Innovation and value creation

Severin Schwan, CEO Roche

Bank am Bellevue
Zuerich, January 2017
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2. legislative and regulatory developments and economic conditions;
3. delay or inability in obtaining regulatory approvals or bringing products to market;
4. fluctuations in currency exchange rates and general financial market conditions;
5. uncertainties in the discovery, development or marketing of new products or new uses of existing products, including without limitation negative results of clinical trials or research projects, unexpected side-effects of pipeline or marketed products;
6. increased government pricing pressures;
7. interruptions in production;
8. loss of or inability to obtain adequate protection for intellectual property rights;
9. litigation;
10. loss of key executives or other employees; and
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Performance update

Strategy

Growth drivers

Summary
Q3 2016: Sales growth for fifth consecutive year

All growth rates at Constant Exchange Rates (CER)
HY 2016: Strong core operating profit & margin

CER=Constant Exchange Rates
2016: Building the base for future growth

New Molecular Entities: Launches and key read-outs

Launches

- Tecentriq in 2/3 line bladder & lung (US)
- Alecensa in 2/3 line ALK+ lung (US)
- Cotellic in BRAF+ melanoma (US)
- Gazyva in R/R iNHL (US)
- Venetoclax in 17p del CLL (US)

Positive key read-outs

- Gazyva in 1L iNHL: GALLIUM (at interim)
- Emicizumab (ACE910) in inhibitor patients: HAVEN1
- Actemra in Giant Cell Arteritis: GiACTA

Diagnostics

- Launch of Cobas e801
Performance update

Strategy

Growth drivers

Summary
Roche strategy

Focused on medically differentiated therapies

Uniquely positioned to benefit all stakeholders

- Personalized medicines for patients & Health Care Professionals
- Optimised benefit / risk ratio for regulators
- Optimised benefit / cost ratio for payors
Recognition for innovation
Leading by Breakthrough Therapy Designations (BTDs)

Total number of BTDs received

<table>
<thead>
<tr>
<th>Company</th>
<th>BTDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roche</td>
<td>14</td>
</tr>
<tr>
<td>Novartis</td>
<td>11</td>
</tr>
<tr>
<td>BMS</td>
<td>10</td>
</tr>
<tr>
<td>Merck</td>
<td>9</td>
</tr>
<tr>
<td>Pfizer</td>
<td>7</td>
</tr>
<tr>
<td>Abbvie</td>
<td>7</td>
</tr>
</tbody>
</table>

BTDs halve development time

<table>
<thead>
<tr>
<th>Designation</th>
<th>Years from Phase 1 to Filing</th>
</tr>
</thead>
<tbody>
<tr>
<td>No designation</td>
<td>7.5</td>
</tr>
<tr>
<td>Fast track</td>
<td>5.8</td>
</tr>
<tr>
<td>Accelerated review</td>
<td>3.8</td>
</tr>
<tr>
<td>BTD</td>
<td>3.6 (-52%)</td>
</tr>
</tbody>
</table>

Source: [http://www.focr.org/breakthrough-therapies](http://www.focr.org/breakthrough-therapies) as of October 2016; PPMS=Primary Progressive Multiple Sclerosis; CLL=Chronic Lymphocytic Leukemia; NSCLC=Non-Small Cell Lung Cancer; IPF=Idiopathic Pulmonary Fibrosis
Launches of new medicines at a record high
Biosimilars impact

*Complex market drivers; clear divide in uptake vs Generics*

**Market share**

- **Remicade**
  - Driven by price and patient offering
  - Efficacy visible only long(ER) term

- **Somatropin**

- **EPO**

- **Filgrastim**
  - Payer driven
  - High turnover of patients

- **Diovan (Novartis)**
  - Small molecule
  - Virtually disappear

- **Zyprexa (Eli Lilly)**

Sources: IMS Health, IMS & Roche analysis, ¹ Volume market share based on EU5 average, ² Data based on % remaining sales in EU
Increasing productivity
Selected examples

**Commercial**
- Resource shift to support launches
- Commercial productivity program

**Product Development**
- Decision making: Putting all projects into portfolio context
- Above median NPV and POL
- Below NPV and POL

**Production**
- Shift from small to large molecule capacity
- Small molecule capacity
- Biologics capacity

- Recent launches & pipeline
- In-market & established

Shared service centres: Kuala Lumpur, Budapest, Puerto Rico
Roche: Towards individualization of treatment

