TITAN MEDICAL INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE YEAR ENDED DECEMBER 31, 2018

(IN UNITED STATES DOLLARS)

This Management's Discussion and Analysis ("MD&A") is dated February 13, 2019.

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, 2018 (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, 2018, 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 intends to initially pursue focused surgical indications for the SPORT Surgical System, which may include one or more of gynecologic, urologic, colorectal or general abdominal 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's technology and research and development objectives and milestones, including such development milestones as achieving design freeze, estimated costs, schedules for completion and probability of success;

- the Company's intention with respect to updating any forward-looking statement after the date on which such statement is made or to reflect the occurrence of unanticipated events;
- the Company's expectation with respect to continuing animal and human cadaver studies;
- the Company's expectation that it can in a timely manner produce the appropriate preclinical and clinical data required for a 510(k) application to the U.S. Food and Drug Administration, and Technical File for the CE Mark;
- the Company's expectation with respect to launching a commercial product in certain jurisdictions;
- the Company's intentions to develop a robust training curriculum and post-training assessment tools;
- the Company's plans to develop and commercialize the SPORT Surgical System and the estimated incremental costs (including the status, cost and timing of achieving the development milestones disclosed herein);
- the Company's plans to design, create and refine software for production system functionality of the SPORT Surgical System and the estimated incremental costs (including the status, cost and timing of achieving the development milestones disclosed herein);
- the Company's intentions to complete formative and summative human factors studies;
- the Company's belief that existing and planned prototype units will be suitable to support human factors studies, preclinical evaluation and activities related to securing confirmatory human data during 2019;
- the Company's intentions with respect to initiating marketing activities following receipt of the applicable regulatory approvals;
- the Company's intention to continue to assess specialized skill and knowledge requirements and recruitment of qualified personnel and partners;
- the Company's belief that the materials and parts necessary for the manufacture of a clinical-grade SPORT Surgical System will be available in the marketplace;
- the Company's expectation that it will be able to finance its continuing operations by accessing public markets for its securities;
- the Company's intended use of proceeds of any offering of securities;
- the Company's intention with respect to not paying any cash dividends on Common Shares in the foreseeable future;
- the Company's intention to retain future earnings, if any, to finance expansion and growth;
- the Company's projected competitive conditions with respect to its products;
- the Company's technology and research and development objectives, including such development milestones as completing the engineering confidence build and achieving design freeze, estimated costs, schedules for completion and probability of success;

- 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 that it will continue its pursuit of key strategic relationships;
- the Company's continuing efforts to secure its intellectual property and 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 plan to focus on the development and commercialization of the SPORT Surgical System at estimated incremental costs and according to a given timeline; and
- the Company intends to utilize a direct sales force and/or distribution partner(s) to initiate marketing the SPORT Surgical System to hospitals.

Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are no 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, dependency on additional financing, the Company's history of losses, reliance on strategic alliances, the ability to retain key personnel in a highly-competitive employment environment, the possibility of the Company's inability to augment its management team when required, the possibility that the Company's trade secrets and confidential information may be compromised, reliance on third parties for important aspects of the Company's business, uncertainty as to product development and commercialization milestones, results of operations, competition, technological advancements, rapidly changing markets, uncertain market for the Company's products and technology, uncertainty as to the enforceability of the Company's intellectual property, infringement of intellectual property rights of others, 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 market conditions and demands and preferences, changes in government policy, exposure to product liability claims, 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, uncertainty as to the Company's ability to meet its development and commercialization milestones, uncertainties as to development and manufacturing of a commercially viable product, reliance on external suppliers and development firms, fluctuations in the market prices of the Company's securities, possible future sales by the Company's shareholders of their securities, limited operating history of the Company, the development stage of the Company and its lack of revenues or earnings, fluctuations of the Company's financial results, the possibility that the Company is not able to maintain its "foreign private issuer" status, and the possibility of delisting from the Nasdaq or TSX exchanges.

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, 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 as a result 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 the successor corporation formed pursuant to two separate amalgamations under the *Business Corporations Act* (Ontario) on July 28, 2008. Titan does not have any subsidiaries.

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.

Overall Performance

During the year ended December 31, 2018 the Company raised gross proceeds of $28,424,732 ($25,776,269 net of closing cost including cash commission of $1,983,429). The Company generated a net los of $22,639,272, which included research and development expenditures of $32,858,339 and a gain on the change in fair value of warrants of $17,095,220.

