Science, patient benefits and productivity

Daniel O’Day
CEO Pharmaceuticals

UBS Global Healthcare Conference, New York, May 2018
This presentation contains certain forward-looking statements. These forward-looking statements may be identified by words such as ‘believes’, ‘expects’, ‘anticipates’, ‘projects’, ‘intends’, ‘should’, ‘seeks’, ‘estimates’, ‘future’ or similar expressions or by discussion of, among other things, strategy, goals, plans or intentions. Various factors may cause actual results to differ materially in the future from those reflected in forward-looking statements contained in this presentation, among others:

1. pricing and product initiatives of competitors;
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
11. adverse publicity and news coverage.

Any statements regarding earnings per share growth is not a profit forecast and should not be interpreted to mean that Roche’s earnings or earnings per share for this year or any subsequent period will necessarily match or exceed the historical published earnings or earnings per share of Roche.

For marketed products discussed in this presentation, please see full prescribing information on our website – www.roche.com

All mentioned trademarks are legally protected
Performance update

Managing the transition - replace and extend

Digital / large data / PHC 2.0

Productivity

Outlook
Q1 2018: Sales growth for the sixth consecutive year

All growth rates at Constant Exchange Rates (CER)
2018: New products with annualized sales of >CHF 8bn*
> 80% of growth driven by new products

* Venclexta sales are booked by partner AbbVie.
Performance update

Managing the transition - replace and extend

Digital / large data / PHC 2.0

Productivity

Outlook
Replace and extend the business
Through continuously improving standard of care

### Replace existing businesses

<table>
<thead>
<tr>
<th>Product</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>MabThera</td>
<td>Gazyva, Venclexta, polatuzumab vedotin, Sub Cut</td>
</tr>
<tr>
<td>Herceptin</td>
<td>Perjeta, Kadcyla, Sub Cut</td>
</tr>
<tr>
<td>Avastin</td>
<td>Tecentriq, entrectinib</td>
</tr>
<tr>
<td>Lucentis</td>
<td>VA2, port delivery</td>
</tr>
<tr>
<td>Tamiflu</td>
<td>baloxavir (Cap Endo)</td>
</tr>
</tbody>
</table>

### Entering new franchises

<table>
<thead>
<tr>
<th>Franchise</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS: Ocrevus</td>
<td></td>
</tr>
<tr>
<td>Hemophilia: Hemlibra</td>
<td></td>
</tr>
<tr>
<td>CNS: SMA, Autism, Huntington’s</td>
<td></td>
</tr>
</tbody>
</table>

### Achievements Q1 2018

- **Perjeta**: Launched in eBC in US
- **Gazyva**: Launched in FL in US/EU
- **Hemlibra**: Launched in inh. patients in US/EU; BTD in non-inh.
- **Tecentriq**: IMpower150 with OS benefit
- **Venclexta**: Launched in 17p del; Filed in CLL R/R
- **baloxavir**: Filing initiated in US
- **entrectinib**: Acquisition of Ignyta completed
- **VA2**: Strong Ph2 data in DME

---

VA2=anti-VEGF/anti-angiopoietin-2 bispecific antibody; MS=multiple sclerosis; SMA=spinal muscular atrophy; eBC=early breast cancer; FL=follicular lymphoma; BTD=Breakthrough Therapy Designation; CLL R/R=relapsed/refractory (R/R) chronic lymphocytic leukemia; DME=diabetic macular edema
Replace and extend the hematology franchise: Improving standard of care, entering new indications

Incidence rates (330,000 pts)

Ph III 1L (CLL14) + Venclexta
Ph III R/R (MURANO) + Gazyva
Ph III R/R (BELLINI) + Polatuzumab vedotin
Ph II R/R (GO29365) + Polatuzumab vedotin
Ph III 1L (Viale-A) + Rituxan
Ph III 1L (Viale-C) + Rituxan
Idasanutlin + 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
Hematology franchise: Encouraging signs with new launches

**CD20 franchise**

- (-) MabThera (EU): Impacted by biosimilars (-43%), US: Biosimilars in H2 expected
- (+) Gazyva (EU/US): Launched in 1L FL (+27%)
- (+) Venclexta sales reached USD 59m (+179%)

**Major news flow 2018/2019**

- Gazyva: Final analysis in CLL 1st line
- Venclexta: US/EU approval in R/R CLL (MURANO), data in MM and AML
- Polatuzumab: Ph II data in R/R DLBCL to be shared with Health Authorities
- Idasanutlin: R/R AML

