

**TITAN MEDICAL INC. MANAGEMENT’S**  
**DISCUSSION AND ANALYSIS**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**  
**(IN UNITED STATES DOLLARS)**

This Management’s Discussion and Analysis (“MD&A”) is dated February 13, 2018.

This MD&A provides a review of the performance of Titan Medical Inc. (“Titan” or the “Company”) and should be read in conjunction with its audited financial statements for the year ended December 31, 2017 (and the notes thereto) (the “Financial Statements”). The Financial Statements have been prepared in accordance with International Financial Reporting Standards (“IFRS”). All financial figures are in United States Dollars except where otherwise noted.

***Internal Control over Financial Reporting***

During the year ended December 31, 2017, no changes were made to the Company’s internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

***Forward-Looking Statements***

This discussion includes certain statements that may be deemed “forward-looking statements”. All statements in this discussion other than statements of historical facts that address future events, developments or transactions that the Company expects, are forward-looking statements. These forward-looking statements are made as of the date of this MD&A. Forward-looking statements are frequently, but not always, identified by words such as “expects”, “expected”, “expectation”, “anticipates”, “believes”, “intends”, “estimates”, “predicts”, “potential”, “targeted”, “plans”, “possible”, “milestones”, “objectives” and similar expressions, or statements that events, conditions or results “will”, “may”, “could”, or “should” occur or be achieved. Forward-looking statements that appear in this MD&A include: the Company is committed to developing its robotic surgical system with the objective of substantially improving upon minimally invasive surgery; the Company aims to pursue a broad set of surgical indications for the SPORT Surgical System, including general abdominal, gynecologic, urologic and colorectal procedures; the SPORT Surgical System is being developed with the goal of inserting the interactive multi-articulating instruments and the 3D high definition vision system into the patient’s body cavity through a single incision; the Company continues to explore in-licensing opportunities for technologies that may be used in conjunction with the Company’s robotic surgical system; the Company anticipates expanding its patent portfolio by filing patent applications as it progresses in the development of robotic surgical technologies and by licensing suitable technologies; the Company’s current plan is to focus on the development and commercialization of the SPORT Surgical System at estimated incremental costs and according to the timeline as set forth in the table below; the Company has decided to build additional prototypes and develop more advanced instruments and training systems for expanded use for additional surgical procedures; the Company intends to utilize a direct sales force and/or distribution partner(s) to initiate marketing the SPORT Surgical System to hospitals; the Company has not deviated from its plan to use the net proceeds from certain

offerings towards the ongoing development and commercialization of its SPORT Surgical System and general working capital purposes; Titan will continue its pursuit of key strategic relationships, carrying on efforts to secure its intellectual property through the patent and licensing process.

Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. Forward-looking statements are statements about the future and are inherently uncertain, and actual results of the Company or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, such as current global financial conditions, dependence on key personnel, conflicts of interest, obtaining of or cost of additional financing, strategic alliances, uncertainty as to product development and commercialization milestones, results of operations, competition, technological advancements, rapidly changing markets, uncertain market, uncertain acceptance of the Company's technology or intellectual property, infringement of intellectual property rights, scope and cost of insurance and uninsured risks, risks associated with the Company entering into additional long-term contractual arrangements, ability to license other intellectual property rights, government regulation, changes in government policy, changes in accounting and tax rules, regulatory inquiries, requirements and approvals, contingent liabilities, manufacturing and product defects, history of losses, stock price volatility, future share sales, limited operating history, fluctuating financial results and currency fluctuations. Please also refer to the risk factors set forth starting on page 16 of the Company's Annual Information Form for the 2016 fiscal year, available on SEDAR at [www.sedar.com](http://www.sedar.com), which are expressly incorporated by reference into the MD&A.

There may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Other than as specifically required by law, the Company undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made, or to reflect the occurrence of unanticipated events, whether because of new information, future events or results or otherwise. Investors are cautioned that any such statements are not guarantees of future performance and that actual results or developments may differ materially from those projected in the forward-looking statements. Accordingly, investors should not place undue reliance on forward-looking statements.

### ***History and Business***

The Company is, and since July 28, 2008 has been, incorporated under the *Business Corporations Act* (Ontario).

The address of the Company's corporate office and its principal place of business is 170 University Avenue, Suite 1000, Toronto, Ontario, Canada M5H 3B3.

The Company was formed by way of amalgamation under the *Business Corporations Act* (Ontario) on July 28, 2008. Titan does not have any subsidiaries. The Company is committed to developing its robotic surgical system for use in connection with minimally invasive surgery (surgery without large incisions). From inception, the Company has focused on research and development toward

its robotic surgical technology and building its intellectual property portfolio, trade secrets and scientific and technical knowledge base.

