

QUANTUM NUMBERS CORP.

Management's Discussion and Analysis

December 31, 2018

QUANTUM NUMBERS CORP.

The following management's discussion and analysis ("MD&A") of the financial condition and results of the operations of Quantum Numbers Corp. (Formerly Active Growth Capital Inc.) (the "Company") constitutes management's review of the factors that affected the Company's financial and operating performance for the year ended December 31, 2018 compared to the year ended December 31, 2017 prepared with information available as of March 27, 2019.

Further information regarding the Company and its operations are filed electronically on the System for Electronic Document Analysis and Retrieval ("SEDAR") in Canada and can be obtained from www.sedar.com

1.1 FORWARD LOOKING STATEMENTS

The sections of this management discussion and analysis ("MD&A") on the Company's strategy and action plan, its intellectual properties, development and financial reporting reflecting management's current expectations contain "forward-looking statements." Such statements should be understood in context, particularly statements that reflect the Company's opinions, estimates and expectations about future events or results. Such forward-looking statements are subject to certain factors and involve some risks and uncertainties. There can be no assurance that such statements will prove to be accurate. Factors that could cause future results, activities and events to differ materially from those expressed or implied by such forward-looking statements include, but not limited to, possibility or not to obtain the patent, time required to obtain such patent, risks inherent in the hi-tech industry, and the time it will take for the industry to be ready to move to quantic solutions. These risks and uncertainties are described in this MD&A and also the annual information form filed on SEDAR.

1.2 INCORPORATION, NATURE OF OPERATIONS AND GOING CONCERN

Quantum Numbers Corp. (the "Company" or "Quantum") was incorporated under the *Business Corporations Act* of Ontario on July 19, 2007.

The head office, principal address and records office of the Company are located at 3755 E Blvd Matte, suite 201, Brossard, Québec, J4Y 2P4. The Company is a developer of a new generation of cryptographic solutions pursuant to the acquisition of intellectual property.

The business of technology involves a high degree of risk and there can be no assurance that projects under research and development will proceed through to achieve commercialization. Risks related to the value of the Company's intangible assets, completing proof of concept studies, protecting intellectual property rights, the ability of the Company to raise alternative financing, and risks inherent to new technologies, such as risk of obsolescence, slow adoption and competing technological advances. Changes in future conditions could require material impairment of investments.

These financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") and on a going concern basis, which contemplates that the Company will be able to realize its assets and discharge its liabilities in the normal course of business.

Management routinely plans future activities including forecasting cash flows. Management has reviewed their plan with the Directors and has collectively formed a judgment that the Company has adequate resources to continue as a going concern for the foreseeable future, which Management and the Directors have defined as being at least the next 12 months.

1.3 COMPANY OVERVIEW AND STRATEGY

ASSET ACQUISITION

On August 3, 2016, the Company entered into an Intellectual Property Assignment Agreement with Societe de Commercialisation des Produits de la recherche appliquee SOCPRA Sciences et Genie SEC ("SOCPRA") and its inventors by issuing a total of 6,000,000 common shares of the Company at a fair value of \$0.05 per share, representing a total fair value of \$300,000. The Company also reimbursed \$13,838 to SOCPRA for the professional fees associated with the protection of the patent ("Acquisition").

Until the expiry of the last patent rights, the Company will pay to SOCPRA a royalty of 5% calculated on the net sales price of products sold by the Company. The royalty shall be calculated on a 12-month basis starting on the effective date and shall be paid by the Company to SOCPRA within 90 days following the expiry of each reference year. The Company may decide, during the three years following the closing date, to pay SOCPRA an amount of \$1,500,000 or, at SOCPRA's option, to issue to SOCPRA 10,000,000 common shares of the Company. In such case, any further royalties will cease to be due and SOCPRA shall not be entitled to any further payment from the Company in consideration for the intellectual property. If the Company does not find or develop a commercial application within three years, 50% of the intellectual property shall be transferred back to SOCPRA.

