

Lightwave Logic, Inc.  
Form 10-Q  
August 14, 2017

**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

---

**FORM 10-Q**

---

**(Mark One)**

**QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2017

**OR**

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 0-52567

**Lightwave Logic, Inc.**

(Exact name of registrant as specified in its charter)

Edgar Filing: Lightwave Logic, Inc. - Form 10-Q

**Nevada**

**82-049-7368**

(State or other jurisdiction of

(I.R.S. Employer Identification No.)

Incorporation or Organization)

**1831 Lefthand Circle, Suite C**

**Longmont, CO**

**80501**

(Address of principal executive offices)

(Zip Code)

**(720) 340-4949**

(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

*(Do not check if a smaller reporting company)*

Emerging growth company

If an emerging growth company, indicate by checkmark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act.) Yes  No

The number of shares of the registrant's Common Stock outstanding as of August 11, 2017 was 71,441,538.

---

**TABLE OF CONTENTS**

|         |                       | <b>Page</b>   |
|---------|-----------------------|---|
| Part I  | Financial Information |   |
|         | <u>Item 1</u>         | <u>Financial Statements</u> 1   |
|         | <u>Item 2</u>         | <u>Management's Discussion and Analysis of<br/>Financial Condition and Results of Operations</u> 15 |
|         | <u>Item 4</u>         | <u>Controls and Procedures</u> 25   |
| Part II | Other Information     |   |
|         | <u>Item 2</u>         | <u>Unregistered Sales of Equity Securities and Use<br/>of Proceeds</u> 26                           |
|         | <u>Item 6</u>         | <u>Exhibits</u> 26  |
|         |                       | <u>Signatures</u> 27  |

### Forward-Looking Statements

This report on Form 10-Q contains, and our officers and representatives may from time to time make, "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as: "anticipate," "intend," "plan," "goal," "seek," "believe," "project," "estimate," "expect," continuing, ongoing, "strategy," "future," "likely," "may," "should," could, "will" and similar references to future periods. Examples of forward-looking statements include, among others, statements we make regarding expected operating results, such as anticipated revenue; anticipated levels of capital expenditures for our current fiscal year; our belief that we have sufficient liquidity to fund our business operations during the next 12 months; strategy for gaining customers, growth, product development, market position, financial results and reserves.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following: lack of available funding; general economic and business conditions; competition from third parties; intellectual property rights of third parties; regulatory constraints; changes in technology and methods of marketing; delays in completing various engineering and manufacturing programs; changes in customer order patterns; changes in product mix; success in technological advances and delivering technological innovations; shortages in components; production delays due to performance quality issues with outsourced components; those events and factors described by us in Item 1.A Risk Factors in our most recent Annual Report on Form 10-K; other risks to which our Company is subject; other factors beyond the Company's control.

Any forward-looking statement made by us in this report on Form 10-Q is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.



**PART I FINANCIAL INFORMATION**

**Item 1**

**Financial Statements**

**LIGHTWAVE LOGIC, INC.**

**FINANCIAL STATEMENTS**

**June 30, 2017**

**(UNAUDITED)**

|                                   | <b>Page</b> |
|-----------------------------------|-------------|
| Balance Sheets                    | 2           |
| Statements of Operations          | 3           |
| Statement of Stockholders' Equity | 4           |
| Statements of Cash Flows          | 5           |
| Notes to Financial Statements     | 6           |