### ***Overall Performance***

The Company's business is focused on research and development through to the planned commercialization of computer-assisted robotic surgical technologies for application in minimally invasive surgery ("MIS"). The Company is currently developing the SPORT Surgical System, a single-port robotic surgical system. The SPORT Surgical System is comprised of a surgeon-controlled patient cart that includes a 3D high definition vision system and multi-articulating instruments for performing MIS procedures, and a surgeon workstation that provides the surgeon with an ergonomic interface to the patient cart and a 3D endoscopic view inside the patient's body during MIS procedures. With the SPORT Surgical System, the Company aims to pursue a broad set of surgical indications, including general abdominal, gynecologic and urologic procedures.

Development of the SPORT Surgical System has proceeded in response to "voice of customer" feedback and, consultation with medical technology development firms and input from the Company's Surgeon Advisory Board (the "Surgeon Advisory Board") comprised of key opinion leaders in targeted fields. This approach has allowed the Company to design a robotic surgical system that is intended to include the traditional advantages of robotic surgery, including 3D stereoscopic imaging and restoration of instinctive control, as well as new and enhanced features, including an advanced surgeon workstation incorporating a 3D high definition display providing a more ergonomically friendly user interface and a patient cart with enhanced instrument dexterity. Overall, the surgical system is designed to be adapted to the needs of the surgeon, rather than the surgeon having to adapt to the system.

The SPORT Surgical System patient cart is being developed to deliver interactive multi-articulating instruments and a 3D high definition vision system into a patient's abdominal body cavity through a single access port. The design of the patient cart includes an insertion tube of approximately 19-millimeter (mm) diameter, capable of insertion into the body cavity through a skin incision of approximately 25mm. The insertion tube includes a collapsible distal end portion incorporating a 3D high definition camera module that once inserted, is configured to deploy into a working configuration wherein the camera module and multi-articulating instruments can be controlled by a surgeon via the workstation. The reusable multi-articulating, snake-like instruments are designed to couple with sterile detachable single patient use robotic end effectors that would provide first use quality in every case and eliminate the reprocessing of the complete instrument. The use of reusable (for a specific number of uses) robotic instruments and single patient use end effectors is intended to minimize the cost per procedure. The patient cart is also designed to include a mast, a boom and wheels for optimal configurability for a variety of surgical indications and the ability to be maneuvered within the operating room, or redeployed within hospitals and surgical centers, where applicable.

As part of the development of the SPORT Surgical System, the Company plans to develop a robust training curriculum and post-training assessment tools for surgeons and surgical teams. The proposed training curriculum will likely include cognitive pre-training, psychomotor skills training, surgery simulations, live animal and human cadaver lab training, surgical team training,

troubleshooting and an overview of safety. Post-training assessment will include validation of the effectiveness of those assessment tools.

The Company continuously evaluates its technologies under development for intellectual property protection through a combination of trade secrets and patent application filings. As of December 31, 2017, the Company had ownership of 20 patents and 48 patent applications. The Company anticipates expanding its patent portfolio by filing patent applications as it progresses in the development of robotic surgical technologies and by licensing suitable technologies. The Company previously entered into exclusive license agreements with several organizations including The Trustees of Columbia University. The license agreement with Columbia University provided the Company with certain rights for the development and commercialization of robotic surgical technology for use in single port surgery. On August 25, 2017, the Company gave notice of its intent to terminate the license agreement with Columbia University.

As part of its development and commercialization efforts, the Company has established certain milestones that it uses to assess its progress towards developing commercially viable robotic surgical technologies. These milestones relate to technology and design advancements as well as to targeted dates for preclinical studies and completion of regulatory submissions. To assess progress, the Company regularly tests and evaluates its technology. If such evaluations indicate technical defects or failure to meet cost or performance goals, the Company's commercialization schedule could be delayed and potential purchasers of its initial commercial systems may decline to purchase them or may choose to purchase alternative technologies.

Among other things, the future success of the Company is substantially dependent on continuing its research and development program, including the ongoing support of any outsourced research and development suppliers.

In addition to being capital intensive, research and development activities relating to the sophisticated technologies that the Company is developing are inherently uncertain as to future success and the achievement of desired results. If delays or problems occur during the Company's ongoing research and development activities, important financial and human resources may need to be diverted toward resolving such delays or problems. Further, there is material risk that the Company's research and development activities may not result in a functional, commercially viable product or one that is approved by regulatory authorities. See "Risk Factors".

The current prototype units incorporate previous design and engineering work completed on the SPORT Surgical System. These units have and will continue to be used for preclinical live animal and human cadaver studies, incorporating the most recent design and engineering modifications. The live animal and human cadaver studies are expected to provide information in support of anticipated regulatory submissions to the United States Food and Drug Administration ("FDA") for marketing clearance, and European regulatory authorities for the CE Mark. Management has initiated communications with the FDA and a European Notified Body (for the CE Mark), to confirm the preclinical studies and possibly, confirmatory human data that may be required to support formal regulatory submittals. Communications are ongoing with the intent of clarifying details of the regulatory pathways during 2018.