The Acquisition was not considered to be a business combination and was accounted for as an asset acquisition. Total purchase price of \$300,000, finder's fees of \$30,000 and transaction costs of \$116,112, which includes the reimbursement of \$13,838 above, totalling \$446,112, were capitalized to intellectual property.

INTELLECTUAL ACTIVITIES

Since Quantum Numbers Corp. changed to quantum hi-tech Intellectual Property, the primary management objective was to strengthen the Company in the following three sectors of activities:

Patent

The Company is at the stage of Patent Pending in Canada, USA, European Community ("EC") and ten other strategic countries. As it is imperative for the Company to obtain its patent to pass the introduction level with potentials clients, it was then decided to work with the Company's Patent Agent and to the best of their abilities, have them review all patents requests issued in our field to assess the patentability of our technology. The Company received the final report that indicates that it should continue the National Phase as planned. By doing the legwork and research at the stage of patentability report, the Company was able to answer rapidly to the EC investigator. Furthermore, that research, also allowed us to develop a second Patent that the Company filed under a Patent Cooperation Treaty ("PCT") for the moment.

1.3 COMPANY OVERVIEW AND STRATEGY (Continued)

INTELLECTUAL ACTIVITIES (Continued)

Patent (Continued)

In August 2018, the Company received from the United States Patent and Trademark (USPTO), its first patent on a portion of its application. The Company also received a notice of allowance for the second patent, which was issued on January 1st, 2019. Continuation requests have been filed for both patents in order to pursue the acceptance of the claims not accepted, which is why the Company's patents are still at the patent pending stage in the United States. Both applications are still under review with the European Patent Office. The Company's first patent was granted in full from Russia in December 2018.

Technology

In order to stay focused on our primary objective, which is to make our technology accessible as rapidly as possible to potential clients and partners, and secured regarding its effectiveness and ensuring that the Intellectual Property is well protected, we are closely working with l'École de Technologie Supérieure ("ÉTS") in order to maximize the potentiality and security of our Technology.

In regards of our second technology "Method and System for creating a Random Bit Sample", this technology is a method that quantifies the randomness of our signal, a perfect complement of our first technology.

Market

For the last twelve months, our resources and energy were focused on developing the position of the Company for success in the emerging Quantum Random Number Generator market. The NIST Post Quantum Cryptography standardization committee is still progressing and we are convinced to have the right attributes to fulfill the future requirements for the general market and be part of a highly competitive solution. We pursuing to increase our presence in trade shows over the next quarters. We will strategically attend the ones where potential partners and clients are present. This quarter, we were present at Certified Infosec Conference 2018, ICC2018 and Infosecurity North America. During the first quarter of 2019, we also attended additional trade shows. In a nutshell, we work closely with the ETS in regards to the technology and the adaptation to the needs of potential clients. After reaching some milestones on that front, we will be in a position to propose a specific solution to niche potential clients.

1.4 HIGHLIGHTS

The Company reported a net loss and comprehensive loss of \$916,042 in 2018 compared to a net loss and comprehensive loss of \$1,431,441 in 2017.

As at December 31, 2018, the Company had a net working capital of \$914,839 (2017 - \$1,050,812).

During the year, the Company issued 4,967,000 common shares at a price of \$0.10 per share for the exercise of warrants.

During the year, the Company sold 500,000 shares of St-Georges Eco-Mining Corp. for a total cash consideration of \$121,845 and recorded a change in fair value of investment of \$48,155.

