TITAN MEDICAL INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE YEAR ENDED DECEMBER 31, 2016

(IN UNITED STATES DOLLARS)

This Management's Discussion and Analysis ("MD&A") is dated March 21, 2017.

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, 2016 (and the notes thereto) ("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.

Additional information in respect of the Company, including the Company's most recent annual information form, can be found under the Company's profile at www.sedar.com.

Internal Control over Financial Reporting

During the year ended December 31, 2016, 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 and urologic procedures; the design of the surgical system is intended to allow for the system to be adapted to the needs of the surgeon; 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 Company continues to explore in-licensing opportunities for technologies that may be used in conjunction with the Company's robotic 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 anticipates expanding its patent portfolio by filing patent applications as it progresses in the development of robotic surgical technologies and by acquiring or 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; over the course of the next twelve months, Titan's objectives include continuing to significantly advance the development of its robotic surgical system through ongoing human factors and usability trials including the build of engineering verification (EV) units to be used for a number of planned pre-clinical studies; the Company intends to utilize a direct sales force and/or distribution partner(s) to initiate marketing the SPORT Surgical System to hospitals; the continued development and commercialization of the SPORT Surgical System; the Company has not deviated from its plan to use the Net Proceeds 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; Longtai Medical Inc. will concurrently with the signing of the Distributorship Agreement (as defined herein), subscribe for and purchase an additional US$4,000,000 worth of common shares; if the Distributorship Agreement is signed and the second US$4,000,000 private placement is completed, Titan will retain US$1,400,000 of the Distributorship Deposit (as defined herein) and repay US$600,000 to Longtai.

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, unfavorable competitive market conditions, dependence on key personnel, conflicts of interest, the Company's ability to obtain additional financing, strategic alliances, uncertainty as to product development and commercialization milestones, inability to achieve product cost targets, results of operations, competition, rapidly changing markets, uncertain market or uncertain acceptance of the Company's technology, technological advancements, intellectual property protection and infringement, ability to license other intellectual property rights of others, insurance and uninsured risks, product and services not completely developed, government regulation, changes in government policy, changes in costs and anticipated timelines associated with regulatory approvals, changes in accounting and tax rules, contingent liabilities, manufacturing risks, product defect risk, profitability, supplier risk, including supplier concentration, 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 9 of the Company's Annual Information Form for the 2015 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 incorporated under the *Business Corporations Act* (Ontario). The Company was formed by way of amalgamation under the *Business Corporations Act* (Ontario) on July 28, 2008.

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

Titan does not have any subsidiaries.

The Company is committed to developing its robotic surgical system for use in connection with minimally invasive surgery ("MIS"). From inception, the Company has focused on research and development of its robotic surgical technology and building its intellectual property portfolio, trade secrets and scientific and technical knowledge base.

Overall Performance

Titan Medical Inc. is a pre-revenue development stage company. During the year ended December 31, 2016 the Company raised, over the course of three offerings, $30,757,639 ($27,876,145 net of agents' commissions and other offering expenses). Titan closed the year with cash and cash equivalents of $4,339,911 and working capital of $2,366,832, excluding warrant liability.

During the year, the Company generated a net loss of $23,323,496 and material expenses included research and development costs of $22,577,885, foreign exchange loss of $277,303, general and administrative costs of $4,949,905 and a gain on change in fair value of warrants of $4,950,013.

The Company's business is focused on research and development through to the commercialization of computer-assisted robotic surgical technologies for application in MIS. The Company is presently developing a single-port robotic surgical system, the SPORT 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 surgical 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.

Development of the SPORT Surgical System has proceeded in response to "voice of customer" feedback, consultation with medical technology development firms and input from the Company's Surgeon Advisory Board comprised of key opinion leaders in targeted fields. This has allowed the Company to design a robotic surgical system that is intended to include the traditional advantages of robotic surgery, including tele-operation, 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 improved instrument dexterity. Overall, the design of the surgical system is intended to allow for the system to be adapted to the needs of the surgeon, rather

than the surgeon having to adapt to the system. The Company aims to pursue a broad set of surgical indications for the SPORT Surgical System, including general abdominal, gynecologic and urologic procedures.

In addition to the in-house led development of robotic surgical technologies, the Company continues to explore in-licensing opportunities for technologies that may be used in conjunction with the Company's surgical system under development. In 2012, the Company entered into an exclusive license agreement with The Trustees of Columbia University for a robotic surgical technology for use in single-port surgery. The Company has exclusive license rights for the development and commercialization of the licensed technology, providing a basis for the development of the SPORT Surgical 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 patient's body cavity through a skin incision of approximately 25 mm. 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 reposable (re-usable 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, 2016, the Company had ownership or exclusive rights to 14 patents and 32 patent applications filed with various patent offices. The Company anticipates expanding its patent portfolio by filing patent applications as it progresses in the development of robotic surgical technologies and by acquiring and/or licensing suitable technologies. The Company previously entered into exclusive license agreements with several organizations including the Trustees of Columbia University. The agreement with Columbia University provides the company with certain rights for the development and commercialization of robotic surgical technology for use in single port surgery, providing a basis for the development of the SPORT Surgical System.

