Innovation and value creation

Alan Hippe, CFO Roche Group

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6. increased government pricing pressures;
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Performance update

Extending leadership in Personalized Healthcare

Building pillars of growth

Summary
Roche Group sales: Continued growth for 3 yrs

All growth rates at Constant Exchange Rates (CER)
YTD Sept 2014: Sales of top 10 Pharma products

Oncology and immunology key therapeutic areas

CHFm

<table>
<thead>
<tr>
<th>Product</th>
<th>CHFm (YTD Sept 2014)</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herceptin</td>
<td>4,679</td>
<td>+21%</td>
</tr>
<tr>
<td>CD20</td>
<td>5,156</td>
<td>+3%</td>
</tr>
<tr>
<td>Avastin</td>
<td>4,749</td>
<td>+6%</td>
</tr>
<tr>
<td>Kadcyla</td>
<td>5,683</td>
<td></td>
</tr>
<tr>
<td>Perjeta</td>
<td>633</td>
<td></td>
</tr>
<tr>
<td>Lucentis</td>
<td>1,260</td>
<td>+5%</td>
</tr>
<tr>
<td>Tarceva</td>
<td>971</td>
<td>0%</td>
</tr>
<tr>
<td>Actemra</td>
<td>897</td>
<td>+24%</td>
</tr>
<tr>
<td>Pegasys</td>
<td>811</td>
<td>-17%</td>
</tr>
<tr>
<td>Xolair</td>
<td>701</td>
<td>+24%</td>
</tr>
<tr>
<td>Xeloda</td>
<td>623</td>
<td>-43%</td>
</tr>
<tr>
<td>CellCept</td>
<td>623</td>
<td>-4%</td>
</tr>
</tbody>
</table>

Note: HER2 franchise: Herceptin, Perjeta, Kadcyla; CD20 franchise: Mabthera, Gazyva/Gazyvaro
Growth rates represent YTD September 2014 vs. YTD September 2013 at CER
HY 2014: Increase in core operating profit & margin

<table>
<thead>
<tr>
<th>Year</th>
<th>Core Operating Profit (%)</th>
<th>Core Operating Margin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HY 2010</td>
<td>37.2%</td>
<td>37.2%</td>
</tr>
<tr>
<td>HY 2011</td>
<td>38.1%</td>
<td>38.1%</td>
</tr>
<tr>
<td>HY 2012</td>
<td>38.5%</td>
<td>38.5%</td>
</tr>
<tr>
<td>HY 2013</td>
<td>40.7%</td>
<td>40.7%</td>
</tr>
<tr>
<td>HY 2014</td>
<td>41.0%</td>
<td>41.0%</td>
</tr>
</tbody>
</table>

CER = Constant Exchange Rates
HY 2014: Operating free cash flow and margin further increased

- **Roche Group**
  - % of sales: 2012: 32.3%, 2013: 32.0%, 2014: 34.3%
  - CHFm increase: +11% (+6%)

- **Pharma Division**
  - % of sales: 2012: 38.5%, 2013: 38.7%, 2014: 41.6%
  - CHFm increase: +10% (+6%)

- **Diagnostics Division**
  - % of sales: 2012: 16.1%, 2013: 13.6%, 2014: 12.3%
  - CHFm increase: -0.4% (-10%)

1 CER=Constant Exchange Rates
Sales to cash conversion across the industry

1 FCF defined as Total Cash Flows from Operations – Capex. Absolute figures converted to CHF based on average annual FX rates for 2013.

2 2013A FCF as % 2013A sales
Performance update

Extending leadership in Personalized Healthcare

Building pillars of growth

Summary
Roche strategy: Focused on medically differentiated therapies

Regulators: Optimised benefit / risk ratio
Payors: Optimised benefit / cost ratio
Leveraging our unique strength in PHC
Enabling better differentiated therapies

Personalized Healthcare in Pharma
achieving differentiated therapies

Diagnostics

PHC

Pharma

Healthcare IT

Lampalizumab
Geographic Atrophy

Lebrikizumab
Asthma

PD-L1
Cancer Immunotherapy

Etrolizumab
Ulcerative Colitis
Healthcare IT impacting R&D and patient care

Applications relevant across Pharma value chain

Clinical trial data and R&D data tracked

Smarter, more efficient R&D

Database & Analytics interface

Clinical routine data and other data tracked

Better patient care

New R&D hypotheses generated

Evidence-based treatment options outlined

Patients matched to clinical trials

Treatment plan selected
Roche and FMI can innovate together
Cancer immunotherapy and continuous monitoring
key areas for collaboration

