



Investor Presentation

TSX: TMD | Nasdaq: TMDI

September 4, 2019

Forward-looking Statements

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Titan Medical Overview

Designer and developer of a versatile single-port platform intended to address a growing multibillion-dollar market* for abdominal surgeries performed using robotic technology.

Designed for improved clinical performance, ease-of-use, operating room efficiency and hospital economics.



Investment Highlights

Novel Clinical Paradigm	✓ Multi-articulated instrument triangulation through a single incision
Promising Physician Feedback	✓ Tested by U.S. and EU surgeons from 4 surgical disciplines ✓ 45 preclinical studies prior to 15 GLP studies in 2019 ✓ 9 peer-reviewed abstract presentations and 1 published manuscript
Robust IP Portfolio	✓ 120+ global patents and applications
Disruptive Business Model	✓ Projected savings on capital equipment, service and procedure costs ✓ Recurring revenue model based on consumable components
Pre-commercial Momentum	✓ U.S. launch planned in 2020 using direct sales strategy
Favorable Market Dynamics	✓ Large, underpenetrated market due to size, complexity and costs associated with existing robotic surgical systems ✓ Applicable to multiple minimally invasive procedures



Evolution of Surgical Care

Open Surgery

- Open surgery offers broad application
- Requires significant hospital stay and recovery time
- Risk of adverse events

Minimally Invasive Surgery

- Minimally Invasive Surgery (MIS) has been increasing over the past 25 years
- Reduced hospitalization time
- Reduced risk of adverse events
- Requires highly skilled surgeons

Multi-Port Robotic Surgery

- Robotic surgery further expands upon the benefits of MIS
- Over 1 million* global robotic procedures were performed in 2018
- **Technology remains expensive with procedural and operational limitations**

Single-Port Robotic Surgery

- Application of da Vinci® Single-Site in GYN and general surgery showed early promise
- da Vinci SP® single port robotic system received initial FDA clearance for urology in 2018
- **Robotic visualization, precision and dexterity with triangulation delivered through a single incision – such as Titan Medical’s single-port surgical system – the next frontier**



Today's Robotic Surgery Environment

Robotic technology was introduced to mitigate the risks of MIS, reduce variations in procedural efficiency and improve consistency of patient outcomes.

Benefits

- Increased Dexterity
- Improved Visualization (3D)
- Improved Ergonomics

Titan's single-port robotic system offers the benefits of multi-articulated surgery through a single point of entry in order to reduce trauma.



Technology Differentiation

Engineered for Simplicity and Efficiency



Single-Incision

With a single incision made around the umbilicus, the result can be near-scarless surgery



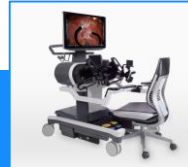
Small Footprint

Enhanced mobility and ease-of-use leads to quicker deployment in multiple ORs and higher utilization



Multi-Articulating

Single-use end-effectors on reusable multi-articulating instrument arms result in optimal and economical device performance in every procedure



Open Display

3D high-definition display offers the balance of surgical immersion and situational awareness in the OR



Ergonomic Workstation

Highly ergonomic workstation with natural handle interface enables comfortable surgical posture, even during long procedures



Purposeful Design

Designed from the ground up to improve:

Clinical Capabilities

OR Efficiency

Hospital Economics

System Overview

- Versatile single-port robotic surgery solution
- Smaller OR footprint than multi-port systems
- Designed to overcome multi-port robotic surgery limitations
- Engineered for performance, efficiency and cost-effectiveness
- Expected to provide access to underserved market segments, such as ambulatory surgery centers