As part of its development and commercialization efforts, the Company has established certain milestones that it uses to assess its progress toward developing commercially viable robotic surgical technologies. These milestones relate to technology and design advancements as well as to targeted dates for pre-clinical testing 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 its continued research and development program including the ongoing support of outsourced research and development suppliers. In addition to being capital intensive, research and development activities relating to sophisticated technologies that the Company develops 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 a 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.

The Company completed the build of two engineering verification ("EV") units in the fourth quarter of 2015. The Company had previously announced plans to build first-in-human units in the first quarter of 2016 after the completed build of the two EV units. However, due to the revision of the development path, the first-in-human units were repurposed as EV units and were completed during the first quarter of 2016. The EV units incorporate substantially all of the previous design and engineering work completed on the SPORT Surgical System and may be used for pre-clinical live animal and human cadaver studies. The live animal and human cadaver studies are expected to provide comprehensive and high quality information to have a positive contribution towards anticipated regulatory submissions to the United States Food and Drug Administration ("FDA") and European regulatory authorities for the CE Mark.

The Company initiated human factor and usability evaluations for the SPORT Surgical System during the first half of 2016. Several evaluation sessions were performed with participation by clinical personnel from independent hospitals in which opportunities for improvement in system setup, performance, and instrument reprocessing were identified.

Please also see the discussion below under the heading, "*Development Objectives*", for additional information concerning development related activities that occurred in 2016.

Selected Annual Information

The following table summarizes selected financial data reported by the Company for the years ended December 31, 2016, 2015 and 2014 in accordance with International Financial Reporting Standards ("IFRS"). The information set forth should be read in conjunction with the respective audited financial statements. All amounts shown are in U.S. dollars which is the company's functional and presentation currency.

	2016	2015	2014
Net sales	-	-	-
Net and comprehensive loss for the year	$23,323,496	$41,413,281	$13,450,261
Basic & diluted loss per share	$0.16	$0.40	$0.14
Total long term liabilities	-	-	-
Total assets	$7,192,496	$12,886,310	$35,389,436
Dividends	-	-	-

Significant changes in key financial data from 2014 to 2016 can be attributed to the availability of equity financing and expenditures in connection with the development of the Company's robotic surgical system.

In 2012, the Company started the transition of its technology development to a single-port robotic surgical system. The continuation of its development efforts was funded by financings completed in subsequent years.

Effective January 1, 2014, the Company adopted, on a prospective basis, the U.S. dollar as its functional and presentation currency. In accordance with IAS 32, because the exercise prices of the warrants issued subsequent to January 1, 2014 are not fixed amounts as they are denominated in a currency (Canadian dollar) other than the Company's functional currency (U.S. dollar), these warrants are accounted for as a derivative financial liability. The warrant liability as well as warrants issuable from the exercise of broker warrants, is initially measured at fair value and subsequent changes in fair value are recorded through the net and comprehensive loss for the applicable year. The fair value of these warrants is initially determined using a comparable warrant quoted in an active market, adjusted for differences in the terms of the warrants. At December 31, 2016, the warrant liability was adjusted to fair value measured at the market price of the listed warrants.

Discussion of Operations

The Company incurred a net and comprehensive loss of $23,323,496 during the year ended December 31, 2016, compared with a net and comprehensive loss of $41,413,281 for the year ended December 31, 2015. This decrease in net and comprehensive loss for the year is primarily attributed to a slowdown of development work in the third and fourth quarter of 2016 due to insufficient capital. Foreign exchange loss in the year ended December 31, 2016 was $277,303, compared to $873,823 in 2015.

During the year ended December 31, 2016, the Company continued the development of the Company's robotic surgical system, continued efforts toward furthering key strategic relationships, and carried on efforts to secure the Company's intellectual property through the patent and licensing process. As of December 31, 2016, the Company has ownership or exclusive rights to 14 issued patents and 32 patent applications filed with various patent offices.