**Future**
Multiplex assays and Monitoring

**Example: Lung Cancer**

**Comprehensive tumor analysis…**
*Multiple modalities required including:*

- DNA & RNA sequencing
- Protein expression – Multiplex IHC

**…and continuous monitoring**

Blood + Imaging

Key innovations that Roche and FMI can develop together:

1. RNA-based Immunotherapy test
2. Continuous monitoring of tumor specific molecular alterations in blood
### Roche in cancer immunotherapy

**Extensive program in monotherapy and combinations**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Combination</th>
<th>Indication</th>
<th>Ph 1</th>
<th>Ph 2</th>
<th>Ph 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-L1</td>
<td>Mono</td>
<td>Lung</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>+ Tarceva</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD-L1</td>
<td>Mono</td>
<td>Bladder</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PD-L1</td>
<td>Mono</td>
<td>Renal</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Avastin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD-L1</td>
<td>+ Zelboraf</td>
<td>Melanoma</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD-L1</td>
<td>Mono</td>
<td>Solid tumors</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Avastin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ cobimetinib</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ ipilimumab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ IFN alfa-2b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD-L1</td>
<td>+ Avastin + FOLFOX</td>
<td>Colorectal</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD-L1</td>
<td>Mono</td>
<td>Hematology</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Gazyva</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD-L1</td>
<td>Mono</td>
<td>TNBC</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSF1R</td>
<td>Mono</td>
<td>Solid tumors</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ PDL1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ CD40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEA IL-2v</td>
<td>Mono</td>
<td>Solid tumors</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OX-40</td>
<td>Mono</td>
<td>Solid tumors</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD-40</td>
<td>Mono</td>
<td>Solid tumors</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNA vaccine</td>
<td>Mono</td>
<td>Prostate</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDO</td>
<td>Mono / combo</td>
<td>Various</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- ✓ Study ongoing
- ✓ Study planned/imminent
Summary of R&D collaboration

Enabling personalized healthcare for patients

Roche/FMI collaboration

What we aim to achieve together

Key initial areas for collaboration

- Cancer Immunotherapy test
- Continuous monitoring test

Brings together expertise needed to innovate for patients

- Roche a leader in PHC/companion diagnostics across modalities
- FMI a leader in comprehensive genomic profile development and molecular information
Performance update

Extending leadership in Personalized Healthcare

Building pillars of growth

- Cancer immunotherapy
- Hematology/Hemophilia
- Immunology

Summary
Roche oncology: Continued sales growth
A portfolio of differentiated medicines

Sales at 2013 exchange rates
Roche cancer immunotherapy pipeline
A leading portfolio for combinations in-house

Costimulatory antibodies
Anti-OX40 (agonist)

Vaccines
Anti-CD40 (agonist)

Priming and activation
Anti-CTLA4
Anti-CD137 (agonist)
Anti-OX40 (agonist)
Anti-CD27 (agonist)
IL-2
IL-12

Cancer antigen presentation
Vaccines
IFN-α
GM-CSF
Anti-CD40 (agonist)
TLR agonists

Release of cancer cell antigens
Chemotherapy
Radiation therapy
Targeted therapy

Trafficking of T cells to tumours

Infiltration of T cells into tumours
Anti-VEGF

Recognition of cancer cells by T cells
CARs

Killing of cancer cells
Anti-PD-L1
Anti-PD-1
IDO inhibitors

Tumour-targeted cytokine
Anti-CEA-IL-2v

Avastin

T cell engagers

CSF-1R
Macrophages (M2)

Checkpoint Inhibitors
Anti-PDL1
IDOi

T-cell Survival and growth signals

Adapted from Chen & Mellman, Immunity 39, p1 (2013)
Cancer immunotherapy: Enable and increase eligibility through combinations

Increase eligible tumour types

Lung  Bladder  Renal  Melanoma  TNBC  Head & Neck  Hematology  Solid tumours

4L/3L  2L  1L  adjuvant

Increase eligible patient population

Likely monotherapy

Likely combinations
Anti-PDL1 (MPDL 3280A) in bladder cancer
Confirming strength in cancer immunotherapy

