

Titan Medical Inc.

Management's Discussion and Analysis

FOR THE THREE MONTHS ENDED MARCH 31, 2012

This Management's Discussion and Analysis is dated May 15, 2012.

This Management's Discussion and Analysis provides a review of the performance of Titan Medical Inc. ("Titan" or the "Company") and should be read in conjunction with its unaudited condensed interim financial statements for the three months ended March 31, 2012 (and the notes thereto) ("Interim Financial Statements"). The Interim Financial Statements have been prepared in accordance with International Accounting Standard 34. The Company's reporting currency is Canadian dollars.

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 three months ended March 31, 2012, 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 acquisitions and events or developments that the Company expects, are forward-looking statements. These forward-looking statements are made as of the date of this Management's Discussion and Analysis. Forward-looking statements are frequently, but not always, identified by words such as "expects", "expectation", "anticipates", "believes", "intends", "estimates", "predicts", "potential", "targeted", "plans", "possible" and similar expressions, or statements that events, conditions or results "will", "may", "could", or "should" occur or be achieved. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. Forward-looking statements are statements about the future and are inherently uncertain, and actual results of the Company or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, such as current global financial conditions, dependence on key personnel, conflicts of interest, obtaining of or cost of additional financing, strategic alliances, uncertainty as to product development and commercialization milestones, results of operations, competition, technological advancements, rapidly changing markets, uncertain market, uncertain acceptance of the Company's technology or intellectual property, infringement of intellectual property rights, scope and cost of insurance and uninsured risks, risks associated with the Company entering into additional long-term contractual arrangements, ability to license other intellectual property rights, government regulation, changes in government policy, changes in accounting and tax rules, regulatory inquiries, requirements and approvals, contingent liabilities, manufacturing and product defects, limited history of earnings and stock price volatility. 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

Titan Medical Inc. is the successor corporation formed pursuant to two separate amalgamations (the “Amalgamations”) under the *Business Corporations Act* (Ontario) on July 28, 2008: (i) Synergist Medical Inc. (“Synergist”) amalgamated with Titan Medical Inc. (formerly, 2174656 Ontario Limited), then a wholly owned subsidiary of KAM Capital Corp. (“KAM”), to form a new corporation called Titan Medical Inc. (“Amalco”); and (ii) the amalgamation of Amalco with KAM to form Titan Medical Inc.

The Amalgamations constituted the Qualifying Transaction of KAM under the policies of the TSX Venture Exchange and satisfied the requirement to complete a Going Public Event as such term was defined in debentures previously issued by Synergist.

Titan’s business consists of the continued development of the Amadeus™ Surgical System, a “next generation” surgical robotic platform, as described in more detail below.

The Company continues the business of Synergist which was incorporated in 2002 and which commenced business in May 2006. The Company is committed to developing the Amadeus™ Surgical System with the objective of substantially improving upon keyhole or minimally invasive surgery (surgery without large incisions). From inception, the Company has been focusing on its research and development activities and building its intellectual property portfolio, trade secrets and scientific and technical knowledge base.

Overall Performance

The Company is a development stage company engaged in the design and development of the Amadeus™ Surgical System for robotic surgery. The Amadeus™ Surgical System includes single and multiple port access capability with the objective of performing complex procedures directed and operated by a surgeon and surgical team. The Amadeus™ Surgical System includes: robotic arms; a surgeon’s workstation comprised of visual screens and controllers to manoeuvre the robotic arms; a tower that contains all of the necessary hardware, software and power supply components and related instruments which the Company has identified to date to operate the system; and a patient cart, designed for specific surgical applications. The Amadeus™ Surgical System uses an open architecture platform designed to offer increased flexibility and allow for a greater range of potential surgical applications.

The Company has completed prototypes of the Amadeus™ Surgical System which embody innovations toward the targeted capability of robotic surgery, including: (i) a higher resolution and colour fidelity 3D vision system allowing rapid interpretation of anatomy; (ii) a hand controller with force feedback, providing real-time force information for control of the system; and (iii) instruments with increased degrees of freedom of movement. In the last quarter of 2011, the Company completed prototypes of a pre-production surgeon workstation, a pre-production tower, and beta patient cart of its Amadeus™ Surgical System. The beta patient cart

is being designed with the objective to allow surgeons to perform procedures within small to medium size surgical spaces such as general surgery procedures and ear, nose and throat (ENT) procedures.

The Company also continues to actively explore in-licensing opportunities for technologies that may be used in conjunction with the Amadeus™ Surgical System. During the period, the Company announced that it has entered into an exclusive license agreement with Columbia University for a novel single port robotic surgery system, the Insertable Robotic Effector Platform (“IREP”). The Company has exclusive license rights for the development and commercialization of the intellectual property of the IREP. The Company is currently investigating the potential to incorporate the IREP into its Amadeus™ Surgical System.

The Company has also established product development and commercialization milestones that it uses to assess its progress towards developing a commercially viable product. These milestones relate to technology and design improvements as well as to dates for achieving development goals. 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 choose to purchase alternative technologies.

