So Hyung Jeong

Current status and business opportunity in Korean medical device
Outline

- Current Status of Korean Medical Device Market
- Business Opportunity
- Invitation to KOTRA’s 2018 Business Event
Market Status

- Korean medical device market (’16): USD 4.6 billion
- Korean world market share (’16): 1.7%, 9th largest market in the world
- Average annual growth rate of production amount (’11~’16): 10.4%
  ** reflects the rapid growth of the Korean medical device industry

*Source: MFDS, 2016*
Major Items in Production

- Total production of medical devices (’16) : USD 4.6 billion

Top 4 Products in Korea

- Ultrasonic Imaging System
- Medical Image Processing Unit
- Digital X-ray Imaging System
- Soft Contact Lens

Source: MFDS, 2016
# Major Exports and Imports

<table>
<thead>
<tr>
<th>Major Exports</th>
<th>Major Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasound Imaging System</td>
<td>Soft Contact Lens</td>
</tr>
<tr>
<td>Dental Implant</td>
<td>Stent</td>
</tr>
<tr>
<td>Soft Contact Lens</td>
<td>Hemodialysis filter</td>
</tr>
<tr>
<td>Biomaterial Graft/Prosthesis</td>
<td>Computed tomography system</td>
</tr>
<tr>
<td>Medical Image Processing System</td>
<td>Intravascular catheter</td>
</tr>
<tr>
<td>IVD Reagents for Clinical</td>
<td>Internal knee prosthesis</td>
</tr>
<tr>
<td>Probe for Medical Use</td>
<td>MRI system</td>
</tr>
<tr>
<td>IVD Reagents for Infectious Disease</td>
<td>Electrosurgical system</td>
</tr>
<tr>
<td>Laser Surgical Unit</td>
<td>Soft corrective ophthalmic lens</td>
</tr>
<tr>
<td>X-ray System</td>
<td>Immunochromatographic test strip</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

- Source: MFDS, 2016
# Top 10 Major Players

Total production of medical devices ('16): USD 4.6 billion

<table>
<thead>
<tr>
<th>Manufacturers</th>
<th>Exporters</th>
<th>Importers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Osstem Implant</td>
<td>1 GE Healthcare Korea</td>
<td>1 J&amp;J Medical Korea</td>
</tr>
<tr>
<td>2 Samsung Medison</td>
<td>2 Samsung Medison</td>
<td>2 Roche Diagnostics Korea</td>
</tr>
<tr>
<td>3 GE Healthcare Korea</td>
<td>3 Standard diagnostics</td>
<td>3 Siemens Healthcare</td>
</tr>
<tr>
<td>4 Siemens Healthcare</td>
<td>4 Siemens Healthcare</td>
<td>4 Covidien Korea</td>
</tr>
<tr>
<td>5 Dentium</td>
<td>5 Vatech</td>
<td>5 Medtronic Korea</td>
</tr>
<tr>
<td>6 Vatech</td>
<td>6 Ceragem</td>
<td>6 Abbot Korea</td>
</tr>
<tr>
<td>7 Samsung</td>
<td>7 Samsung</td>
<td>7 J&amp;J Korea</td>
</tr>
<tr>
<td>8 Vieworks</td>
<td>8 I-sens Wonju factory</td>
<td>8 Philips Electronic</td>
</tr>
<tr>
<td>9 Standard Diagnostics</td>
<td>9 Osstem Implant</td>
<td>9 Olympus Korea</td>
</tr>
<tr>
<td>10 Nugamedical</td>
<td>10 Vieworks</td>
<td>10 Stryker Corporation</td>
</tr>
</tbody>
</table>

*Source: MFDS, 2016*
2. Biz Opportunities in Korea
Test-bed Market

Medical Test Bed

Global Market Share in Clinical Trials

1. Seoul
2. Houston
3. New York
4. London
5. Boston
6. Berlin
7. LA
Strong Healthcare Technology

- Medical Specialists in Hospitals
  - Highly-qualified professional doctors, surgeons, nurses and other healthcare professionals
  - Oncology, plastic surgery, dentistry, traditional Korean medicine, etc.