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1.5 SELECTED ANNUAL INFORMATION

	Year ended December 31		
	2018	2017	2016
	\$	\$	\$
Net loss and comprehensive loss for the year	(916,042)	(1,431,441)	(344,239)
Basic and diluted loss per share	(0.02)	(0.03)	(0.02)
Cash	909,500	1,189,371	987,978
Total assets	1,599,028	1,973,091	1,472,708
Total liabilities	62,750	157,487	106,198
Equity	1,536,278	1,815,604	1,366,510

Analysis 2018 compared to 2017

The total assets at December 31, 2018 of \$1,599,028 decreased by \$374,063 compared to \$1,973,091 as at December 31, 2017. This decrease is attributable mainly to:

- A decrease in cash of \$279,871 primarily used to fund operating activities of \$871,769 offset by financing activities from proceeds of warrants of \$496,700.
- A decrease in investment of \$170,000 resulting from the disposal of shares of St-Georges Eco Mining Corp.

The decrease in equity is mainly due to the net loss and comprehensive loss offset by the exercise of warrants and the share-based payments.

Analysis 2017 compared to 2016

The increase in total assets is mainly due to the increase in cash and cash equivalents, investments and capitalization of development costs regarding the intellectual property.

The increase in equity is mainly due to the share-based payments regarding options granted and the exercise of warrants.

1.6 OPERATING ACTIVITIES

The 2018 net loss and comprehensive loss decreased to \$916,042 from a net loss and comprehensive loss of \$1,431,441 in 2017 mainly due to a decrease in share-based payments for an amount of \$521,369, consulting fees for an amount of \$146,454 and salaries for an amount of \$63,096 offset by an increase in the change in fair value of financial assets and liabilities at fair value through profit or loss for an amount of \$193,155.

1.7 BOARD OF DIRECTORS AND SENIOR MANAGEMENT CHANGES

On March 27, 2018, Mr. Pierre Miron was appointed interim Secretary in replacement of Mr. Maxime Lemieux.

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1.8 INTELLECTUAL PROPERTY

The carrying amount can be analyzed as follows:

	Balance as at December 31 2017	Additions	Balance as at December 31 2018
	\$	\$	\$
Cost			
Acquisition of SOCPRA license	446,112	-	446,112
Development costs	146,377	28,000	174,377
	<u>592,489</u>	<u>28,000</u>	<u>620,489</u>
Accumulated amortization			
Amortization	-	-	-
	<u>-</u>	<u>-</u>	<u>-</u>
Carrying amount	<u>592,489</u>	<u>28,000</u>	<u>620,489</u>

1.9 SELECTED FINANCIAL INFORMATION AND OPERATING RESULTS

	December 31	
	2018	2017
	\$	\$
Expenses		
Salaries	327,569	390,665
Share-based payments	140,016	661,385
Development costs	107,579	84,856
Travel expenses	103,200	119,836
Legal and audit fees	61,465	67,298
Professional fees	31,978	33,437
Consulting fees	31,282	177,736
Net loss and comprehensive loss for the year	<u>916,042</u>	<u>1,431,441</u>
Basic and diluted loss per share	<u>0.02</u>	<u>0.03</u>
Weighted average number of common shares outstanding	<u>60,352,715</u>	<u>51,542,664</u>

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1.10 SUMMARY OF QUARTERLY RESULTS

The following table sets forth selected quarterly financial information for each of the eight most recently completed quarters.

<u>Three-month period ended</u>	<u>Net loss and comprehensive loss for the period</u>	<u>Basic and diluted loss per share</u>
	\$	\$
December 31, 2018	(215,707)	(0.004)
September 30, 2018	(204,071)	(0.003)
June 30, 2018	(222,794)	(0.003)
March 31, 2018	(273,470)	(0.005)
December 31, 2017	(593,910)	(0.011)
September 30, 2017	(380,017)	(0.01)
June 30, 2017	(264,883)	(0.005)
March 31, 2017	(192,631)	(0.004)

The net loss and comprehensive loss for the period ended September 30, 2017 increased of \$115,134 compared to the period ended June 30, 2017. The increase resulted mainly from the increase in salaries and share-based payments.

The net loss and comprehensive loss for the period ended December 31, 2017 increased of \$213,893 compared to the period ended September 30, 2017. The increase resulted mainly from the increase in share-based payments offset by the increase in the change in fair value of investment.