**LIGHTWAVE LOGIC, INC.****BALANCE SHEETS**

|   | <b>June 30,</b>     | <b>December 31,</b> |
|---|---------------------|---------------------|
|   | <b>2017</b>         | <b>2016</b>         |
|   | (Unaudited)         | (Audited)           |
| <b>ASSETS</b>   |                     |                     |
| <b>CURRENT ASSETS</b>   |                     |                     |
| Cash and cash equivalents   | \$ 2,140,426        | \$ 1,956,844        |
| Prepaid expenses and other current assets   | 234,457             | 136,942             |
|   | 2,374,883           | 2,093,786           |
| <b>PROPERTY AND EQUIPMENT - NET</b>   | <b>498,600</b>      | <b>425,650</b>      |
| <b>OTHER ASSETS</b>   |                     |                     |
| Intangible assets - net   | 627,141             | 667,972             |
| <b>TOTAL ASSETS</b>   | <b>\$ 3,500,624</b> | <b>\$ 3,187,408</b> |
| <b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>   |                     |                     |
| <b>CURRENT LIABILITIES</b>  |                     |                     |
| Accounts payable including current portion of equipment purchase  | \$ 180,507          | \$ 65,027           |
| Accounts payable and accrued expenses - related parties   | 49,584              | 5,559               |
| Accrued expenses  | 127,868             | 57,300              |
|   | 357,959             | 127,886             |
| <b>LONG TERM EQUIPMENT PURCHASE - NET OF CURRENT PORTION</b>  | <b>29,732</b>       |                     |
| <b>TOTAL LIABILITIES</b>  | <b>387,691</b>      | <b>127,886</b>      |
| <b>STOCKHOLDERS' EQUITY</b>   |                     |                     |
| Preferred stock, \$0.001 par value, 1,000,000 authorized,<br>No shares issued or outstanding  |                     |                     |
| Common stock \$0.001 par value, 250,000,000 authorized,<br>70,611,130 and 68,077,288 issued and outstanding at<br>June 30, 2017 and December 31, 2016 | 70,611              | 68,078              |
| Additional paid-in-capital  | 51,929,138          | 48,998,073          |
| Accumulated deficit   | (48,886,816)        | (46,006,629)        |
| <b>TOTAL STOCKHOLDERS' EQUITY</b>   | <b>3,112,933</b>    | <b>3,059,522</b>    |
| <b>TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY</b>   | <b>\$ 3,500,624</b> | <b>\$ 3,187,408</b> |

See accompanying notes to these financial statements.



**LIGHTWAVE LOGIC, INC.****STATEMENTS OF OPERATIONS****FOR THE THREE MONTHS AND SIX ENDING JUNE 30, 2017 AND 2016****(UNAUDITED)**

|   | <b>For the Three Months Ending<br/>June 30,</b> |                | <b>For the Six Months Ending<br/>June 30,</b> |                |
|---|---|----------------|---|----------------|
|   | <b>2017</b>                                     | <b>2016</b>    | <b>2017</b>                                   | <b>2016</b>    |
| NET SALES   | \$  | \$             | \$  | \$             |
| COST AND EXPENSE                                    |   |                |   |                |
| Research and development                            | 839,014   | 592,570        | 1,567,528                                     | 1,195,833      |
| General and administrative                          | 798,449   | 446,760        | 1,258,862                                     | 902,808        |
|   | 1,637,463                                       | 1,039,330      | 2,826,390                                     | 2,098,641      |
| LOSS FROM OPERATIONS                                | (1,637,463)                                     | (1,039,330)    | (2,826,390)                                   | (2,098,641)    |
| OTHER INCOME (EXPENSE)                              |   |                |   |                |
| Interest income                                     | 62  | 62             | 124   | 129            |
| Commitment fee                                      | (29,168)  |                | (53,921)                                      | (237,965)      |
| NET LOSS  | \$ (1,666,569)                                  | \$ (1,039,268) | \$ (2,880,187)                                | \$ (2,336,477) |
| Basic and Diluted Loss per Share                    | \$ (0.02)                                       | \$ (0.02)      | \$ (0.04)                                     | \$ (0.04)      |
| Basic and Diluted Weighted Average Number of Shares | 69,874,539                                      | 65,601,676     | 69,490,753                                    | 65,542,773     |

See accompanying notes to these financial statements.



**LIGHTWAVE LOGIC, INC.****STATEMENT OF STOCKHOLDERS EQUITY****JUNE 30, 2017****(UNAUDITED)**

|  | <b>Number of<br/>Shares</b> | <b>Common<br/>Stock</b> | <b>Additional<br/>Paid-in<br/>Capital</b> | <b>Accumulated<br/>Deficit</b> | <b>Total</b> |
|--|-----------------------------|-------------------------|---|--------------------------------|--------------|
| BALANCE AT<br>DECEMBER<br>31, 2016<br>(AUDITED)                  | 68,077,288                  | \$ 68,078               | \$ 48,998,073                             | \$ (46,006,629)                | \$ 3,059,522 |
| Common stock<br>issued to<br>institutional<br>investor           | 2,000,000                   | 2,000                   | 1,654,760                                 |                                | 1,656,760    |
| Common stock<br>issued for<br>additional<br>commitment<br>shares | 53,845                      | 54                      | 53,867                                    |                                | 53,921       |
| Exercise of<br>warrants  | 469,000                     | 469                     | 502,031                                   |                                | 502,500      |
| Common stock<br>issued for<br>services                           | 10,997                      | 10                      | 7,990                                     |                                | 8,000        |
| Options issued<br>for services                                   |                             |                         | 565,603                                   |                                | 565,603      |
| Warrants issued<br>for services                                  |                             |                         | 146,814                                   |                                | 146,814      |
| Net loss for the<br>six months<br>ending June 30,<br>2017        |                             |                         |   | (2,880,187)                    | (2,880,187)  |
| BALANCE AT<br>JUNE 30, 2017<br>(UNAUDITED)                       | 70,611,130                  | \$ 70,611               | \$ 51,929,138                             | \$ (48,886,816)                | \$ 3,112,933 |

See accompanying notes to these financial statements.