The Company's business is focused on research and development through to the commercialization of computer-assisted robotic surgical technologies for application in minimally invasive surgery ("MIS"). The Company is developing the SPORT Surgical System, a single-port robotic surgical system 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 advanced ergonomic interface to the patient cart and a 3D endoscopic view inside the patient's body during MIS procedures. The Company intends to initially pursue focused surgical indications for the SPORT Surgical System, which may include one or more of gynecologic, urologic, colorectal or general abdominal procedures.

Development of the SPORT Surgical System has proceeded with input from surgeons and operating room staff experienced in minimally invasive surgery and, consultation with medical technology development firms and input from the Company's Surgeon Advisory Board (the "Surgeon Advisory Board") comprised of surgeons who specialize in minimally invasive surgery. 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, with the intent that the system will appeal to a broader array of surgeons than systems that do not provide such adjustability.

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 25 millimeter (mm) diameter. The insertion tube includes an integrated 2D wide-angle camera module that once inserted, provides visualization for optimal positioning of the camera insertion tube by the bedside assistant under the guidance of the surgeon. Once the camera insertion tube is inserted and positioned in the body, a separate steerable, 3D high definition endoscopic camera 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 without compromising surgical performance. 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 is developing a robust training curriculum and post-training assessment tools for surgeons and surgical teams. The proposed training curriculum is planned to 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. On September 18, 2018, the Company announced the successful completion of 14 core surgical skills simulation modules for use with the SPORT Surgical System surgeon workstation. The successful demonstration and delivery of these modules was a significant development in the first phase of the comprehensive surgeon training curriculum that the Company is planning for its SPORT Surgical System.

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, 2018, the Company had ownership of 29 patents and 73 patent applications. The Company has accelerated the filing and prosecution of patents that management believes will validate the novelty of its unique technology, and in turn, support the value of the entire franchise. Early evidence of success with this initiative has been the rapid growth of its patent portfolio from 12 issued patents at December 31, 2016 to 29 issued patents as of December 31, 2018. The Company anticipates further expanding its patent portfolio by filing additional patent applications as it progresses in the development of robotic surgical technologies and potentially, by licensing suitable technologies.

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 and clinical 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, manufacturable product, or one that is approved by regulatory authorities.

Previously, for the year ended 2017, the Company achieved all of its milestones as published in the Company's Annual Information Form for the 2017 fiscal year. The Company continued this trend of accomplishment through the year ended 2018, again completing all of its published milestones: (1) planning of software development and product upgrades including improvements to the workstation, patient cart, instruments, camera, light source and disposable components; (2) demonstration of the first two modules of its simulation software; (3) prototyping, testing and procurement of surgeon feedback on revised workstation controls; (4) completion of software and hardware change requirements and finalization of computer and software architecture for production systems; (5) completion of revisions to instrument and lens wash system and demonstration of performance; (6) completion of a camera insertion tube engineering confidence build based on an improved design; (7) completion of the design of the SPORT Surgical System workstation and patient cart for engineering confidence build; (8) completion and demonstration of a full suite of simulation software for beta test; and (9) completion of the SPORT Surgical System capital equipment engineering confidence build based on the improved design requirements.

As previously announced, the Company selected three Centers of Excellence (strategic facilities) for preclinical studies in the U.S. and Europe, which are:

- Florida Hospital Nicholson Center in Celebration, Florida;
- Columbia University Medical Center in New York, New York; and
- Institut Hospitalo-Universitaire de Strasbourg ("IHU Strasbourg") in Strasbourg, France.

Ahead of its published milestone, on September 25, 2017, the Company announced the completion of the world's first gynecologic, colorectal and urologic single port robotic procedures using its advanced prototype SPORT Surgical System at the Florida Hospital Nicholson Center in Celebration, Florida. Since that time, the Company has announced that surgeons have completed critical surgical tasks integral to gynecologic procedures using advanced prototypes of the SPORT Surgical System at Columbia University Medical Center's surgical simulation center in New York, New York and at the Institute of Image-Guided Surgery at IHU Strasbourg.