Research and development expenditures (all of which were expensed in the year) for the year ended December 31, 2016 and December 31, 2015, respectively, were as follows:

Research and Development Expenditures	Year Ended December 31, 2016	Year Ended December 31, 2015
Intellectual property development	$20,000	$20,000
License and royalties	82,531	517,505
Product development	22,475,354	37,675,827
Total	$22,577,885	$38,213,332

Research and development expenditures decreased in the year ended December 31, 2016 compared to the same period in 2015. This decrease was a result of a reduction in capital available to fund development and design for manufacturing performed by our external development firm and our contract manufacturing firm, particularly during the third and fourth quarter of 2016. In November 2016, both firms resumed work on the development of the SPORT Surgical System on a limited basis.

Excluding foreign exchange, general and administrative expenses for the year ended December 31, 2016, were $4,949,905 compared to $3,557,638 for the same period in 2015. This increase in 2016 over 2015 is attributed to an increase in consulting fees, stock based compensation, management & administrative salaries, and travel expenses.

For the year ended December 31, 2016, the foreign exchange loss was $138,504 before foreign exchange on warrant liabilities, compared to $1,361,336 for the comparable period in 2015. The decrease in foreign exchange loss of $1,222,832 for the year ended December 31, 2016 compared to the same period in 2015 is attributed to substantially higher Canadian dollar cash balances in 2015 at less favourable foreign exchange rates than in 2016. The U.S. dollar was considerably stronger against the Canadian dollar in 2015 compared to 2016. The Company does not currently have a formal foreign exchange hedging policy as the Company only maintains a minimum balance on hand of Canadian dollars. At December 31, 2016 the foreign exchange loss on warrant liabilities was $138,799, versus a gain of $487,513 for the comparable period in 2015.

The gain attributed to change in fair value of warrants for the year ended December 31, 2016 was $4,950,013, compared to a gain of $1,142,876 for the same period at December 31, 2015. This increase in gain of $3,807,137 reflects a reduction in fair value of warrants in 2016 compared to 2015, coupled with an increase in the number of outstanding warrants from 27,676,965 at December 31, 2015 to 77,451,086 at December 31, 2016.

Titan realized $7,540 of interest income in the year ended December 31, 2016 and $88,637 in the year ended December 31, 2015. This decrease in interest income is due to lower cash balances, as the Company advanced its development of the SPORT Surgical System.

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, calculated in accordance with IFRS.

	Three Months Ended December 31, 2016	**Three Months Ended September 30, 2016**	**Three Months Ended June 30, 2016**	**Three Months Ended March 31, 2016**	**Three Months Ended December 31, 2015**	**Three Months Ended September 30, 2015**	**Three Months Ended June 30, 2015**	**Three Months Ended March 31, 2015**
Net sales	-	-	-	-	-	-	-	-
Net and Comprehensive Loss from operations	$2,008,365	$1,659,863	$7,934,874	$11,720,394	$13,136,604	$10,899,586	$8,250,823	$9,126,268
Basic and diluted loss per share	$0.01	$0.01	$0.05	$0.09	$0.12	$0.11	$0.08	$0.09

Significant changes in key financial data from the three months ended March 31, 2015 to the three months ended December 31, 2016 reflects the continued development of a single-port robotic platform with prototypes for use in ongoing laboratory studies. Also included is the effect of the reduction of product research and development work in the third and fourth quarters of 2016 and the revaluation of the Company's warrant liability at fair value, with subsequent changes recorded through net and comprehensive loss for the year.

During the fourth quarter of 2016, operating expenses, other than foreign exchange were $1,331,891 compared to $834,456 for the same period in 2015. This increase of $497,435 is attributed primarily to an increase in stock based compensation as well as additional management and administration salaries, consulting fees and professional fees. Foreign exchange gain in the fourth quarter of 2016 was $57,664 compared to a foreign exchange gain of $97,255 for the same period in 2015. This decrease in foreign exchange gain of $39,591 is primarily attributable to the foreign exchange on warrants, a gain of $61,114 in 2016 compared to a gain of $96,967 in 2015. The loss from operations prior to interest income and fair value revaluation of warrants was $2,336,822.

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.

Titan had $4,339,911 of cash, cash equivalents and short-term investments on hand, accounts payable and accrued liabilities, and other liabilities and charges of $4,232,201, excluding warrant liability at December 31, 2016, compared to $11,197,573, and $11,159,829 respectively, at December 31, 2015. Titan's working capital as at December 31, 2016 was $2,366,832, excluding warrant liability, compared to $1,273,401, at December 31, 2015. This increase in working capital is primarily attributed to the previously noted reduction of development work and the capital raises completed during the last two quarters of 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.

Ticker Symbol	**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.E	April 23, 2014	April 23, 2017	12,203,189	12,346,914	$2.75	33,954,014
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 23, 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	April 14, 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	October 27, 2021	2,030,000	2,030,000	$0.75	1,522,500
NOT LISTED	March 16, 2017	March 16, 2019	10,733,600	10,733,600	$0.40	4,293,440
NOT LISTED	March 16, 2017	March 16, 2021	10,733,600	10,733,600	$0.50	5,366,800
TOTAL			96,787,468	95,861,135		109,868,071

The following table sets forth the material contractual obligations of the Company at December 31, 2016.