Workstation

Open, unobtrusive 3D high-definition display

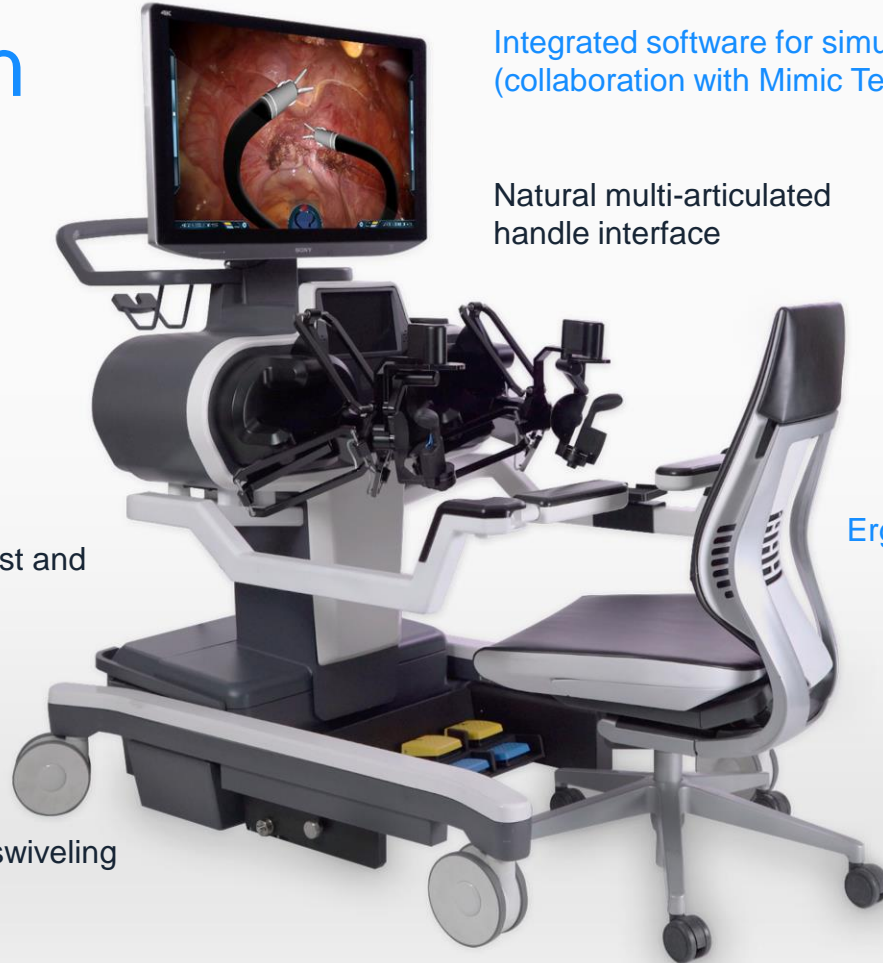
Integrated software for simulation training (collaboration with Mimic Technologies, Inc.)

Natural multi-articulated handle interface

Multi-configurable elbow rest and foot pedal positioning

Ergonomically focused design

Easily maneuverable with swiveling easy-gliding coasters



Patient Cart

Easy to load and unload instruments through detachable camera insertion tube with integrated 2D high-definition camera

Single-port enables swift multi-quadrant positioning

Minimal cable management in OR

Single-arm configuration with no external moving parts facilitates simple setup and assistant-friendly surgery