To date, 12 experienced robotic surgeons from three continents have performed 43 live animal studies and two human cadaver studies. The studies performed include a broad array of procedures commonly performed by gynecologic, urologic, colorectal, bariatric, and general surgeons. The

surgeons who performed these studies have prepared and submitted related abstracts for peer review, and have presentated at clinical education meetings, including:

1. **Multi-disciplinary applications of a new robotic platform** by Barbara Seeliger, MD and Lee Swanstrom, MD (IHU Strasbourg), accepted and presented as a poster at the Society of American Gastrointestinal and Endoscopic Surgeons Meeting, Seattle, WA. (April 2018);

2. **Single-port prostatectomy using SPORT Surgical System** by Eric Barret, MD (Institut Mutualiste Montsouris, France), accepted and presented as a poster at the 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 the Society of Robotic Surgery Meeting, Stockholm, Sweden (June 2018);

4. **Feasibility of single-port partial nephrectomy using SPORT surgical system** by Eric Barret, MD (Institut Mutualiste Montsouris, 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 (Institut Mutualiste Montsouris, France) Accepted and presented at World Congress of Endourology Meeting, Paris, France, September 2018; and

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 at American Association of Gynecologic Laparoscopists World Congress, Las Vegas, NV (November 2018).

Further, several of these surgeons collaborated to author a manuscript that was published January 2019 in the highly-regarded, peer-reviewed journal *Surgical Endoscopy*: and is titled **Enabling single-site laparoscopy: the SPORT platform** by Barbara Seeliger[1] · Michele Diana[1] · Jelle P. Ruurda[2] · Konstantinos M. Konstantinidis[3] · Jacques Marescaux[1] · Lee L. Swanström[1,4]

1 IHU-Strasbourg Institute of Image-Guided Surgery, 1, place de l'Hôpital, 67091 Strasbourg Cedex, France
2 Department of Surgical Oncology, University Medical Center, Utrecht, Utrecht, Netherlands
3 Department of General, Bariatric, Laparoscopic and Robotic Surgery, Athens Medical Center, Athens, Greece
4 Division of GI/MIS, The Oregon Clinic, Portland, OR, USA

Selected Annual Information

The following table summarizes selected financial data reported by the Company for the years ended December 31, 2018, 2017 and 2016 in accordance with IFRS. The information set forth should be read in conjunction with the respective audited financial statements.

	2018	2017	2016
Net Sales	-	-	-
Net and comprehensive loss for the year	$22,639,272	$33,586,984	$23,323,496
Basic & diluted loss per share	$1.36	$4.25	$4.80
Total long-term liabilities	-	-	-
Total Assets	$21,915,164	$29,674,610	$7,192,496
Dividends	-	-	-

Significant changes in key financial data from 2016 to 2018 can be attributed to the availability of equity financing, the fluctuations of the fair value of warrants and expenditures in connection with the development of the Company's robotic surgical system.

Discussion of Operations

The Company incurred a net and comprehensive loss of $22,639,272 during the year ended December 31, 2018, compared with a net and comprehensive loss of $33,586,984 for the year ended December 31, 2017. This decrease in net and comprehensive loss for the year is primarily attributed to a large gain from the change in fair value of warrants in 2018 compared to a loss in 2017, which was partially offset by substantially higher research and development expenditures in 2018 compared to 2017. In addition, foreign exchange gain in the year ended December 31, 2018, was $979,894, compared to a loss of $542,664 for the year ended December 31, 2017. This change

in foreign exchange of $1,522,558 is primarily attributable to the foreign exchange on warrants, a gain of $984,462 in 2018 compared to a loss of $305,475 in 2017.

During the year ended December 31, 2018, the Company continued to support strategic product development and manufacturing relationships with qualified subcontractors, carrying on efforts to globally secure the Company's intellectual property through the patent and licensing process, and continue the development of the Company's robotic surgical system.

Research and development expenditures (all of which were expensed in the period), for the years ended December 31, 2018 and December 31, 2017, respectively, were as follows:

Research and Development Expenditures	**Year Ended December 31, 2018**	**Year Ended December 31, 2017**
Intellectual property development	$ 14,540	$ 25,704
License and royalties	-	43,575
Product development	32,843,799	12,831,576
Total	$32,858,339	$12,900,855

Research and development expenditures increased in the year ended December 31, 2018 compared to the same period in 2017. This increase was primarily due to an increase in available funding in 2018 that allowed the Company to accelerate product development in 2018, compared to 2017.

Excluding foreign exchange, general and administrative expenses for the year ended December 31, 2018, were $6,832,003 compared to $5,983,201. The increases in general and administrative expenses during the comparative periods are attributed to increases in insurance, consulting fees, incremental salaries of personnel added after the beginning of 2017, management and administrative salaries, professional fees and office and general expenses.

