Intuitive Surgical - Overview

- Founded in 1995
  - Employs ~1100 people worldwide, ~1000 people in the US
  - Publicly-traded company, NASDAQ “ISRG”
- Intuitive’s da Vinci systems used in 136,000 procedures performed in 2008, up 60% from 2007
  - Q109 procedures up approximately 60% from Q108
- 1,171 da Vinci® System base as of 3/31/09
  - 863 United States, 211 Europe, 97 Rest of World
- FDA Clearances - Laparoscopic, Thoracoscopic, Prostatectomy, Cardiotomy, Revascularization, Urology, Gynecology, Pediatric
- Target Markets - Urology, Gynecology, Cardiothoracic, General Surgery
Medical-Surgical Robotics

Definition
- The use of computer-controlled mechanisms to improve therapeutic outcomes

Types of Medical-Surgical Robots
- Medical and Surgical Aids - Surgery and patient care
- Radiation Therapy Robots - Accurate therapy delivery
- Guidance and Positioning Robots - Hands-on manipulator control
- Surgical Tele-robots - Human-in-control

Value Proposition: Better therapeutic outcomes resulting from initial capital investment
- Better tissue targeting - higher precision
- Less invasive procedures - smaller access
- Reduced complications when compared to non-robotic procedures
The Medical-Surgical Robotics Landscape (1)

Medical and Surgical Robotic Aids

- Rounding Robots
  - InTouch RP7

- MIS Scope Holders
  - Prosurgics EndoAssist

Radiation Therapy Robots

- Radiation Control Robots
  - Accuray Cyberknife
The Medical-Surgical Robotics Landscape (2)

Guidance & Positioning Robots
  Image-Guided Robots
    - CUREXO Robodoc
    - Mazor SpineAssist
  Hand Guidance/Haptic Walls
    - MAKO Surgical

Surgical Tele-Robots
  Catheter Guidance Robots
    - Hansen Sensei
    - Stereotaxis Niobe
  Minimally Invasive Robots
    - Intuitive Surgical da Vinci
Example: Intuitive’s da Vinci® Si Tele-robot

**Vision**
- 3D-HD view of the surgical field

**Dexterity**
- Greater range of motion than the human wrist

**Precision**
- Tremor reduction, motion scaling

**Ergonomics**
- Improved positioning & surgeon comfort

*da Vinci® Si- Video Overview*
Drivers for Adoption of Robotic Surgery

**Patient Value** = \(\frac{\text{Efficacy}}{\text{Invasiveness}^2}\)

**Surgeon Value** = Patient Value + ease-of-use + dependability + shorter length-of-stay (LOS)

**Hospital Value** = Patient Value + Surgeon Value + economic benefits for the hospital

**Economic Value** = Improved outcomes + fewer complications + reduced LOS + fewer readmissions + faster return to normal activities
Reported Clinical Benefits of *da Vinci®* Procedures Versus Open Surgery

**Greater Efficacy**
- Improved cancer control\(^1\)
- Increased continence\(^2\)
- Enhanced sexual potency\(^3\)

**Reduced Invasiveness**
- Reduced pain\(^3\)
- Reduced blood loss\(^4\)
- Reduced length of stay\(^4\)

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* Comparative prostatectomy results from: Bhandari A, J Urology 2000; Brown JA, Urologic Oncology, 2004; Guillonneau B, Jnl of Urology, 2002.*
Annual Worldwide daVinci Procedures

Cumulative total of ~300,000 da Vinci patients through 2008, reaching >500,000 patients in early 2010*