<table>
<thead>
<tr>
<th>PD-L1 IHC (n)</th>
<th>ORR (95% CI)</th>
<th>Dx+ vs Dx- ORR (95% CI)</th>
<th>Median PFS (range), weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHC 3 (n=10)</td>
<td>60% (27-85)</td>
<td>52% (34-69)</td>
<td>Not reached (5 to 48+)</td>
</tr>
<tr>
<td>IHC 2 (n=23)</td>
<td>48% (27-68)</td>
<td></td>
<td>24 (5 to 50+)</td>
</tr>
<tr>
<td>IHC 1 (n=24)</td>
<td>17% (6-37)</td>
<td>14% (6-28)</td>
<td>11 (0.1+ to 30+)</td>
</tr>
<tr>
<td>IHC 0 (n=12)</td>
<td>8% (0-35)</td>
<td></td>
<td>7 (5 to 24+)</td>
</tr>
</tbody>
</table>

**Bladder cancer: No new therapies since 30 y**

Anti-PDL1 is listed as MPDL3280A in clinicaltrials.gov. Diagnostic PD-L1-positive: IHC 2 (≥ 5% but < 10% ICs); IHC 3 (≥ 10%), PD-L1 negative: IHC 0 (< 1% of ICs) and IHC 1 (≥ 1% but < 5%).
Anti-PDL1 (MPDL 3280A) in Triple Negative BC
Clinical responses in high unmet medical need

<table>
<thead>
<tr>
<th>PD-L1 IHC (n)</th>
<th>ORR (95% CI)</th>
<th>Dx+ vs Dx- ORR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHC 3 (n=6)</td>
<td>17% (1,60)</td>
<td></td>
</tr>
<tr>
<td>IHC 2 (n=3)</td>
<td>67% (14,98)</td>
<td>33% (10,70)</td>
</tr>
<tr>
<td>IHC 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IHC 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Poor prognosis relative to patients with other breast cancer subtypes
- No approved targeted treatment options for TNBC (in US) - chemo remains a mainstay of treatment
- Broad set of data at AACR 2015

All data from: Leisha A. et all, San Antonio Breast cancer Symposium, Dec 2014; Anti-PDL1 is listed as MPDL3280A in clinicaltrials.gov. Diagnostic PD-L1-positive: IHC 2 (≥ 5% but < 10% ICs); IHC 3 (≥ 10%). PD-L1 negative: IHC 0 (< 1% of ICs) and IHC 1 (≥ 1% but < 5%).
Roche Hematology pipeline

Broad range of indications and approaches

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bcl-2 inh (GDC 199) + Gazyva</td>
<td>Bcl-2 inh (GDC 199)</td>
<td>Gazyva</td>
</tr>
<tr>
<td>CLL</td>
<td>CLL R/R 17p del</td>
<td>DLBCL</td>
</tr>
<tr>
<td><strong>Bcl-2 inh (GDC 199)</strong></td>
<td><strong>Erivedge</strong></td>
<td><strong>Gazyva</strong></td>
</tr>
<tr>
<td><strong>NHL</strong></td>
<td><strong>AML</strong></td>
<td><strong>iNHL relapsed</strong></td>
</tr>
<tr>
<td><strong>Bcl-2 inh (GDC 199)</strong></td>
<td><strong>polatuzumab ved. (CD 79b)</strong></td>
<td><strong>Gazyva</strong></td>
</tr>
<tr>
<td><strong>AML</strong></td>
<td><strong>NHL</strong></td>
<td><strong>iNHL front-line</strong></td>
</tr>
<tr>
<td><strong>Bcl-2 inh (GDC 199)</strong></td>
<td><strong>pinatuzumab ved. (CD22)</strong></td>
<td><strong>Bcl-2 inh. (GDC 199)</strong></td>
</tr>
<tr>
<td><strong>Multiple myeloma</strong></td>
<td><strong>NHL</strong></td>
<td><strong>CLL R/R</strong></td>
</tr>
<tr>
<td><strong>LSD1 inh (RG6016)</strong></td>
<td><strong>Mdm2 (RG738)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>AML</strong></td>
<td><strong>AML</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MDM2 (RG738)</strong></td>
<td><strong>ADC (RG7598)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>AML</strong></td>
<td><strong>multiple myeloma</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ADC (RG7598)</strong></td>
<td><strong>Chk1 inh (RG7741)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>multiple myeloma</strong></td>
<td><strong>lymphoma</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chk1 inh (RG7741)</strong></td>
<td><strong>RG 7845</strong></td>
<td></td>
</tr>
<tr>
<td><strong>lymphoma</strong></td>
<td><strong>heme tumors</strong></td>
<td></td>
</tr>
<tr>
<td><strong>RG 7845</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Registration