---

CER=Constant Exchange Rates; FL=follicular lymphoma; CLL=chronic lymphoid leukemia; BR=bendamustine+Rituxan; DLBCL=diffuse large B-cell lymphoma; * Venclexta sales are booked by partner AbbVie.
Hematology franchise: Venclexta - strong momentum

**Sales / performance:**
- Q1’2018 sales: USD 59m (+179% YOY Q1 growth)

**Upcoming milestones:**
- R/R CLL: MURANO data filed, priority review
- 1L unfit AML: Filing discussions under way
- R/R MM: BELLINI data in early 2019
- 1L unfit CLL: CLL14 data in early 2019

---

**All lines 17p(del)**

<table>
<thead>
<tr>
<th></th>
<th>Q2’17 (n=228)</th>
<th>Q3’17 (n=233)</th>
<th>Q4 ‘17 (n=179)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venclexta</td>
<td>38%</td>
<td>43%</td>
<td>52%</td>
</tr>
<tr>
<td>Ibrutinib cont.</td>
<td>14%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>Zydelig – cont.</td>
<td>39%</td>
<td>35%</td>
<td>29%</td>
</tr>
</tbody>
</table>

---

3SOURCE: Q1’18 Tracking, represents charts collected primarily in Q4 ‘17
Replace and extend breast cancer franchise: APHINITY new standard of care in Her2+ BC, potential new opportunities in TNBC
Replace and extend ophthalmology franchise: Address real-world efficacy gaps and reduce the treatment burden

Roche strategic focus

VA2: Improved efficacy via novel MOAs

Port delivery: Long-Acting Delivery technologies

Biomarkers for personalized healthcare and novel endpoints

Why long-acting matters

"Patients received a mean of 5.0 and 2.2 injections in the 1st and 2nd year, respectively. More frequent visits and injections were associated with greater improvements in visual acuity" F.G Holz, Br J Ophth, 2015

In US, also only ~5 injections in first year (wet AMD), even fewer in DME (2011-2014 US Marketscan data)

VA2 and long acting port delivery to address major medical needs
Ophthalmology franchise: Anti-VEGF/Ang2 biMAb in DME - Ph II results (BOULEVARD) with improved efficacy

- First bispecific antibody in ophthalmology: Engineered for improved pharmacokinetics and faster systemic clearance

- Characteristic DME pathology is retinal microvascular inflammation, ischemia, and breakdown of the blood-retinal barrier, resulting in leakage of fluid into the retina and vision loss

- Ang2 inhibition could improve blood-retinal barrier stability and reduce retinal vascular inflammation, contributing to an improved therapeutic benefit

DME = diabetic macular edema
Replace and extend the business
Through continuously improving standard of care

<table>
<thead>
<tr>
<th>Replace existing businesses</th>
<th>Entering new franchises</th>
</tr>
</thead>
<tbody>
<tr>
<td>MabThera</td>
<td></td>
</tr>
<tr>
<td>Herceptin</td>
<td>Gazyva, Venclexta, polatuzumab vedotin, Sub Cut</td>
</tr>
<tr>
<td>Avastin</td>
<td>Perjeta, Kadcyla, Sub Cut</td>
</tr>
<tr>
<td>Lucentis</td>
<td>Tecentriq, entrectinib</td>
</tr>
<tr>
<td>Tamiflu</td>
<td>VA2, port delivery</td>
</tr>
<tr>
<td></td>
<td>baloxavir (Cap Endo)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Achievements Q1 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perjeta: Launch in eBC in US</td>
</tr>
<tr>
<td>Gazyva: Launch in FL in US/EU</td>
</tr>
<tr>
<td>Hemlibra: Launch in inh. patients in US/EU; BTD in non-inh.</td>
</tr>
<tr>
<td>Tecentriq: IMpower150 with OS benefit</td>
</tr>
<tr>
<td>Venclexta: Launch in 17p del; Filed in CLL R/R</td>
</tr>
<tr>
<td>baloxavir: Filing initiated in US</td>
</tr>
<tr>
<td>entrectinib: Acquisition of Ignyta completed</td>
</tr>
<tr>
<td>VA2: Strong Ph2 data in DME</td>
</tr>
</tbody>
</table>

VA2=anti-VEGF/anti-angiopoietin-2 bispecific antibody; MS=multiple sclerosis; SMA=spinal muscular atrophy; eBC=early breast cancer; FL=follicular lymphoma; BTD=Breakthrough Therapy Designation; CLL R/R=relapsed/refractory (R/R) chronic lymphocytic leukemia; DME=diabetic macular edema
Extend current business base: Ocrevus

