Sandoz Division

Richard Francis – Global Head and CEO, Sandoz

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Executive summary

Sandoz

• Is a full-service generics provider with leading positions in biosimilars\(^1\), anti-infectives, dermatology, and transplant / immunosuppressants

• Is driving the business with the goal to have growth with margin expansion

• Has a broad range of development capabilities and is pushing forward on new differentiated generics

• Has high quality products and expects to benefit from increased scale in moving towards one manufacturing organization with Novartis

• Is the industry leader in biosimilars, based on product portfolio, pipeline, capabilities and expertise, having launched the first biosimilar in US under the new regulatory pathway

\(^1\) In the combined regions of North America, Europe, Japan and Australia
Agenda

Sandoz overview

Sandoz 6 key priorities
Sandoz is a full-service generics provider, well positioned within the Novartis enterprise

Discovering new ways to improve and extend people’s lives. We pioneer novel approaches to help people around the world access high-quality medicine. This is how we contribute to improving society’s ability to support growing healthcare needs.

- \(~27,000\) Employees worldwide
- \(~160\) Countries in which Sandoz products are sold
- \(>1100\) Large portfolio of compounds

Driving focus to key markets that count.
Sandoz is a global leader in generics

Top generics companies, 2015 sales
USD million

1 Individual company annual and quarterly reports. Pro forma by including all acquired companies; figures reflect sales for generics and OTC only, including API and excluding originator (e.g. Copaxone®) and proprietary business (e.g. Women’s Health). Sandoz 2015 figures exclude Mature Brands. All trademarks, logos and pictures are the property of the respective owners.
Sandoz continues to lead on multiple fronts

<table>
<thead>
<tr>
<th>Therapeutic Areas</th>
<th>Geographies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandoz is #1 and the leader in</td>
<td>Sandoz leads in key markets</td>
</tr>
<tr>
<td>• Biosimilars&lt;sup&gt;1&lt;/sup&gt;</td>
<td>• #1 in Germany</td>
</tr>
<tr>
<td>• Anti-Infectives&lt;sup&gt;2&lt;/sup&gt;</td>
<td>• #2 in Russia</td>
</tr>
<tr>
<td>• Dermatology&lt;sup&gt;2&lt;/sup&gt;</td>
<td>• #3 in US</td>
</tr>
<tr>
<td>• Transplant / Immunosuppressants&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Leadership in prioritized geographies</td>
</tr>
</tbody>
</table>

Unique experience and knowledge

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<sup>1</sup> In the combined regions of North America, Europe, Japan and Australia

<sup>2</sup> #1 in Gx market by volume
Agenda

- Sandoz overview
- Sandoz 6 key priorities
Sandoz is focused on 6 key priorities to ensure growth with margin improvement

1. Geographic Focus
2. Patients, People & Collaboration
3. Sustainable Growth
4. D&R / BD&L
5. Tech Ops & Quality
6. Biosimilars
Industry trends reinforce Sandoz choice of priorities

Industry Trends

1. Ensure customer focus/brand management
2. Drive geographic focus
3. Targeted portfolio expansion and “value-added” meds
4. Focus on supply, cost and quality
5. Continuous differentiated new launch pipeline
6. Capitalize on the biosimilar opportunity

What we are focusing on at Sandoz

1. Leveraging breadth of Novartis capabilities to build a compelling customer value proposition
2. Focusing on markets that count, now and in future. Making strategic choices to streamline the organization
3. Confirming future TA and value-added drivers to build a competitive and differentiated portfolio
4. Optimizing manufacturing network to step-change supply reliability, quality and competitiveness
5. Revamping our New Launch engine to fuel future growth. Building proactive BD, M&A and strategic partnerships
6. Reinforcing our #1 market position. Building our best-in-class pipeline. Driving continued double-digit growth
Driving focus by exiting low margin businesses:
• Ongoing commercial exit in Indonesia
• “Fine-tuned” model: India, Pakistan and Portugal

Targeting resources and delivering growth in our 2 critical segments:

**Priority Focus markets**
Significant part of our existing and future business

**Priority Growth markets**
Significant market opportunity and absolute growth top and bottom line

Increasing geographic focus with constant fine-tuning of market models
Priority Focus markets: Building leading and sustainable presence in markets that count