*Uniquely positioned to change treatment paradigm*

<table>
<thead>
<tr>
<th></th>
<th>Past</th>
<th>Current</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>Symptomatic</td>
<td>Single biomarkers (tissue-based)</td>
<td>Comprehensive diagnostics, (genomics, tissue &amp; blood)</td>
</tr>
<tr>
<td>Treatment decision</td>
<td>Empirical</td>
<td>Biomarker-guided</td>
<td>Comprehensive Dx and data-driven decision support</td>
</tr>
<tr>
<td>Treatment</td>
<td>Broad spectrum medicines</td>
<td>Targeted medicines</td>
<td>Individualized treatments</td>
</tr>
</tbody>
</table>
Performance update

Strategy

Growth drivers

Summary
2016 onwards: Key data read-outs

Outcome studies are event-driven: timelines may change. Standard approval timelines of 1 year assumed.
Outcome studies are event-driven: timelines may change. Standard approval timelines of 1 year assumed.
Our Cancer Immunotherapy Strategy
*Tecentriq as a foundation*

Going deep in diseases where we have strong scientific rationale

<table>
<thead>
<tr>
<th>Pivotal</th>
<th>Lung</th>
<th>Bladder</th>
<th>Kidney</th>
<th>Breast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1L, 2L, adjuvant</td>
<td>1L, 2L, adjuvant</td>
<td>1L, combo with Avastin</td>
<td>1L combo with chemo</td>
</tr>
</tbody>
</table>

Important future development areas

<table>
<thead>
<tr>
<th></th>
<th>Colorectal</th>
<th>Melanoma</th>
<th>Ovarian</th>
<th>Hematology</th>
</tr>
</thead>
</table>

All studies with extensive biomarker program and PDL1 diagnostic
Tecentriq in 2L+ non-small cell lung cancer

Survival benefit regardless of PD-L1 status

Atezolizumab
Docetaxel

Median 9.6 mo
(95% CI, 8.6, 11.2)

Median 13.8 mo
(95% CI, 11.8, 15.7)

HR, 0.73\(^a\)
(95% CI, 0.62, 0.87)

\(P = 0.0003\)

Minimum follow up = 19 months

Barlesi et al, ESMO 2016;\(^a\) Stratified HR; HR=hazard ratio; ITT=intention-to-treat
### Cancer immunotherapy: 10 NMEs with near-term monotherapy and combo read-outs

<table>
<thead>
<tr>
<th>NME / Combinations</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>aCEA/CD3 TCB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aCEA/CD3 TCB + Tecentriq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aOX40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aOX40 + Tecentriq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>emactuzumab + Tecentriq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aCD40 + Tecentriq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aCEA-IL2v FP + Tecentriq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vanucizumab+ Tecentriq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aFAP-IL2v FP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDOi + Tecentriq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aCD40 + vanucizumab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aCD40 + emactuzumab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aCD20/CD3 TCB 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIGIT + Tecentriq</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NME = new molecular entity; 1. NMEs: aCD40; aOX40; aFAP-IL2v FP; aCEA-IL2v FP; vanucizumab (aAng2/VEGF); aCEA/CD3 TCB; aCD20/CD3 TCB 1; emactuzumab (aCSF-1R); IDOi (NewLink); aTIGIT; Note: Outcome studies are event driven, timelines may change.
2016 onwards: Key data read-outs

**NMEs**

<table>
<thead>
<tr>
<th>Year</th>
<th>Product</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Gazyva</td>
<td>R/R iNHL (GADOLIN)</td>
</tr>
<tr>
<td></td>
<td>Alecensa</td>
<td>2L ALK+ NSCLC</td>
</tr>
<tr>
<td></td>
<td>Venclexta</td>
<td>R/R CLL with 17p del</td>
</tr>
<tr>
<td></td>
<td>Cotellic + Zelboraf</td>
<td>BRAFmut melanoma</td>
</tr>
</tbody>
</table>

**Line extensions**

<table>
<thead>
<tr>
<th>Year</th>
<th>Product</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post 2017</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Endpoints**

- Oncology/ hematology
- Neuroscience
- Ophthalmology
- Immunology
- FDA Breakthrough Therapy Designation

Outcome studies are event-driven: timelines may change. Standard approval timelines of 1 year assumed.
OCREVUS: First drug active in both RMS & PPMS

Strong share of voice at ECTRIMS

- New endpoint analysis focusing on disease progression as treatment goal
- Regulatory review by FDA/EMA for both RMS and PPMS on-going; PDUFA date: March 28th

RMS=relapsing forms of multiple sclerosis (MS) which includes patients with RRMS and SPMS with superimposed relapses; RRMS=relapsing-remitting MS; SPMS=secondary progressive MS; PPMS=primary progressive MS; Giovannoni G. et al, presented at ECTRIMS 2016; Montalban X. et al, presented at ECTRIMS 2016
2016 onwards: Key data read-outs