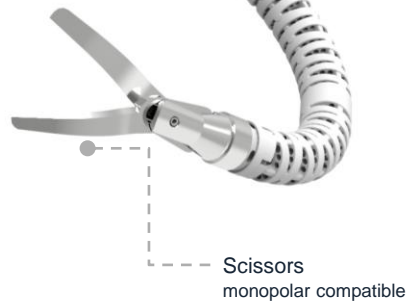
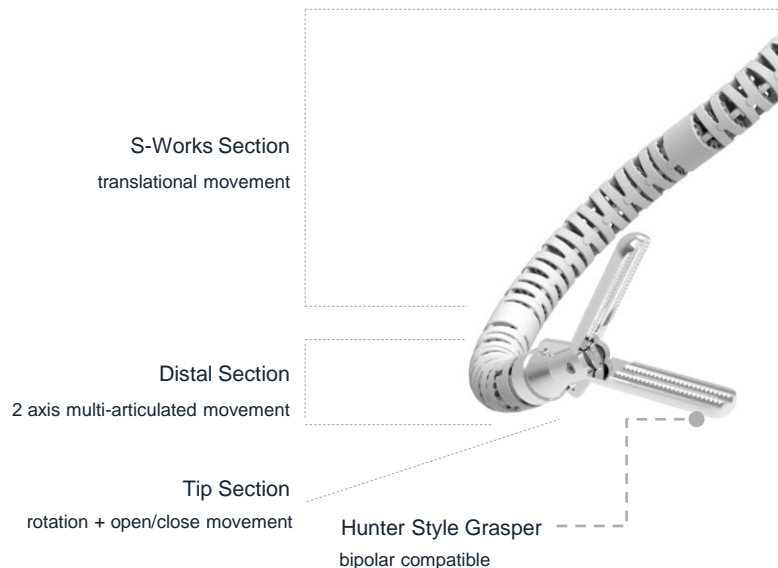
Instruments and steerable 3D high-definition camera delivered through camera insertion tube of 25 mm diameter

Compact, rollers enable mobility to maneuver and position



Multi-Articulated Instruments

Variety of multi-use instruments and single-patient-use end effectors for grasping, suturing, cutting and coagulation



Dissector
bipolar compatible



Hook
monopolar compatible



Needle Driver



Traditional Grasper

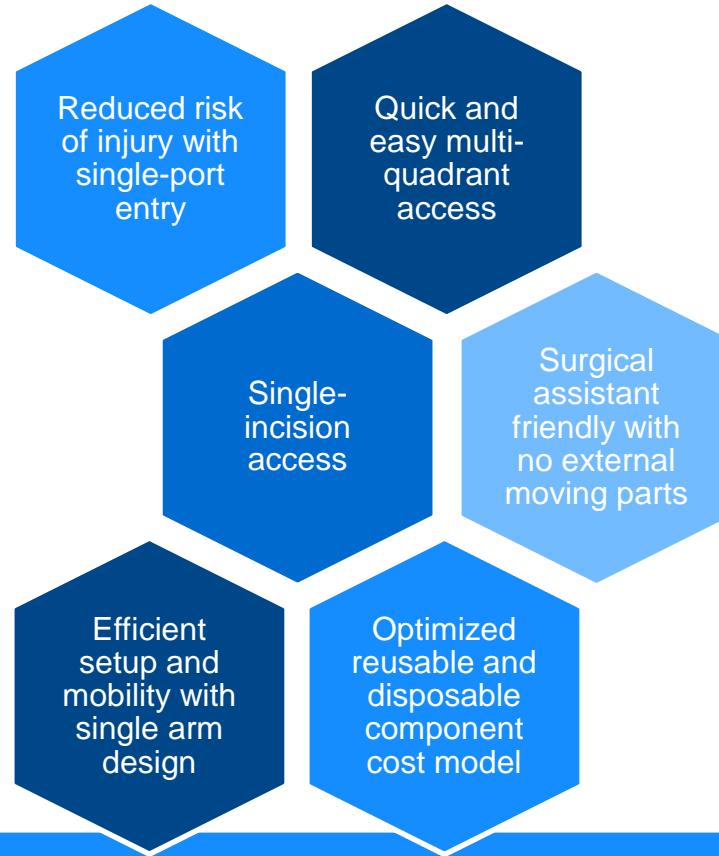


Open architecture for adaptation of future end effectors and functionality



Single-port surgery
with enhanced robotic
technology

Optimal Patient Care



Titan Medical's single-port surgical system is designed to provide surgeons with multi-articulated instruments in a triangulated configuration through a single incision.

Intellectual Property

A unique single-port robotic surgery system that is differentiated by its patented multi-articulating instruments, user interface and ergonomic features.