The gain attributed to the change in fair value of warrants for the year ended December 31, 2018 was $17,095,220 compared to loss of $13,133,671 for the same period in 2017. The change of $30,228,891 reflects a significant decrease in the fair value of warrants in 2018 compared to 2017.

The Company realized $288,300 of interest income on its cash and cash-equivalent balances during the year ended December 31, 2018, and $17,442 for the same period in 2017. This increase in interest income is primarily attributed to substantially higher cash balances in its money market account in 2018 compared to 2017.

For a discussion with regard to 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 and calculated in accordance with IFRS. Basic

and diluted loss per share figures are calculated on the basis of the 30:1 consolidation of common shares.

	Three Months Ended December 31, 2018	Three Months Ended September 30, 2018	Three Months Ended June 30, 2018	Three Months Ended March 31, 2018	Three Months Ended December 31, 2017	Three Months Ended September 30, 2017	Three Months Ended June 30, 2017	Three Months Ended March 31, 2017
Net sales	-	-	-	-	-	-	-	-
Net and Comprehensive Loss (gain) from operations	$8,410,702	$7,534,456	$5,885,415	$808,699	$12,829,980	$13,902,817	$1,865,913	$4,988,274
Basic and diluted loss per share	$0.41	$0.41	$0.47	$0.07	$1.20	$1.80	$0.30	$0.90

Significant changes in key financial data from the three months ended March 31, 2017 through the three months ended December 31, 2018 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.

During the fourth quarter of 2018, the Company had a net and comprehensive loss of $8,410,702 compared to a loss of $12,829,980 for the same period in 2017. This decrease in loss of $4,419,278 is primarily attributed to a gain in the change in fair value of warrants in 2018 of $7,166,276 compared to a loss of $7,407,114 in 2017, which was offset by substantially higher research and development expenditures in 2018 of $14,194,003 compared to $3,188,783 in 2017.

Liquidity and Capital Resources

The Company currently does not generate any revenue (other than interest income on its cash balances) and accordingly it is primarily dependent upon equity financing for any additional funding required for development and operating expenses. The Company expects that approximately US $45 million in incremental funding is needed, for the next 12 months to maintain its currently anticipated pace of development. If additional funding is not available, the pace of the Company's product development plan may be reduced. These conditions indicate the existence of a material uncertainty that may cast significant doubt on the ability of the Company to continue as a going concern if additional funding is not secured. However, based on internal forecasts, Management believes that the Company has sufficient funds to meet its obligations under a reduced development plan, if necessary, for the ensuing twelve months.

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 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. 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, or loss of their investment.

The Company had $11,471,243 of cash and cash equivalents on hand and accounts payable and accrued liabilities of $6,447,888 excluding warrant liability, at December 31, 2018, compared to $26,130,493 and $2,218,352 respectively, at December 31, 2017. The Company's working capital as at December 31, 2018 was $14,294,791 excluding warrant liability, compared to $26,675,319 at December 31, 2017.

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. The chart has been updated to reflect the number of warrants issued and outstanding post 30:1 consolidation, as at June 30, 2018.

	Issue Date	**Expiry Date**	**Number Issued**	**Number Outstanding**	**Exercise Price (CDN $)**
TMD.WT.F	November 16, 2015	November 16, 2020	233,740	233,740	$48.00
TMD.WT.G	February 12, 2016	February 12, 2021	389,027	386,694	$30.00
TMD.WT.G	February 23, 2016	February 12, 2021	58,226	58,226	$30.00
TMD.WT.H	March 31, 2016	March 31, 2021	501,831	501,831	$36.00
TMD.WT.H	April 14, 2016	March 31, 2021	75,275	75,275	$36.00
TMD.WT.I	September 20, 2016	September 20, 2021	569,444	569,444	$22.50
TMD.WT.I	October 27, 2016	September 20, 2021	67,667	67,667	$22.50
NOT LISTED	March 16, 2017	March 16, 2019	357,787	135,824	$12.00
NOT LISTED	March 16, 2017	March 16, 2021	357,787	355,253	$15.00
NOT LISTED	June 29, 2017	June 29, 2022	1,612,955	75,810	$6.00
NOT LISTED	July 21, 2017	June 29, 2022	370,567	370,567	$6.00
NOT LISTED	August 24, 2017	August 24, 2022	563,067	563,067	$6.00
NOT LISTED	December 5, 2017	December 5, 2022	1,533,333	1,533,333	$18.00
NOT LISTED	April 10, 2018	April 10, 2023	1,126,665	1,126,665	$10.50
NOT LISTED	May 10, 2018	April 10, 2023	168,889	168,889	$10.50
*NOT LISTED	August 10, 2018	August 10, 2023	7,679,574	7,679,574	$4.15
TOTAL			15,665,834	13,901,859	

*The exercise price of the August 10, 2018 warrants is US $3.20. For conformity, because the other warrants in this table are in CDN dollars, the exercise price and potential proceeds in respect of the August 10, 2018 warrants have been converted to CDN dollars using the Bank of Canada rate on August 3, 2018 of US $1.00 = CDN $1.2983.

