Hematology is in our blood

Boule Diagnostics AB
Nordea MedTech/Life Science Seminar
November 27, 2018

Fredrik Dalborg, CEO and Group President
Christina Rubenhag, CFO
Boule Vision and Mission

Vision:

Improving health for everyone, everywhere

Mission:

We work closely with our customers and partners to provide user friendly, high quality, near patient diagnostics solutions everywhere in the world.

We efficiently develop, manufacture and provide complete solutions for the human and veterinary markets.
General healthcare trends

General trends in healthcare and diagnostics

• Aging population, increased demand for healthcare and diagnostics
• Proactive, more patient driven health, increased focus on diagnostics
  – Access to results via web/mobile
  – Patient convenience expectations
• Increased access to qualified healthcare, growing importance of emerging markets
• Healthcare system cost consciousness
• Many new technologies emerge, quality, accuracy and reliability remain a vital requirement for broad adoption
Boule is active in the decentralized, near patient diagnostics segment

Decentralized market is smaller…

<table>
<thead>
<tr>
<th>USD bn</th>
<th>Market size</th>
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<tbody>
<tr>
<td>3,5</td>
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<tr>
<td>3</td>
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<td>2,5</td>
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<td>1,5</td>
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<td>1</td>
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<td>0,5</td>
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Centralized Hematology
3 part

Decentralized Hematology
5 part

In the decentralized market, 3 part is bigger but 5 part grows faster

…but growing faster

<table>
<thead>
<tr>
<th>Market growth</th>
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<tr>
<td>8%</td>
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<tr>
<td>7%</td>
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<tr>
<td>6%</td>
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<tr>
<td>5%</td>
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<tr>
<td>4%</td>
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<tr>
<td>3%</td>
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<tr>
<td>2%</td>
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<tr>
<td>1%</td>
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<tr>
<td>0%</td>
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Overall Hematology Market
2%

Decentralized Hematology market
7%

…driven by major trends

- Large and growing market potential: >100,000 small and medium sized labs globally
- Increased access to healthcare in emerging markets
  - Emphasis on smaller cities and rural areas
- Near patient diagnostics is attractive to patients and healthcare systems in developed markets
  - Cost efficiency and patient convenience

Source: Kalorama IVD 2016, Boule data
Trends in the decentralized, near patient segment

- Patients expecting easy access to testing and quick results
- Use of finger stick (less invasive and allowing for less skilled staff)
- More advanced technologies made available for smaller lab applications
  - Broader types of diagnostic tests
  - More advanced sensor technologies
  - More parameters
  - Ease of use and analytical support
- Consolidation of small labs, volume requirements increasing in some segments
- New, near patient segments emerging (urgent care centers, pharmacies, home care, etc.)
What differentiates Boule from competitors

- Products and organization focused on the decentralized, near-patient market
- Recognized high quality and reliability, ease of use and low lifecycle cost
- Integrated supplier of the complete system (instruments, reagents, controls and calibrators, cleaners)
- Reputation for strong service and support
- Unique features (shear valve technology, finger stick sample method, autoloader system for high volume users, etc.)
- Global presence, strong market shares in developed and developing markets
- Dual brand strategy, providing better market access, stronger market understanding and improved distributor management
Innovation: Evolving the offering to meet current and future customer needs

- New sensor technologies
- Smaller point of care systems
- Adjacent diagnostic tests
- Regional manufacturing
- Automation
- Cost efficiency
- Higher throughput
- Ease of use
- Software (analysis algorithms)
- IT Integration
- Business Development
- R&D
- Manufacturing
R&D: Core capabilities and development areas

*Focused on decentralized, near patient market*

### Core capabilities

- Impedance sensor technology
- Sample and fluid management
  - Precision
  - Quality
  - Reliability
  - Cost efficiency
- Reagent development
  - 3 part
  - 5 part +
- Controls development
- Software and IT integration
- Supporting high levels of quality and regulatory compliance

### Developing areas

- Further develop laser optics technology capabilities
- Building capacity to manage multiple projects simultaneously
- Next stage cytometry technology
  - Imaging
  - Fluorescence
- Adjacent technologies, including:
  - Clinical chemistry
  - Electrolytes
  - Coagulation
  - Immunoassays
- IT integration and Apps

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Boule focus will be to develop technologies to meet the specific needs of the decentralized segment
Laser and optical sensor module development ongoing for next generation product family

*Boule has long experience in designing complete hematology systems*
Overview of R&D projects in 2018

New veterinary platform Exigo H400

- 19 parameters including 4-part WBC diff (LYM, MONO, NEUT, EOS)
- 12 pre-installed species profiles
- Launched in Q2 2018

New 5 part system platform development

- Full blown development project started Q3 2017, gradually adding resource
- Modular 5 part system with additional parameters and higher throughput
- Acquired laser optics technology, evolved further with internal development, new laser module design established and being tested
- Developing advanced cell detection and classification algorithms, using AI approaches
- Developing new and advances IT connectivity approaches

Continuous product improvement, quality and cost reduction

- Completed software updates as well as new electronics module development
- Preparing system upgrades for 2019
- Supporting business development technology evaluation
- Working on multiple component redesign projects to reduce cost and increase efficiency
Continued growth and efficiency initiatives in manufacturing

*Leveraging relatively high instrument volumes, and complete system offering*

New automation solutions for the production of instruments, expected to streamline the production of current and future instrument generations.

Increasing production capacity, streamlining and automating the production process for controls at the Florida plant.

Implementing a cost-reduction in instrument electronics module manufacturing, expected to provide an annual cost-saving of approximately SEK 3 million, beginning in the first quarter of 2019.

In addition, further regional reagent manufacturing options being evaluated.
Active business development work to broaden the portfolio

Adding entry level 5 part system to the portfolio
- Strengthens portfolio, logical addition to current products
- Expected to create additional growth and drive growth for current portfolio (combined tenders, strengthening commercial channel)
- Launch in November 2018

Providing new advanced hematology technology to the decentralized segment
- Advanced imaging technology through collaboration with CellaVision (launch of DC 1 imaging system for decentralized lab)

Adding new adjacent diagnostic tests for the near patient, (point of care) market
- Distributing point of care CRP testing in US and LATAM
- Clinical chemistry for veterinary market

Assessing further business development opportunities
- Assessing further partnerships/acquisitions in current hematology and adjacent diagnostic areas
The Boule offer – a growing portfolio

<table>
<thead>
<tr>
<th>Medonic</th>
<th>Swelab</th>
<th>Medonic</th>
<th>Swelab</th>
<th>Quintus</th>
<th>Exigo H400</th>
<th>Exigo C200</th>
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<tbody>
<tr>
<td>Human diagnostics</td>
<td>Human diagnostics</td>
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<td>Human diagnostics</td>
<td>Veterinary hematology</td>
<td>Veterinary Chemistry</td>
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<tr>
<td>3-part system</td>
<td>3-part system</td>
<td>5-part system</td>
<td>5-part system</td>
<td>5-part system</td>
<td>3 &amp; 4 part system</td>
<td>System</td>
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- **Reagents, Blood controls and calibrators**
- **Consumables for OEM customers**
- **Open consumables for other manufacture’s open systems**

- **Tied consumables for proprietary instruments**
- **Cleaning products**
- **Reagents rotor**
Thank you!