In 2017 the Company set milestones early in the year and thereafter proceeded to achieve every one of them on or ahead of schedule. In particular, the Company:

- Finalized user requirements for the first-generation robotic surgical system, removing features that may have impeded progress to commercialization.
- Selected and confirmed strategic Centers of Excellence for preclinical studies in the U.S. and Europe, which included three of the world's top robotic surgical training centers, Florida Hospital Nicholson Centre in Celebration, Florida, Columbia University in New York City and the Institut Hospitalo-Universitaire (IHU) in Strasbourg, France.
- Through its contract development and manufacturing partner, continued to test and evaluate the performance of subsystems of early surgical system prototypes in order to identify potential deficiencies that could impede the deployment of the advanced prototypes into the Centers of Excellence.
- Completed initial formative human factors studies to assist in anticipating the advantages and challenges to the implementation of the Company's design concept in an operating room.
- Implemented design changes on an expedited basis to ensure that advanced prototypes would be fully functional when deployed at the Centers of Excellence.
- Working with a leading simulation provider, completed the initial requirements for an architecture for simulation software, the supporting hardware and the design of a training program.
- Deployed advanced prototypes at the three Centers of Excellence, allowing to date, twelve experienced robotic surgeons from three countries to successfully perform twenty-one live animal studies and two human cadaver studies.
- The Company received notices of issuance of additional US and European patents.
- Communicated with the U.S. Food and Drug Administration (FDA), filing a Q-submission and receiving a response, which initiates a current and formal dialog on a regulatory pathway for the Company's robotic surgical system in the U.S.; and concurrently, met with the British Standards Institution (BSI) Group, a qualified European Notified Body regarding the process for securing the CE Mark for the Company's surgical system in Europe.

### ***Discussion of Operations***

The Company incurred a net and comprehensive loss of \$33,586,984 during the year ended December 31, 2017, compared with a net and comprehensive loss of \$23,323,496 for the year ended December 31, 2016. This increase in net and comprehensive loss for the year is primarily attributed to the reduced research and development activities in 2017, offset by the substantial increase in the fair value of warrant liabilities in 2017 compared to 2016. In addition, foreign

exchange loss for the year ended December 31, 2017 was \$542,664 compared to \$277,303 for the year ended December 31, 2016.

During the year ended December 31, 2017, corporate efforts were ongoing related to furthering strategic product development and manufacturing relationships, carrying on efforts to secure the Company's intellectual property through the patent and licensing process, and continuing the development of the Company's robotic surgical system.

Research and development expenditures (all of which were expensed in the period) for the year ended December 31, 2017 and December 31, 2016, respectively, were as follows:

<b>Research and Development Expenditures</b>	<b>Year Ended December 31, 2017</b>	<b>Year Ended December 31, 2016</b>
Intellectual property development	\$ 25,704	\$ 20,000
License and royalties	43,575	82,531
Product development	12,831,576	22,475,354
Total	<u>\$ 12,900,855</u>	<u>\$ 22,577,885</u>

Research and development expenditures decreased in the year ended December 31, 2017 compared to the same period in 2016. This decrease was primarily due to a reduction in available funding in 2017 compared to 2016.

Excluding foreign exchange, general and administrative expenses for the year ended December 31, 2017, were \$5,983,201 compared to \$4,949,905 for the comparable period in 2016. This increase in 2017 over 2016 is attributed primarily to an increase in stock-based compensation and management and administrative salaries.

The loss attributed to the change in fair value of warrants for the year ended December 31, 2017 was \$13,133,671 compared to a gain of \$4,950,013 for the same period in 2016. The change in loss of \$18,083,684, reflects a more significant increase in the fair value of warrants in 2017 compared to 2016 and the loss on extinguishment of \$709,782 regarding the conversion of the Longtai deposit to common shares in Q3 2017.

The company realized \$17,442 of interest income in the year ended December 31, 2017 and \$7,540 in the year ended December 31, 2016. This increase is primarily attributed to the substantial increase in cash in the 4th quarter of 2017 from the exercise of warrants and the offering of units completed in the fourth quarter of 2017.

For a discussion regarding the status of the development of the SPORT Surgical System, please see "*Development Objectives*" below.

### ***Summary of Quarterly Results***

The following is selected financial data for each of the eight most recently completed quarters, derived from the Company's financial statements, calculated in accordance with IFRS.