Contractual Obligations	Payments Due by Period				
	Total $	Less than 1 year	2 - 3 years	4 - 5 years	After 5 years
Purchase Orders for Outsourced Design, Development & Engineering	4,681,779	4,681,779			
Milestone Payments	897,500			897,500	
Licensing Agreements	480,000	80,000	10,000	385,000	5,000
Total Contractual Obligations	6,059,279	4,761,779	10,000	1,282,500	5,000

Purchase Orders for Outsourced Design, Development and Engineering - Company has outsourced certain aspects of the design and development to Ximedica, a U.S. based technology development company. At December 31, 2016, $1,984,978 in purchase orders remained outstanding with that firm. During the year, the Company issued further purchase orders to U.S. based contract manufacturer (the "Contract Manufacturer") to provide further design for manufacturing and engineering services. At December 31, 2016, $2,696,801 in purchase orders remained outstanding to the Contract Manufacturer.

Milestone Payments - The Company has entered into a number of licensing agreements with suppliers and universities that will require payments to be made to them in future years, based on the achievement by the Company of certain milestones and which payments could total up to $897,500. Subsequently, following commercialization, royalty payments will be required, based on a percentage of annual net sales of the licensed product, in the range of 4% to 6% per royalty agreement.

Licensing Agreements - The Company has entered into a number of licensing agreements with educational and medical institutions as well as suppliers, with regard to intellectual property to be incorporated into the SPORT Surgical System. These agreements require Titan to make periodic payments in 2017 and beyond.

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 Company completed the build of two engineering verification ("EV") units in the fourth quarter of 2015. The Company had announced plans to build first-in-human units in the first

quarter of 2016 after the completed build of the two EV units. However, due to the revision of the development path discussed below, the first-in-human units were repurposed as additional EV units and were completed during the first quarter of 2016. The EV units incorporate substantially all of the previous design and engineering work completed on the SPORT Surgical System and may be used for pre-clinical live animal and human cadaver studies. The live animal and human cadaver studies are expected to provide comprehensive and high quality information to have a positive contribution toward anticipated regulatory submissions to the FDA and European regulatory authorities for the CE Mark.

In the first quarter of 2016, in consultation with its advisors, the Company and its principal development firm, Ximedica, re-engineered and optimized the 2016 development plan. This was done partially in view of observations related to the experiences of other robotic surgery companies in dealing with regulatory authorities and published changes to the FDA guidelines, "Applying Human Factors and Usability Engineering to Medical Devices", issued February 3, 2016, and effective April 3, 2016. The Company reviewed the FDA's new guidelines and incorporated additional procedures and documentation into its human factor and usability studies in an effort to comply with the new guidelines. Consequent to this as well as further engineering development initiatives, the Company determined the total costs for it to reach submission of a 510(k) application to the FDA would increase significantly from the Company's previously published estimate. The Company therefore withdrew all prior milestone charts set forth in the Company's Management's Discussion and Analysis and Annual Information Form in respect of the year ended December 31, 2015 and those set forth in its prospectus supplements respectively dated February 9, 2016 and March 24, 2016.

In the second quarter of 2016, the Company entered into a manufacturing and supply agreement with the Contract Manufacturer for the future manufacturing of the SPORT Surgical System. In addition to providing manufacturing expertise, the Contract Manufacturer is expected to participate in the final stages of development and design for manufacturing of the SPORT Surgical System.

During the second half of 2016, the work performed by Ximedica and the Contract Manufacturer engaged by the Company for design and development of the SPORT Surgical System was reduced until such time that the Company received sufficient financing to cover work orders projected over a six-month period. Subsequent to an offering by the Company that closed in October 2016, both firms were re-engaged to resume development of the SPORT Surgical System at a rate consistent with the level of financing raised and acceptable to both Ximedica and the Contract Manufacturer. This scaled-back rate of program funding was intended as a short-term solution to maintain momentum in critical path human factors studies until accelerated product development could be resumed with adequate funding.

Previously, the Company had forecast specific milestones for completion in 2016. Due in part to scaled back development, several of these milestones were not completed. In particular the Company proposed the build of a fifth EV unit, ("EV5"), in the second half of 2016. Based upon imminent design changes, the Company deemed that the build of the EV5 unit would have had little value and could have even diverted valuable engineering and financial resources from progress on known iterative design improvements. It has been determined that the assembly of additional EV units is not necessary at this time. The Company has working prototype units that

it believes can be upgraded and made to support human factors studies and anticipated pre-clinical animal and human cadaver testing activities in 2017.

