancer / ATR Inhibitor
- Cancer / DHODH Inhibitor
- Cancer / Regorafenib* (multi-Kinase Inhibitor)
- Cancer / Anetumab Rvavtansine (Mesothelin-ADC)
- Cancer / Lupartumab Amadotin (C4.4a-ADC)
- Cancer / CD22-Targeted Thorium Conjugate
- Cancer / MSLN-Targeted Thorium Conjugate
- Cancer / CEACAM6 fb Antibody
- Cancer / ILDR2 fb Antibody
  - Heart Failure / Vasopressin Receptor Antagonist
  - Chronic Kidney Disease / sGC Activator 1
  - Chronic Kidney Disease / Vasopressin V1a Receptor Antag.
  - Pulmonary Hypertension / sGC Activator 2
  - Anti-coagulation / FXIa Inhibitor
  - Endometriosis / P2X3 Antagonist 1
  - Endometriosis / Persist. Chron. Cough / P2X3 Antagonist 2
  - Endometriosis / P2X4 Antagonist
  - Endometriosis / Rheumatoid Arthritis / IRAK4 Inhibitor 1
  - Hemophilia / FVIII Gene Therapy
  - Acute Respiratory Distress Syndrome / sGC Activator 3
  - Acute Respiratory Distress Syndrome / PEG-ADM Inhale
  - Rheumatoid Arthritis / IRAK4 Inhibitor 2

**Phase II (13)**
- Cancer / Radium-223 (α-Emitter)
- Urothelial Cancer / Rogaratinib (pan-FGFR Inhibitor)
- Thrombosis / FXI Antisense (IONIS)
- Thrombosis / anti-FXIIa Antibody
- Peripheral Artery Disease / AR-Alpha 2c Receptor Antagonist
- Heart Failure preserved EF / Vericiguat (sGC Stimulator)
- Heart Failure / Fulacimstat (Chymase Inhibitor)
- Chronic Kidney Disease / Fulacimstat
- Endometriosis / Vilaprisan (S-PR Modulator)
- Contraception / Combi IUS: LNG (Progestin) + Indomethacin (NSAID)
- Hemophilia / anti-TFPI-Antibody
- Obstructive Sleep Apnea / TASK Channel-Blocker
- Persistent Chronic Cough / P2X3 Antagonist 1

**Phase III (11)**
- Prostate Cancer (nmCRPC) / Darolutamide (AR Antagonist)
- Prostate Cancer (mHSPC) / Darolutamide
- Non-Hodgkin Lymphoma / Copanlisib (PI3K Inhibitor)
- Peripheral Artery Disease / Rivaroxaban (FXa Inhibitor)
- Chronic Heart Failure and Coronary Artery Dis. / Rivaroxaban
- Medically II / Rivaroxaban
- Venous Thromboembolism in Children / Rivaroxaban
- Heart Failure reduced EF / Vericiguat (sGC Stimulator)
- Diabetic Kidney Disease / Molidustat (HIF-PH Inhibitor)
- Renal Anemia / Molidustat (HIF-PH Inhibitor)
- Sympt. Uterine Fibroids / Vilaprisan (S-PR Modulator)
Finerenone May Reduce the Risk of CV-mortality and the Progression of Kidney Disease in Patients with Diabetic Kidney Disease

Key phase II data (ARTS-DN\(^1\))

- Finerenone is a novel non-steroidal MRA that has greater receptor selectivity and better receptor affinity than existing MRAs (e.g. spironolactone, eplerenone)

- Addressing high unmet medical need

- Two phase III trials in diabetic kidney disease underway: FIDELIO DKD (CV study) and FIGARO DKD (renal study)

- Potential for differentiation:
  - First-in-class MRA for treatment of DKD
  - Non-steroidal structure, no interaction with steroid hormone receptors compared to existing MRAs
  - Low risk of hyperkalemia which prohibits the use of marketed MRAs in DKD

Dose dependent reduction of proteinuria by finerenone when added to RAS blocker therapy in patients with DKD

MRA: Mineralocorticoid receptor antagonist; RAS: Renin-angiotensin system; CV: Cardiovascular; DKD: Diabetic kidney disease; UACR: Urinary albumin-creatinine ratio

\(^1\) Bakris, G.L. et al., JAMA 2015; 314:884-894.
Vericiguat is a Potentially New Treatment Option on Top of Standard of Care for Patients with Heart Failure

First-in-class, direct sGC stimulator addressing the NO-sGC-cGMP pathway, a relevant mechanism in heart failure

Heart failure is still associated with significant mortality risk despite the availability of new therapeutic options

Potential for differentiation:

- New mode of action to be positioned on top of standard of care
- OD dosing and overall favorable safety and tolerability profile

Development in collaboration with Merck & Co.

Dose-response relationship between vericiguat dose and reduction in NT-proBNP, a surrogate marker for cardiac function

sGC: Soluble guanylate cyclase; NO: Nitric oxide; cGMP: Cyclic guanosinemonophosphate; OD: Once daily; PLA: Placebo; NT-proBNP: N-terminal prohormone of brain natriuretic peptide

Copanlisib is a Differentiated PI3K-inhibitor for the Treatment of Lymphoma

**Key phase II data (CHRONOS-1)**

Overall response rate in patients with follicular B-cell non-Hodgkin’s lymphoma who had relapsed disease following at least two prior treatments:

<table>
<thead>
<tr>
<th>n=104</th>
<th>Copanlisib</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall response rate</td>
<td>59%</td>
</tr>
<tr>
<td>Complete response</td>
<td>14%</td>
</tr>
<tr>
<td>Partial response</td>
<td>44%</td>
</tr>
</tbody>
</table>

Copanlisib had a favorable safety profile with a low rate of severe toxicities overall.

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**Phosphatidylinositol-3-kinase (PI3K) inhibitor blocking cellular signal transduction processes crucial for cancer progression**

**In development for various forms of lymphoma**

**Potential for differentiation:**

- Inhibits different isoforms of PI3K
- Intravenous administration, thus lower propensity for serious gastrointestinal toxicity
- Intermittent once weekly dosing
- Launched in the US in 2017 for the treatment of relapsed follicular lymphoma. Registration granted under accelerated FDA approval based on phase II data

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1 Dryling M. et al.: Blood 2017; 130: 2777

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Driving Performance and Delivering New Growth Opportunities

Capital Markets Day
London, December 5, 2018

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