	Three Months Ended December 31 2017	Three Months Ended September 30 2017	Three Months Ended June 30, 2017	Three Months Ended March 31, 2016	Three Months Ended December 31 2016	Three Months Ended September 30 2016	Three Months Ended June 30, 2016	Three Months Ended March 31 2016
Net sales	-	-	-	-	-	-	-	-
Net and Comprehensive Loss from operations	\$12,829,980	\$13,902,817	\$1,865,913	\$4,988,274	\$2,008,365	\$1,659,863	\$7,934,874	\$11,720,394
Basic and diluted loss per share	\$0.04	\$0.06	\$0.01	\$0.03	\$0.01	\$0.01	\$0.05	\$0.09

Changes in key financial data from the three months ended March 31, 2016 to the three months ended December 31, 2017 reflect the ongoing development of the SPORT Surgical System. Also included is the requirement to revalue the Company's warrant liability at fair value, with subsequent changes recorded through net and comprehensive loss for the period.

### *Liquidity and Capital Resources*

The Company currently does not generate any revenue or income (other than interest income on its cash balances) and accordingly, it is (and it will be for the foreseeable future) dependent primarily upon equity financing for any additional funding required for development and operating expenses.

The ability of the Company to arrange such financing in the future will depend in part upon prevailing capital market conditions and the business success of the Company. There can be no assurance that the Company will be successful in its efforts to arrange additional financing on terms satisfactory to the Company. If additional financing is raised by the issuance of shares or convertible securities from treasury, control of the Company may change and shareholders may suffer additional dilution. If adequate funds are not available, or are not available on acceptable terms, the Company may not be able to take advantage of opportunities, or otherwise to continue its technology development program at its current pace.

The Company had \$26,130,493 of cash and cash equivalents on hand and accounts payable and accrued liabilities of \$2,218,352 excluding warrant liability, at December 31, 2017, compared to \$4,339,911 and \$4,232,201 respectively, at December 31, 2016. The Company's working capital as at December 31, 2017 was \$26,675,319 excluding warrant liability, compared to \$2,366,832, at December 31, 2016.

Below is a table that sets out the various series of Titan warrants that were previously issued, using historic rates. The disclosure of the potential proceeds in the last column of the table below assumes all warrants are exercised on or before the expiry date. However, there is no assurance that any warrants will be exercised prior to their expiry.

	Issue Date	Expiry Date	Number Issued	Number Outstanding	Exercise Price (CDN \$)	Potential Proceeds (CDN \$)
TMD.WT.C	March 13, 2013	March 13, 2018	6,260,763	5,260,705	\$1.25	6,575,881

TMD.WT. F	November 16, 2015	November 16, 2020	7,012,195	7,012,195	\$1.60	11,219,512
TMD.WT. G	February 12, 2016	February 12, 2021	11,670,818	11,600,818	\$1.00	11,600,818
TMD.WT. G	February 23, 2016	February 12, 2021	1,746,789	1,746,789	\$1.00	1,746,789
TMD.WT.H	March 31, 2016	March 31, 2021	15,054,940	15,054,940	\$1.20	18,065,928
TMD.WT.H	April 14, 2016	March 31, 2021	2,258,241	2,258,241	\$1.20	2,709,889
TMD.WT. I	September 20, 2016	September 20, 2021	17,083,333	17,083,333	\$0.75	12,812,500
TMD.WT. I	October 27, 2016	September 20, 2021	2,030,000	2,030,000	\$0.75	1,522,500
NOT LISTED	March 16, 2017	March 16, 2019	10,733,600	4,074,708	\$0.40	1,629,883
NOT LISTED	March 16, 2017	March 16, 2021	10,733,600	10,657,600	\$0.50	5,328,800
NOT LISTED	June 29, 2017	June 29, 2022	48,388,637	2,319,305	\$0.20	463,861
NOT LISTED	July 21, 2017	June 29, 2022	11,117,000	11,117,000	\$0.20	2,223,400
NOT LISTED	August 24, 2017	August 24, 2022	16,892,000	16,892,000	\$0.20	3,378,400
NOT LISTED	December 5, 2017	December 5, 2022	46,000,000	46,000,000	\$0.60	27,600,000
TOTAL			206,981,916	153,107,634		106,878,161

### ***Development Objectives***

The Company uses a combination of internal resources and external development firms to execute the research, development and commercialization plan for the Company's robotic surgical system.

The results achieved by surgeons in operating prototypes in animal and cadaver studies during 2017 validated the potential for single incision surgeries to be performed with the SPORT Surgical System. However, the studies also confirmed that improvements to the system would be necessary before proceeding toward regulatory clearance and commercialization. The planning for engineering activities has already commenced, but the execution of those activities will increase the cost of product development and extend the timeline to commercialization. The Company anticipates that 2018 will be a year of intense product development in preparation for manufacturing, including hardware and software at all levels, involving the workstation, patient cart, camera and light source, instruments, and disposable components that facilitate successful surgery. This work must be completed before design freeze and proceeding with summative evaluation usability tests with the final product and validation studies required for regulatory filings. Based on the scope of product development ahead, the Company expects these tests and studies to take place in 2019, with the system in its final configuration and with training programs in place for new surgeon users.