<table>
<thead>
<tr>
<th>Market</th>
<th>Market Performance</th>
<th>Portfolio</th>
<th>Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>#3 in the market</td>
<td>1st biosimilar&lt;sup&gt;2&lt;/sup&gt;</td>
<td>4 → 3 Manufacturing sites</td>
</tr>
<tr>
<td></td>
<td>7.2% TRx share</td>
<td>Broad portfolio</td>
<td>Broomfield</td>
</tr>
<tr>
<td></td>
<td>+10% vs. PY FY 2015 growth</td>
<td>Innovative gx</td>
<td>Fougera&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>+4.4% vs. PY TRx growth FY 2015&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td>Wilson</td>
</tr>
<tr>
<td>GERMANY</td>
<td>#1 &amp; #2 in the market</td>
<td>Biosimilars</td>
<td>6 → 4 Optimized network&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>+5% vs. PY FY 2015 growth – Return to Growth</td>
<td>Specialty</td>
<td>Barleben</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OTC</td>
<td>Holzkirchen</td>
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<tr>
<td></td>
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<td>Broad portfolio</td>
<td>Rudolstadt</td>
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<td></td>
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<td>Osterweddingen</td>
</tr>
<tr>
<td>RUSSIA</td>
<td>#2 in the market</td>
<td>Biosimilars</td>
<td>1 Manufacturing site – anticipating future market needs</td>
</tr>
<tr>
<td></td>
<td>-2% vs. PY FY 2015 despite macroeconomic challenges</td>
<td>Rx</td>
<td>St. Petersburg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OTC</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> Source: IMS NPA TRx – MAT Dec 2015, Generics only
<sup>2</sup> Under new regulatory pathway
<sup>3</sup> Melville/Hicksville consolidation as per US trade release on March 7 with aim to complete by 2020
<sup>4</sup> Frankfurt divestment completed. Gerlingen site to be closed by end of 2016
Priority Growth markets: Growing presence to capture future opportunities

<table>
<thead>
<tr>
<th>Market</th>
<th>Market Performance¹</th>
<th>Market opportunity²</th>
<th>Portfolio</th>
<th>Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1 2016 net sales growth vs. PY in % cc</td>
<td>2020 Gross Gx Market USD billion, % 2016-20 CAGR</td>
<td>Plans to expand our portfolio in key Priority Growth markets</td>
<td></td>
</tr>
<tr>
<td>CHINA</td>
<td>11%</td>
<td>101 7%</td>
<td>Mature brands</td>
<td>1 Manufacturing site</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Expanding portfolio</td>
<td>Zhongshan</td>
</tr>
<tr>
<td>TURKEY</td>
<td>29%</td>
<td>15 5.4%</td>
<td>Mature brands</td>
<td>3 Manufacturing sites</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Expanding portfolio</td>
<td>Gebze 1</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>Gebze 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tuzla</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>18%</td>
<td>2 9.9%</td>
<td>Mature brands</td>
<td>1 Manufacturing site</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Expanding portfolio</td>
<td>Cambé</td>
</tr>
</tbody>
</table>

¹ Select Priority Growth markets (including Mature Products): Q1 2016 net sales, growth vs. PY (in % cc)
² IMS; Market Prognosis, converted to USD Sanoz methodology
Portfolio priorities: Continue to fuel further growth through growth drivers

<table>
<thead>
<tr>
<th>Sandoz growth drivers</th>
<th>BIOPHARMA</th>
<th>OTC</th>
<th>ONCOLOGY INJECT</th>
<th>ANTI INFECTIVES</th>
<th>RESPIRATORY</th>
<th>Region growth drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dermatology</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ophthalmics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pain</td>
</tr>
</tbody>
</table>

1. **BIOPHARMA**
   - Sandoz FY 2015 sales: 772 USD m
   - Of 10 filings already completed: 6
   - Q1 2016 cc growth vs PY: +50%

2. **OTC**
   - Sandoz FY 2015 sales
   - OTC Sandoz FY 2015 sales
   - Gx market leader by volume: #1
   - Overall global market by sales: #3

*Including retail business*
Sandoz expands with Mature Brands transfer

~USD 900 million net sales and 19 brands transferred

Key brands
Aclasta (Osteoperosis) Foradil (Respiratory)

Sandoz benefits
- Further building scale in key markets (China and Russia)
- Complements existing portfolio

Sandoz will maximize for Group value
- Incorporate (un-promoted) brands in Sandoz promotional efforts
- Expand to customers not yet served

Malaria initiative
Will also be transferred and incorporated in Sandoz-operated Novartis Access Initiatives
Broad range of development capabilities combining long-term TA\(^1\) focus with technological expertise

