Science, patient benefits and productivity

Severin Schwan, CEO Roche Group

Zurich, January 2018
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6. increased government pricing pressures;
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Performance update

Strategy and personalization of treatment

Portfolio rejuvenation

Productivity

Outlook
Sales growth for the sixth consecutive year

All growth rates at Constant Exchange Rates (CER)
YTD Sep 2017: Successful launch activities
Differentiation driving growth

Additional sales of new launches

<table>
<thead>
<tr>
<th>CHF</th>
<th>Alecensa</th>
<th>Perjeta</th>
<th>Tecentriq</th>
<th>Ocrevus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+122m</td>
<td>+238m</td>
<td>+278m</td>
<td>+500m</td>
</tr>
</tbody>
</table>

- EU / US approved, NCCN guidelines category ‘1’
- US approved in Her2+ mBC, eBC & neoadjuvant
- US / EU approval in bladder (1/2L) & lung (2L)
- US, CH, Australia approved in RMS & PPMS, EU positive CHMP opinion

Total: ~1'100m

mBC=metastatic breast cancer; eBC=early breast cancer; PPMS=primary progressive multiple sclerosis; RMS=relapsing forms of multiple sclerosis; NCCN=National Comprehensive Cancer Network; CHMP=Committee for Medicinal Products for Human Use
Important medicines trial read outs at a record high

- IMvigor210
- GALLIUM
- J-ALEX
- GiACTA
- OAK
- APHINITY
- ALEX
- HAVEN 1 and 2
- MURANO
- HAVEN 3
- IMpower150
- IMmotion151
Breakthrough designations: Impacting cycle times and reflecting the quality of our research

18 Breakthrough Therapy Designations

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Roche</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>Novartis</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>BMS</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Merck</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>Pfizer</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase duration (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No = 7.5</strong></td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td><strong>Fast track = 5.8</strong></td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td><strong>Accelerated review = 3.8</strong></td>
</tr>
<tr>
<td>0.9</td>
</tr>
<tr>
<td><strong>Breakthrough therapy = 3.6</strong></td>
</tr>
<tr>
<td>1.1</td>
</tr>
</tbody>
</table>

Source: [http://www.focr.org/breakthrough-therapies](http://www.focr.org/breakthrough-therapies) as of October 2017
Performance update

Strategy and personalization of treatment

Portfolio rejuvenation

Productivity

Outlook
Roche strategy
*Focused on medically differentiated therapies*

Uniquely positioned to benefit all stakeholders

- Personalized medicines for patients & Health Care Professionals
- Optimized benefit / risk ratio for regulators
- Optimized benefit / cost ratio for payors
Roche PHC 2.0 strategy

Personalize treatment through understanding of a patient’s tumor

<table>
<thead>
<tr>
<th>Target population</th>
<th>Pre-PHC</th>
<th>PHC 1.0</th>
<th>PHC 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large: unspecified</td>
<td>Medium: sub-group</td>
<td>Small: individual patient</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnostics</th>
<th>No specific biomarkers</th>
<th>Single disease marker</th>
<th>Comprehensive NGS(^1) &amp; response monitoring</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>One medicine fits all</th>
<th>Targeted agents</th>
<th>Personalized combos of targeted &amp; CIT(^2) agents</th>
</tr>
</thead>
</table>

\(^1\) Next generation sequencing; \(^2\) Cancer Immunotherapy; PHC=personalized healthcare
PHC 2.0: Ignyta’s entrectinib fits within our strategy*
Targeting mutations across different solid tumor types

Identify patients with targeted mutations

Entrectinib: Treat select patients across different tumors

FoundationOne & Roche Diagnostics support identification of rare tumor mutations

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1 NTRK=Neurotropic Tropomyosin Receptor Kinase 1, 2 and 3; ROS1: c-ros oncogene 1
2 LIS+ELIS Prevalence: ROS1 in solid tumors ~6000 patients and NTRK in solid tumors ~8000 patients (both mutations have prevalence of 0.5 – 1.5% in most solid tumors; 80% in MASC)