Subsequent to the filing of the Company's prospectus supplement dated September 13, 2016 and its management's discussion and analysis in respect of the three and nine months ended September 30, 2016 and following the resignations of the Company's former Executive Vice President of Regulatory Affairs and the Company's former Chief Executive Officer, the Company completed a detailed review of its development plan and its then current milestones. With the appointment of the Company's new Chief Executive Officer, David McNally, the development review was extended and increased in scope which resulted in the Company's decision to revise its interim development milestones. Consequently, the milestones set forth in the prospectus supplement dated September 13, 2016 and its management's discussion and analysis in respect of the three and nine months ended September 30, 2016 have been withdrawn and replaced with the new milestones contained herein.

The Company had also forecast that it would complete heuristic studies, which are precursors to the more formal formative usability studies, in 2016. Heuristic studies are "hands-on" or interactive approaches to learning, and processes in which technical personnel evaluate a device's user interface against design principles, rules or "heuristic" guidelines. The objective is to evaluate the overall user interface, and identify possible weaknesses in the design, especially when use error could lead to patient or operator harm. Heuristic studies include careful consideration of accepted concepts for design of the user interface. Formative studies involve more in-depth evaluation of the user interface by "subject matter experts", which may include surgeons, nurses, and operating room technicians. The rigorous nature of formative studies with participation by clinical experts typically drives significantly higher associated expenses than heuristic studies. Therefore, it can be more efficient to gain insights from heuristic studies before proceeding to formative studies.

Specifically, the Company had forecast the completion of two heuristic usability modules, or studies in the second half of 2016. These heuristic studies were completed, however the results of the studies yielded opportunities to improve the design of the product. Therefore, after making changes to system prototypes, two additional heuristic modules were completed by the end of 2016, for a total of four heuristic studies performed in 2016. The Company now expects to proceed to complete two formative usability modules in the first half of 2017, promptly following a final analysis of the first four heuristic studies.

The creation and refinement of software for production system functionality has not yet commenced. The Company plans to commence this process in the first half of 2017, and it will likely remain an intensive, ongoing process through the remainder of the year.

It has been determined that the assembly of additional engineering verification units is not necessary at this time. The Company has other working prototype units that it believes can be upgraded and made to support human factors studies and anticipated pre-clinical testing activities in 2017.

At this time, the Company's primary development objectives and milestones in 2017 will be to advance human factors studies, stabilize the design and development of the system and initiate pre-clinical studies.

The Company estimates that it will require a minimum of approximately US$10 million to fund its development milestones for the first half of 2017, specifically, those related to the advancement of the human factors and usability studies and finalization of user requirements for the first generation SPORT Surgical System. It is further estimated that a minimum of an additional US$18 million will be required to fund development and pre-clinical studies during the second half of 2017.

The Company presently estimates that a total of US$75 million of additional capital including the US$10 million and US$18 million amounts noted above, will be required to fund development work through submission of the 510(k) application to the FDA and submittal to European authorities for the CE Mark, which are projected by year-end 2018. However, given the uncertainty of, among other things, product development timelines, regulatory requirements and the timing and number of future animal and human cadaver studies that may be required, actual costs and development times may exceed management's current expectations.

The Company estimates costs to the end of 2017 related to the development, commercialization and regulatory clearance of the SPORT system to be as set out in the table below.

Development Milestones	***Estimated Cost (in U.S. million $)***	***Schedule for Milestone Completion***	***Comments***
Units built and ready for engineering verification (Prototype is formally tested to meet previously defined specifications)			
Build two EV units	-	Q4 2015	*Completed*
Build additional EV units	-	Q1 2016	*Completed*
Perform initial heuristic human factors and usability studies	-	Q2 2016	*Completed*
Complete human factors and usability studies			
Finalize user requirements for 1st generation robotic surgical system	4.5	Q1 2017	
Select and confirm strategic facilities for pre-clinical studies in US and Europe	0.5	Q2 2017	
Test and evaluate performance of subsystems of existing EV units	1.8	Q2 2017	
Complete initial formative human factors studies	2.0	Q2 2017	
Initiate design changes based on subsystem performance and human factors evaluation	1.0	Q2 2017	
Implement design changes and retest system and subsystems Update Design History File and documentation for relevant modules of Company Quality Management Systems ("QMS") Complete initial requirements and architecture for simulation software and training program design	8.7	Q3 2017 Q3 2017 Q3 2017	