The amounts and timing of the Company's actual expenditures will depend upon numerous factors, including the status of its development and commercialization efforts and the amount of capital raised through equity financings and warrant and option exercises.

A complete estimate of the timing and costs for development milestones beyond 2018 are speculative. The Company does however estimate that a minimum of an additional US \$50 million will be required beyond 2018 in order to submit its 510(k) application to the FDA, apply for the CE Mark, and if successful with those efforts, proceed with early commercialization activities. Given the uncertainty of, among other things regulatory processes, product development timelines, regulatory requirements, (such as live animal and human cadaver studies), and possibly human

confirmatory studies, actual costs and development times may exceed management's current expectations and an accurate estimate of the future costs of the regulatory phases and development milestones beyond 2018 is not possible at this time.

### ***Current Development Plan***

The Company anticipates development costs through to the end of 2018 to be as set out in the table below.

<i>Development Milestones</i>	<i>Estimated Cost (in U.S. million \$)</i>	<i>Schedule for Milestone Completion</i>	<i>Comments</i>
Based on preclinical study results, plan software development and product upgrades including improvements to workstation, patient cart, instruments, camera, light source and disposable components Demonstrate first two modules of simulation software	9.0 <sup>(2)</sup>	Q1 2018	
Prototype, test and procure surgeon feedback on revised workstation controls Complete software and hardware change requirements and finalize computer and software architecture for production systems Complete revisions to instrument and lens wash system and demonstrate performance	10.6 <sup>(3)</sup>	Q2 2018	
Complete Camera Insertion Tube (CIT) engineering confidence build based on improved design Complete design of SPORT surgeon workstation and patient cart for engineering confidence build Complete and demonstrate full suite of simulation software for beta test	10.8 <sup>(4)</sup>	Q3 2018	
Complete SPORT capital equipment engineering confidence build based on improved design	10.6 <sup>(5)</sup>	Q4 2018	
Document results of confidence build unit testing, implement design improvements and schedule preliminary audit of quality system by European Notified Body	TBD <sup>(1)</sup>	H1 2019	
Submit draft protocols to FDA in Q-submission(s) for comment	TBD <sup>(1)</sup>	H2 2019	
Initiate SPORT Surgical System Design Freeze Verify production system operation with clinical experts under rigorous formal (summative) human factors evaluation under simulated robotic manipulation			

exercises and through exercises of the completed surgeon simulation software and training program			
Complete and document preclinical live animal (swine) and cadaver surgery studies according to final protocols for FDA submittal			
Obtain 13485 Certification			
Submit technical file to European Notified Body for review for CE Mark			
Submit 510(k) application to FDA			
<b>TOTAL</b>	TBD <sup>(1)</sup>		

**Notes:**

- (1) A specific cost for individual milestone completion cannot be estimated at this time.
- (2) Includes research and development costs estimated at approximately US \$7.3 million, and general and administrative costs estimated at approximately US \$1.7 million.
- (3) Includes research and development costs estimated at approximately US \$8.5 million, and general and administrative costs estimated at approximately US \$2.1 million.
- (4) Includes research and development costs estimated at approximately US \$8.6 million, and general and administrative costs estimated at approximately US \$2.2 million.
- (5) Includes research and development costs estimated at approximately US \$8.4 million, and general and administrative costs estimated at approximately US \$2.2 million.

Upon completion of the development of the SPORT Surgical System and following receipt of all applicable regulatory clearances in the United States and Europe, the Company intends to utilize a direct sales force and/or distribution partner(s) to initiate marketing of the SPORT Surgical System to hospitals.

Due to the nature of technology research and development, there is no assurance that these objectives will be achieved, and there can be no assurance with respect to the time or resources that may be required. The Company expects that additional specific milestones could be identified as the development of its SPORT Surgical System progresses, or existing milestones, budgets and the schedule for completion of each milestone may change depending on many factors including the results of the Company's development program, clarification of or changes to regulatory requirements, the availability of financing and the ability of development firms engaged by the Company to complete work assigned to them. The total costs to complete the development of the Company's SPORT Surgical System as referenced above are only an estimate based on current information available to the Company and cannot yet be determined with a high degree of certainty, and the cost may be substantially higher than estimated. Please see "Forward-looking Statements" and "Risk Factors".

Please also refer to the risk factors set forth starting on page 16 of the Company's Annual Information Form for the 2017 fiscal year, available on SEDAR at [www.sedar.com](http://www.sedar.com).