Differentiated and innovative design provides a strong position on freedom to operate.

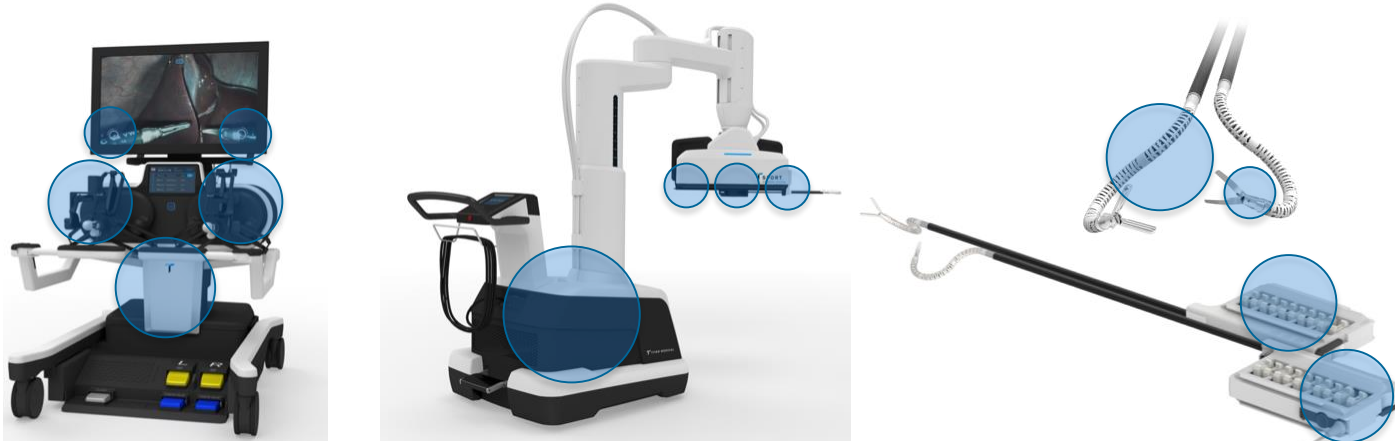
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U.S. & International
Patents Issued

82

Applications Pending

Areas of Titan Medical's single-port robotic surgical system covered by patents or pending applications:



Proven Feasibility in a Wide Variety of Procedures

45 Procedures Performed to Date (*live porcine unless otherwise indicated, excludes GLP*)

- GYN and GYN-ONC (8 procedures at Columbia University and Florida Hospital):
 - Radical Hysterectomy with Bilateral Salpingo Oophorectomy and Bilateral Pelvic / Para-Aortic Node Dissection
 - Simple Hysterectomy with Bilateral Salpingo Oophorectomy and Bilateral Pelvic Node Dissection
 - Simple Hysterectomy with Bilateral Salpingo Oophorectomy
- Urology (19 procedures at IHU Strasbourg and Florida Hospital):
 - Hemi-Nephrectomy and Partial Nephrectomy
 - Prostatectomy (Human Cadaver)
 - Pyeloplasty
 - Ureteral-Bladder Anastomosis
- General Surgery (14 procedures at IHU Strasbourg and Florida Hospital):
 - Cholecystectomy (1 Human Cadaver, 5 Live Porcine)
 - Nissen Fundoplication (1 Human Cadaver, 3 Live Porcine)
 - Esophagectomy (Human Cadaver)
 - Gastrectomy
 - Splenectomy
- Colorectal (4 procedures at Florida Hospital):
 - Colectomy
 - Low Anterior Resection



Peer-reviewed Abstracts to Date

Single-port robotic surgery with Titan's system is feasible & repeatable.