<table>
<thead>
<tr>
<th>Gazyva¹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLL</strong></td>
</tr>
</tbody>
</table>

¹ Approved in US, submitted in EU
ACE 910 in Hemophilia

FVIIIa mimetic bispecific antibody

A novel approach supporting the interaction between FIXa and FX, thereby promoting FX activation and acceleration of coagulation

ACE 910 in Hemophilia
Clinical data support further development

<table>
<thead>
<tr>
<th>Cohort (N=6 per cohort)</th>
<th>N</th>
<th>Median ABR reduction (range)</th>
<th>Mean ABR</th>
<th>Nr of pts with “zero” bleeds</th>
<th>Thromboembolic events</th>
<th>Systemic hypersensitivity reactions</th>
<th>Neutralizing ADAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 (0.3 mg/kg)</td>
<td>2 (no inh)</td>
<td>23%–100% 65%–100%</td>
<td>13.5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4 (FVIII inh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2 (1 mg/kg)</td>
<td>2 (no inh)</td>
<td>100% 89%–100%</td>
<td>0.7</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4 (FVIII inh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3 (3 mg/kg)</td>
<td>3 (no inh)</td>
<td>0%*–100% 100%</td>
<td>0.7</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3 (FVIII inh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Efficacy**

**Safety**

**Expected features**

- Subcutaneous, low dosing frequency
- Effective in patients irrespective of the presence of FVIII inhibitors

*One patient did not report bleeding episodes at baseline nor during the conduct of this study*
Lampalizumab: Pivotal phase 3 started

- **CHROMA & SPECTRI**: 2 identical, randomized studies (c.940 pts each)
  - Primary endpoint: Reduction in the rate of GA\(^1\) disease progression
- **Phase 2 (MAHALO)**: Showed high efficacy in subpopulation with exploratory biomarker

**Geographic Atrophy**

GA is a progressive, irreversible & blinding disorder

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\(^1\) Geographic Atrophy
Performance update

Extending leadership in Personalized Healthcare

Building pillars of growth

Summary
Roche: A pipeline of distinct products

**Oncology**
- Avastin
- Rituxan/MabThera
- Herceptin
- Xeloda
- Tarceva
- Zelboraf
- Erivedge
- Perjeta
- Kadcyla
- Gazyva/Gazyvaro

**Immunology/Ophthalmology**
- Esbriet
- Pulmozyme
- Xolair
- Actemra/RoActemra
- Lucentis
- Rituxan/MabThera RA

**Neuroscience**
- lebrikizumab
- etrolizumab
- lampalizumab
- ocrelizumab
- gantenerumab
- ocrelizumab
- gantenerumab

1. Phase III decision pending; 2. FPI in 1H 2014; 3. FPI in 2H 2014
## 2015: News flow

**Impact on current business**

<table>
<thead>
<tr>
<th>Action</th>
<th>Impact / Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace CD20 franchise</td>
<td>Gazyva (aggressive and indolent NHL)</td>
</tr>
<tr>
<td>Expand cancer immunotherapy</td>
<td>PD-L1: Renal, Lung, Bladder, Triple Negative BC Combos: OX 40, CD40, IL2, CSF1R, IDOi</td>
</tr>
<tr>
<td>Launch recent approvals</td>
<td>Esbriet: Approved in US, Japan and Europe</td>
</tr>
<tr>
<td>Diversify into CNS</td>
<td>Ocrelizumab in Multiple Sclerosis</td>
</tr>
<tr>
<td>Diversify into Hemophilia</td>
<td>ACE910: start pivotal trials</td>
</tr>
</tbody>
</table>
2014 Outlook

- **Group sales growth**\(^1\):
  - Low- to mid-single digit

- **Core EPS growth**\(^1\):
  - Ahead of sales growth

- **Dividend outlook**:
  - Further increase dividend

\(^1\)At constant exchange rates
Doing now what patients need next
Development of an immunotherapy test
FMI and Roche bring key capabilities together

Roche/FMI collaboration:
• Comprehensive RNA – based immunotherapy test to be jointly developed
• FMI: expertise in sequencing test development
• Roche: immunotherapy breadth and scientific know-how

Together: Ability to bridge science and the clinic for patients

Adapted from Chen & Mellman, Immunity 39, p1 (2013).