**LIGHTWAVE LOGIC, INC.****STATEMENTS OF CASH FLOW****FOR THE SIX MONTHS ENDING JUNE 30, 2017 AND 2016****(UNAUDITED)**

|   | <b>For the Six Months Ending<br/>June 30,</b> |                     |
|---|---|---------------------|
|   | <b>2017</b>                                   | <b>2016</b>         |
| <b>CASH FLOWS FROM OPERATING ACTIVITIES</b>                               |   |                     |
| Net loss  | \$ (2,880,187)                                | \$ (2,336,477)      |
| Adjustment to reconcile net loss to net cash used in operating activities |   |                     |
| Warrants issued for services  | 146,814                                       | 46,738              |
| Stock options issued for services   | 565,603                                       | 264,575             |
| Common stock issued for services and fees                                 | 61,921  | 249,965             |
| Depreciation and amortization and noncash patent expenses                 | 152,813                                       | 97,573              |
| Gain on disposal of property and equipment                                |   | (644)               |
| (Increase) decrease in assets   |   |                     |
| Prepaid expenses and other current assets                                 | (97,515)                                      | 59,496              |
| Increase (decrease) in liabilities  |   |                     |
| Accounts payable  | 44,125  | 1,879               |
| Accounts payable and accrued expenses- related parties                    | 44,025  | 18,275              |
| Accrued expenses  | 70,568  | (8,212)             |
| Net cash used in operating activities                                     | (1,891,833)                                   | (1,606,832)         |
| <b>CASH FLOWS FROM INVESTING ACTIVITIES</b>                               |   |                     |
| Cost of intangibles   | (22,070)                                      | (15,565)            |
| Purchase of property and equipment  | (55,829)                                      | (23,905)            |
| Sale of property and equipment  |   | 19,500              |
| Net cash used in investing activities                                     | (77,899)                                      | (19,970)            |
| <b>CASH FLOWS FROM FINANCING ACTIVITIES</b>                               |   |                     |
| Exercise of warrants  | 502,500                                       |                     |
| Issuance of common stock, institutional investor                          | 1,656,760                                     |                     |
| Repayment of equipment purchased  | (5,946)                                       |                     |
| Net cash provided by financing activities                                 | 2,153,314                                     |                     |
| <b>NET INCREASE (DECREASE) IN CASH AND CASH<br/>EQUIVALENTS</b>           | <b>183,582</b>                                | <b>(1,626,802)</b>  |
| <b>CASH AND CASH EQUIVALENTS - BEGINNING OF PERIOD</b>                    | <b>1,956,844</b>                              | <b>3,730,705</b>    |
| <b>CASH AND CASH EQUIVALENTS - END OF PERIOD</b>                          | <b>\$ 2,140,426</b>                           | <b>\$ 2,103,903</b> |

**Supplemental Disclosure of Non-cash investing and financing activity:**

|   |    |         |
|---|----|---------|
| Equipment acquisition funded by liability | \$ | 107,033 |
|---|----|---------|

See accompanying notes to these financial statements.



**LIGHTWAVE LOGIC, INC.**

**NOTES TO FINANCIAL STATEMENTS**

**JUNE 30, 2017 AND 2016**

**NOTE 1 - NATURE OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Financial Statements**

The accompanying unaudited financial statements have been prepared by Lightwave Logic, Inc. (the Company). These statements include all adjustments (consisting only of its normal recurring adjustments) which management believes necessary for a fair presentation of the statements and have been prepared on a consistent basis using the accounting policies described in the Summary of Accounting Policies included in the 2016 Annual Report. Certain financial information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States have been condensed or omitted pursuant to the rules and regulations of the Securities and Exchange Commission, although the Company firmly believes that the accompanying disclosures are adequate to make the information presented not misleading. The financial statements should be read in conjunction with the financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the Securities and Exchange Commission. The interim operating results for the three and six months ending June 30, 2017 may not be indicative of operating results expected for the full year.