* The acquisition of Ignyta Inc. by Roche Holdings Inc. is pending and is subject to customary closing conditions. The closing of the transaction is expected to take place in the first half of 2018.
PHC 2.0: Bridging advanced analytics to provide clinical decision support solutions for patients and physicians

In-vitro data

- Biomarkers
- Tissue pathology
- Genomics & sequencing

In-vivo data

- Medical imaging
- Patient monitoring

Digital platform & analytics

- Combined patient records
- Real-time data
- Best practices
- Research outcomes

Workflow solutions + apps

- Speed, accuracy, confidence

Clinical decision support

- Speed, accuracy, confidence

Data driven patient care

- Early diagnosis
- Early intervention
- Individualised treatment

Combine in-vitro and in-vivo expertise - complementary strategic partnership
Performance update

**Strategy and personalization of treatment**

**Portfolio rejuvenation**

**Productivity**

**Outlook**
Development activities across the portfolio
Growth through innovation

Growing the existing business by improving Standard of Care

- HER2: Sub-cut, Perjeta in eBC (APHINITY) and mBC; Kadcyla
- CD20: Sub-cut, Gazyva, Venclexta, polatuzumab vedotin, T-cell bispecifics
- Avastin: Tecentriq combo

Expanding the business through differentiated medicines

- Ocrevus: RMS, PPMS
- Alecensa: Alk+ lung cancer
- Hemlibra: Adult & pediatric inhibitor and non-inhibitor patients
  - Tecentriq: Lung, triple negative BC, RCC, CRC
  - Other: Programmes in ophthalmology, neuroscience etc.

RMS=relapsing forms of multiple sclerosis; PPMS=primary progressive multiple sclerosis; BC=breast cancer, CRC=colorectal cancer
APHINITY: Perjeta+Herceptin in HER2+ eBC

Early approved in the US

- Indicated for patients at high risk of recurrence (risk not specified on label), for one year (18 cycles) treatment
- Neoadjuvant treated patients should continue to receive Perjeta following surgery to complete 1 year of treatment

von Minckwitz et al, ASCO 2017; eBC=early breast cancer (adjuvant setting); HR=hormone receptor; * Target population for Herceptin in adjuvant breast cancer (US & EU5); current Herceptin penetration ~95%; Source: Datamonitor and internal estimates
Late-stage hematology: Improving the standard of care and extending into new indications

Incidence rates (330,000 pts\(^1\))

Ph III 1L (CLL14)
Ph III R/R (MURANO) + Venclexta in collaboration with AbbVie

Ph II R/R
Ph III 1L (POLARIX) + polatuzumab vedotin

1 Datamonitor; incidence rates includes the 7 major markets (US, Japan, France, Germany, Italy, Spain, UK); CLL=chronic lymphoid leukemia; DLBCL (aNHL)=diffuse large B-cell lymphoma; iNHL=indolent non-hodgkin’s lymphoma; AML=acute myeloid leukemia; MM=multiple myeloma; MDS=myelodysplastic syndrome; ALL=acute lymphoblastic leukemia; Venclexta in collaboration with AbbVie; Gazyva in collaboration with Biogen; Polatuzumab vedotin in collaboration with Seattle Genetics

\(^{1}\) Datamonitor; incidence rates includes the 7 major markets (US, Japan, France, Germany, Italy, Spain, UK); CLL=chronic lymphoid leukemia; DLBCL (aNHL)=diffuse large B-cell lymphoma; iNHL=indolent non-hodgkin’s lymphoma; AML=acute myeloid leukemia; MM=multiple myeloma; MDS=myelodysplastic syndrome; ALL=acute lymphoblastic leukemia; Venclexta in collaboration with AbbVie; Gazyva in collaboration with Biogen; Polatuzumab vedotin in collaboration with Seattle Genetics
Polatuzumab vedotin and Venclexta
Offering distinct benefit for patients