Sales of originator “blockbusters” with anticipated LOE\(^2\) over the period 2021-2030
Estimated sum of product sales (USD bn) with >1bn brand sales

<table>
<thead>
<tr>
<th>Therapeutic Area</th>
<th>Product Sales (USD bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncology</td>
<td>60</td>
</tr>
<tr>
<td>Antiviral</td>
<td>30</td>
</tr>
<tr>
<td>Cardiology</td>
<td>20</td>
</tr>
<tr>
<td>CNS</td>
<td>20</td>
</tr>
<tr>
<td>Respiratory</td>
<td>20</td>
</tr>
<tr>
<td>Diabetes</td>
<td>20</td>
</tr>
<tr>
<td>Others</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>190</strong></td>
</tr>
</tbody>
</table>

Key technologies to support a broad range of TAs\(^3\)

- Innovative solid formulations, incl. XR tabs, suspensions, abuse-resistant systems
  - Yes
  - Yes
- Injectables, incl. vials, syringes, infusions, liposomes
  - Yes
  - Yes
- Respiratory inhalers, incl. dry powder inhalers, metered dose inhalers, Soft Mist inhalers
  - Yes
  - Yes
- Topicals, incl. creams/gels, nasal sprays, eyedrops\(^4\)
  - Yes
- Transdermals, incl. Matrix Patch and Reservoir Patch
  - Yes

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\(1\) Therapeutic area; slide shows TAs with the greatest opportunity in terms of cumulative blockbuster potential, based on estimated 2021 sales for products worth >1bn in estimated sales only. It does not represent the full value of all estimated sales in the various TAs, i.e. products / launches with estimated 2021 sales of <1bn are not included.

\(2\) Anticipated LOEs over the period 2021-30.

\(3\) Key technologies across multiple TAs, choice of technology often dosage form-dependent

\(4\) Eyedrops historically classified by IMS as topicals
Tech Ops & Quality: Focusing on key sites while continuously strengthening Quality

Technology

Cost

Service

Geography

~40

Production sites in network

97%

97% of 67 inspections in 2015 rated good or satisfactory

1

Leveraging the scale and benefits of moving to One Manufacturing organization

1 Frankfurt site divested. Gerlingen site to be closed by end of 2016. Turbhe closure by 2017
2 Results status December 31, 2015, for continuing operations on Sandoz. Received FDA warning letter related to inspection at Kalwe/Turbhe India sites in August 2014
Biosimilar markets are having a significant impact for healthcare systems

<table>
<thead>
<tr>
<th>Product Approvals</th>
<th>Market Acceptance</th>
<th>Patient Experience</th>
<th>Healthcare system savings</th>
<th>Increased patient access</th>
</tr>
</thead>
<tbody>
<tr>
<td>20+</td>
<td>&gt;50%</td>
<td>+250m</td>
<td>€551m</td>
<td>104%</td>
</tr>
</tbody>
</table>

- Products from various companies approved by the European Medicines Agency over last 10 years\(^1\)
- Market share for various biosimilar G-CSF\(^2\)
- Patient days of safe\(^3\) clinical experience with Sandoz biosimilars alone\(^4\)
- Estimated cumulative savings from biosimilars epoetins in Germany 2007-2011\(^5\)
- Increase in standard units of filgrastim in the UK from 2008-2014 (post biosimilar launch)\(^6\)

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\(^1\) European Medicines Agency Website
\(^2\) IMS MIDAS
\(^3\) Patient days without any recorded adverse events
2015 was a historic year for biosimilars

Key recent developments

**Regulatory**
- First biosimilar approved and launched under new regulatory pathway
- Draft FDA guidance on naming issued

**Legal**
Initial clarification on BPCIA¹

**Reimbursement**
Shared CMS reimbursement code for all biosimilars

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¹ Biologics Price Competition and Innovation Act; litigation ongoing
² Monoclonal antibody

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**Regulatory**
First biosimilar mAb2 approved
Accelerated EMA approvals

**Policy**
Several governments support physician-driven switching

**Observations regarding recent launches**
High uptake in high payer control countries (e.g. Nordics)
Discounts and biosimilar adoption in decentralized payor countries not necessarily correlated
US market and immunology therapies expected to drive dramatic market expansion

**Biosimilar market by geography**

<table>
<thead>
<tr>
<th>Year</th>
<th>US</th>
<th>EU</th>
<th>Rest of world</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Biosimilar market by segment**