Commitments

As part of its program of research and development around the SPORT Surgical System, the Company has outsourced certain aspects of the design and development to a U.S based technology and development company. At December 31, 2018, $12,756,962 in purchase orders remain

outstanding. The Company also has on deposit with the same U.S supplier $8,541,630 to be applied against future invoices.

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. Accordingly, product development was accelerated in 2018 in preparation for commercial manufacturing, including hardware and software development at all levels, involving the workstation, patient cart, cameras and light source, instruments, and disposable components that facilitate successful surgery. Product improvements were completed and implemented in a capital equipment engineering confidence build of an improved prototype in December of 2018 and are expected to be followed by system performance evaluation in early 2019.

Initial product development, including software integration, will be completed before design freeze and proceeding with summative evaluation usability tests with the final product and validation studies required for supporting 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.

During 2018, the Company confirmed with the Food and Drug Administration of the United States Department of Health and Human Services (the "FDA"), that confirmatory human data will be required for its planned regulatory submission. The performance of human surgeries with the SPORT Surgical System will require an Investigational Device Exemption ("IDE") from the FDA, which must be submitted and approved in advance. Further, the recruitment of surgeons from multiple hospital sites will be necessary to perform the surgeries. Each of these sites will require approval of their independent Institutional Review Board ("IRB") to approve the studies. During the first three quarters of 2019, the Company plans to pursue the recruitment of surgeons and hospitals for the studies, IDE approval by the FDA, and approvals by the IRB of each hospital, in preparation for the confirmatory human studies planned for completion during the fourth quarter.

A complete estimate of the timing and costs for development milestones beyond 2019 is speculative. The Company estimates that a minimum of US $64.1 million will be required to fund its operations in 2019. Based on the cash and cash equivalents on hand, including deposits with suppliers as at December 31, 2018, the Company believes that it will need to raise approximately $45 million to fund it operations in 2019. This includes projected capital resources necessary for the Company to submit its 510(k) application to the FDA and apply for CE Marking which indicates that a product for sale within the European Economic Area (EEA) has been assessed to conform with health safety and environmental protection requirements. If successful with those efforts, the Company expects to proceed with early commercialization activities in the U.S. in 2020. Given the uncertainty of, among other things, product development timelines, regulatory processes and requirements (such as live animal and human cadaver studies and confirmatory human studies), as well as the availability of required capital to fund development and operating

costs, 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 2019 is not possible at this time.

The Company's current plan is to raise sufficient financing and continue the development and commence commercialization of the SPORT Surgical System at estimated incremental costs, and according to the timeline, as set forth in the table below.

Current Development Plan

The Company anticipates development costs through to the fourth quarter of 2019 to be as set out in the table below (the "Current Development Plan").

Milestone Number	*Development Milestones*	*Estimated Cost (in U.S. million $)*	*Schedule for Milestone Completion*	*Comments*
Milestone 1	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		Q2 2018	*Completed*
Milestone 2	Complete Camera Insertion Tube (CIT) engineering confidence build based on improved design Complete design of SPORT Surgical System surgeon workstation and patient cart for engineering confidence build Complete and demonstrate full suite of simulation software for beta test		Q3 2018	*Completed*
Milestone 3	Complete SPORT Surgical System capital equipment engineering confidence build based on improved design		Q4 2018	Completed
Milestone 4	Document results of confidence build unit testing, implement subsystem design improvements and schedule preliminary audit of quality system by European Notified Body	16.0[(1)]	Q1 2019	
Milestone 5	Update system design and related hardware and software documentation Verify production system operation with clinical experts under rigorous formal (summative) human factors evaluation under simulated robotic manipulation exercises Initiate SPORT Surgical System Design Freeze Initiate preclinical live animal (swine) and cadaver studies according to final protocols for FDA submittal Submit Investigational Device Exemption (IDE) application to FDA	16.9[(2)]	Q2 2019	
	Submit draft protocols to FDA in Q-submission(s) for comment			*Completed*