Source: MOHW, Medical Korea, 2015
Small but powerful local players

Remarkable ‘Hidden Champions’ in Korea

- Imaging Diagnostic Device
  
  **Samsung Medison**
  
  Diagnostic Ultrasound devices with live-3D technology
  
  Affiliate of Samsung electronics in 2011

- Dermatologic Laser
  
  **Lutronic**
  
  Dermatologic laser manufacturer with no.1 domestic market share and No.2 in Asia

- Automated External Defibrillator
  
  **CU Medical Systems**
  
  Korea’s first manufacturer of automated external defibrillators / Having technology for world class remote medical treatment system

- Dental Equipment
  
  **VATECH**
  
  World 5th largest dental x-ray manufacturer

- Dental Implants
  
  **OSSTEM IMPLANT**
  
  No.1 market share in China[2013]

- Capsule Endoscopy
  
  **IntroMedic**
  
  FDA approved[2012] and exported to 86 countries around the world
# Activation of VC investment in Healthcare Industry

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT Manufacture</td>
<td>2,955</td>
<td>1,951</td>
<td>1,463</td>
<td>959</td>
</tr>
<tr>
<td>ICT service</td>
<td>1,553</td>
<td>1,913</td>
<td>4,019</td>
<td>4,062</td>
</tr>
<tr>
<td>Machinery</td>
<td>2,297</td>
<td>1,560</td>
<td>1,620</td>
<td>2,125</td>
</tr>
<tr>
<td>Chemistry/Material</td>
<td>989</td>
<td>827</td>
<td>1,486</td>
<td>1,509</td>
</tr>
<tr>
<td><strong>Bio/Medical</strong></td>
<td><strong>1,463</strong></td>
<td><strong>2,928</strong></td>
<td><strong>3,170</strong></td>
<td><strong>4,683</strong></td>
</tr>
<tr>
<td>Entertainment</td>
<td>1,963</td>
<td>2,790</td>
<td>2,706</td>
<td>2,678</td>
</tr>
<tr>
<td>Game</td>
<td>940</td>
<td>1,762</td>
<td>1,683</td>
<td>1,427</td>
</tr>
<tr>
<td>Distributor/Service</td>
<td>1,092</td>
<td>2,046</td>
<td>3,043</td>
<td>2,494</td>
</tr>
<tr>
<td>ETC</td>
<td>593</td>
<td>616</td>
<td>1,668</td>
<td>1,570</td>
</tr>
<tr>
<td><strong>SUM</strong></td>
<td><strong>13,845</strong></td>
<td><strong>16,393</strong></td>
<td><strong>20,858</strong></td>
<td><strong>21,500</strong></td>
</tr>
<tr>
<td><strong>Bio to Total</strong></td>
<td><strong>10.57%</strong></td>
<td><strong>17.86%</strong></td>
<td><strong>15.20%</strong></td>
<td><strong>21.78%</strong></td>
</tr>
</tbody>
</table>
Domestic Market Expansion

- 10th most popular destination in the world for medical tourism

Number of foreign patients per year

An increasing number of foreign patients per year projects Korea as one of the leaders in Medical Tourism.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>16,000</td>
</tr>
<tr>
<td>2009</td>
<td>60,000</td>
</tr>
<tr>
<td>2011</td>
<td>128,000</td>
</tr>
<tr>
<td>2013</td>
<td>212,000</td>
</tr>
<tr>
<td>2015</td>
<td>998,000*</td>
</tr>
<tr>
<td>2020</td>
<td>998,000*</td>
</tr>
</tbody>
</table>
Major Bioclusters in Korea

Where to Invest?

1. Osong Biovalley (High-Tech Medical Cluster)
2. Daegu Medivalley (High-Tech Medical Cluster)
3. Incheon BioCluster (FEZ)
4. Pangyo2 Techno-Valley
5. Seoul Metropolitan Area
6. Daeduk Innopolis
7. Jecheon Biovalley
8. Gwangju dental cluster (FIZ)
9. Foodpolis (FIZ)
10. Wonju Medical Device / chuncheon bio
11. Pohang Techno Valley
Major Investors in Healthcare Industry – Medical device

Source: KOTRA, 2016.05
3.

