

**QUANTUM NUMBERS CORP.**

**Interim Management Discussion and Analysis**

**As at June 30, 2018**

# QUANTUM NUMBERS CORP.

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## 1. SCOPE OF MANAGEMENT'S FINANCIAL ANALYSIS

The following analysis should be read in conjunction with the annual financial statements, including accompanying notes, of Quantum Numbers Corp. ("the Company") for the year ended December 31, 2017. The unaudited condensed interim financial statements for the quarter ended June 30, 2018, including comparative figures, have been prepared in accordance with IFRS applicable to the preparation of interim financial statements, including IAS 34, *Interim Financial Reporting*. All amounts are in Canadian dollars unless otherwise indicated.

### 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. (Formerly Active Growth Capital Inc.) (the "Company" or "Quantum") was incorporated under the *Business Corporations Act* of Ontario on July 19, 2007. The Company's name was changed from Active Growth Capital Inc. on December 6, 2016.

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") 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

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").

As of December 31, 2017, the patent has not been issued. 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 in 2016. The Company has capitalized an additional \$146,377 as project development costs in 2017 and \$28,000 in 2018, for a total amount capitalized of \$620,489.

### 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**

We have obtained our patent from the United States Patents and Trademarks Office (USPTO) for the Systems aspect and we have filed a Continuation request for the method aspect. We are still at the stage of Patent Pending in Canada, European Community ("EC") and ten other strategic countries. Discussions with inspectors already started with the European Community. If the process goes in a usual manner, we should have some results by late summer early fall.

For the second patent, it has been filed In the United States under the Track One examination and for the European market, under the Pace program, because these programs process examination's requests at a faster pace. The Paris Treaty protects us in about 191 States and countries. The Paris treaty also allows for modification to a patent, if required, at a low cost. Discussions between our patent agent and the USPTO have already begun.

Since we are protected with "Patent Pending," in the ten other countries where we filed, we will wait until we have been able to obtain the most from the USPTO before requesting examinations in these countries. Our goal being minimizing costs.

### 1.3 COMPANY OVERVIEW AND STRATEGY

#### INTELLECTUAL ACTIVITIES (Continued)

##### **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**

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 plan 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 have been present at RSA, ICMC18 and ETSI Security week. After the July and August break in the industry, we will restart in September to attend 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

As at June 30, 2018, the Company had a working capital of \$1,290,504 compared to a working capital of \$1,050,812 on December 31, 2017.

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

During the three-month period, the Company sold 500,000 shares of St-Georges Eco-Mining Corp. for total proceeds of \$121,845.

### 1.5 SENIOR MANAGEMENT CHANGES

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

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### 1.6 INTELLECTUAL PROPERTY

The carrying amount can be analyzed as follows:

	Balance as at December 31 2017	Additions	Balance as at June 30 2018
	\$	\$	\$
<b>Cost</b>			
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>
<b>Accumulated amortization</b>			
Amortization	-	-	-
	<u>-</u>	<u>-</u>	<u>-</u>
<b>Carrying amount</b>	<u>592,489</u>	<u>28,000</u>	<u>620,489</u>

### 1.7 SELECTED FINANCIAL INFORMATION AND OPERATING RESULTS

	Three-month periods ended June 30		Six-month periods ended June 30	
	2018	2017	2018	2017
	\$	\$	\$	\$
<b>Expenses</b>				
Salaries	81,495	85,827	167,190	142,765
Share-based payments	43,115	65,860	95,903	65,860
Travel expenses	29,089	49,677	57,653	73,573
Development costs	32,569	-	51,011	-
Professional fees	12,172	21,624	39,220	42,420
Filing and listing fees	6,914	6,481	12,820	16,945
Insurance	3,470	3,442	6,866	3,442
<b>Net loss and comprehensive loss for the period</b>	<u>(222,794)</u>	<u>(264,883)</u>	<u>(496,264)</u>	<u>(457,514)</u>
<b>Basic and diluted loss per share</b>	<u>(0.003)</u>	<u>(0.005)</u>	<u>(0.008)</u>	<u>(0.009)</u>
<b>Weighted average number of common shares outstanding</b>	<u>60,527,838</u>	<u>51,359,865</u>	<u>60,174,689</u>	<u>49,308,388</u>

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### 1.8 BALANCE SHEET

	June 30, 2018	December 31, 2017
	\$	\$
Total assets	2,003,494	1,973,091
Total liabilities	91,551	157,487
Total equity	1,911,943	1,815,604

### 1.9 SUMMARY OF QUARTER RESULTS

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

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<u>Three-month period ended</u>	<u>Net loss and comprehensive loss for the period</u>	<u>Basic and diluted loss per share</u>
	\$	\$
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)
December 31, 2016	(283,534)	(0.01)
September 30, 2016	(32,147)	(0.003)

### 1.10 FINANCIAL SITUATION

#### **LIQUIDITY**

As of June 30, 2018, the Company had a working capital of \$1,290,504 compared to a working capital of \$1,050,812 on December 31, 2017. The increase results mainly from the exercise of warrants and the sale of investments.