**Nature of Business**

Lightwave Logic, Inc. is a technology Company focused on the development of next generation photonic devices and non-linear optical polymer materials systems for applications in high speed fiber-optic data communications and optical computing markets. Currently the Company is in various stages of photonic device and materials development and evaluation with potential customers and strategic partners. The Company expects to obtain a revenue stream from datacom and telecom devices, sales of non-linear optical polymers, and product development agreements prior to moving into full-scale production.

The Company's current development activities are subject to significant risks and uncertainties, including failing to secure additional funding to operationalize the Company's technology now under development.

## Stock-based Payments

The Company accounts for stock-based compensation under the provisions of Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 718, "Compensation - Stock Compensation", which requires the measurement and recognition of compensation expense for all stock-based awards made to employees and directors based on estimated fair values on the grant date. The Company estimates the fair value of stock-based awards on the date of grant using the Black-Scholes model. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the shorter of the vesting period or the requisite service periods using the straight-line method. The Company accounts for stock-based compensation awards to nonemployees in accordance with FASB ASC 505-50, "Equity-Based Payments to Non-Employees ( ASC 505-50 )". Under ASC 505-50, the Company determines the fair value of the warrants or stock-based compensation awards granted as either the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measurable. All issuances of stock options or other equity instruments to non-employees as consideration for goods or services received by the Company are accounted for based on the fair value of the equity instruments issued. Any stock options issued to non-employees are recorded as an expense and additional paid in capital in stockholders' equity over the applicable service periods. Non-employee equity based payments are recorded as an expense over the service period, as if the Company had paid cash for the services. At the end of each financial reporting period, prior to vesting or prior to the completion of the services, the fair value of the equity based payments will be re-measured and the non-cash expense recognized during the period will be adjusted accordingly. Since the fair value of equity based payments granted to non-employees is subject to change in the future, the amount of the future expense will include fair value re-measurements until the equity based payments are fully vested or the service completed.

**LIGHTWAVE LOGIC, INC.**

**NOTES TO FINANCIAL STATEMENTS**

**JUNE 30, 2017 AND 2016**

**NOTE 1 - NATURE OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES  
(CONTINUED)**

**Loss per Share**

The Company follows FASB ASC 260, Earnings per Share, resulting in the presentation of basic and diluted earnings per share. Because the Company reported a net loss in 2017 and 2016, common stock equivalents, including stock options and warrants were anti-dilutive; therefore, the amounts reported for basic and dilutive loss per share were the same.

**Comprehensive Income**

The Company follows FASB ASC 220.10, Reporting Comprehensive Income. Comprehensive income is a more inclusive financial reporting methodology that includes disclosure of certain financial information that historically has not been recognized in the calculation of net income (loss). Since the Company has no items of other comprehensive income, comprehensive income (loss) is equal to net loss.

**Recently Adopted Accounting Pronouncements**

As of June 30, 2017 and for the three months then ended, there were no recently adopted accounting pronouncements that had a material effect on the Company's financial statements.

**Recently Issued Accounting Pronouncements Not Yet Adopted**

As of June 30, 2017, there are no recently issued accounting standards not yet adopted which would have a material effect on the Company's financial statements through 2017.

**NOTE 2 MANAGEMENT'S PLANS**

As a technology company focusing on the development of the next generation photonic devices and non-linear optical polymer materials systems, substantial net losses have been incurred since inception. The Company has satisfied capital requirements since inception primarily through the issuance and sale of its common stock. The Company currently has a cash position of approximately \$2,600,000. Based upon the current cash position and expenditures of approximately \$400,000 per month, management believes the Company has sufficient funds to finance its operations through February 2018. In January 2016, the Company signed a purchase agreement ( Purchase Agreement ) with an institutional investor to sell up to \$20,000,000 of common stock. A registration statement related to the transaction filed with the U.S. Securities and Exchange Commission registering 5,000,000 shares of the Company's common stock went effective on April 7, 2016. Under the Purchase Agreement and at Company's sole discretion, the institutional investor has committed to invest up to \$20,000,000 in common stock over a 36-month period. The Company has raised \$3,209,950 as of June 30, 2017. The Company raised an additional \$935,600 under the Purchase Agreement during July and August 2017.