Development Milestones	*Estimated Cost (in U.S. million $)*	*Schedule for Milestone Completion*	*Comments*
Complete and report on pre-clinical animal studies at strategic facilities in US and Europe Confirm FDA and CE Mark pathways in coordination with regulatory authorities	9.2	Q4 2017 Q4 2017	
Complete software development, system design and update Design History File for regulatory filing Complete summative human factors evaluation Complete simulation software development and training program design Complete and document pre-clinical studies for FDA submittal Prepare and submit 510(k) application to FDA and prepare technical file for CE Mark and submit to European Notified Body Publish white papers on pre-clinical studies	TBD(1)	2018	
Anticipated receipt of FDA 510(k) clearance and CE Mark Perform successful human surgeries at initial US and European training centres	TBD(1)	2019	
TOTAL	TBD(1)		

Notes:

(1) The schedule for future milestone completion cannot be estimated at this time pending receipt and confirmation of detailed cost projections by the Company's principal development and manufacturing service providers.

Upon completion of the development of the SPORT Surgical System and following receipt of applicable regulatory clearances, the Company intends to utilize a direct sales force and/or distribution partners to initiate marketing the SPORT Surgical System to hospitals.

Due to the nature of medical device 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 robotic 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, the availability of financing and the ability of development firms engaged by the Company to completed work assigned to them. The total costs to complete the development of the Company's SPORT Surgical System as referenced above are only estimates 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 also refer to the risk factors set forth starting on page 13 of the Company's Annual Information Form for the 2015 fiscal year, available on SEDAR at www.sedar.com.

Financings

First Quarter of 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 Securities Inc. (the "Agent"). The Company sold 21,467,200 units under the Offering at a price of CDN$0.35 per Unit for gross proceeds of approximately $5,680,221 ($5,100,880 net of closing cost including cash commission of $394,316 paid in accordance with the terms of the 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 on Common Share of the Company at an exercise price of CDN $0.50 and expiring March 16, 2021.

Pursuant to the agency agreement, in addition to the cash commission paid to the Agent, broker warrants were issued to the Agent 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.

Offering in Second Half of 2016

On September 20, 2016 Titan completed an offering of securities pursuant to an agency agreement dated September 13, 2016 between the Company and Bloom Burton & Co. Limited and Echelon Wealth Partners Inc. (the "Agents"). The Company sold 17,083,333 units ("Units") under the Offering at a price of CDN $0.60 per Unit for gross proceeds of $7,749,000 ($6,951,987 net of closing costs including cash commission of $528,668 paid in accordance with the terms of the agency agreement). Each Unit comprised of one common share of the Company and one warrant. Each whole warrant entitles its holder to purchase one additional common share of Titan for CDN $0.75 and will expire September 20, 2021.

Pursuant to the agency agreement, in addition to the cash commission paid to the Agents, the Company issued 1,165,494 broker warrants to Agents. Each broker warrant entitles the holder thereof to acquire one common share of the Company at the price of CDN$0.60 and expires September 20, 2018.

On October 27, 2016, the Agents exercised the over-allotment option granted by the Company in connection with the September 20, 2016 offering and the Company sold an additional 2,030,000 Units at the offering price of CDN $0.60 per Unit for additional gross proceed of $909,846 ($845,181 net of closing costs including cash commission of $63,689 paid in accordance with the terms of the agency agreement).

In connection with the exercise of the over-allotment option, the Company paid a cash commission equal to 7% of the gross proceeds to the Company from the exercise of the over-allotment option and issued 142,100 broker warrants to the Agents.

In connection with the offering, the Company filed a prospectus supplement dated March 10, 2017 to its base shelf prospectus dated August 18, 2015.

Offerings During First Half of 2016

On February 12, 2016 Titan completed an offering of securities made pursuant to an agency agreement dated February 9, 2016 between the Company and Bloom Burton. The Company sold 11,670,818 units under the offering at a price of CDN$0.90 per unit for gross proceeds of approximately $7,592,101 ($6,844,046 net of closing costs including cash commission of $516,622 paid in accordance with the terms of the agency agreement). Each unit consisted of one common share of the Company and one common share purchase warrant. Each whole warrant entitles the holder thereof to acquire one common share of the Company at an exercise price of CDN$1.00 and expires February 12, 2021.

On February 23, 2016 the over-allotment option in connection with the Company's February 12, 2016 offering of 11,670,818 units was exercised in full, and the Company sold an additional 1,746,789 units at the offering price of CDN$0.90 per unit for gross proceeds to Titan of approximately $1,139,937 ($1,029,605 net of closing costs including cash commission of $79,796 paid in accordance with the terms of the agency agreement). Each whole warrant entitles the holder thereof to acquire one common share of the Company at an exercise price of CDN$1.00 and expires February 23, 2021.

