Titan Medical Inc.

May 2015
This presentation contains "forward-looking statements" which reflect the current expectations of management of the Company's future growth, results of operations, technological development and implementation, performance and business prospects, opportunities, and illustrations and prototypes of the SPORT™ Surgical Systems. Wherever possible, words such as "may", "would", "could", "will", "anticipate", "believe", "plan", "expect", "intend", "estimate" and similar expressions have been used to identify these forward-looking statements. These statements reflect management's current beliefs with respect to future events and are based on information currently available to management. Forward-looking statements involve significant risks, uncertainties and assumptions. Many factors could cause the Company's actual results, performance, achievements or technological development and implementation to be materially different from any future results, performance, achievements or technological development and implementation that may be expressed or implied by such forward-looking statements, including, without limitation, those listed in the "Risk Factors" section of the Company's Annual Information Form dated April 4, 2014 and other information contained in the Company’s public filings (which may be viewed at www.sedar.com). Information contained in this presentation is qualified in its entirety by such public filings. Should one or more of these risks or uncertainties materialize, or should assumptions underlying the forward looking statements prove incorrect, actual results, performance or achievements may vary materially from those expressed or implied by the forward-looking statements contained in this presentation. These factors should be considered carefully and prospective investors should not place undue reliance on the forward-looking statements. Although the forward-looking statements contained in the presentation are based upon what management currently believes to be reasonable assumptions, the Company cannot assure prospective investors that actual results, performance or achievements will be consistent with these forward-looking statements. This presentation does not constitute an offer to sell any class of securities of the Company in any jurisdiction.
Investment Highlights

• Targeting large and rapidly growing robotic surgery market
  – General Surgery (Cholecystectomy, Appendectomy)
  – Gynecology (Benign Hysterectomy)
  – Urology

• Innovative Single-Port device with growing IP
  – High-dexterity robotic platform
  – Small footprint
  – Lower cost

• “Razor / Razorblade” model drives attractive recurring revenue stream

• Highly experienced management team and Surgeon Advisory Board

• Development partnership with leading product realization firm Ximedica

• Recently raised CDN ~$38 million
Market Drivers: Hospital Trends

Mobility
- Movement to minimally invasive surgery

Flexibility
- Greater ROI: CLINICALLY, FINANCIALLY, OPERATIONALLY

Affordability
- Reduction in patient hospital stays
- Reduction of complication and infection rates

Versatility
- Management of budgets emphasizing cost-conscious, clinically-efficient solutions
Return on Investment

FINANCIAL

Less expensive surgical device

- Profitability for hospitals
- Affordability for secondary and tertiary hospitals
- Acceptability for Affordable Care

OPERATIONAL

Simpler, smaller surgical device

- Mobility
- Flexibility
- Operational Versatility

CLINICAL

Less complex, higher volume procedures

- More patients benefit from robotics
- More ambulatory surgeries are possible
- Benefits from MIS
SPORT™ Market Opportunity

**GENERAL SURGERY**
- Cholecystectomy
- Appendectomy
- Colectomy
- Bariatrics

**GYNECOLOGY**
- Benign Hysterectomy

**UROLOGY**
- Partial Nephrectomy
- Pyelolithotomy
- Adrenalectomy
- Bilateral Vasovasostomy

**TOTAL MARKET OPPORTUNITY OF 4 MILLION PROCEDURES**
SPORT™ Surgical System

- Small footprint
- Lower cost
- Improved dexterity
- Simulation training

- Easy setup and maneuverability
- < $1 M
- Expands procedural penetration
- Comprehensive training

Competitive advantages driving utilization and enhancing ROI for hospitals

For illustrative purposes only. Does not necessarily represent the final working product.
Market-Proven Business Model

One Time
System Sales
In excess of 6,000* placement opportunities in the United States

Recurring Revenue
Disposable Instruments
(high recurring revenue)

Service Agreements

* Source: American Hospital Association (January 2, 2014)
Ximedica Overview

• A full service product realization firm with over 25 years of experience developing medical device products

• 3 offices:
  ✓ Providence, RI
  ✓ St. Paul / Minneapolis, MN
  ✓ Hong Kong

• Ximedica’s Quality Management system is certified as compliant with ISO 13485:2012
  ✓ ISO 13485 is aligned with the U.S. Food and Drug Administration’s requirements for Quality Management Systems