#### **CASH FLOWS**

The Company's operating activities used \$232,591 in the three-month period ended June 30, 2018 and \$179,914 for the same period in 2017. The increase in cash flows used results mainly from the increase in developments costs and the net changes in non-cash working capital items.

The Company's investing activities used \$12,803 in the three-month period ended June 30, 2018 and \$71,422 for the same period in 2017. The decrease in cash flows used results from the decrease in intellectual property acquisition.

The Company's financing activities generated \$121,845 in the three-month period ended June 30, 2018 and \$374,150 for the same period in 2017. The decrease in cash flows results from the decrease of exercise of warrants offset by the proceeds from sale of investments.

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### 1.10 FINANCIAL SITUATION (Continued)

#### RESULTS OF OPERATION

The main expenses for the three-month and six-month periods ended June 30, 2018 were salaries for amount of \$81,495 and \$167,190, share-based payments for \$43,115 and \$95,903, travel expenses for an amount of \$29,089 and \$57,653, development costs for \$32,569 and \$51,011, professional fees for an amount of \$12,172 and \$39,220 and filing and listing fees for \$6,914 and 12,820. For the three-month and six-month periods ended June 30, 2017 the main expenses were salaries for amount of \$85,827 and \$142,765, consulting fees for \$25,300 and \$100,091, travel expenses for an amount of \$49,677 and \$73,573, share-based payments for \$65,860 and \$65,860 and professional fees for an amount of \$21,624 and \$42,420.

### 1.11 POST-REPORTING DATE EVENT

On August 8, 2018, the Company was granted its first patent by the United States Patent and Trademark Office (USPTO): US Patent No. 10042609. This first patent covers the "System" aspect which had initially been presented in International Application number PCT/CA2015/050408, entitled: Method for generating random numbers and associated random number generator.

### 1.12 SHARE CAPITAL

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

### 1.13 STOCK OPTIONS

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

	June 30, 2018		December 31, 2017	
	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price
		\$		\$
Balance outstanding, beginning of period	4,880,000	0.19	1,430,000	0.10
Granted	-	-	4,650,000	0.20
Exercised	-	-	(200,000)	0.10
Expired	-	-	(1,000,000)	0.15
Cancelled	-	-	-	-
Balance outstanding, end of period	<u>4,880,000</u>	0.19	<u>4,880,000</u>	0.19
Balance exercisable, end of period	<u>3,880,000</u>	0.16	<u>3,380,000</u>	0.14

The weighted average remaining contractual life for options outstanding at June 30, 2018 is 6.29 (2017 – 8.06) years.

The Company recognized an amount of \$43,115 (2017 - \$65,860) for the period ended June 30, 2018.

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### 1.13 STOCK OPTIONS (Continued)

The weighted average fair value of the granted options was determined using the Black-Scholes option pricing model and based on the following weighted average assumptions:

	<u>2018</u>	<u>2017</u>
Average share price at date of grant	\$0.30	\$0.25
Dividends yield	-	-
Expected weighted volatility	125%	125%
Risk-free interest rate	1.39%	1.39%
Expected average life	10 years	10 years
Average exercise price at date of grant	\$0.30	\$0.25

Outstanding and exercisable options are as follows:

Expiry Date	Exercise Price	<u>Number of shares</u>		Remaining life (years)
		Outstanding	Exercisable	
	\$			
September 30, 2019	0.125	180,000	180,000	1.25
November 22, 2021	0.10	1,050,000	1,050,000	3.39
December 18, 2022	0.12	1,650,000	1,650,000	4.44
January 26, 2027	0.30	<u>2,000,000</u>	<u>1,000,000</u>	8.57
		<u>4,880,000</u>	<u>3,880,000</u>	

### 1.14 SHARE PURCHASE WARRANTS

The changes in warrants are as follows:

The changes in warrants during the period ended June 30, 2018 are as follows:

	<u>June 30, 2018</u>		<u>December 31, 2017</u>	
	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price
		\$		\$
Balance outstanding, beginning of period	18,101,000	0.10	30,940,500	0.10
Expired	(13,134,000)	0.10	(848,000)	0.10
Exercised	<u>(4,967,000)</u>	0.10	<u>(11,991,500)</u>	0.10
Balance outstanding, end of period	<u>-</u>	-	<u>18,101,000</u>	0.10

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### 1.15 OUTSTANDING SHARE DATA

	<u>August 24, 2018</u>
Common shares	60,527,838
Stock options	4,880,000
Warrants	-
Broker warrants	-
	<u>65,407,838</u>

### 1.16 INTELLECTUAL PROPERTY

*“Our technology involves detailed proprietary and engineering knowledge and specific customer adoption criteria. If the Company is not able to effectively protect its intellectual property or cater to specific customer adoption criteria, our business may suffer a material negative impact and could fail.”*

The success of our company will be dependent on our ability to successfully develop; qualify under current regulations and protect our technologies by way of patents and trademarks. The Company has its Patent Pending in Canada, United States, European Union and in 10 other countries. If we are unable to secure trademarks and patent protection for our intellectual property in the future, or that protection is inadequate for future products, our business may be materially adversely affected.

Further, there is no assurance that our technology does not or will not infringe upon patents, copyrights or other intellectual property rights held by third parties. The Company has mandated its Patent Agent to perform an exhaustive analysis of the Patent and Patent Pending deposited prior to ours, findings should be available very shortly, but all efforts are being made to obtain it sooner. However, we may become subject to legal proceedings and claims from time to time relating to the intellectual property of others in the ordinary course of our business. If we are found to have violated the intellectual property rights of others, we may be enjoined from using such intellectual property, and we may incur licensing fees or be forced to develop alternatives. In addition, we may incur substantial expenses and diversion of management time in defending against these third-party infringement claims, regardless of their merit. Successful infringement or licensing claims against us may result in substantial monetary liabilities, which may materially and adversely disrupt our business.

*“The Company may be unable to secure or maintain regulatory qualifications for its Technology.”*

The Company may be unable to secure or maintain regulatory qualifications for its products for some sector of our market. This would limit the ability of the Company to procure patent or other intellectual property protection for its technology and to license or enforce such patents if any.

### 1.17 RISK AND UNCERTAINTIES

Risk factors are discussed in detail in the Company's Financial Statements and MD&A contained in the annual report for the year ended December 31, 2017.

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### 1.18 EVALUATION OF INTERNAL CONTROL OVER FINANCIAL REPORTING

Management maintains a system of internal control over financial reporting to provide reasonable assurance that assets are safeguarded from any loss or unauthorized use and that financial information is reliable and available in a timely manner. They have also designed or had designed internal controls over financial reporting to provide reasonable assurance that financial reporting is reliable and that the financial statements are designed to report financial information in accordance with IFRS.

There were no important changes in the internal control over financial reporting during the six-month period ended June 30, 2018, that had or could reasonably be expected to materially affect the internal control over financial reporting ("ICFR").

### 1.19 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.

#### 1.19.1 Transactions with key management

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

	<u>2018</u>	<u>2017</u>
	\$	\$
Consulting fees	5,600	39,900
Salaries	167,190	142,838
Professional fees	2,745	21,726
Share-based payments	<u>95,903</u>	<u>-</u>
	<u>271,438</u>	<u>204,464</u>

An amount of \$1,070 (2017 - \$nil) is due from a former director for expense advances and is included in advance to related party.

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

**1.20 ADDITIONAL INFORMATION AND CONTINUOUS DISCLOSURE**

This MD&A is dated August 24, 2018 and complies with Canadian Securities Administrators' *Regulation 51-102 respecting continuous disclosure obligations, c. V-1.1, r. 24*. The purpose of this MD&A is to help the reader understand and assess the material changes and trends in the Company's results and financial position. It presents Management's perspective on the Company's current and past activities and financial results, as well as an outlook of activities planned for the coming months. The Company regularly discloses additional information through press releases and other reports filed on the Company ([www.quantumnumberscorp.com](http://www.quantumnumberscorp.com)), and SEDAR ([www.sedar.com](http://www.sedar.com)) websites.

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

(s) Pierre Miron, Chief Financial Officer

Montreal (Quebec), August 24, 2018