As of December 31, 2018, the Company had a net working capital of \$914,839 (2017 - \$1,050,812). Refer to "Share Capital" for a summary of proceeds received from the issuance of common shares.

1.11 LIQUIDITY

As of December 31, 2018, the Company had a net working capital of \$914,839 (2017 - \$1,050,812). Refer to "Share Capital" for a summary of proceeds received from the issuance of common shares.

1.12 CASH FLOWS

The Company's operating activities used \$871,769 in 2018 compared to \$868,957 in 2017. The increase in cash flows used resulted mainly from an increase in net changes in non-cash working capital items offset by the decrease of administration expenses.

The Company's investing activities generated \$95,198 in 2018 compared to \$148,800 used in 2017. The increase in cash flows generated resulted mainly from a decrease in intellectual property acquisition offset by an increase in proceeds from sale of investments.

The Company's financing activities generated \$496,700 in 2018 compared to \$1,219,150 in 2017. The decrease in cash flows is mainly due to a decrease in proceeds from exercise of warrants.

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1.13 FOURTH QUARTER

During the three-month period ended December 31, 2018, the Company recorded a net loss and comprehensive loss of \$215,707 compared to \$593,910 for the same period in 2017, which represents a decrease of \$378,203. The variance is mainly due to a decrease in share-based payments for an amount of \$468,115, development costs for an amount of \$52,963 and change in fair value of financial assets and liabilities through profit or loss for an amount of \$145,000.

1.14 SHARE CAPITAL

During the year, the Company issued 4,967,000 common shares at a price of \$0.10 per share for the exercise of warrants.

1.15 SHARE-BASED PAYMENTS

The Company's share options are as follows for the reporting periods presented:

	2018		2017	
	Number of options	Weighted average exercise price \$	Number of options	Weighted average exercise price \$
Balance outstanding, beginning of year	4,880,000	0.19	1,430,000	0.10
Granted	-	-	4,650,000	0.20
Exercised	-	-	(200,000)	0.10
Expired	<u>(400,000)</u>	0.10	<u>(1,000,000)</u>	0.15
Balance outstanding and exercisable, end of year	<u>4,480,000</u>	0.20	<u>4,880,000</u>	0.19
Balance exercisable, end of year	<u>3,980,000</u>	0.18	<u>3,380,000</u>	0.14

The weighted average remaining contractual life for options outstanding at December 31, 2018 is 5.53 (2017 - 6.29) years.

Outstanding and exercisable options are as follows:

Expiry date	Exercise price \$	2018		2017	
		Number	Exercisable	Number	Exercisable
September 30, 2019	0.13	130,000	130,000	180,000	180,000
November 22, 2021	0.10	700,000	700,000	1,050,000	1,050,000
December 18, 2022	0.12	1,650,000	1,650,000	1,650,000	1,650,000
January 26, 2027	0.30	<u>2,000,000</u>	<u>1,500,000</u>	<u>2,000,000</u>	<u>500,000</u>
		<u>4,480,000</u>	<u>3,980,000</u>	<u>4,880,000</u>	<u>3,380,000</u>

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1.16 WARRANTS

The changes in warrants during the years ended December 31, 2018 and 2017 are as follows:

	2018		2017	
	Number of warrants	Weighted average exercise price	Number of warrants	Weighted average exercise price
		\$		\$
Balance outstanding, beginning of year	18,101,000	0.10	30,940,500	0.10
Expired	(13,134,000)	0.10	(848,000)	0.10
Exercised	(4,967,000)	0.10	(11,991,500)	0.10
Balance outstanding, end of year	-	-	18,101,000	0.10

Outstanding warrants are as follows:

Expiry date	Exercise price	2018	2017
		Number	Number
	\$		
February 3, 2018	0.10	-	755,000
March 31, 2018	0.10	-	17,346,000
		-	18,101,000

The weighted average remaining contractual life of warrants outstanding is nil (2017 - 0.24) years.

