6th CSIR CONFERENCE

BUILDING A WORLD CLASS, GLOBALLY COMPETITIVE PHARMACEUTICAL BUSINESS OUT OF SOUTH AFRICA

Stavros Nicolaou

5 October 2017
Humble beginnings - Greyville

Notre Dame de Bondeville

Oss - Netherlands

East London

Cape Town

Clayville

Port Elizabeth
Evolution of Aspen’s Manufacturing Base

- Aspen General Facility has been on the present site for approximately 70 years

- Acquired by Aspen from South African Druggists in March 1999, together with facilities in East London and Johannesburg

- Mainly supplied the South African market

- Within 15 years, Aspen has transformed from being a domestically accredited supplier to an international pharmaceutical manufacturer with the developed capability to supply various dosage forms to any pharmaceutical market in the world

- In the last 10 years, billions have been invested in the Group’s South African facilities for infrastructural expansion and enhancements to improve compliance to the relevant regulatory standards, and in order to support Aspen’s sustained supply to both its domestic and diverse international markets
Aerial view of Aspen’s Global Manufacturing Base in Port Elizabeth.
Regulatory Authorities Relevant to South African Operations

<table>
<thead>
<tr>
<th>Regulatory Authority</th>
<th>PE Unit 1</th>
<th>PE Unit 2</th>
<th>PE Unit 3</th>
<th>SVP</th>
<th>International Distribution</th>
<th>SA Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCC</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>FDA</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>MHRA</td>
<td>X</td>
<td>X</td>
<td># planned on product submission</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHO</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TGA</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anvisa (Brazil)</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
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</tr>
</tbody>
</table>

- High volume solid manufacturing for domestic and export markets
- Small to medium volume solid manufacturing for domestic and export markets: fluid-bed dried products (2A) & oven dried products (2B)
- End state solid packing for domestic market
- Eye drops, lyophilized vials, ampoules and vials for domestic and export markets
- Warehousing for domestic and export markets
- Warehousing for domestic market

x = Approved  
# = Inspection planned
<table>
<thead>
<tr>
<th>Company</th>
<th>Products/Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boehringer Ingelheim</td>
<td>Nevirapine</td>
</tr>
<tr>
<td>GSK</td>
<td>Lamivudine, Zidovudine, Combivir, Epivir &amp; Others</td>
</tr>
<tr>
<td>Bristol-Myers Squibb</td>
<td>Stavudine, Didanosine, Atazanavir</td>
</tr>
<tr>
<td>Gilead</td>
<td>Tenofovir &amp; Emtricitabine</td>
</tr>
<tr>
<td>MSD</td>
<td>Efavirenz</td>
</tr>
<tr>
<td>Iroko</td>
<td>Aldomet and Indocid</td>
</tr>
<tr>
<td>Eli Lilly</td>
<td>Cycloserine and Capreomycin</td>
</tr>
<tr>
<td>Bayer</td>
<td>Nur- Isterate Injection</td>
</tr>
<tr>
<td>Prestige Brands</td>
<td>Murine &amp; Murine Plus, Range of Eye Drop Products</td>
</tr>
</tbody>
</table>
## Revenue by customer geography

<table>
<thead>
<tr>
<th>R’million</th>
<th>FY 2017</th>
<th>FY 2016</th>
<th>% change</th>
<th>FY 2016 (CER)*</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed Europe</td>
<td>11 431</td>
<td>11 100</td>
<td>3%</td>
<td>10 161</td>
<td>13%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>10 957</td>
<td>7 738</td>
<td>42%</td>
<td>7 490</td>
<td>46%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>9 892</td>
<td>9 355</td>
<td>6%</td>
<td>9 185</td>
<td>8%</td>
</tr>
<tr>
<td>Latin America</td>
<td>4 184</td>
<td>3 481</td>
<td>20%</td>
<td>3 254</td>
<td>29%</td>
</tr>
<tr>
<td>Developing Europe and CIS</td>
<td>2 589</td>
<td>2 345</td>
<td>10%</td>
<td>2 223</td>
<td>16%</td>
</tr>
<tr>
<td>MENA</td>
<td>1 117</td>
<td>878</td>
<td>27%</td>
<td>820</td>
<td>36%</td>
</tr>
<tr>
<td>USA &amp; Canada</td>
<td>1 043</td>
<td>662</td>
<td>58%</td>
<td>618</td>
<td>69%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41 213</strong></td>
<td><strong>35 559</strong></td>
<td><strong>16%</strong></td>
<td><strong>33 751</strong></td>
<td><strong>22%</strong></td>
</tr>
</tbody>
</table>