## ***Financings***

During 2017, 52,654,224 warrants issued in previous offerings were exercised for total proceeds of \$9,438,577. The fair market value of the exercised warrants had a value of \$7,953,581 which was reclassified from warrant liability to common stock.

### ***Offerings During Q4 2017***

On December 5, 2017 Titan completed an offering of units (the “December Offering”) made pursuant to an agency agreement dated November 30, 2017 between the Company and Bloom Burton Securities Inc. (“Bloom Burton”). The Company sold 46,000,000 units under the December Offering at a price of CDN \$0.50 per unit for gross proceeds of approximately \$18,137,800 (\$16,517,424 net of closing costs including cash commission of \$1,246,185 paid in accordance with the terms of the agency agreement). Each unit consisted of one Common Share and one Common Share purchase warrant, each warrant entitling the holder thereof to acquire one additional Common Share at an exercise price of CDN \$0.60 and expiring December 5, 2022. The warrants were valued at \$5,223,686 based on the value determined by using the Black-Scholes model and the balance of \$12,914,114 was allocated to common shares.

On October 20, 2017 and October 30, 2017, the Company completed a non-brokered private placement offering of 13,385,900 Common Shares, for aggregate gross proceeds of US \$2,677,326 (CDN\$3,343,416), to subscribers in Canada, the United States and Europe.

### ***Offerings During Q2 2017***

On June 29, 2017, the Company completed an offering of securities (the “June Offering”) pursuant to an agency agreement (the “June Agency Agreement”) dated June 26, 2017 between the Company and Bloom Burton. At the first closing of the June Offering on June 29, 2017, the Company sold 48,388,637 units at a price of CDN \$0.15 per unit for gross proceeds of approximately \$5,576,357 (\$4,838,002 net of closing costs including cash commission of \$382,689 paid in accordance with the terms of the June Agency Agreement). Each unit consisted of one common share of the Company and one common share purchase warrant, each warrant entitles the holder thereof to acquire one common share of the Company at an exercise price of CDN \$0.20 and expires June 29, 2022. The warrants were valued at \$2,788,274 based on the value determined by the Black-Scholes model and the balance of \$2,788,083 was allocated to common shares. In addition to the cash commission paid to Bloom Burton and selling group members, broker warrants were issued to Bloom Burton and selling group members, which entitle the holder to purchase 3,285,986 common shares at a price of CDN \$0.15 per share prior to expiry on June 29, 2019.

On July 21, 2017 Titan completed the second closing of the June Offering pursuant to which the Company sold an additional 11,117,000 units at a price of CDN \$0.15 per unit for gross proceeds of approximately \$1,328,871 (\$1,200,788 net of closing costs including cash commission of \$93,021 paid in accordance with the terms of the June Agency Agreement). Each unit consisted of one common share of the Company and one common share purchase warrant, each warrant entitles the holder thereof to acquire one common share of the Company at an exercise price of CDN \$0.20

and expiring June 29, 2022. The warrants were valued at \$575,844 based on the value determined by using the Black-Scholes model and the balance of \$753,027 was allocated to common shares.

Pursuant to the agency agreement, in addition to the cash commission paid to Bloom Burton and the selling group members, broker warrants were issued to Bloom Burton and the selling group members, which entitle the holder to purchase 778,190 common shares at a price of CDN \$0.15 per share prior to expiry on June 29, 2019.

### ***Offerings During Q1 2017***

On March 16, 2017, Titan completed an offering (the “March Offering”) of securities made pursuant to an agency agreement dated March 10, 2017 (the “March Agency Agreement”) between the Company and Bloom Burton. The Company sold 21,467,200 units under the Offering at a price of CDN\$0.35 per unit for gross proceeds of approximately \$5,642,537 (\$5,039,817 net of closing cost including cash commission of \$394,316 paid in accordance with the terms of the March Agency Agreement). Each unit consisted of one common share of the Company and (i) one-half of one common share purchase warrant, each whole warrant entitling the holder thereof to acquire one common share of the Company at an exercise price of CDN \$0.40 and expiring March 16, 2019, and (ii) one-half of one common share purchase warrant, each whole warrant entitling the holder thereof to acquire one common share of the Company at an exercise price of CDN \$0.50 and expiring March 16, 2021. The warrants were valued at \$1,297,810 based on the value determined by using the Black-Scholes model and the balance of \$4,344,727 was allocated to common shares.

Pursuant to the March Agency Agreement, in addition to the cash commission paid to Bloom Burton, broker warrants were issued to Bloom Burton which entitle the holder to purchase 1,500,155 common shares at a price of CDN \$0.35 per share prior to expiry on March 16, 2019.