<table>
<thead>
<tr>
<th>Year</th>
<th>Insulins</th>
<th>Oncology</th>
<th>EPO, G-CSF, hGH</th>
<th>Immunology</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>0.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>14</td>
<td>+92%</td>
<td>+35%</td>
<td>+142%</td>
</tr>
</tbody>
</table>

**CAGR**

1. Compound Annual Growth Rate
2. Source: EvaluatePharma, IMS, Market Reports, Sandoz
Originators have become key biosimilar players

Evolution competitive landscape

Before 2015

2015 and after

Key competitors are partnering for:

- Commercial capabilities
- Generic capabilities
- Resources
- Clinical expertise
- Manufacturing networks
However, winning in biosimilars requires long-term commitment and integration of six core capabilities.
Biosimilar infliximab: Discounts and uptake in EU5 not necessarily correlated

Combination of discounts, hospital/physician incentives and strong education plays important role in sustainable uptake

Source: IMS
Sandoz sustains its biosimilar leadership position with growth accelerating

Sandoz biopharmaceuticals 3rd-party sales¹
USD million at actual rates

First to launch biosimilar in:
- EU
- US²
- Canada
- Japan

All three in-line brands continue to grow double-digit

¹ Includes biosimilars, industrial manufacturing and Glatopa™
² Under new regulatory pathway
Sandoz is on track for 10 filings\(^1\)

<table>
<thead>
<tr>
<th>Molecule</th>
<th>Indication</th>
<th>Originator(^3)</th>
<th>Agency</th>
<th>Filing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etanercept</td>
<td>Rheumatoid Arthritis</td>
<td><img src="image" alt="Enbrel" /></td>
<td>FDA</td>
<td>2015 ✓</td>
</tr>
<tr>
<td>Etanercept</td>
<td>Rheumatoid Arthritis</td>
<td><img src="image" alt="Enbrel" /></td>
<td>EMA</td>
<td>2015 ✓</td>
</tr>
<tr>
<td>Peg-filgrastim</td>
<td>Neutropenia</td>
<td><img src="image" alt="Neulasta" /></td>
<td>FDA</td>
<td>2015 ✓</td>
</tr>
<tr>
<td>Peg-filgrastim</td>
<td>Neutropenia</td>
<td><img src="image" alt="Neulasta" /></td>
<td>EMA</td>
<td>2015 ✓</td>
</tr>
<tr>
<td>Epoetin subcutaneous</td>
<td>Anemia</td>
<td><img src="image" alt="EPOGEN" /></td>
<td>EMA</td>
<td>2015 ✓ (approved)</td>
</tr>
<tr>
<td>Rituximab</td>
<td>Non-Hodgkin’s Lymphoma</td>
<td><img src="image" alt="Rituxan" /></td>
<td>EMA</td>
<td>2016 ✓</td>
</tr>
<tr>
<td>Epoetin</td>
<td>Anemia</td>
<td><img src="image" alt="EPOGEN" /></td>
<td>FDA</td>
<td>2016</td>
</tr>
<tr>
<td>Adalimumab</td>
<td>Rheumatoid Arthritis</td>
<td><img src="image" alt="HUMIRA" /></td>
<td>FDA</td>
<td>2016</td>
</tr>
<tr>
<td>Adalimumab</td>
<td>Rheumatoid Arthritis</td>
<td><img src="image" alt="HUMIRA" /></td>
<td>EMA</td>
<td>2017</td>
</tr>
<tr>
<td>Rituximab</td>
<td>Non-Hodgkin’s Lymphoma</td>
<td><img src="image" alt="Rituxan" /></td>
<td>FDA</td>
<td>2017</td>
</tr>
</tbody>
</table>

\(^1\) By 2017

\(^2\) Main indication only

\(^3\) All trademarks are the property of their owner
Recent launches in US progressing well with key learnings shaping future launches

**ZARXIO™ (filgrastim-sndz)**
1st US biosimilar under new regulatory pathway

- Zarxio™ 15+% market share\(^1\) of the US daily filgrastim market
- Physicians accept biosimilar concept
- P&T\(^2\) committee often involved in adoption process
- Delivering patient support and education to meet patient needs (e.g. financial assistance)

**Glatopa™**
1st US generic in Multiple Sclerosis

- Glatopa™ ~35% market share\(^1\) of the US 20mg Glatiramer Acetate market
- Physician education needed to drive acceptance of generics
- Conversion to 40mg formulation continued post generic approval
- Engaging patients through services hub (e.g. financial assistance, nursing support)

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\(^1\) In volume, March 2016, based on IMS and internal estimates
\(^2\) Pharmacy and Therapeutics