Among other things, the future success of the Company is substantially dependent on a continued research and development program. 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 a desired result. If delays or problems occur during the Company’s ongoing research and development process, 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.

Operations

The Company develops its core technologies through a combination of in-house personnel and selected engineering and technology partners developing components of the Amadeus™ Surgical System to the Company’s specifications. Currently, the Company has its components completed through purchase orders and does not have long-term development contracts with any third party engineering and technology partners.

Selected Annual Information

The following table summarizes selected financial data reported by the Company for the years ended December 31, 2011, 2010 and 2009. The information set forth should be read in conjunction with the respective audited financial statements. The net and comprehensive loss from operations for the year 2010 has been adjusted to reflect the transition to IFRS.

	2011 (IFRS)	2010 (IFRS)	2009 (Canadian)
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			GAAP)
Net sales	-	-	-
Net and comprehensive loss for the year	\$16,127,529	\$3,761,058	\$747,278
Basic & diluted loss per share	\$0.30	\$0.09	\$0.02
Total long term liabilities	-	-	-
Total assets	\$11,350,395	\$9,958,278	3,426,702
Dividends	-	-	-

Significant changes in key financial data from 2009 to 2011 can be attributed to the availability of added funding and resulting development of the Amadeus™ Surgical System. In 2009 expenditures were reduced, although Titan did complete a private placement offering on December 23, 2009, resulting in the issuance of 5,822,000 units for net proceeds of \$1,991,323. During 2010 and 2011 the Company continued further development of the Amadeus™ Surgical System, hired additional employees and secured new premises in support of the Amadeus™ Surgical System’s related product development. This continued growth was possible as a result of successful financings completed on December 10, 2010, June 21, 2011 and December 22, 2011. See “Financings” for additional details.

Discussion of Operations

The Company incurred a net loss of \$3,327,534 during the three months ended March 31, 2012 compared with a net loss of \$2,112,045 for the three months ended March 31, 2011. This increase in expenditure is due primarily to the increase in research and development costs, plus the addition of staff and their related costs over the period. During the three months ended March 31, 2012, corporate expenditures were focused on the further pursuit of key strategic relationships, carrying on efforts to secure its intellectual property through the patent and licensing process, the continued development of the Amadeus™ Surgical System and raising equity capital. As of March 31, 2012, the Company has ownership or exclusive rights to 14 patent applications, U.S. and foreign. In addition, the Company owns three issued U.S. patents.

Research and development expenditures (all of which were expensed in the periods) for the three months ended March 31, 2012 and March 31, 2011 comprised the following:

Research and Development Expenditures	Three Months Ended March 31, 2012	Three Months Ended March 31, 2011
Intellectual property development	\$1,693	\$886
License and royalties	\$88,634	-
Product development	<u>\$2,099,747</u>	<u>\$1,422,434</u>
Total	<u>\$2,190,074</u>	<u>\$1,423,320</u>

The increased research and development expenditures in the three months ended March 31, 2012, over the same period in 2011 are a direct result of successful equity offerings of the Company, and such expenditures are a direct result of a greater amount of funds consequently being available to support the continued development of the Amadeus™ Surgical System. The increase in license and royalty payments is a result of the Company’s ongoing efforts to obtain in-licensing opportunities for technologies in support of the Amadeus™ Surgical System.

General and administrative expenses for the three months ended March 31, 2012, amounted to \$1,162,352, compared to \$706,129 for the comparable period in 2011. The increase in product development and general and administrative expenses over the previous periods reflects the fact that the company has been successful at raising financing thus allowing it to continue its development of the Amadeus™ Surgical System. In addition, the Company has increased its occupancy requirements, staffing levels, the services of its professional advisors and its investor relations consultants.

Stock based compensation expense for the three months ended March 31, 2012 and 2011 was \$76,978 and \$134,491, respectively.

Titan realized \$24,892 of interest income in the three months ended March 31, 2012 and \$17,404 in the three months ended March 31, 2011.

Summary of Quarterly Results

The following is selected financial data from the Company's unaudited quarterly financial statements ending with the most recently completed quarter, being the period ended March 31, 2012, calculated in accordance with the transition to IFRS.

	Three Months Ended March 31, 2012	Three Months Ended December 31, 2011	Three Months Ended September 30, 2011	Three Months Ended June 30, 2011	Three Months Ended March 31, 2011	Three Months Ended December 31, 2010	Three Months Ended September 30, 2010	Three Months Ended June 30, 2010
Net sales	-	-	-	-	-	-	-	-
Net and comprehensive loss/(income) from operations	\$3,327,534	\$5,159,540	\$6,067,576	\$2,788,368	\$2,112,045	\$1,117,819	\$1,136,315	\$984,679
Basic and diluted loss/(income) per share	\$0.05	\$0.10	\$0.11	\$0.05	\$0.04	\$0.03	\$0.03	\$0.02

Significant changes in key financial data from the three months ended June 30, 2010, to the three months ended December 31, 2011, can be attributed to funding availability which permitted increased development activity, increased staffing, occupancy requirements and supplier relationships. During the first quarter of 2012, further review and development of the Amadeus™ Surgical System and its component parts continued, but at a reduced pace.