2018 KOTRA’s Business event
Located worldwide 10 local head offices, 126 Korea Business Centers (KBCs) in 86 countries

**KOTRA Organization**

- **Europe [23]**
  - AMSTERDAM
  - ATHENS
  - BEOGRAD
  - BRATISLAVA
  - BRUSSELS
  - BUCHAREST
  - BRUSSELS
  - DEN HaAG
  - DOHA
  - DINBURGH
  - HELSINKI
  - LONDON
  - MADRID
  - MILAN
  - MUNICH
  - PARIS
  - PRAGUE
  - SOFIA
  - STOCKHOLM
  - VIENNA
  - WARSAW
  - ZURICH

- **Middle East [15]**
  - ALGIER
  - ABU DHABI
  - BAGHDAD
  - CAIRO
  - CASABLANCA
  - DAMASCUS
  - Doha
  - DUBAI
  - JEDDAH
  - KUWAIT
  - MUSCAT
  - RIYADH
  - TEBERDA
  - TRIPOLI

- **Africa [10]**
  - ACCRA
  - ADDIS ABABA
  - DAR ES SALAAM
  - JOHANNESBURG
  - KIkhITOM
  - KINSHASA
  - LAGOS
  - MAPUTO
  - NAIROBI
  - ABIDJAN

- **Southeast Asia [14]**
  - BANGKOK
  - HANOI
  - HO CHI MINH
  - JAKARTA
  - KUALA LUMPUR
  - MANILA
  - MELBOURNE
  - PHNOM PENH
  - SINGAPORE
  - SURABAYA
  - SYDNEY
  - VIETNAM
  - YANGON

- **Southwest Asia [7]**
  - BENGALURU
  - CHENNAI
  - COLOMBO
  - DHAKA
  - KARACHI
  - MUMBAI
  - NEW DELHI

- **China [19]**
  - BEIJING
  - CHANGSHA
  - CHENGDU
  - CHONGQING
  - Dalian
  - GUANGZHOU
  - HANGZHOU
  - HONG KONG
  - NANNING
  - QINGDAO
  - SHANGHAI
  - SHENYANG
  - TAIPEI
  - WUHAN
  - XI’AN
  - XIAN
  - ZHEJIANG

- **North America [10]**
  - CHICAGO
  - DALLAS
  - DETROIT
  - LOS ANGELES
  - MIAMI
  - NEW YORK
  - SILICON VALLEY
  - TORONTO
  - VANCOUVER
  - WASHINGTON D.C.

- **Central & South America [14]**
  - ASUNCION
  - BOGOTA
  - BUENOS AIRES
  - CARACAS
  - GUATEMALA
  - HAVANA
  - LIMA
  - MEXICO
  - PANAMA
  - QUITO
  - RIO DE JANEIRO
  - SANTIAGO
  - SANTO DOMINGO
  - SAO PAULO
KOTRA works with you!
Novartis Partnering Conference

- Visit Korea to partner with high-tech Korean company!
## 1:1 Business Meeting with Korean company

<table>
<thead>
<tr>
<th></th>
<th>Global Market Bio Plaza</th>
<th>Boomup KOREA</th>
<th>Global Bio Pharma Plaza</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When</strong></td>
<td>Mar.15-Mar.16</td>
<td>End of March</td>
<td>May 9 - May.11</td>
</tr>
<tr>
<td><strong>Where</strong></td>
<td>Coex, Seoul</td>
<td>Seoul</td>
<td>Coex, Seoul</td>
</tr>
<tr>
<td><strong>What?</strong></td>
<td>Conference, 1:1 Business Meeting, KIMES(Korea)</td>
<td>1:1 Business Meeting</td>
<td>1:1 Business Meeting</td>
</tr>
<tr>
<td><strong>With Whom</strong></td>
<td>KIMES Exhibitors</td>
<td>Korean companies</td>
<td>Korean companies</td>
</tr>
<tr>
<td><strong>Regarding Industry</strong></td>
<td>Medical Device</td>
<td>Bio/pharmaceutical</td>
<td>Bio/pharmaceutical</td>
</tr>
</tbody>
</table>
Thank you for your listening.

sohyung@kotra.or.kr