>7% US market share after three quarters

Source: IMS. Data may be restated as appropriate on a regular basis * NTB – New-to-Brand (includes naïve and switch patients)
Extend current business base: Alecensa

Market leadership in 1L ALK+ within first quarter of launch

- Updated PFS data at ASCO 2018

Note: *US Alecensa Share modified based on TBT (see Feb 2018 1L Launch Dashboard) Source: US Alecensa Key Metrics Tracker (Q4 2017), Feb 2018 1L Launch Dashboard
Extend current business base: Hemlibra
HAVEN 3 and 4 submitted to WFH

HAVEN 3 and 4 to be presented at WFH (Glasgow, May 20-24)
Hemlibra designated as Part B drug by CMS

BTD=breakthrough designation; WFH=world federation of hemophilia; CMS=centers for medicare & medicaid services
Extend and replace current business base: CIT 1L lung cancer program reading out in H1 2018

- **IMpower133**: (Tecentriq+cb+etoposide) PFS/OS
- **IMpower131**: (Tecentriq+cb+pac/nab-pac) PFS/OS (PFS)
- **IMpower132**: (Tecentriq+cp/cb+pem) PFS/OS
- **IMpower150**: (Tecentriq+cb/pac/-Avastin) PFS/OS (H1 2018) (PFS) (OS)

March 26: IMpower150 met co-primary OS endpoint at interim analysis
March 20: IMpower131 met co-primary PFS endpoint

Source: Datamonitor; incidence rates 7 major markets (US, Japan, France, Germany, Italy, Spain, UK); Note: Outcome studies are event driven, timelines may change;

1IMpower133 in extensive stage SCLC; CIT=cancer immunotherapy; cb=carboplatin; pac=paclitaxel; nab-pac=nab-paclitaxel (Abraxane); cp=cisplatin; pem=pemetrexed
Tecentriq in 1L non-squamous NSCLC
IMpower150: A unique opportunity in key subgroups

**PD-L1 status (SP142 and SP263) and Teff signatures**

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>n (%)^a</th>
<th>Median PFS, mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teff-high</td>
<td>284 (43%)</td>
<td>Arm B: 11.3; Arm C: 6.8</td>
</tr>
<tr>
<td>Teff-low</td>
<td>374 (57%)</td>
<td>Arm B: 7.3; Arm C: 7.0</td>
</tr>
<tr>
<td>PD-L1-High (TC3 or IC3)</td>
<td>135 (20%)</td>
<td>Arm B: 12.6; Arm C: 6.8</td>
</tr>
<tr>
<td>PD-L1-Low (TC1/2 or IC1/2)</td>
<td>224 (32%)</td>
<td>Arm B: 8.3; Arm C: 6.6</td>
</tr>
<tr>
<td>PD-L1-Negative (TC0 and IC0)</td>
<td>338 (49%)</td>
<td>Arm B: 7.1; Arm C: 6.9</td>
</tr>
<tr>
<td>ITT-WT</td>
<td>692 (100%)</td>
<td>Arm B: 8.3; Arm C: 6.8</td>
</tr>
</tbody>
</table>

**EGFR/ALK genetic alterations and liver metastases**

<table>
<thead>
<tr>
<th>Populations</th>
<th>n (%)^a</th>
<th>Median PFS, mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITT (including EGFR/ALK+)</td>
<td>800 (100%)</td>
<td>Arm B: 8.3; Arm C: 6.8</td>
</tr>
<tr>
<td>EGFR/ALK+ only^b</td>
<td>108 (14%)</td>
<td>Arm B: 8.7; Arm C: 6.1</td>
</tr>
<tr>
<td>ALK rearrangement^c</td>
<td>34 (31%)</td>
<td>Arm B: 8.3; Arm C: 5.9</td>
</tr>
<tr>
<td>EGFR mutation^d</td>
<td>80 (74%)</td>
<td>Arm B: 10.2; Arm C: 6.9</td>
</tr>
<tr>
<td>Exon 19 deletion or L858R^e</td>
<td>59 (74%)</td>
<td>Arm B: 10.2; Arm C: 6.1</td>
</tr>
<tr>
<td>ITT-WT</td>
<td>692 (87%)</td>
<td>Arm B: 8.3; Arm C: 6.8</td>
</tr>
<tr>
<td>Liver metastases</td>
<td>110 (14%)</td>
<td>Arm B: 8.2; Arm C: 5.4</td>
</tr>
<tr>
<td>No liver metastases</td>
<td>680 (86%)</td>
<td>Arm B: 8.3; Arm C: 7.0</td>
</tr>
</tbody>
</table>