* FY 2016 restated at FY 2017 average exchange rates

- Performance in ZAR is determined by
  - Fluctuations in exchange rate; and
  - Underlying operational performance
- Exchange rate effect
  - Variance between actual and constant exchange rate (CER)
- CER reflects the underlying operational performance
The evolution of Aspen

Commercial Pharma
• Geographic diversity
• Product portfolio
Manufacturing Capacity and Capability
• Finished Dose Form
• API
FY 2000
Sales R1.0 billion

South Africa only

FY 2013
Sales R18.6 billion

Predominantly SA and Australia

FY 2017
Sales R31.4 billion

Global Multinational

In FY2017, there was a further ±R10 billion of revenue from Nutritionals and Manufacturing
Commercial Pharma | product portfolio

FY 2000
Sales R1.0 billion

Other Commercial Pharma Brands

FY 2013
Sales R18.6 billion

Predominantly Other Commercial Pharma Brands with limited therapeutic focused brands

FY 2017
Sales R31.4 billion

Global and diverse product range with a focus on Speciality

FY 2017:
• SA < 50% of Other Commercial Pharma brands
• Generics account for ±10% of sales
Manufacturing | FDF capacity & capability

FY 2000
Tablets only

FY 2013
Predominantly solids with some Speciality

FY 2017
Dominant sterile platform with Speciality & Solids

FY 2022
Further evolution to Sterile Manufacturing

PE - Tablets

- BO - High Potency
- PE - Lyophilisation & Eye drops

Anaesthesia Products

- PE - High Potency & Cytotoxics
  Steriles (amps & vials)
- BO - Hormonal creams
- NDB - Prefilled syringes
Manufacturing | API capacity & capability

**Total Capacity** 200 KvH

<table>
<thead>
<tr>
<th>Capabilities</th>
<th>FY 2013</th>
<th>FY 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaesthetics</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Muscle relaxants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Narcotics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analgesics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antipsychotics</td>
<td></td>
<td></td>
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<tr>
<td>Antineoplasics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronchodilators</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Added Capabilities**

- Copenhagen – Oss
  - Speciality chemicals 20%
- India – Vizag*
  - Biochemicals 15%
- Netherlands – Oss
  - Narcotics
  - Analgesics
  - Antipsychotics
  - Antineoplasics
  - Bronchodilators

**NDB:**
- Purification of Fondaparinux
- Conversion of heparin to Nadroparin

**Total Capacity** 980 KvH

<table>
<thead>
<tr>
<th>Added Capabilities</th>
<th>FY 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Potency &amp; Cytotoxics</td>
<td>34%</td>
</tr>
<tr>
<td>Steroids/Alkaloids/Heterocyclics</td>
<td></td>
</tr>
<tr>
<td>Conjugated &amp; Esterified estrogens</td>
<td></td>
</tr>
<tr>
<td>Peptides</td>
<td></td>
</tr>
<tr>
<td>Hormonal &amp; General intermediates</td>
<td></td>
</tr>
<tr>
<td>Biochemicals – Heparin &amp; Danaparoid Gonadotropins</td>
<td></td>
</tr>
</tbody>
</table>

- Five fold capacity increase
- Enhanced capabilities
- Broader geographic diversity

*Intermediate manufacturing
Anaesthetic Brands

- Largest sector of therapeutic focused brands
- Broad portfolio
  - No.1 globally (ex-USA)
  - Local, general and topical
  - AZ & GSK products included for ten and four months respectively

### Regional representation

<table>
<thead>
<tr>
<th>Region</th>
<th>FY 2017 (CER)</th>
<th>FY 2016 (CER)</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed Markets</td>
<td>3 885</td>
<td>7</td>
<td>&gt;100%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>3 180</td>
<td>107</td>
<td>&gt;100%</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>7 065</strong></td>
<td><strong>114</strong></td>
<td></td>
</tr>
</tbody>
</table>

**DM revenue contribution: 55%**

**EM revenue contribution: 45%**
Thrombosis sales down R324 million
- Developed Europe down R605 million
- EMs providing positive offset

<table>
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<th>R ‘million</th>
<th>FY 2017</th>
<th>FY 2016 (CER)</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed Markets</td>
<td>3 255</td>
<td>3 861</td>
<td>(16%)</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>2 410</td>
<td>2 128</td>
<td>13%</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>5 665</td>
<td>5 989</td>
<td>(5%)</td>
</tr>
</tbody>
</table>

- 57% DM revenue contribution
- 43% EM revenue contribution

Regional representation

- Developed Asia, Australasia & North America
THANK YOU