1.17 POST-REPORTING DATE EVENTS

On January 1st, 2019, the Company obtained a second patent from the USPTO on its second application.

On February 20, 2019, the Company sold its right, title and interest in the Portage-du-Fort Project for cash consideration of \$1. The Company will hold a 1.5% net smelter return ("NSR") and a 10% commission will be payable by the purchaser if the property is sold.

1.18 OFF-BALANCE SHEET ARRANGEMENTS

The Company does not have any off-balance sheet arrangements.

1.19 FINANCIAL INSTRUMENTS

All financial instruments are recognized when the Company becomes a party to the contractual provisions of the financial instrument and are initially measured at fair value plus transaction costs, except for financial assets and financial liabilities carried at fair value through profit or loss, which are measured initially at fair value. Financial assets are derecognized when the contractual right to the cash flows from the financial assets expire, or when the financial asset and all substantial risks and rewards are transferred.

Please refer to Note 13 of the financial statements for an extended description of the Company's financial instruments and their fair values.

1.20 FINANCIAL RISK MANAGEMENT

In the normal course of operations, the Company is exposed to various financial risks. The Company does not enter into financial instrument agreements, including derivative financial instruments, for speculative purposes. Please refer to Note 13 of the financial statements for an extended description of the Company's main financial risks.

1.21 MANAGEMENT OF CAPITAL

The capital structure of the Company consists of equity attributable to common shareholders, comprising issued capital, share options reserves and deficit. The Company's objectives when managing capital are to: (i) preserve capital; (ii) obtain the best available net return; and (iii) maintain liquidity.

The Company manages the capital structure and makes adjustments to it in light of changes in economic conditions and the risk characteristics of the underlying assets. To maintain or adjust the capital structure, the Company may attempt to issue new shares. There were no changes to the Company's approach to capital management during the year.

The Company is not subject to externally imposed capital requirements.

1.22 RELATED PARTY TRANSACTIONS

The Company's related parties include companies under common control and joint key management, as described below.

Unless otherwise stated, none of the transactions incorporate special terms and conditions and no guarantees were given or received. Outstanding balances are usually settled in cash.

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1.22 RELATED PARTY TRANSACTIONS (Continued)

TRANSACTIONS WITH KEY MANAGEMENT

The key management of the Company are the members of senior management and the Board. The remuneration for the year of key management include the following expenses:

	<u>2018</u>	<u>2017</u>
	\$	\$
Consulting fees	12,200	31,550
Legal fees	3,158	41,343
Salaries	312,000	358,769
Share-based payments	140,016	661,385
	<u>467,374</u>	<u>1,093,047</u>

An amount of \$nil (2017 - \$1,070) is due from a former director for expense advances and is included in advance to related party. The amount has been written off during the year.

An amount of \$1,600 (2017 - \$34,887) is due to directors for unpaid consulting fees and is included in accounts payable and accrued liabilities.

An amount of \$nil (2017 - \$12,000) is due to directors for unpaid salaries and is included in accounts payable and accrued liabilities.

An amount of \$984 (2017 - \$6,511) is due to directors for reimbursement of expenses incurred during the year ended December 31, 2018 and is included in accounts payable and accrued liabilities.

1.23 CRITICAL ACCOUNTING ESTIMATES

The critical accounting estimates are described in Note 2 of the audited financial statements.

1.24 CHANGES IN ACCOUNTING POLICY INCLUDING INITIAL ADOPTION

The company adopted IFRS 9 which is detailed in Note 3(k) of the audited financial statements.

1.25 OTHER

Disclosure of Outstanding Securities as at March 27, 2019.

Outstanding common shares: **60,527,838**

Outstanding options: **4,880,000**

Outstanding share purchase warrants: **nil**

(s) Jean-Charles Phaneuf, President and Chief Executive Officer

(s) Pierre Miron, Chief Financial Officer

Montreal (Quebec), March 27, 2019