* Forecasts based on Company estimates.
<table>
<thead>
<tr>
<th><strong>Urology</strong></th>
<th><strong>Gynecology</strong></th>
<th><strong>Cardiothoracic</strong></th>
<th><strong>General</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostatectomy</td>
<td>Hysterectomy</td>
<td>Mitral Valve Repair &amp; Replacement</td>
<td>Gastric Bypass</td>
</tr>
<tr>
<td>Nephrectomy</td>
<td>Myomectomy</td>
<td>Single Vessel Beating Heart Bypass</td>
<td>Nissen Fundoplication</td>
</tr>
<tr>
<td>Partial Nephrectomy</td>
<td>Sacral Colpopexy</td>
<td>Multi-Vessel Beating Heart Bypass</td>
<td>Heller Myotomy</td>
</tr>
<tr>
<td>Pyeloplasty</td>
<td>Pelvic Lymphadenectomy</td>
<td>Single Vessel Arrested Heart Bypass</td>
<td>Gastrectomy</td>
</tr>
<tr>
<td>Cystectomy</td>
<td>Tubal Reanastomosis</td>
<td>Multi-Vessel Arrested Heart Bypass</td>
<td>Colon Resection</td>
</tr>
<tr>
<td>Donor Nephrectomy</td>
<td>Vaginal Prolapse Repair</td>
<td>IMA Harvesting</td>
<td>Thyroidectomy</td>
</tr>
<tr>
<td>Ureterolithotomy</td>
<td>Dermoid Cyst</td>
<td>Coronary Anastomosis</td>
<td>Arteriovenous Fistula</td>
</tr>
<tr>
<td>Pelvic Lymphadenectomy</td>
<td>Endometrial Ablation</td>
<td>Atrial Septum Aneurysm</td>
<td>Toupet</td>
</tr>
<tr>
<td>Adrenalectomy</td>
<td>Oophorocystectomy</td>
<td>Atrial Septal Defect Repair</td>
<td>Pancreatectomy</td>
</tr>
<tr>
<td>Cystocele Repair</td>
<td>Oophorectomy</td>
<td>Tricuspid Valve Repair</td>
<td>Adrenalectomy</td>
</tr>
<tr>
<td>Excision of Renal Cyst</td>
<td>Ovarian Cystectomy</td>
<td>Thrombectomy</td>
<td>Hemi-Colectomy</td>
</tr>
<tr>
<td>Lymphadenectomy</td>
<td>Ovarian Transposition</td>
<td>Thymectomy</td>
<td>Sigmoidectomy</td>
</tr>
<tr>
<td>Testicular Resection</td>
<td>Salpingectomy</td>
<td>Esophagectomy</td>
<td>Splenectomy</td>
</tr>
<tr>
<td>Renal Cyst Decortication</td>
<td>Salpingo-Oophorectomy</td>
<td>Pericardial Window</td>
<td>Pyloroplasty</td>
</tr>
<tr>
<td>Ureteral Transplant</td>
<td>Colposuspension (Burch)</td>
<td>Lobectomy</td>
<td>Gastroplasty</td>
</tr>
<tr>
<td>Nephropexy</td>
<td>Tubal Ligation</td>
<td>Pneumonectomy</td>
<td>Appendectomy</td>
</tr>
<tr>
<td>Ureterectomy</td>
<td>Tubal Ligation</td>
<td>Pacemaker Lead Implantation</td>
<td>Intra-rectal Surgery</td>
</tr>
<tr>
<td>Rectocele Repair</td>
<td>Tubal Ligation</td>
<td>Mediastinal Resection</td>
<td>Bowel Resection</td>
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<tr>
<td>Varicocele</td>
<td></td>
<td>Pulmonary Wedge Resection</td>
<td>Lumbar Sympathectomy</td>
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<td>Liver Resection</td>
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<td></td>
<td></td>
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<td>Vaso-vasostomy</td>
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<td></td>
<td>Hernia Repair</td>
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</tbody>
</table>

**Procedures Performed with daVinci**

- Urology
- Gynecology
- Cardiothoracic
- General
Where Are We Now?

- **Growing Market**
  - 6 companies in the US market today
  - Many more working to bring new products to the market

- **Substantive and Growing Clinical Literature**
  - Over 1400 articles demonstrating equivalent or better outcomes, decreased trauma and decreased complication rates across many different procedures

- **Compelling Value Proposition**
  - Initial capital investments result in reduced hospital stays, decreased complication rates leading to decreases in re-admissions, and faster return to normal life for patients
  - Primary savings from hospital operating costs, increased productivity, and avoided cost of capital for hospital facilities
  - Within a few years, and with modest assumptions, net benefits in the US would total billions of dollars annually
Medical Robotics Presents a Substantial Opportunity

- Medical Tele-robots alone could be a $4 Billion annual industry
- Government sponsored programs exist to create medical robots to compete in world markets in at least
  - Japan
  - Canada
  - Korea
  - Singapore
  - Great Britain
  - France
  - Germany
What Does the Future Hold?

*Future Innovations in Surgical Robotics...*
- Improved capability through fewer, smaller incisions
- Integrated imaging for diagnostics and therapeutics
- Advanced delivery of focal therapies

*Leading to More Applications, Increased Benefits...*
- Expanded set of robotic-minimally invasive procedures
- Greater access to higher quality care—for rural and smaller urban areas, and in military uses, e.g., bases and naval ships
- Improved healthcare outcomes overall
- Broader economic benefits
What Was Required for Early Entrants to Get Here?

Coordinated Public-Private Effort
- Collaborative projects with early government support laid the foundation for a new industry

Long-Range Vision for Government and Investors
- Intuitive’s evolution (and that of other surgical robotics companies) depended on “patient” investment

Hospital Vision in Adopting Innovative Technologies
- Early adopters provided patients with new treatment options while ensuring safety, efficacy, and cost-effectiveness
- Leaders “saw beyond” accounting practices that distort the impact of new technologies and fail to account for patient benefits
What Does the Industry Need Moving Forward?

**Strong Commitments to Technology Leadership**
- Delivering globally competitive medical robots will require on-going R&D and commercialization-focused investment

**Cross-Agency Coordination and Support**
- Surgical robotic technologies cut across a variety of disciplines and agency missions, making coordination of efforts essential

**Thoughtful Approaches to Comparative Effectiveness Research and Healthcare Economics**
- Robotics demonstrates increased clinical performance AND reduced end-to-end cost to treat—a cross-treatment-cycle view of costs and benefits is required
Thank You