Polatuzumab vedotin¹
Phase II update in R/R DLBCL

- Break through therapy designation (BTD), EU PRIME designation
- Potential foundational component in all regimes treating B-cell malignancies

Venclexta²
Phase III MURANO interim results in R/R CLL

- Break through therapy designation (BTD)
- Programs in CLL, AML, NHL, MM

¹ Sehn L. H. et al., ASH 2017; ² Seymour J. et al., ASH 2017

DLBCL=diffuse large B-cell lymphoma; CLL=chronic lymphoid leukemia; AML=acute myeloid leukemia; NHL=non-hodgkin’s lymphoma; MM=multiple myeloma; PRIME=Priority Medicines
Development activities across the portfolio

Growth through innovation

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RMS=relapsing forms of multiple sclerosis; PPMS=primary progressive multiple sclerosis; BC=breast cancer, CRC=colorectal cancer
Ocrevus with excellent launch in all treatment lines in RMS and PPMS, positive CHMP opinion

- Continued strong uptake in RMS and PPMS (60/40)
- Broad base of prescribers and high level of US insurance coverage

RMS=relapsing forms of multiple sclerosis; PPMS=primary progressive multiple sclerosis
Hemlibra now approved in hemophilia A with factor VIII inhibitors
US approval 3 months prior to PDUFA date

FDA approval Nov 2017
3 months prior to PDUFA date

- No age limitation on label
- First treatment in hemophilia to compare to prophylaxis
- Statistically significant quality-of-life improvement incl. in label¹

HAVEN 1 Adult/adolescent inhibitor, QW dosing
Approved in US, updated data presented at ASH, data currently under review by EMA (accelerated assessment)

HAVEN 2 Pediatric inhibitor, QW dosing
Approved in US, updated data presented at ASH, data currently under review by EMA (accelerated assessment)

HAVEN 3 Non-inhibitor, QW/Q2W dosing
Trial met primary endpoint and key secondary endpoints ✔

HAVEN 4 Inhibitor/Non-inhibitor Q4W dosing
Positive interim results ✔

¹ Physical Health Score of the Hemophilia-specific Quality of Life Score
Tecentriq / Cancer Immunotherapy (CIT)

* Catching up and taking the lead*

**Wave 1: Rapid launch**

- Fast-to-Market strategy in lung and bladder monotherapy

**Wave 2: Lead in key indications**

- Expand benefitting populations by combining with currently available therapies

**Wave 3: Transformative Leadership**

- Differentiate CIT portfolio through Tecentriq + NME-based combos
Tecentriq Wave 2: IMpower150 - PFS statistically significant & clinically meaningful in both ITT-WT and Teff-WT

<table>
<thead>
<tr>
<th>Subgroup (% of enrolled patients)</th>
<th>Median PFS, mos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arm B</td>
</tr>
<tr>
<td>ITT (incl EGFR/ALK mutant +) (100%)</td>
<td>8.3</td>
</tr>
<tr>
<td>EGFR/ALK mutant+ onlyb (14%)</td>
<td>9.7</td>
</tr>
<tr>
<td>ITT-WT (87%)</td>
<td>8.3</td>
</tr>
<tr>
<td>Teff-high WT (43%)</td>
<td></td>
</tr>
<tr>
<td>Teff-low WT (57%)</td>
<td></td>
</tr>
<tr>
<td>TC2/3 or IC2/3 (35%)</td>
<td></td>
</tr>
<tr>
<td>TC1/2/3 or IC1/2/3 (51%)</td>
<td></td>
</tr>
<tr>
<td>TC0 and IC0 (49%)</td>
<td></td>
</tr>
<tr>
<td>TC3 or IC3 (20%)</td>
<td></td>
</tr>
<tr>
<td>TC0/1/2 or IC0/1/2 (80%)</td>
<td></td>
</tr>
</tbody>
</table>