**LIGHTWAVE LOGIC, INC.****NOTES TO FINANCIAL STATEMENTS****JUNE 30, 2017 AND 2016****NOTE 3 PROPERTY AND EQUIPMENT**

Property and equipment consists of the following:

|                                | <b>June 30,</b> |    | <b>December 31,</b> |
|--------------------------------|-----------------|----|---------------------|
|                                | <b>2017</b>     |    | <b>2016</b>         |
| Office equipment               | \$ 60,731       | \$ | 55,817              |
| Lab equipment                  | 947,084         |    | 789,135             |
| Furniture                      | 32,693          |    | 32,693              |
| Leasehold Improvements         | 231,859         |    | 231,859             |
|                                | 1,272,367       |    | 1,109,504           |
| Less: Accumulated depreciation | 773,767         |    | 683,854             |
|                                | \$ 498,600      | \$ | 425,650             |

Depreciation expense for the six months ending June 30, 2017 and 2016 was \$89,912 and \$89,627. Depreciation expense for the three months ending June 30, 2017 and 2016 was \$45,034 and \$44,169. During the three months ended June 30, 2016, the company sold equipment for proceeds of \$19,500 and a gain of \$644.

**NOTE 4 INTANGIBLE ASSETS**

This represents legal fees and patent fees associated with the prosecution of patent applications. The Company has recorded amortization expenses on patents granted, which are amortized over the remaining legal life. Maintenance patent fees are paid to a government patent authority to maintain a granted patent in force. Some countries require the payment of maintenance fees for pending patent applications. Maintenance fees paid after a patent is granted are expensed, as these are considered ongoing costs to maintain a patent. Maintenance fees paid prior to a patent grant date are capitalized to patent costs, as these are considered patent application costs. No amortization expense has been recorded on the remaining patent applications since patents have yet to be granted.

Patents consist of the following:

|                                | <b>June 30,</b> |    | <b>December 31,</b> |
|--------------------------------|-----------------|----|---------------------|
|                                | <b>2017</b>     |    | <b>2016</b>         |
| Patents                        | \$ 781,675      | \$ | 754,259             |
| Less: Accumulated amortization | 154,534         |    | 86,287              |
|                                | \$ 627,141      | \$ | 667,972             |

Amortization expense for the six months ending June 30, 2017 and 2016 was \$62,901 and \$7,946. Amortization expense for the three months ending June 30, 2017 and 2016 was \$58,928 and \$3,973. Expense for abandoned patents for the three months ending June 30, 2017 and 2016 was \$0 and \$0.

#### **NOTE 5 LONG TERM EQUIPMENT PURCHASE PAYABLE**

Outstanding long term equipment purchase payable is comprised of the following:

| <b>Final Year<br/>of Maturity</b> | <b>Interest<br/>Rate</b> | <b>June 30,<br/>2017</b> | <b>December 31,<br/>2016</b> |
|-----------------------------------|--------------------------|--------------------------|------------------------------|
| 2018                              | 0.00%                    | \$29,732                 | \$                           |

**LIGHTWAVE LOGIC, INC.**

**NOTES TO FINANCIAL STATEMENTS**

**JUNE 30, 2017 AND 2016**

**NOTE 6 INCOME TAXES**

There is no income tax benefit for the losses for the three and six months ended June 30, 2017 and 2016 since management has determined that the realization of the net deferred tax asset is not assured and has created a valuation allowance for the entire amount of such benefits.

The Company's policy is to record interest and penalties associated with unrecognized tax benefits as additional income taxes in the statement of operations. As of January 1, 2017, the Company had no unrecognized tax benefits, or any tax related interest or penalties. There were no changes in the Company's unrecognized tax benefits during the period ended June 30, 2017. The Company did not recognize any interest or penalties during 2017 related to unrecognized tax benefits. With few exceptions, the U.S. and state income tax returns filed for the tax years ending on December 31, 2013 and thereafter are subject to examination by the relevant taxing authorities.

**NOTE 7 STOCKHOLDERS EQUITY**

**Preferred Stock**

Pursuant to the Company's Articles of Incorporation, the Company's board of directors is empowered, without stockholder approval, to issue series of preferred stock with any designations, rights and preferences as they may from time to time determine. The rights and preferences of this preferred stock may be superior to the rights and preferences of the Company's common stock; consequently, preferred stock, if issued could have dividend, liquidation, conversion, voting or other rights that could adversely affect the voting power or other rights of the common stock. Additionally, preferred stock, if issued, could be utilized, under special circumstances, as a method of discouraging, delaying or preventing a change in control of the Company's business or a takeover from a third party.