Milestone Number	*Development Milestones*	*Estimated Cost (in U.S. million $)*	*Schedule for Milestone Completion*	*Comments*
Milestone 6	Complete and document preclinical live animal (swine) and cadaver studies according to final protocols for FDA submittal Obtain ISO 13485 Certification Receive IDE approval from FDA	16.1[(3)]	Q3 2019 –	
Milestone 7	Complete and document human confirmatory studies under IDE protocols for FDA submittal Submit Technical File to European Notified Body for review for CE Mark Submit 510(k) application to FDA	15.1[(4)]	Q4 2019	
	TOTAL	64.1		

Notes:

(1) Includes research and development costs estimated at approximately US $14.6 million, and general and administrative costs estimated at approximately US $1.4 million.
(2) Includes research and development costs estimated at approximately US $15.5 million, and general and administrative costs estimated at approximately US $1.4 million.
(3) Includes research and development costs estimated at approximately US $14.7 million, and general and administrative costs estimated at approximately US $1.4 million.
(4) Includes research and development costs estimated at approximately US $13.7 million, and general and administrative costs estimated at approximately US $1.4 million.

Upon completion of the development of the SPORT Surgical System and following receipt of applicable regulatory clearance in the United States, the Company intends to utilize a direct sales force and 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 a number of 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 costs may be substantially higher than estimated. Please see "*Forward-Looking Statements*".

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.

Financings

On June 19, 2018 a share consolidation, on the basis of 30 pre-consolidation common shares forming one post-consolidation common share, was completed and the Company's outstanding common shares ("Common Shares") were adjusted from 419,888,250 to 13,996,275. All references to Common Shares, warrants, and stock options have been updated in the notes to reflect the 1:30 share consolidation.

During the first quarter of 2019, 619,606 warrants had been exercised for gross proceeds of $1,982,739.

Offerings During Q3 2018

On August 10, 2018, the Company completed an offering of securities made pursuant to an agency agreement dated August 7, 2018 between the Company and Bloom Burton Securities Inc. ("Bloom Burton"). The Company sold 7,679,574 units under the offering price of $2.50 per unit for gross proceeds of approximately $19,198,935 ($17,464,711 net of closing cost including cash commission of $1,343,925). Each unit consisted of one Common Share of the Company and one Common Share purchase warrant, each warrant entitling the holder to acquire one Common Share at an exercise price of $3.20 and expiring August 10, 2023.

Offerings During Q2 2018

On April 10, 2018, the Company completed an offering of securities pursuant to an agency agreement dated April 3, 2018 between the Company and Bloom Burton. The Company sold 1,126,665 units under the offering at a price of CDN $9.00 per unit for gross proceeds of approximately $8,035,941 ($7,211,320 net of closing costs including cash commission of $562,516). Each unit consisted of one common share and one warrant, each warrant entitling the holder thereof to acquire one common share at an exercise price of CDN $10.50 and expiring April 10, 2023.

On May 10, 2018, the Company announced the exercise of the over-allotment option granted to Bloom Burton as agent for its offering, at a price of CDN $9.00 per unit, completed on April 10, 2018 and the Company sold an additional 168,889 units at the offering price for additional gross proceeds of $1,189,856 ($1,100,238 net of closing costs including cash commission of $76,988). Each unit consisted of one Common Share of the Company and one warrant, each warrant entitling the holder thereof to acquire one Common Share at an exercise price of CDN $10.50 and expiring April 10, 2023.

Offerings During Q4 2017

On December 5, 2017, the Company completed an offering of securities made pursuant to an agency agreement dated November 30, 2017 between the Company and Bloom Burton. The Company sold 1,533,333 units at a price of CDN $15.00 per unit for gross proceeds of approximately $18,137,800 ($16,555,875 net of closing costs including cash commission of $1,246,185). Each unit consisted of one common share and one warrant, each warrant entitling the

holder thereof to acquire one additional common share at an exercise price of CDN $18.00 and expiring December 5, 2022.

On October 20, 2017 and October 30, 2017, the Company completed a non-brokered private placement offering of 446,197 common shares, for aggregate gross proceeds of $2,677,326 (CDN$3,343,416), to subscribers in Canada, the United States and Europe.