• Has developed medical device products for some of the largest medical device manufacturers in the industry

• Titan has contracted Ximedica to bring the SPORT™ Surgical System to market, including technical, regulatory and manufacturing efforts
ESTABLISHED TIERED STRATEGY IN 2014

Objective was to de-risk functionality most critical to surgeons
  • Instruments
  • Controllability
  • Visualization

Tier 1 functionality developed and proven as separate initiatives

Regulatory Strategy, Product Risk Management and IP Strategies are being managed in parallel
TITAN MEDICAL INC.

ACHIEVEMENTS
Successfully implemented additional end effectors:

- Needle driver
- Hook cautery
- Curved dissector
- Atraumatic Grasper

Improved performance related to:

- Precision of movement
- Workspace
- Manufacturability

Initialized development of sterile drape interface

47% Size reduction

700 Hours of lab testing

30 Physical prototypes evaluated

5 Tissue tests

50 Hours of tissue interaction

Curved Dissector  Hook Cautery  Needle Grasper  Atraumatic Grasper
Controllability

Leveraged robust human factors/usability process per FDA guidelines

Developed controllability benchmark system

Substantially advanced controllability:
  • Reduced learning curve
  • Reduced cognitive load
  • Increased ability to perform complex tasks

20+
Advanced algorithms developed

50%
Latency reduction

12+
Robotic/non-robotic surgeons in controllability studies

Usability Studies

Controllability Data Analysis

Human Factors Analysis
Successfully integrated functionality of custom visualization system:

- Image capture
- Image process
- Image display

Advanced capabilities of image processing enable accurate color rendition

Advanced design of insertable camera module

Imaging portal resolution increased substantially and size reduced 50%

Developed 2nd generation insertion tube and articulation

Expert surgeons commented image is equivalent or better than state of the art
Integration

Successfully demonstrated on target performance of critical subsystems

Successfully integrated critical subsystems into highly functional robotic system

Capabilities include:

- Insertion into living abdominal cavity
- Deployment of instruments and camera
- Complex surgical tasks
- Acquisition and display of 1080p 3D image
- On-target controllability
Key Milestones

- **Design and Test of Feasibility Prototype Completed**
- **Units Built and Ready for Engineering Verification**
- **Early Human Feasibility Report Completed**
- **Audit for CE Mark Commenced**
- **Pivotal Human Clinical Trial Commenced**
- **Pivotal Trial Completed, 510(k) Submitted to FDA**
- **O.U.S. Commercial Launch (Pending CE Mark Approval)**
- **U.S. Commercial Launch (Pending 510(k) Market Clearance)**

- **1Q 2015**
- **2Q 2016**
- **3Q 2016**
- **4Q 2016**
- **Mid-2017**
Intellectual Property

Patents & Patent Applications

• 9 U.S. Patents

Licensed Technology

• 1 U.S. Patent
• 4 Patent Applications (US, EP)
Management Team

High-quality management team brings a combined 120 years of clinical, managerial, operational, and financial experience at leading health care companies and medical institutions.
# Management Team

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<th>Name &amp; Position</th>
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| **John Hargrove**  
Chief Executive Officer and Chairman | • Over 30 years of executive-level health care experience, including at Johnson and Johnson in the operating companies of Ethicon, Ethicon Endo-Surgery, and Johnson and Johnson Health Care Systems  
• Previous positions include Vice President of Corporate Accounts for Johnson & Johnson and President, Corporate Account Management for Ohmeda Inc. |
| **Reiza Rayman, MD, PhD**  
President and Co-Founder | • Clinical research in robotic surgery since 1998  
• Collaborated in world’s first endoscopic robotic coronary artery bypass (1999)  
• Obtained $30M grant for robotic surgery  
• Author and co-author of more than 20 publications on robotic surgery |
| **Stephen Randall, CPA, CGA**  
Chief Financial Officer | • Over 25 years of experience in senior financial roles at private, publicly-traded, and start-up companies in technology sector |
| **Dennis Fowler, MD**  
Executive Vice President, Clinical and Regulatory Affairs | • Co-inventor of the single-incision technology licensed by Titan from Columbia University  
• Minimally Invasive Surgery pioneer  
• Former Director of the Center for Innovation and Outcomes Research in the Department of Surgery, Columbia University  
• Experience commercializing multiple health care/surgical technologies |
## Surgeon Advisory Board

