Science, patient benefits and productivity

Alan Hippe, CFO

J.P. Morgan, January 2018
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6. increased government pricing pressures;
7. interruptions in production;
8. loss of or inability to obtain adequate protection for intellectual property rights;
9. litigation;
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11. adverse publicity and news coverage.

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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

- 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

- **Q2 16**
  - IMvigor210
  - GALLIUM
  - J-ALEX
  - GiACTA

- **Q3 16**
  - OAK

- **Q4 16**
  - APHINITY

- **Q1 17**
  - ALEX
  - HAVEN 1 and 2

- **Q2 17**
  - MURANO

- **Q3 17**
  - 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>

Phase duration (years):

- No = 7.5
- Fast track = 5.8
- Accelerated review = 3.8
- Breakthrough therapy = 3.6

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></th>
<th>Pre-PHC</th>
<th>PHC 1.0</th>
<th>PHC 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target population</strong></td>
<td>Large: unspecified</td>
<td>Medium: sub-group</td>
<td>Small: individual patient</td>
</tr>
<tr>
<td><strong>Diagnostics</strong></td>
<td>No specific biomarkers</td>
<td>Single disease marker</td>
<td>Comprehensive NGS(^1) &amp; response monitoring</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td>One medicine fits all</td>
<td>Targeted agents</td>
<td>Personalized combos of targeted &amp; CIT(^2) agents</td>
</tr>
</tbody>
</table>

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\(^1\) 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

1 NTRK=Neurotropic Tropomyosin Receptor Kinase 1, 2 and 3; ROS1: c-ros oncogene 1
2 US+EU5 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

Roche

Biomarkers
Tissue pathology
Genomics & sequencing

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

In-vivo data

MedGen

Medical imaging
Patient monitoring

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

Priority review – approval 21 Dec 2017 - one month prior to PDUFA date
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)**

**Ph II R/R**

**Ph III 1L (POLARIX)**

\[\text{Incidence rates (330,000 pts\(^1\))}\]

<table>
<thead>
<tr>
<th>Condition</th>
<th>Incidence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLL</td>
<td>13%</td>
</tr>
<tr>
<td>DLBCL</td>
<td>14%</td>
</tr>
<tr>
<td>MDS</td>
<td>7%</td>
</tr>
<tr>
<td>MM</td>
<td>17%</td>
</tr>
<tr>
<td>ALL</td>
<td>3%</td>
</tr>
<tr>
<td>iNHL</td>
<td>37%</td>
</tr>
<tr>
<td>AML</td>
<td>9%</td>
</tr>
</tbody>
</table>

\(^1\) 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

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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

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 bispecific
- 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.
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
Hemlibra now approved in hemophilia A with factor VIII inhibitors
US approval 3 months prior to PDUFA date

<table>
<thead>
<tr>
<th>FDA approval Nov 2017 3 months prior to PDUFA date</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>HAVEN 1 Adult/adolescent inhibitor, QW dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved in US, updated data presented at ASH, data currently under review by EMA (accelerated assessment)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HAVEN 2 Pediatric inhibitor, QW dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved in US, updated data presented at ASH, data currently under review by EMA (accelerated assessment)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HAVEN 3 Non-inhibitor, QW/Q2W dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial met primary endpoint and key secondary endpoints ✔</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HAVEN 4 Inhibitor/Non-inhibitor Q4W dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive interim results ✔</td>
</tr>
</tbody>
</table>

1 Physical Health Score of the Hemophilia-specific Quality of Life Score
Differentiate CIT portfolio through Tecentriq + NME-based combos

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>11.3</td>
</tr>
<tr>
<td>Teff-low WT (57%)</td>
<td>7.3</td>
</tr>
<tr>
<td>TC2/3 or IC2/3 (35%)</td>
<td>11.1</td>
</tr>
<tr>
<td>TC1/2/3 or IC1/2/3 (51%)</td>
<td>11.0</td>
</tr>
<tr>
<td>TC0 and IC0 (49%)</td>
<td>7.1</td>
</tr>
<tr>
<td>TC3 or IC3 (20%)</td>
<td>12.6</td>
</tr>
<tr>
<td>TC0/1/2 or IC0/1/2 (80%)</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Hazard Ratio<sup>c</sup>

- 0.25
- 1
- 1.25

Median PFS, mos

- In favor of Arm B: Tecentriq+Avastin+CP
- In favor of Arm C: Avastin+CP

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

<sup>a</sup>ITT, EGFR/ALK mutants, and ITT-WT % prevalence out of ITT (N=800); Teff % prevalence out of those tested in ITT-WT (N=658); PD-L1 IHC % prevalence out of ITT-WT (N=692).