Offerings During Q2 and Q3 2017

On June 29, 2017, the Company completed an offering of securities pursuant to an agency agreement dated June 26, 2017 between the Company and Bloom Burton. At the first closing on June 29, 2017, the Company sold 1,612,955 units at a price of CDN $4.50 per unit for gross proceeds of approximately $5,576,357 ($4,838,002 net of closing costs including cash commission of $382,689). Each unit consisted of one common share and one warrant, each warrant entitles the holder thereof to acquire one common share at an exercise price of CDN $6.00 and expires June 29, 2022. 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 109,533 common shares at a price of CDN $4.50 per share prior to expiry on June 29, 2019.

On July 21, 2017, the Company completed a second closing pursuant to which the Company sold an additional 370,567 units at a price of CDN $4.50 per unit for gross proceeds of approximately $1,328,871 ($1,200,788 net of closing costs including cash commission of $93,021). Each unit consisted of one common share and one warrant, each warrant entitles the holder thereof to acquire one common share at an exercise price of CDN $6.00 and expiring June 29, 2022.

Offerings During Q1 2017

On March 16, 2017, Titan completed an offering of securities made pursuant to an agency agreement dated March 10, 2017 between the Company and Bloom Burton. The Company sold 715,573 units under the offering at a price of CDN$10.50 per unit for gross proceeds of approximately $5,642,537 ($5,039,817 net of closing cost including cash commission of $394,316). Each unit consisted of one common share and (i) one-half of one warrant, each whole warrant entitling the holder thereof to acquire one common share of the Company at an exercise price of CDN $12.00 and expiring March 16, 2019, and (ii) one-half of one warrant, each whole warrant entitling the holder thereof to acquire one common share at an exercise price of CDN $15.00 and expiring March 16, 2021.

Private Placements – Longtai Medical Inc.

On August 24, 2017, Titan completed a subscription agreement with Longtai Medical Inc. ("Longtai") for the equity conversion of Longtai's $2.0 million distribution deposit. Under the terms of the subscription agreement dated July 31, 2017, Titan issued to Longtai 563,067 units at an assigned issue price of CDN $4.50 per unit. Each unit consists of one Common Share and one warrant, with each warrant exercisable for one Common Share at an exercise price of CDN $6.00 per warrant prior to expiry on August 24, 2022. The warrants were valued at $822,372 based on the value of comparable warrants at the time. The common shares were valued at $1,887,411 based on the market value on August 24, 2017 of CDN $4.20. In addition, because the warrant and the Common Share 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 unaudited condensed.

The utilization of proceeds as outlined in the short form prospectus dated April 3, 2018 and August 7, 2018 has been updated as outlined in the following table

	Proceeds from the Offering as outlined in the short-form prospectus dated April 3, 2018 (including the May 10, 2018 overallotment)	Proceeds from the Offering as outlined in the short-form prospectus dated August 7, 2018	Total
Ongoing development and commercialization of the SPORT Surgical System	$6,649,246	$13,971,769	$20,621,015
General working Capital requirements	1,662,312	3,492,942	5,155,254
Total Net Proceeds	$8,311,558	$17,464,711	$25,776,269

Off-Balance Sheet Arrangements

Other than for leased premises occupied by the Company, as discussed in note 8 of the audited financial statements for the year ended December 31, 2018 and 2017, 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:

Type of Securities	**Number of Common Shares issued or issuable upon conversion**
Common Shares	22,295,455
Stock options[(1)]	925,782
Warrants	13,282,253
Broker warrants[(2)]	786,183

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 Interim Financial Statements for terms of such options.

(2) Pursuant to the agency agreement in respect of the March 2017 offering, in addition to the cash commission paid to the agents, 50,005 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one Common Share at the price of CDN $10.50 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, 135,473 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one Common Share at the price of CDN $4.50 for a period of 24 months following the closing date.

Pursuant to the agency agreement in respect of the December 2017 offering, in addition to the cash commission paid to the agents, 105,350 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one Common Share at the price of CDN $15.00 for a period of 24 months following the closing date.

Pursuant to the agency agreement in respect of the April 2018 offering, in addition to the cash commission paid to the agents, 89,795 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one Common Share at the price of CDN $9.00 for a period of 24 months following the closing date.

Pursuant to the agency agreement in respect of the August 2018 offering, in addition to the cash commission paid to the agents, 537,570 broker warrants were issued to the agents. Each broker warrant entitles the holder thereof to acquire one Common Share at the price of CDN $2.50 for a period of 24 months following the closing date.