- 1. Multi-disciplinary applications of a new robotic platform** by Barbara Seeliger, MD and Lee Swanstrom, MD (IHU Strasbourg)
Accepted and presented at Society of American Gastrointestinal and Endoscopic Surgeons Meeting, Seattle, WA, April 2018
- 2. Single-port prostatectomy using SPORT Surgical System** by Eric Barret, MD (IMM, France)
Accepted and presented at EAU Section of Urology Technology Meeting, Modena, Italy, May 2018
- 3. Multispecialty single port robotic technology applied in the live animal model: proof of concept** by Travis Rogers, MD, Eduardo Parra Davila, MD, Vipul Patel, MD (all from Florida Hospital), Ricardo Estape, MD (South Miami GOG) and Armando Melani, MD (IRCAD Brazil)
Accepted and presented as a poster at Society of Robotic Surgery Meeting, Stockholm, Sweden, June 2018
- 4. Feasibility of single-port partial nephrectomy using SPORT surgical system** by Eric Barret, MD (IMM, France)
Accepted and presented as a poster at Society of Robotic Surgery Meeting, Stockholm, Sweden, June 2018
- 5. Single-port robotic partial and hemi nephrectomy using a novel single port robotic platform** by Sebastien Crouzet, MD (University of Lyon, France) and Barbara Seeliger, MD (IHU Strasbourg)
Accepted and presented at EAU Robotic Urology Section Meeting, Marseille, France, September 2018
- 6. Reverse Objective Structured Assessment of Technical Skills (Reverse-OSATS) as a means of measuring the capability of the Titan Medical SPORT Surgical System on core surgical principles** by Chetna Arora, MD, Arnold P. Advincula, MD (both from Columbia University Medical Center) and William B. Burke, MD (Stony Brook Cancer Center)
Accepted and presented at Society of European Robotic Gynecologic Surgeons Meeting, Milan, Italy, September 2018
- 7. Multispecialty single port robotic technology applied in the live animal model: proof of concept** by Travis Rogers, MD, Eduardo Parra Davila, MD, Vipul Patel, MD (all from Florida Hospital), Ricardo Estape, MD (South Miami GOG) and Armando Melani, MD (IRCAD Brazil)
Accepted and presented at World Congress of Endourology Meeting, Paris, France, September 2018
- 8. Feasibility of single-port partial nephrectomy using SPORT surgical system** by Eric Barret, MD (IMM, France)
Accepted and presented at World Congress of Endourology Meeting, Paris, France, September 2018
- 9. Reverse Objective Structured Assessment of Technical Skills (Reverse-OSATS) as a means of measuring the capability of the Titan Medical SPORT Surgical System on core surgical principles** by Chetna Arora, MD, Arnold P. Advincula, MD (both from Columbia University Medical Center) and William B. Burke, MD (Stony Brook Cancer Center)
Accepted and presented at American Association of Gynecologic Laparoscopists Global Congress, Las Vegas, NV, November 2018