**Common Stock Options and Warrants**

In May 2014, under the 2007 Employee Stock Option Plan the Company issued an option to a new director to purchase 200,000 shares of common stock at a purchase price of \$0.763 per share. The option was valued at \$122,515, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years with 50,000 vesting immediately and the remainder vesting in annual equal installments of 50,000 commencing on the one year anniversary of the date of grant. The option is expensed over the vesting term. In July 2016, the option to purchase 50,000 shares of common stock forfeited. In October 2016, the option to purchase 150,000 shares of common stock forfeited. For the three months ended June 30, 2017 the Company recognized \$0 of expense. During the six months ending June 30, 2017, the Company reduced amortization by \$19,718.

During August 2015, under the 2007 Employee Stock Option Plan, the Company issued an option to a new director to purchase 200,000 shares of common stock at a purchase price of \$0.69 per share. The option was valued at \$90,615, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests 50,000 immediately and the remaining in equal annual installments of 50,000 over the next three years. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$5,648 and \$11,234 of expense. As of June 30, 2017, the option to purchase 200,000 shares of common stock is still outstanding.

During October 2015, under the 2007 Employee Stock Option Plan, the Company issued an option to a new employee to purchase 35,000 shares of common stock at a purchase price of \$0.74 per share. The option was valued at \$16,393, fair value, using the Black-Scholes Option Pricing Formula. The option expires October 12, 2025 with 4,375 shares vesting on the anniversary date of the third month of employment and the remaining vesting in seven equal installments of 4,375 at the end of every three month period thereafter. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$2,046 and \$4,089 of expense. As of June 30, 2017, the option to purchase 35,000 shares of common stock is still outstanding.



**LIGHTWAVE LOGIC, INC.**

**NOTES TO FINANCIAL STATEMENTS**

**JUNE 30, 2017 AND 2016**

**NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)**

**Common Stock Options and Warrants (Continued)**

During November 2015, under the 2007 Employee Stock Option Plan, the Company issued an option effective January 1, 2016 to the Chief Executive Officer to purchase 100,000 shares of common stock at a purchase price of \$0.86 per share. The option expires November 9, 2025 with 12,500 shares vesting on January 1, 2016 and the remaining vesting quarterly in equal installments of 12,500 commencing April 1, 2016. The option was valued at \$33,108, fair value, using the Black-Scholes Option Pricing Formula. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$4,139 and \$8,277 of expense. As of June 30, 2017, the option to purchase 100,000 shares of common stock is still outstanding.

In January 2016, the Company signed a Purchase Agreement with an institutional investor to sell up to \$20,000,000 of common stock. The Company also entered into a registration rights agreement with the institutional investor whereby the Company agreed to file a registration statement related to the transaction with the U.S. Securities and Exchange Commission registering 5,000,000 shares of the Company's common stock. The registration statement was filed on March 25, 2016. The registration statement became effective April 7, 2016. Under the Purchase Agreement and at Company's sole discretion, the institutional investor has committed to invest up to \$20,000,000 in common stock over a 36-month period. The Company issued 350,000 shares of restricted common stock to the institutional investor as an initial commitment fee valued at \$237,965, fair value, and 650,000 shares of common stock are reserved for additional commitment fees to the institutional investor in accordance with the terms of the Purchase Agreement. During the period August 2016 through June 30 2017, the institutional investor purchased 4,400,000 shares of common stock for proceeds of \$3,209,950 and the Company issued 104,326 shares of common stock as additional commitment fee, valued at \$87,841, fair value, leaving 545,674 in reserve for additional commitment fees. For the three months ending June 30, 2017, the institutional investor purchased 400,000 shares of common stock for proceeds of \$584,600 and the Company issued 19,001 shares of common stock as additional commitment fee, valued at \$29,168, fair value. For the six months ending June 30, 2017, the institutional investor purchased 2,000,000 shares of common stock for proceeds of \$1,656,760 and the Company issued 53,845 shares of common stock as additional commitment fee, valued at \$53,921, fair value. During July and August 2017, the institutional investor purchased 800,000 shares of common stock for proceeds of \$935,600 and the Company issued 30,408 shares of common stock as additional commitment fee, valued at \$37,164, fair value, leaving 515,266 in reserve for additional commitment fees.

In February 2016, under the 2007 Employee Stock Option Plan, the Company issued an option to an independent director purchase 50,000 shares of common stock at a purchase price of \$0.68 per share. The option was valued at \$21,475, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests 20,000 immediately and the remaining in quarterly equal installments of 10,000 commencing April 1, 2016. The option is expensed over the vesting terms. In July 2016, the option to purchase 10,000 shares of common stock forfeited. For the three months ended June 30, 2017 the Company recognized \$0 of expense. During the six months ending June 30, 2017, Company reduced amortization by \$4,295. As of June 30, 2017, the option to purchase 40,000 shares of common stock is still outstanding.