### ***Private Placements – Longtai Medical Inc.***

On November 23, 2015 Titan closed a private placement of 4,290,280 Common Shares to Longtai Medical Inc. at a subscription price of CDN \$1.23 per common share for gross proceeds of \$4,000,000. Under the Agreement, Titan granted to Longtai exclusive rights to negotiate an exclusive marketing, sales and distribution agreement for Titan’s SPORT Surgical System in the Asia Pacific region. Longtai paid to Titan \$2,000,000 as a deposit toward the Distributorship Agreement.

As the parties were not able to reach consensus as to the Distributorship Agreement by the agreed upon date, the deposit became due for repayment to Longtai. On August 24, 2017, Titan completed a subscription agreement with Longtai for the equity conversion of Longtai’s \$2.0 million deposit. Under the terms of the subscription agreement dated July 31, 2017, Titan issued to Longtai 16,892,000 Units at an assigned issue price of CDN \$0.15 per Unit. Each Unit consists of one Common Share and one warrant exercisable for one Common Share at an exercise price of CDN \$0.20 prior to expiry on August 24, 2022. The warrants were valued at \$822,372 based on the value determined by the Black-Scholes model. The Common Shares were valued at \$1,887,411 based on the market value on August 24, 2017 of CDN \$0.14. The warrant and the Common Shares were valued at fair value in accordance with International Financial Reporting Interpretations

Committee Interpretation #19-Extinguishing Financial Liabilities (“IFRIC 19”). A loss of \$709,782 was incurred on extinguishment which is included in the Gain (Loss) on change in value of warrant liability in the statement of net and comprehensive loss.

The utilization of proceeds as outlined in the short form prospectus dated March 10, 2017, June 26, 2017 and November 30, 2017 has been updated as outlined in the following table:

	Proceeds from the Offering as outlined in the Short Form Prospectus dated March 10, 2017	Proceeds from the Offering as outlined in the Short Form Prospectus dated June 26, 2017	Proceeds from the Offering as outlined in the Short Form Prospectus dated November 30, 2017	Total
Ongoing development and commercialization of the Sport Surgical System	\$ 4,031,854	\$4,831,032	\$13,213,939	\$ 22,076,825
General working capital requirements	1,007,963	1,207,758	3,303,485	\$ 5,519,206
Total Net Proceeds	<u><u>\$ 5,039,817</u></u>	<u><u>\$ 6,038,790</u></u>	<u><u>\$ 16,517,424</u></u>	<u><u>\$ 27,596,031</u></u>

#### ***Off-Balance Sheet Arrangements***

Other than for leased premises occupied by the Company, the Company does not utilize off balance sheet arrangements.

## ***Outstanding Share Data***

The following table summarizes the outstanding share capital as of the date of this MD&A:

<b>Type of Securities</b>	<b>Number of common shares issued or issuable upon conversion</b>
Common shares	380,826,684
Stock options <sup>(1)</sup>	25,966,721
Warrants	153,107,634
Broker warrants <sup>(2)</sup>	8,179,152

Notes:

- (1) The Company has outstanding options enabling certain employees, directors, officers and consultants to purchase common shares. Please refer to note 4(b) of the Unaudited Condensed Interim Financial Statements for terms of such options.
- (2) Pursuant to the agency agreement in respect of the February 2016 offering, in addition to the cash commission paid to the agent for the offering, 916,443 broker warrants were issued to the agent. Each broker warrant entitles the holder thereof to acquire one unit of the Company at the price of CDN\$0.90 for a period of 24 months following the closing date. Each unit consists of one common share and one warrant. Each warrant entitles the holder to acquire one common share at an exercise price of CDN\$1.00 for a period of 60 months from the date of closing.

Pursuant to the agency agreement in respect of the March 2016 offering, in addition to the cash commission paid to Bloom Burton, 1,190,921 broker warrants were issued to the agent. Each broker warrant entitles the holder thereof to acquire one unit of the Company at the price of CDN \$1.00 for a period of 24 months following the closing date. Each unit consists of one common share and one warrant. Each warrant entitles the holder to acquire one common share at an exercise price of CDN \$1.20 per share for a period of 60 months from the date of closing.

Pursuant to the agency agreement in respect of the September 2016 offering, in addition to the cash commission paid to the agents, 1,307,594 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one common share of the Company at the price of CDN \$0.60 for a period of 24 months following the closing date.

Pursuant to the agency agreement in respect of the March 2017 offering, in addition to the cash commission paid to the agents, 1,500,155 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one common share of the Company at the price of CDN \$0.35 for a period of 24 months following the closing date.

Pursuant to the agency agreement in respect of the June 2017 offering, in addition to the cash commission paid to the agents, 4,064,176 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one common share of the Company at the price of CDN \$0.15 for a period of 24 months following the closing date.

Pursuant to the agency agreement dated November 30, 2017 in respect of the December 2017 offering, in addition to the cash commission paid to the agents, 3,160,500 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one common share of the Company at the price of CDN \$0.50 for a period of 24 months following the closing date.