<sup>b</sup>Patients with a sensitising EGFR mutation or ALK translocation must have disease progression or intolerance of treatment with one or more approved targeted therapies. <sup>c</sup>Stratified HRs for ITT, ITT-WT and Teff-high WT populations; unstratified HRs for all other subgroups. Data cutoff: September 15, 2017
## 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 monotherapy in PD-L1 high patients (~25%)</td>
</tr>
<tr>
<td>Tecentriq + Avastin + Carboplatin + Paclitaxel</td>
<td></td>
<td></td>
<td>Avastin adding benefit</td>
</tr>
<tr>
<td>Tecentriq + Carboplatin + Paclitaxel</td>
<td>IM power110</td>
<td></td>
<td>The role of carbo/pac</td>
</tr>
<tr>
<td>Tecentriq + Carboplatin + Nab-paclitaxel</td>
<td>IM power131</td>
<td></td>
<td>Impact of steroid use</td>
</tr>
<tr>
<td>Tecentriq + Carboplatin/cisplatin + pemetrexed</td>
<td>IM power132</td>
<td></td>
<td>Large trial to investigate real efficacy of pemetrexed 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

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

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Trials</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>Most comprehensive lung cancer program addressing all common backbones</td>
<td>5 trials in non-squamous, squamous &amp; small cell lung cancer</td>
<td>✔ IMpower150</td>
</tr>
<tr>
<td>GU</td>
<td>Among the leaders in renal cancer</td>
<td>1L RCC</td>
<td>✔ IMmotion151</td>
</tr>
<tr>
<td>Breast</td>
<td>First-in-class in triple negative breast cancer</td>
<td>1L TNBC</td>
<td></td>
</tr>
<tr>
<td>CRC</td>
<td>First-in-class in colorectal cancer</td>
<td>2/3L CRC</td>
<td></td>
</tr>
</tbody>
</table>
Performance update

Strategy and personalization of treatment

Portfolio rejuvenation

Productivity

Outlook
Continuing to evolve our operating model

Build an effective organization for the future

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

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

- Resource shift to support key launches
- Commercial productivity program
Performance update

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

<table>
<thead>
<tr>
<th>NMEs</th>
<th>Oncology</th>
<th>Ophthalmology</th>
<th>Neuroscience</th>
<th>Immunology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kadyla</td>
<td>Vencleixa</td>
<td>Cotellic</td>
<td>onartuzumab</td>
<td>gantenerumab</td>
</tr>
<tr>
<td>Erivedge</td>
<td>Cotellic</td>
<td>Gazyva</td>
<td>lampalizumab</td>
<td>gantenerumab</td>
</tr>
<tr>
<td>Perjeta</td>
<td>Cotellic</td>
<td>Gazyva</td>
<td>lampalizumab</td>
<td>gantenerumab</td>
</tr>
<tr>
<td>Cotellec</td>
<td>Gazyva</td>
<td>onartuzumab</td>
<td>gantenerumab</td>
<td>lebrikizumab</td>
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<tr>
<td>Gazyva</td>
<td>Ocrevus</td>
<td>bitopertin</td>
<td>satralizumab</td>
<td>etrolizumab</td>
</tr>
<tr>
<td>onartuzumab</td>
<td>Ocrevus</td>
<td>bitopertin</td>
<td>satralizumab</td>
<td>etrolizumab</td>
</tr>
<tr>
<td>Ocrevus</td>
<td>Ocrevus</td>
<td>satralizumab</td>
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<td>bitopertin</td>
<td>Ocrevus</td>
<td>satralizumab</td>
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<td>etrolizumab</td>
</tr>
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<td>lebrikizumab</td>
<td>Ocrevus</td>
<td>satralizumab</td>
<td>satralizumab</td>
<td>etrolizumab</td>
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<tr>
<td>oral octreotide</td>
<td>Ocrevus</td>
<td>satralizumab</td>
<td>satralizumab</td>
<td>etrolizumab</td>
</tr>
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<td>2012</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>19</td>
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<td>2013</td>
<td>4</td>
<td>20</td>
<td>21</td>
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</tr>
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<td>2014</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>5</td>
<td>27</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>5</td>
<td>1</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>4</td>
<td>1</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>
## 2017 outlook raised at HY

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group sales growth¹</td>
<td>Mid-single digit</td>
</tr>
<tr>
<td>Core EPS growth¹</td>
<td>Broadly in line with sales growth</td>
</tr>
<tr>
<td>Dividend outlook</td>
<td>Further increase dividend in Swiss francs</td>
</tr>
</tbody>
</table>

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