A total of 918,193 broker warrants were issued in connection with the March 2017, June 2017, December 2017 April 2018, and August 2018 offerings. As of the date hereof, 786,183 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, 2018, and the comparative information presented in the audited financial statements for the year ended December 31, 2017.

These financial statements have been prepared in accordance with accounting principles applicable to going concern, which contemplates that the Company will be able to realize its assets and settle its liabilities in the normal course as they come due during the normal course of operations for the foreseeable future. The Company has shareholders' deficiency of $172,937,694 and current losses of $22,639,272. The Company currently does not generate any revenue (other than interest income on its cash balances) and accordingly it is primarily dependent upon equity financing for any additional funding required for development and operating expenses. The Company expects that approximately US $45 million in incremental funding is needed, for the next 12 months to maintain its currently anticipated pace of development. If additional funding is not available, the pace of the Company's product development plan may be reduced. These conditions indicate the existence of a material uncertainty that may cast significant doubt on the ability of the Company to continue as a going concern if additional funding is not secured. However, based on internal forecasts, Management believes that the Company has sufficient funds to meet its obligations under a reduced development plan, if necessary, for the ensuing twelve months.

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 period. 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. 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, since the exercise price of new warrants are not a fixed amount, they are denominated in a currency (Canadian dollar) other than the Company's functional currency (U.S. dollar), as well as the warrants issued August 10, 2018 with the cashless exercise option. 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 the Company's warrant liability is initially based on level 2 (significant observable inputs) and at December 31, 2018 is based on level 1, quoted prices (unadjusted) in an active market, for the Company's listed warrants and level 2 for the Company's unlisted warrants.

Related Party Transactions

During the year ended December 31, 2018, 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 warrant liability. 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.

Outlook

By internal estimates, management believes there is an opportunity for the Company to access an unaddressed U.S. market that potentially may include more than $12 billion in capital equipment revenue and more than $3 billion in associated annual recurring revenue, including smaller hospitals and the underserved ambulatory surgery center market segment.

To date, experienced robotic surgeons performed 45 single-port procedures, including 43 live porcine and two cadaver studies, at the Company's three Centers of Excellence in the US and Europe using the SPORT Surgical System. These studies assisted in validating prototype performance in preclinical settings.

During the studies, essential areas for improvement of the surgical system were identified, including enhancements to the camera and light source, hand controls, instruments and 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. The Company successfully completed, on schedule, the planned SPORT Surgical System capital equipment engineering confidence build based on the improved design by year-end 2018.

In the first quarter of 2019, the Company plans to complete and document the results of confidence build unit testing, implement subsystem design improvements and schedule the preliminary audit of the Company's quality system by a European Notified Body.

Throughout the balance of 2019, management plans to continue 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 identified and made to the system, advanced prototypes will be upgraded and deployed at one or more of the Centers of Excellence for further preclinical evaluation in live animal and cadaver studies to ensure that the improvements are effective. This work must be completed before achieving design freeze and proceeding with summative evaluation usability tests with the final product, and validation studies required for regulatory filings.

In preparation for its planned FDA 510(k) application, the Company has already filed several Q-Submissions with the FDA to clarify in detail the preclinical studies and confirmatory human data required to support its submission. The associated Q-Submission milestone has been achieved well in advance of an earlier projection for completion in 2019. The Company plans to design and execute its studies based on the FDA's responses, with the intent of filing a fully compliant 510(k) application by year-end.

Through its correspondence and discussions with the FDA, the Company has confirmed that confirmatory human data will be required for its planned regulatory submission. The performance of human surgeries with the SPORT Surgical System will require an Investigational Device Exemption ("IDE") from the FDA, which must be submitted and approved in advance. Further, the recruitment of surgeons from multiple hospital sites will be necessary to perform the surgeries. Each of these sites will require approval of their independent Institutional Review Board ("IRB") to approve the studies. During the first three quarters of 2019, the Company plans to pursue the recruitment of surgeons and hospitals for the studies, IDE approval by the FDA, and approvals by the IRB of each hospital, in preparation for the confirmatory human studies planned for completion during the fourth quarter.

Over the next twelve months, the Company plans to raise additional capital to finance the development and commercialization of the SPORT Surgical System. The company will continue to explore alternative sources in order to minimize dilutive effects, including strategic partnerships, private placements and debt. Management will continue to assess the reasonableness of development milestones, as well as timelines and related cost estimates, as financing is secured and development continues.

The Company continues to engage external 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 relating to the Company, including Titan's Annual Information Form for the 2017 fiscal year, is available on SEDAR at www.sedar.com.