**2015**
- **Tecentriq**: 2L+ bladder cancer
- **Venclexta**: R/R CLL with 17p del
- **Cotellic + Zelboraf**: BRAFmut melanoma
- **Alecensa**: 2L ALK+ NSCLC
- **Gazyva**: R/R iNHL (GADOLIN)

**2016**
- **Tecentriq**: 2L+ all-comers NSCLC
- **Actemra**: Giant cell arteritis
- **Gazyva**: 1L iNHL (GALLIUM)

**2017**
- **Tecentriq + Avastin**: 1L RCC
- **Perjeta + Herceptin**: eBC HER2+(APHINITY)
- **Tecentriq + Avastin + chemo**: 1L NSCLC

**Post 2017**
- **Tecentriq program**: CRC, SCLC, TNBC, Melanoma
- **Perjeta + Herceptin**: eBC HER2+(APHINITY)
- **Alecensa**: 1L ALK+ NSCLC
- **Taselisib**: 
- **Etrolizumab**: 
- **Idasanutlin**: 
- **Olesoxime**: 
- **Crenezumab**:
- **Gantenerumab**: 
- **Emicizumab**: Hemophilia A
- **Emicizumab**: Hemophilia A inhibitors
- **Lampalizumab**: Geographic atrophy
- **Tecentriq**: 
- **Tescemriq**: 
- **OS**: 
- **Crenezumab**: 
- **Gantenerumab**: 
- **Idasanutlin**: 
- **Tasemrada**: 
- **Emicizumab**: Hemophilia A
- **Olesoxime**: 
- **Crenezumab**: 
- **Gantenerumab**: 
- **Idasanutlin**: 
- **Tasemrada**: 
- **Emicizumab**: Hemophilia A
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- **Tasemrada**: 
- **Emicizumab**: Hemophilia A
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Outcome studies are event-driven: timelines may change. Standard approval timelines of 1 year assumed.
Hemophilia A: Emicizumab in inhibitor patients

HAVEN 1 meeting all endpoints

### By-passing agent market (USD 2.1bn)

<table>
<thead>
<tr>
<th>Year</th>
<th>FEIBA VH</th>
<th>NovoSeven</th>
<th>% Change</th>
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<tbody>
<tr>
<td>2009</td>
<td>1.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>1.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>2.6</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>

### Emicizumab development program

- Seeking to overcome current clinical challenges, such as multiple frequent IV infusions, high burden of treatment, and the short-lasting effects of existing treatments

### HAVEN 1

**Primary endpoint**

- Significant reduction in the number of bleeds

**Secondary endpoints**

- Significant reduction in the number of bleeds in an intra-patient comparison in people who had received prior bypassing agent prophylaxis

**Safety Profile and Sub-cut Administration**

- Future trials will explore less frequent dosing
- Most common adverse events were injection site reactions, consistent with prior studies

---

1. EvaluatePharma consensus analyst estimates; 2. The study showed a statistically significant reduction in the number of bleeds over time in people treated with emicizumab prophylaxis compared to those receiving no prophylactic treatment.

Emicizumab and its uses are investigational and have not been approved by the US Food and Drug Administration. Efficacy and safety have not been established. The information presented should not be construed as a recommendation for use. The relevance of findings in preclinical studies to humans is currently being evaluated.
Performance update

Strategy

Growth drivers

Summary
Strong pipeline mitigates biosimilar impact

Growth driven by next generation medicines

NME launches
Venetoclax, Alectinib, Cotellic, Ocrelizumab, Atezolizumab, ACE910, Lampalizumab

Pipeline and recent launches

Conceptual

Sales

Biosimilars
MabThera, Herceptin, Avastin

Marketed products

2017 an important year for our pipeline

Key read-outs

<table>
<thead>
<tr>
<th>2017</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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<tbody>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>APHINITY</td>
<td>(Perjeta aBC, Her2+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHROMA, SPECTRI</td>
<td>(Lampalizumab GA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IMpower 150</td>
<td>(Tecentriq 1L Lung)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HAVEN 3</td>
<td>(Emicizumab non-inh.)</td>
<td></td>
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## 2016 outlook

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td><strong>Group sales growth</strong>(^1)</td>
<td>Low to mid-single digit</td>
</tr>
<tr>
<td><strong>Core EPS growth</strong>(^1)</td>
<td>Ahead of sales growth</td>
</tr>
<tr>
<td><strong>Dividend outlook</strong></td>
<td>Further increase dividend in Swiss francs</td>
</tr>
</tbody>
</table>

\(^1\) At Constant Exchange Rates (CER)
Doing now what patients need next