In May 2016, under the 2007 Employee Stock Option Plan, the Company issued an option to an employee to purchase 5,000 shares of common stock at a purchase price of \$0.60 per share. The option was valued at \$1,738, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests in quarterly equal installments of 625 commencing August 4, 2016. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$218 and \$435 of expense. As of June 30, 2017, the option to purchase 5,000 shares of common stock is still outstanding.

In July 2016, under the 2016 Equity Incentive Plan, the Company issued an option to a new employee to purchase 15,000 shares of common stock at a purchase price of \$0.63 per share. The option was valued at \$6,216, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests in quarterly equal installments of 1,875 commencing on September 27, 2016. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$777 and \$1,553 of expense. As of June 30, 2017, the option to purchase 15,000 shares of common stock is still outstanding.

**LIGHTWAVE LOGIC, INC.**

**NOTES TO FINANCIAL STATEMENTS**

**JUNE 30, 2017 AND 2016**

**NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)**

**Common Stock Options and Warrants (Continued)**

During July 2016, the Company issued a warrant to purchase 150,000 shares of common stock at a purchase price of \$0.63 per share for accounting services to be rendered over a twelve month period commencing July 1, 2016. The warrant was valued at \$60,272, fair value, using the Black-Scholes Option Pricing Formula, vesting over the next twelve months with 12,500 vesting immediately, 12,500 vesting per month on the first day of the next ten months and 12,500 vesting on the first day of the twelfth month of the corresponding service agreement. The warrant expires in five years. The expense is being recognized based on service terms of the agreement over a twelve month period. For the three and six months ending June 30, 2017, the Company recognized \$24,344 and \$40,238 of expense. As of June 30, 2017, the warrant to purchase 150,000 shares of common stock is still outstanding.

During November 2016, under the 2016 Equity Incentive Plan, the Company issued an option to an employee to purchase 15,000 shares of common stock at a purchase price of \$0.60 per share. The option was valued at \$5,674, fair value, using the Black-Scholes Option Pricing Formula. The option expires November 9, 2026 with 1,875 shares vesting on December 1, 2016 and the remaining vesting in seven equal quarterly installments of 1,875. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$702 and \$1,406 of expense. As of June 30, 2017, the option to purchase 15,000 shares of common stock is still outstanding.

In November 2016, under the 2016 Equity Incentive Plan, the Company issued an option effective January 9, 2017 to a director to purchase up to 100,000 shares of common stock at a purchase price of \$0.75 per share. The option was valued at \$44,789, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests immediately. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$0 and \$44,789 of expense. As of June 30, 2017, the option to purchase 100,000 shares of common stock is still outstanding.

In December 2016, the Company issued a warrant effective January 1, 2017 to a senior advisor to purchase up to 275,000 shares of common stock at a purchase price of \$0.60 per share. The warrant was valued at \$102,222, fair value, using the Black-Scholes Option Pricing Formula. The warrant expires in 5 years and vests 181,250 immediately

and the remaining in equal monthly installments of 9,375 over the next 10 months. In March 2017, the warrant was amended to vest 181,250 shares of common stock immediately and 92,750 shares of common stock on March 24, 2017. The warrant is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$0 and \$106,576 of expense. As of June 30, 2017, the warrant to purchase 275,000 shares of common stock is still outstanding.

In January 2017, under the 2016 Equity Incentive Plan, the Company issued options to the Company's five independent directors to each purchase 50,000 shares of common stock at a purchase price of \$0.85 per share. Each option was valued at \$26,547, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years with 20,000 vesting immediately and the remainder vesting in quarterly equal installments of 10,000 commencing April 1, 2017. The options are expensed over the vesting terms. For the three and six months ending June 30, 2017, the Company recognized \$26,615 and \$105,895 of expense. As of June 30, 2017, the options to purchase 250,000 shares of common stock are still outstanding.

For the three months ending June 30, 2017 the Company issued 2,599 shares, with a fair value of \$2,000, to a director serving as a member of the Company's Operations Committee commencing August 2015. For the three months ending June 30, 2017, the Company recognized \$2,000 of expense. For the six months ending June 30, 2017 the Company issued 10,997 shares, with a fair value of \$8,000. For the six months ending June 30, 2017, the Company recognized \$8,000 of expense.