Pursuant to the agency agreement, in addition to the cash commission paid to Bloom Burton, the Company issued 916,443 broker warrants to Bloom Burton. Each broker warrant entitles the holder thereof to acquire one unit of the Company at the price of CDN$0.90 and expires February 23, 2018. Each unit consists of one common share of the Company and one common share purchase warrant. Each purchase warrant entitles the holder thereof to acquire one common share of the Company at an exercise price of CDN$ 1.00 and expires February 23, 2021.

On March 31, 2016 Titan completed an offering of securities pursuant to an agency agreement dated March 24, 2016 between the Company and Bloom Burton. The Company sold 15,054,940 units under the offering price of CDN$1.00 per unit for gross proceeds of approximately $11,607,359 ($10,571,919 net of closing costs including cash commission of $796,324 paid in accordance with the terms of the agency agreement). Each unit comprises one common share of Titan and one warrant. Each whole warrant entitles its holder to purchase one additional common share of Titan for CDN$1.20 and will expire March 31, 2021.

Pursuant to the agency agreement, in addition to the cash commission paid to Bloom Burton, the Company issued 1,032,845 broker warrants to Bloom Burton. Each broker warrant entitles the holder thereof to acquire one unit of the Company at the price of CDN$1.00 and expires March 31, 2018. Each unit consists of one common share of the Company and one common share purchase warrant. Each purchase warrant entitles the holder thereof to acquire one common share of the Company at an exercise price of CDN$ 1.20 and expires February 23, 2021.

On April 14, 2016 the over-allotment option to the Company's March 31, 2016 offering was exercised in full and the Company sold an additional 2,258,241 units at the offering price for additional gross proceeds of $1,759,396 ($1,633,407 net of closing costs including commission of $123,158 paid in accordance with the terms of the agency agreement).

Pursuant to the agency agreement, in addition to the cash commission paid to Bloom Burton, the Company issued 158,076 broker warrants to Bloom Burton. Each broker warrant entitles the holder thereof to acquire one unit of the Company at the price of CDN$1.00 and expires April 14, 2018.

Longtai Medical Inc.

On October 30, 2015, the Company entered into a letter agreement (the "Letter Agreement") with Longtai Medical Inc. Under the terms of the Letter Agreement, on November 23, 2015, Longtai subscribed for and purchased US $4,000,000 worth of Common Shares under a private placement, at a subscription price of CDN $1.23 per Common Share. In the Letter Agreement, the Company granted to Longtai exclusive rights to negotiate with the Company for an exclusive marketing, sales and distribution agreement for the Company's SPORT Surgical System in the Asia Pacific region (the "Distributorship Agreement") for a period of 183 days commencing at closing of the private placement. Additionally, Longtai paid to the Company US $2,000,000 as a deposit toward the Distributorship Agreement ("Distributorship Deposit"), which is required to be repaid to Longtai in the event that the Distributorship Agreement is not entered into within such 183 day period. On May 24, 2016, the Company and Longtai executed a three month extension of the exclusive rights granted to Longtai to negotiate the Distributorship Agreement and for the repayment of the Distributorship Deposit to Longtai, extending the negotiation period and the date for repayment of the Distributorship Deposit to August 19, 2016.

On August 24, 2016, Titan announced that it had extended the exclusive rights granted to Longtai to negotiate the Distributorship Agreement from the previous three month extension to monthly progress reviews. Longtai agreed that, concurrently with the signing of the Distributorship Agreement, it shall subscribe for and purchase an additional US $4,000,000 worth of Common Shares at a subscription price equal to the 5-day volume weighted average price of the Common Shares on the TSX (less a 12.5% discount). If the Distributorship Agreement is executed and the second US $4,000,000 private placement is completed, the Company shall retain US $1,400,000 of the Distributorship Deposit and repay US $600,000 to Longtai. There can be no assurance that the parties will be able to negotiate and enter into a Distributorship Agreement or that the parties will complete the US $4,000,000 private placement.

The utilization of proceeds as outlined in the prospectus supplement dated February 9, 2016, March 24, 2016 and September 13, 2016 to the short form base shelf prospectus of the Company dated August 18, 2015 has been updated as outlined in the following table:

	Proceeds from the Offering as outlined in the prospectus supplement dated February 9, 2016 (Including the 15% overallotment)	**Proceeds from the Offering as outlined in the prospectus supplement dated March 24, 2016 (Including the 15% overallotment)**	**Proceeds from the Offering as outlined in the prospectus supplement dated September 13, 2016 (Including the 15% overallotment)**	**Total**
Ongoing development and commercialization of the SPORT Surgical System	$6,298,920	$9,764,261	$6,237,734	$22,300,915
General working capital requirements	1,574,731	2,441,065	1,559,434	5,575,230
Total Net Proceeds	$7,873,651	$12,205,326	$7,797,168	$27,876,145

The Company has not deviated from its plan to use the net proceeds of the offerings described in the table above towards the ongoing development and commercialization of its SPORT Surgical System and general working capital purposes.