Published Manuscript

Surgical Endoscopy

Enabling single-site laparoscopy: the SPORT platform

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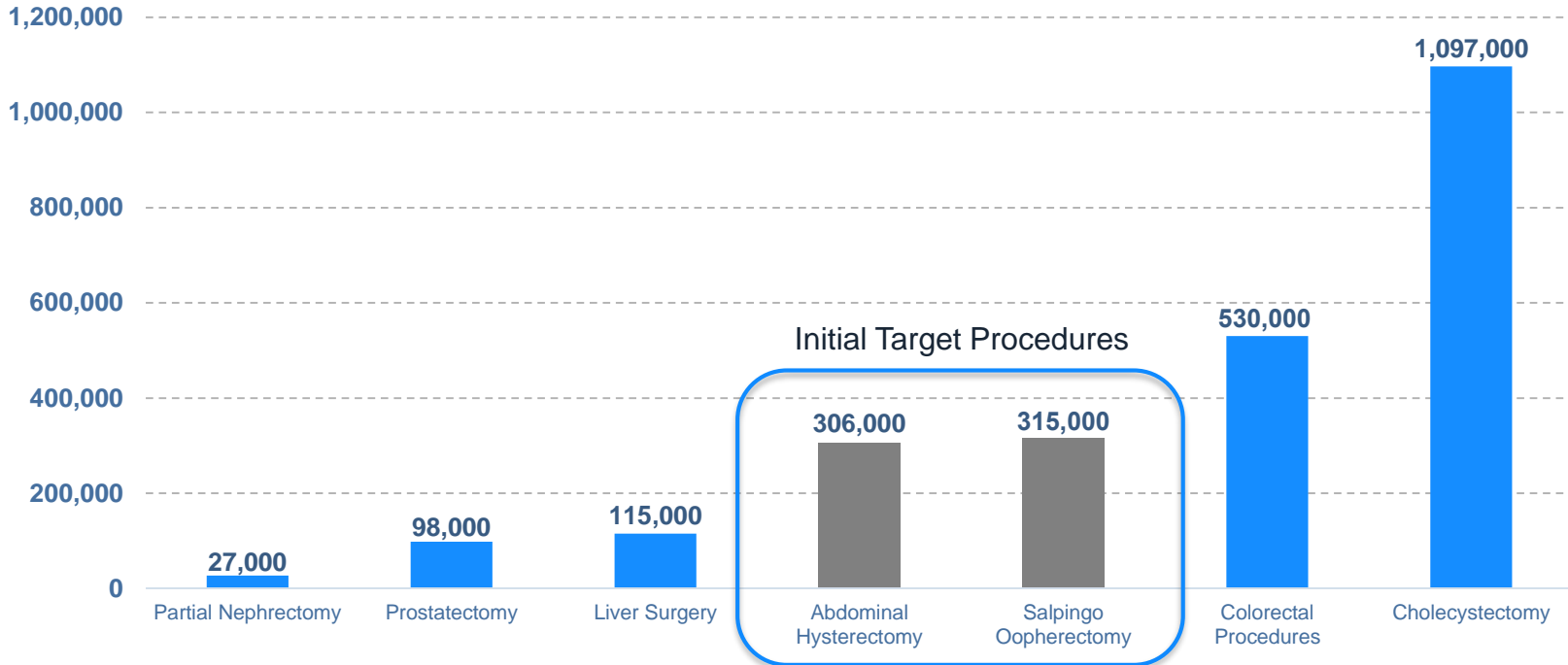
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4 Division of GI/MIS, The Oregon Clinic, Portland, OR, USA



Potential Procedures for Single-port Surgery

Projected 2017 U.S. Procedure Volume (based on most recently-published research)*



*Source: Life Sciences Intelligence Meddevicetracker Report MDT 17015, published October 2017 with annual projections for 2018



Initial U.S. Target: Benign Gynecologic Surgery

- Rationale:
 - Potential to reduce trauma and scarring, and offers possibility of faster recovery for an engaged patient population
 - Ability to produce positive patient outcomes in relatively low-risk benign procedures
 - Viable alternative to other single-port approaches based on gynecologic surgeon feedback from preclinical studies
 - Attractive procedure volumes performed in outpatient as well as inpatient settings, favoring smaller footprint and lower-cost model
 - Clarity of regulatory pathway
 - With an initial U.S. focus, an ability to efficiently provide comprehensive product training and support to facilitate early product adoption and consistent, successful outcomes



Initial U.S. Target: Benign Gynecologic Surgery

Potential addressable annual market opportunity is \$900M+ in U.S. alone¹

- Abdominal Hysterectomy: 306,000 procedures per year in U.S.²
- Salpingo-Oophorectomy and Oophorectomy: 315,000 procedures per year in U.S.²
- Endometriosis³:
 - Underdiagnosed, may affect as many as 6.5 million U.S. women
 - Most common in women in their 30s and 40s
 - Surgery usually chosen for severe symptoms
 - Some surgeries can be performed in outpatient surgery setting