• Clinically meaningful PFS benefit in ITT and key subgroups (EGFR/ALK+ and patients with liver metastases)
• PD(L)1 monotherapy has not shown significant benefit in 2L EGFR/ALK+ patients
• Tumors in patients with liver metastases are characterized by immune suppressive tumor environments, and they usually demonstrate poorer outcomes
• The observed efficacy in these key subgroups may be due to the addition of Avastin to Tecentriq

**FDA granted Priority Review with PDUFA Sep 5, 2018**

Kowanetz M, et al., AACR 2018; ITT=intent-to-treat; WT=wild type; mPFS=median progression free survival; TC=tumor cells; IC=immune cells
Performance update

Managing the transition - replace and extend

Digital / large data / PHC 2.0

Productivity

Outlook
Roche data insights leveraged along the value chain
*Foundation of future competitive differentiation*

- Smarter, more efficient R&D
- Improved access & personalised patient care

- Biological insights & target identification
- Efficient trial design & recruitment
- Improved regulatory & safety processes

- Comprehensive Dx & personalised treatment options
- Clinical decision support
- Value proof and reimbursement

Dx=Diagnostics
..creating direct & indirect value to our business

More effective R&D and more differentiated products

PHC=Personalized Healthcare
Examples for data insights along the value chain

**Kadcyla: Informing R&D decisions**

Characterizing NSCLC patients with HER2 mutations

Kadcyla arm added to BFAST NSCLC umbrella trial

**Alecensa: Real World data support reimbursement**

External control arm using RWD to supplement Alecensa single-arm trials

FH EMR data used in reimbursement discussions across many affiliates globally
Performance update

Managing the transition - replace and extend

Digital / large data / PHC 2.0

Productivity

Outlook
Roche: Productivity improvement initiatives

Examples from Corporate

**Business Process and ERP Vision**
- **ERP Template**
  - Speed & Flexibility
  - Productivity

**Global Shared Services**
- Setup of the SSC Americas in Costa Rica
- Evolution of the SSC APAC in Kuala Lumpur

**Automation & Artificial Intelligence**
- Manual
- Robotics Process Automation
- Machine Learning
- Artificial Intelligence
- End-to-End integrated systems
- Future State

**Evolution of automation**

Rethink how E2E processes should look like and implement new ERP Template (SAP S/4 HANA)

Simplify current setup into a regional service structure across Group, Pharma and Diagnostics

From manual work with transactional data to end-to-end integrated systems with fully integrated automation
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
- Shared Service Centers:
- Other: Productivity initiatives, including procurement

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

Managing the transition - replace and extend

Digital / large data / PHC 2.0

Productivity

Outlook
Record number of NMEs at pivotal stage

**Q1 entrants:** Anti-VEGF/Ang2 biMAb, entrectinib, baloxavir marboxil

<table>
<thead>
<tr>
<th>NMEs</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>Q1 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venclexta</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Alecensa</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tecentriq</td>
<td></td>
<td>27</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Cotellic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lampalizumab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>setralizumab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gantenerumab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ocrevus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lebrikizumab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>etrolizumab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **entrectinib**
- **pontuzumab vedotin**
- **ipatasertib**
- **Hemlibra**
- **idasanutlin**
- **taselisib**
- **anti-VEGF/Ang2 biMAb**
- **HTT-ASO**
- **SMN2 splicer**
- **balovaptan**
- **anti-myostatin adnectin**
- **crenezumab**
- **setralizumab**
- **gantenerumab**
- **baloxxvir marboxil**
- **etrolizumab**

NME=new molecular entities; For details on the indications and line extensions please consult the pipeline appendix. Cap Endonuclease inhibitor (baloxavir marboxil)
2018 outlook raised
From “stable to low single digit” to “low single digit”

<table>
<thead>
<tr>
<th>Group sales growth¹</th>
<th>• Low-single digit</th>
</tr>
</thead>
</table>
| Core EPS growth¹    | • Broadly in line with sales, excl. US tax reform benefit  
|                     | • High-single digit, incl. US tax reform benefit  |
| Dividend outlook    | • Further increase dividend in Swiss francs |
Doing now what patients need next