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<td><strong>Dennis Fowler, MD, MPH</strong></td>
<td>• Head of the Surgeon Advisory Board (see bio on previous slide)</td>
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| **Arnold Advincula, MD** | • Vice-Chair of Women’s Health and Chief of Gynecology at the Sloane Hospital for Women at Columbia University Medical Center/New York Presbyterian Hospital  
• Vice-President of the American Association of Gynecologic Laparoscopy (AAGL) |
| **Julianne Bingener, MD** | • Professor of Surgery and Vice Chair for Quality, Safety and Service in the Department of Surgery in the Mayo Clinic College of Medicine  
• Clinical and research focus is in the use of minimally invasive surgery and endoscopy for the diagnosis and treatment of gastrointestinal diseases |
| **Erik Dutson, MD**   | • Associate Professor of Surgery and Chief of the Section of Minimally Invasive and Bariatric Surgery at UCLA, where he is also the Executive Medical Director of UCLA’s Center for Advanced Surgical and Interventional Technology (CASIT)  
• Clinical interests include laparoscopic and robotic bariatric surgery, while his research interests focus on the development of computer-assisted technology |
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| Adrian Park, MD       | • Chairman of the Department of Surgery and Chair of the Earl Simulation to Advance Innovation and Learning Center of Anne Arundel Health System in Annapolis, MD  
  • Member of the Board of Directors of the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) and served as founding President and Board Chair of the Fellowship Council |
| Lee L. Swanstrom, MD  | • Chief of the Division of GI and Minimally Invasive Surgery at the Oregon Clinic, Director of Providence Health System’s Complex GI and Foregut Surgery Postgraduate Fellowship Program, and Clinical Professor of Surgery at OHSU  
  • A Director of the American Board of Surgery, Past President of both SAGES and the Fellowship Council, and Chief Innovations Officer and Director of the Innovations Fellowship at the Institutes des Hôpitalo Universitaires of the University of Strasbourg, France |
| John Valvo, MD        | • A practicing urologist and Executive Director and founder of the Robotic and Minimally Invasive Surgery Program at Rochester General Hospital in Rochester, New York  
  • The program ranks in the top two percent of robotic programs for surgery volume in the U.S., has trained over 30 robotic surgeons, and has enabled the completion of more than 7,000 robotic urology, gynecology, general, and colorectal operations |
| Yanghee Woo, MD       | • Assistant Professor of Surgery and the Director of the Global Excellence in Gastric Cancer Care at Columbia University Medical Center  
  • An upper gastrointestinal surgeon and has unique international training in minimally invasive/robotic surgery and has expertise in the surgical treatment of tumors of the stomach, pancreas, small bowel, gallbladder and bile ducts |
### March 31, 2015

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<th><strong>Share Price (TMD)</strong></th>
<th>$1.43 (as of Mar. 31, 2015)</th>
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<tr>
<td><strong>Cash, cash equivalents and short-term investments</strong></td>
<td>$27.4 million</td>
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<td><strong>Shares outstanding</strong></td>
<td>102.6 million (105.2 million FD*)</td>
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<td><strong>Market value</strong></td>
<td>146.7 million ($150.5 million FD*)</td>
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<td><strong>Management ownership (March 31, 2015)</strong></td>
<td>6.21%</td>
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*Fully diluted includes, under the Treasury Stock method, an additional 2,224,604 options with a weighted-average exercise price of CDN $1.14.

In addition, 3,665,900 warrants (@CDN $1.85 expiring December 10, 2015), 5,121,500 warrants (@CDN $2.00 expiring June 21, 2016), 3,484,500 warrants (@CDN $1.75 expiring December 22, 2016), 390,729 warrants (@CDN $1.77 expiring March 14, 2017), 5,300,705 warrants (@CDN $1.25 expiring March 13, 2018), 8,317,856 warrants (@CDN $2.00 expiring February 19, 2017), and an additional 12,346,914 warrants (@CDN $2.75 expiring April 23, 2017).
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