Off-Balance Sheet Arrangements

Other than for leased premises occupied by the Company, and licensing agreements both of which are discussed in note 8 of the audited financial statements for the year ended December 31, 2016 and 2015, 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 Management's Discussion and Analysis:

Type of Securities	**Number of Common Shares issued or issuable upon conversion**
Common Shares	187,978,646
Stock Options(1)	15,225,260
Warrants(2)	95,861,135
Broker Warrants(3)	4,915,113

Notes:

(1) The Company has outstanding options enabling certain employees, directors, officers and consultants to purchase Common Shares. Please refer to note 5(b) of the Audited Financial Statements for terms of such options.

(2) Each Warrant entitles its holder to purchase one Common Share of the Company.

(3) 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 the Agents, 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.

A total of 916,443, 1,190,921, 1,307,594 and 1,500,155 broker warrants were issued in connection with the February 2016 offering, March 2016, September 2016 and March 2017 offering, respectively. As of the date hereof, all 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, 2016, and the comparative information presented in the audited financial statements for the year ended December 31, 2015The 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. While management believes that the estimates and assumptions are reasonable, actual results may differ. 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.

Fair Value

(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 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). 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 year. 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, 2016 is based on level 1, quoted prices (unadjusted) in an active market

Related Party Transactions

During the year ended December 31, 2016, 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.

On June 8, 2015, the Company entered into an option agreement with Platform Imaging, LLC ("Platform") whereby Platform granted the Company an option to negotiate a license agreement to have exclusive rights to practice the inventions set forth in patents and patent applications for markerless tracking of robotic surgical tools for potential incorporation in the SPORT Surgical System and to distribute such product thereafter. Under the terms of the option agreement, the Company paid to Platform a non-refundable option fee of $300,000 as follows: (i) $100,000 upon signing the option agreement; (ii) $100,000 on January 2, 2016; and (iii) $100,000 on October 1, 2016. In addition, the Company had the right at any time up to and including February 2, 2017, to exercise the option by paying a fee of $1.3 million for the rights under the license agreement, payable upon execution of a license agreement. Titan has given written notice that it does not intend to exercise the option.

A former senior officer of Titan was also a co-founder, significant shareholder, a director and a member of the senior management team of Platform, as well as the co-inventor of the developed technology.

During the year, an individual related to a former senior executive, provided consulting services in support of sales and marketing efforts for the U.S. and European markets. Annual compensation of $148,320 plus reimbursement of appropriate expenses was paid to the individual. That individual is no longer employed by Titan Medical.

Financial Instruments

The Company's financial instruments consist of cash and cash equivalents, short-term investments, amounts receivable, accounts payable and accrued liabilities, warrant liability, and other liabilities and charges. The fair value of these financial instruments approximates their carrying values, unless otherwise noted, due to the short maturities of these instruments or the discount rate applied.

Outlook

Titan continues to focus its efforts on the research and development of the SPORT Surgical System and is continuing to move toward commercialization. In 2016, the Company completed the build of several prototype units, which when upgraded will be used in 2017 for pre-clinical animal and human cadaver studies.

At this time, the Company's primary development objectives and milestones in 2017 will be to advance human factors studies, formalize user requirements, stabilize the design and development of the system, and initiate pre-clinical studies. Pre-clinical studies performed in live animal subjects by surgeons with fully-functional prototypes are expected to provide valuable insights regarding system performance, as well as the suitability of related surgical accessories, during representative surgical procedures under controlled laboratory conditions.

Based on the evolution of the design of the SPORT Surgical System, the creation and refinement of software for production system functionality has not yet commenced. As the system design matures early in 2017, the Company plans to commence this process in the first half of 2017, and anticipates that it will continue as an intensive, ongoing process through the balance of 2017 with anticipated completion in 2018. As software development is a parallel effort, it is anticipated that insights gained from human factors and pre-clinical studies will provide opportunities to optimize the system for clinical use.

Titan is developing its quality management system (QMS) to be compliant with FDA regulations and in preparation for the audits leading to obtaining the CE Mark. As required testing is completed, the results will be incorporated into the design documentation and technical files to be reviewed during future audits. The Company is planning for studies to support the Company's 510(k) application for FDA clearance as appropriate in the development process.

On a regular basis, Titan undertakes a detailed analysis and reasonableness review of its development milestones and related cost estimates.

Over the next twelve months, the Company plans to raise additional financing and to continue the development and commercialization of the SPORT Surgical System.

Additional Information

Additional information relating to Titan, including Titan's Annual Information Form for the 2015 fiscal year, is available on SEDAR at www.sedar.com.