M. Reck et al., ESMO 2017: IC=tumour-infiltrating immune cells; TC=tumour cells; Teff=T-effector (as defined by expression of PD-L1, CXCL9 and IFNγ); CP=carboplatin and paclitaxel

*In favor of Arm B: Tecentriq+Avastin+CP

Tecentriq + Avastin + chemo combo adds benefit in all pre-defined biomarker subgroups

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## Tecentriq Wave 2: Comprehensive program for fragmented NSCLC space

<table>
<thead>
<tr>
<th>Regimen</th>
<th>1L sq NSCLC</th>
<th>1L non-sq NSCLC</th>
<th>Questions addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tecentriq monotherapy (PD-L1 selected)</td>
<td></td>
<td></td>
<td>The role of <strong>monotherapy</strong> in PD-L1 high patients (~25%)</td>
</tr>
<tr>
<td>Tecentriq + Avastin + Carboplatin + Paclitaxel</td>
<td></td>
<td>✔ (PFS)</td>
<td><strong>Avastin</strong> adding benefit</td>
</tr>
<tr>
<td>Tecentriq + Carboplatin + Paclitaxel</td>
<td></td>
<td></td>
<td>The role of <strong>carbo/pac</strong></td>
</tr>
<tr>
<td>Tecentriq + Carboplatin + Nab-paclitaxel</td>
<td></td>
<td></td>
<td>Impact of <strong>steroid use</strong></td>
</tr>
<tr>
<td>Tecentriq + Carboplatin/cisplatin + pemetrexed</td>
<td></td>
<td></td>
<td>Large trial to investigate real efficacy of <strong>pemetrexed</strong> backbone</td>
</tr>
</tbody>
</table>

NSCLC = non-small cell lung cancer; sq = squamous; non-sq = non-squamous
## Tecentriq Wave 2: Aiming to set new standards of care

### Lung
- Most comprehensive lung cancer program addressing all common backbones
- 5 trials in non-squamous, squamous & small cell lung cancer
  - **IMpower150**

### GU
- Among the leaders in renal cancer
  - **1L RCC**
  - **IMmotion151**

### Breast
- First-in-class in triple negative breast cancer
  - **1L TNBC**

### CRC
- First-in-class in colorectal cancer
  - **2/3L CRC**

### Readouts:
(Q4 17 to Q2 18)
Performance update

Strategy and personalization of treatment

Portfolio rejuvenation

Productivity

Outlook
Continuing to evolve our operating model

**Build an effective organization for the future**

- **R&D**
  - pRED/gRED: Fixed budgets
  - Development: Process optimization (speed) and strict prioritization

- **Manufacturing, Procurement, Corporate**
  - Shift from small to large molecule capacity
  - Shared Service Centers: Kuala Lumpur (Asia), Budapest (EU), Puerto Rico (US)
  - Other: Productivity initiatives, including procurement

- **Marketing / Sales**
  - Resource shift to support key launches
  - Commercial productivity program
Performance update

Strategy and personalization of treatment

Portfolio rejuvenation

Productivity

Outlook
Strong news-flow ahead: Broad late-stage pipeline across therapeutic areas

<table>
<thead>
<tr>
<th>Year</th>
<th>Oncology</th>
<th>Ophthalmology</th>
<th>Neuroscience</th>
<th>Immunology</th>
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<tbody>
<tr>
<td>2012</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
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<tr>
<td>2014</td>
<td>2</td>
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<td>21</td>
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<tr>
<td>2015</td>
<td>5</td>
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<td>1</td>
<td>33</td>
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<tr>
<td>2016</td>
<td>5</td>
<td>1</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>4</td>
<td>1</td>
<td>31</td>
<td></td>
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### 2017 outlook raised at HY

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td><strong>Group sales growth</strong></td>
<td>Mid-single digit</td>
</tr>
<tr>
<td><strong>Core EPS growth</strong></td>
<td>Broadly in line with 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