(1) Based on *potential* of 621,000 procedures per year in the U.S. and management's estimation of revenue of \$1,500 per procedure

(2) Source: Life Science Intelligence Report LSI-PV-US173SU, published November 2017 with annual projections for 2018

(3) Source: A Fact Sheet From the Office on Women's Health, Department of Health & Human Services, USA, www.womenshealth.gov



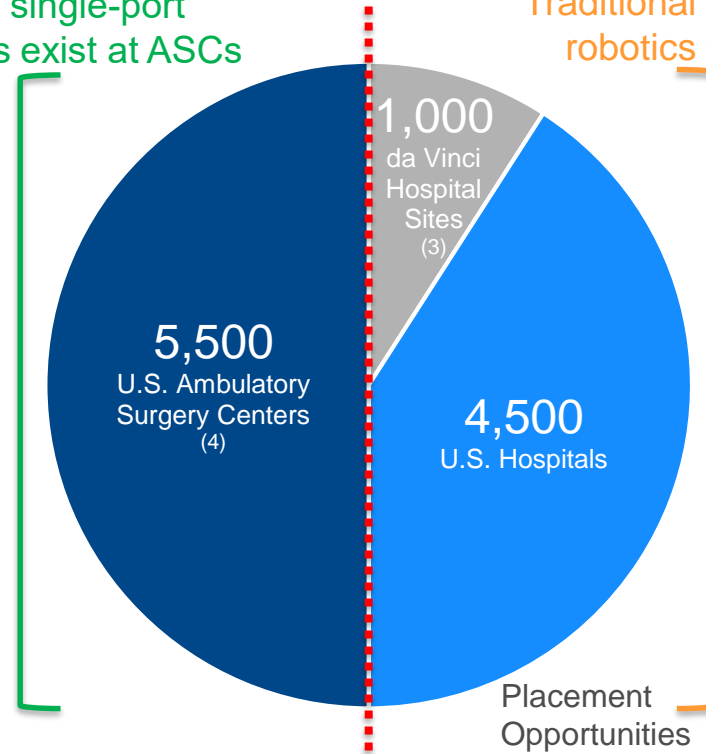
Potential to address needs of both hospitals & ASCs

\$12B+
U.S. Capital
Revenue
Opportunity

10,000 Unaddressed
Placement Opportunities^(1,2)

Potential single-port
opportunities exist at ASCs

Traditional multi-port
robotics targets



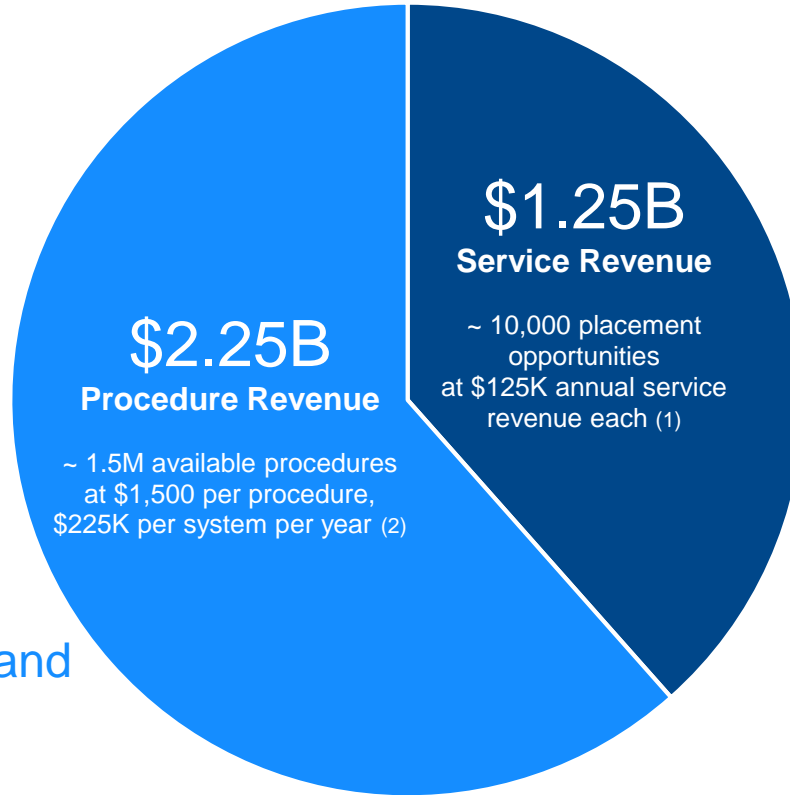
(1) Potential addressable market opportunity based on management's assumption of one system per hospital at \$1.25M per system, plus accessories
(2) Registered U.S. Hospitals Source: <http://www.aha.org/research/rc/stat-studies/fast-facts.shtml>
(3) Intuitive Surgical da Vinci U.S. Hospitals Source: <http://davincisurgeonlocator.com/>
(4) Ambulatory Surgery Centers Source: <http://www.ascassociation.org/advancingurgicalcare/whatisanasc/numberofascperstate>