A total of 12,139,789 broker warrants were issued in connection with the February 2016, March 2016, September 2016, March 2017, June 2017, July 2017 and December 2017 offerings. As of the date hereof, 8,179,152 broker warrants remain outstanding.

## ***Accounting Policies***

The accounting policies set out in the notes to the audited financial statements have been applied in preparing the audited financial statements for the year ended December 31, 2017 and the comparative information presented in the audited financial statements for the year ended December 31, 2016.

The preparation of financial statements in conformity with IFRS requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of provisions at the date of the financial statements and the reported amount of expenses during the year. Financial statement items subject to significant judgement include, (a) the measurement of stock-based compensation and (b) the fair value estimate of the initial measurement of new

warrant liabilities and the remeasurement of unlisted warrant liabilities. While management believes that the estimates and assumptions are reasonable, actual results may differ.

the fair value estimate of the initial measurement of new warrant liabilities. While management believes that the estimates and assumptions are reasonable, actual results may differ.

**(a) *Stock Options***

The Black-Scholes model used by the Company to determine fair values of stock options and warrants was developed for use in estimating the fair value of the stock options and warrants. This model requires the input of highly subjective assumptions including future stock price volatility and expected time until exercise. Changes in the subjective input assumptions can materially affect the fair value estimate.

**(b) *Warrant Liability***

In accordance with IAS 32, because the exercise prices of new warrants are not fixed, they are denominated in a currency (Canadian dollar) other than the Company's functional currency (U.S. dollar). Accordingly, the warrants are accounted for as a derivative financial liability. The warrant liability is initially measured at fair value and subsequent changes in fair value are recorded through Net and Comprehensive Loss for the period. The accounting guidance for fair value measurements prioritizes the inputs used in measuring fair value into the following hierarchy:

**Level 1** – Quoted prices (unadjusted) in active markets for identical assets or liabilities;

**Level 2** – Inputs other than quoted prices included within Level 1 that are directly or indirectly observable;

**Level 3** – Unobservable inputs in which little or no market activity exists, therefore requiring an entity to develop its own assumptions about the assumptions that market participants would use in pricing.

The fair value of our Warrant liability is initially based on Level 2 (significant observable inputs) and at December 31, 2017 is based on Level 1, quoted prices (unadjusted) in an active market, for our listed warrants and level 2 for our unlisted warrants.

***Related Party Transactions***

During the year ended December 31, 2017, transactions between the Company and directors, officers and other related parties were related to compensation matters in the normal course of operations and are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

***Financial Instruments***

The Company's financial instruments consist of cash and cash equivalents, amounts receivable, accounts payable and accrued liabilities and other liabilities and charges. The fair value of these financial instruments approximates their carrying values, unless otherwise noted, due to the

short-term maturities of these instruments or the discount rate applied. Warrant liabilities are valued at fair value as described in the accounting policies note (b).

### ***Outlook***

During the third and fourth quarters of 2017, experienced robotic surgeons performed the first single-port procedures at three Centers of Excellence in the US and Europe using the SPORT Surgical System. These studies validated prototype performance in preclinical settings. During the studies, essential areas for improvement of the surgical system were identified. These include enhancements to the camera and light source, hand controls, instruments, the mechanisms of the patient cart and software throughout the system to ensure safe and reliable system operation. The final design is intended to address performance and usability requirements of prospective surgeon customers, as well as the needs of operating room support personnel and hospital administrators.

In 2018, management intends to focus on product development for manufacturing, including hardware and software at all levels, involving the workstation, patient cart, instruments, camera and light source, and disposable components that facilitate successful surgery.

As improvements are made to the system, advanced prototypes will be upgraded and deployed at the Centers of Excellence and for further preclinical evaluation in live animal and cadaver studies to ensure that the improvements are effective. This work must be completed before freezing the design and proceeding with summative evaluation usability tests with the final product, and validation studies required for regulatory filings. Based on the scope of product development ahead, those tests and studies are expected to take place in 2019.

Over the next twelve months, the Company plans to raise additional capital to finance the development and commercialization of the SPORT Surgical System. Management will continue to assess the reasonableness of development milestones, as well as timelines and related cost estimates, as financing is secured.

The Company's immediate plans also include identifying and engaging technical experts and subcontractors with experience in key technical areas to provide an accelerated pathway to subsystems development with current technology. Further, the Company plans to continue to protect its intellectual property by securing additional patents. The pace at which the Company can carry out these activities will be substantially dependent on its ability to raise the necessary capital on a timely basis.

### ***Additional Information***

Additional information relating to the Company, including Titan's Annual Information Form for the 2016 fiscal year, is available on SEDAR at [www.sedar.com](http://www.sedar.com).