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, as well as upon 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 respond to competitive pressures.

Titan had \$8,023,102 of cash and cash equivalents on hand and accounts payable and accrued liabilities of \$871,903 at March 31, 2012, compared to \$9,738,822 and \$2,007,265, respectively, at December 31, 2011. Titan's working capital as at March 31, 2012 was \$8,070,044, compared to \$8,781,410, at December 31, 2011.

Financings

On June 21, 2011, Titan completed an offering of securities pursuant to an agency agreement with a Canadian investment dealer (the "June Agent"). The offering consisted of 5,577,500 units (the "June Units") at a price of \$1.65 each for gross proceeds of \$9,202,875 (\$8,286,068 net of closing costs including 7% cash commission of \$644,201 paid in accordance with the terms of the agency agreement). Each unit comprised one common share of Titan and one warrant. Each warrant entitles its holder to purchase one additional common share of Titan for \$2.00 and expires on June 21, 2016. The warrants were valued at \$2,175,225 using a proportionate fair value method and the balance of \$7,027,650 was allocated to common shares.

The 5,577,500 warrants issued as part of the offering were listed and commenced trading on the TSX Venture Exchange on August 2, 2011. The warrants, designated as June 2016 warrants, trade under the symbol "TMD.WT.A".

On December 22, 2011, Titan completed an offering of securities pursuant to an agency agreement with a Canadian investment dealer (the "December Agent"). The offering consisted of 4,880,000 units (the "December Units") at a price of \$1.55 each for gross proceeds of \$7,564,000 (\$6,703,575 net of closing costs including 7% cash commission of \$529,480 paid in accordance with the terms of the agency agreement). Each unit comprised one common share of Titan and one warrant. Each warrant entitles its holder to purchase one additional common share of Titan for \$1.75 and expires on December 22, 2016. The warrants were valued at \$1,952,000 using a proportionate fair value method and the balance of \$5,612,000 was allocated to common shares.

The 4,880,000 warrants issued as part of the offering were listed and commenced trading on the TSX Venture Exchange on January 24, 2012. The warrants, designated as December 2016 warrants, trade under the symbol "TMD.WT.B".

On March 8, 2012, the Company completed an offering of securities pursuant to an agency agreement with a Canadian investment dealer (the "March Agent"). The offering consisted of 1,986,755 units (the "March Units") at a price of \$1.51 each for gross proceeds of \$3,000,000 (\$2,555,032 net of closing costs including a 7% cash commission of \$210,000 paid in accordance with the terms of the agency agreement). Each unit comprises one common share of the Company and one common share purchase warrant of the Company. Each common share purchase warrant entitles the holder thereof to purchase one additional common share of the Company for \$1.77 and expires on March 14, 2017. The warrants were valued at \$615,894 using a proportionate fair value method and the balance of \$2,384,106 was allocated to common shares.

Off Balance Sheet Arrangements

Other than for leased premises, 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	64,412,092
Stock options ⁽¹⁾	2,962,720
Warrants	17,444,255
Broker Warrants ⁽²⁾	871,098

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 Financial Statements for terms of such options.
- (2) Pursuant to the agency agreement in respect of June 21, 2011 offering, in addition to the cash commission paid to the June Agent, the Company issued compensation warrants to the June Agent ("June Broker Warrants"). Each June Broker Warrant entitles the holder to purchase 390,425 units ("June Broker Units") of the Company at a price of \$1.65 per share, for a period of 24 months following the closing date of the June offering. Each June Broker Unit comprises one common share of the Company and one warrant that entitles the holder to acquire one common share of the Company at a price of \$1.65.

Pursuant to the agency agreement in respect of December 22, 2011 offering, in addition to the cash commission paid to the December Agent, the Company issued compensation warrants to the December Agent ("December Broker Warrants"). Each December Broker Warrant entitles the holder to purchase 341,600 units ("December Broker Units") of the Company at a price of \$1.75 per share, for a period of 24 months following the closing date of the December offering. Each December Broker Unit comprises one common share of the Company and one warrant that entitles the holder to acquire one common share of the Company at a price of \$1.75.

Pursuant to the agency agreement in respect of the March 8, 2012 offering, in addition to the cash commission paid to the March Agent, the Company issued compensation warrants to the March Agent to purchase 139,073 common shares of the Company at a price of \$1.77 per share for a period of 24 months following the closing date of the March offering.

As at May 15, 2012, none of the broker warrants provided to any of the above agents have been exercised

Changes in Accounting Policies

The Company was required to adopt International Financial Reporting Standards (IFRS) beginning with its year ended December 31, 2011. The Audited Financial Statements for the year ended December 31, 2011 and comparative amounts for 2010 have been prepared by applying IFRS 1, First-time Adoption of International Financial Reporting Standards.

The accounting policies set out in the notes to the Interim Financial Statements have been applied in preparing the Interim Financial Statements for the three months ended March 31, 2012, and the comparative information presented in the Interim Financial Statements for the three months ended March 31, 2011.