\$3.5B

U.S. annual recurring revenue opportunity

estimated for service and consumables



Projected cost savings of 20% vs. multi-port robotic surgical systems²

(1) Potential service revenue based on management's projection of \$125,000 of annual service revenue per system after year 1

(2) Potential procedure revenue based on management's assumption of \$1,500 per procedure revenue, assuming 150 procedures per system per year and an estimate of approximately \$1,900 per procedure revenue for multi-port system use



2019 Progress Update

First Quarter:

- ✓ Announced completion of Engineering Confidence Build
- ✓ Announced publication of first peer-reviewed manuscript in Surgical Endoscopy
- ✓ Documented results of confidence build unit testing and implemented design improvements
- ✓ Began planning preliminary audit of quality system by European Notified Body

Second Quarter:

- ✓ Updated system design and related hardware and software documentation
- ✓ Initiated capital equipment design freeze
- ✓ Commenced preclinical live animal (swine) and cadaver surgery studies under Good Laboratory Practice (GLP) protocols

Updated Plan for Second-half of 2019

Third Quarter:

- ✓ Complete and document preclinical live animal (swine) and cadaver surgery studies
- ✓ Verify production system operation with clinical experts under rigorous formal human factors evaluation under simulated robotic manipulation exercises
- ✓ Complete audits for ISO 13485 Certification
- Compile documentation for Investigational Device Exemption (IDE) application to FDA

Fourth Quarter:

- Implement software enhancements, improvements to instruments and sterile interface
- Obtain ISO 13485 Certification
- Submit IDE application to FDA
- Receive IDE approval from FDA



IDE Preparation Activities

GLP Studies Completed

- Hysterectomy procedures
 - Acute and chronic animal
 - Human cadaver
 - Lab and histology reports in process

Human Factors Evaluation (HFE) Studies Completed

- Important component of regulatory filings
 - Led by independent HFE firm
 - IDE surgeon and staff participation
 - Final report in process



Commercial Timeline

	2018	2019	2020
Established US & EU Centers of Excellence	✓		
Proven Feasibility	✓		
Integrated Simulation Training	✓		
Engineering Confidence Build	✓		
Design Freeze		✓	
Commence GLP Animal Studies		✓	
IDE Approval		Q4	
Submit 510(k) Application			H1
Submit Technical File for CE Mark			H1
Anticipated Regulatory Clearance			H2
Projected Initial Launch			H2





Summary

- Targeting growing multibillion-dollar global robotic surgery market
- Highly versatile, differentiated advanced single-port platform
- Designed for improved clinical performance, ease of use, operating room efficiency and hospital economics
- Potential benefits to patients, surgeons and hospitals versus competitive offerings
- System performance verified in preclinical studies with data presented at clinical conferences
- Capital and recurring revenue streams
- Experienced management team with a record of success



Thank You

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