In March 2017, under the 2016 Equity Incentive Plan, the Company issued an option effective April 1, 2017 to an employee to purchase up to 15,000 shares of common stock at a purchase price of \$0.73 per share. Using the Black-Scholes Option Pricing Formula, the option was valued at \$6,243, fair value. The option expires in 10 years and vests immediately. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$6,243 of expense. As of June 30, 2017, the option to purchase 15,000 shares of common stock is still outstanding.

**LIGHTWAVE LOGIC, INC.**

**NOTES TO FINANCIAL STATEMENTS**

**JUNE 30, 2017 AND 2016**

**NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)**

**Common Stock Options and Warrants (Continued)**

In March 2017, under the 2016 Equity Incentive Plan, the Company issued an option effective April 1, 2017 to a new director to purchase up to 200,000 shares of common stock at a purchase price of \$0.73 per share. Using the Black-Scholes Option Pricing Formula, the option was valued at \$92,516, fair value. The option expires in 10 years and vests 50,000 on April 1, 2017 and the remaining in equal annual installments of 50,000 commencing on April 1, 2018. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$28,895 of expense. As of June 30, 2017, the option to purchase 200,000 shares of common stock is still outstanding.

In March 2017, under the 2016 Equity Incentive Plan, the Company issued an option effective May 1, 2017 to the new Chief Executive Officer to purchase up to 350,000 shares of common stock at a purchase price of \$0.70 per share. Using the Black-Scholes Option Pricing Formula, the option was valued at \$280,120, fair value. The option expires in 10 years and vests 87,500 on May 1, 2017 and the remaining in equal quarterly installments of 87,500 commencing on August 1, 2017. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$116,463 of expense. As of June 30, 2017, the option to purchase 350,000 shares of common stock is still outstanding.

During June 2014 through August 2014, the Company issued 4,207,600 shares of common stock and warrants to purchase 4,207,600 shares of common stock expiring five years from the date of purchase, for proceeds of \$3,140,000 in accordance to a private placement memorandum as amended on May 27, 2014. Pursuant to the terms of the offerings, up to 60 units were offered at the purchase price of \$50,000 per unit, with each unit comprised of 67,000 shares and a warrant to purchase 33,500 shares of common stock at \$1.00 per share and a warrant to purchase 33,500 shares of common stock at \$1.25 per share. During May 2017, warrants were partially exercised to purchase 469,000 shares of common stock for proceeds of \$502,500.

In May 2017, under the 2016 Equity Incentive Plan, the Company issued an option to an employee to purchase 20,000 shares of common stock at a purchase price of \$1.50 per share. The option was valued at \$17,353, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests in quarterly equal installments of

5,000 commencing June 1, 2017. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$5,753 of expense. As of June 30, 2017, the option to purchase 20,000 shares of common stock is still outstanding.

In May 2017, under the 2016 Equity Incentive Plan, the Company issued an option to an employee to purchase 10,000 shares of common stock at a purchase price of \$1.50 per share. The option was valued at \$8,677, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests in quarterly equal installments of 2,500 commencing June 1, 2017. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$2,876 of expense. As of June 30, 2017, the option to purchase 10,000 shares of common stock is still outstanding.

In May 2017, under the 2016 Equity Incentive Plan, the Company issued an option to a new employee to purchase 25,000 shares of common stock at a purchase price of \$1.50 per share. The option was valued at \$23,889, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests in quarterly equal installments of 3,125 commencing August 17, 2017. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$1,461 of expense. As of June 30, 2017, the option to purchase 25,000 shares of common stock is still outstanding.

In May 2017, under the 2016 Equity Incentive Plan, the Company issued an option to a director to purchase 300,000 shares of common stock at a purchase price of \$1.50 per share. The option was valued at \$250,000, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests immediately. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$250,000 of expense. As of June 30, 2017, the option to purchase 300,000 shares of common stock is still outstanding.

**LIGHTWAVE LOGIC, INC.**

**NOTES TO FINANCIAL STATEMENTS**

**JUNE 30, 2017 AND 2016**

**NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)**

**Common Stock Options and Warrants (Continued)**

In May 2017, under the 2016 Equity Incentive Plan, the Company issued an option to a new employee to purchase 10,000 shares of common stock at a purchase price of \$1.50 per share. The option was valued at \$9,585, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests in quarterly equal installments of 1,250 commencing September 12, 2017. The option is expensed over the vesting term. For the three and six months ending June 30, 2017, the Company recognized \$247 of expense. As of June 30, 2017, the option to purchase 10,000 shares of common stock is still outstanding.

During January 2017, an option to purchase 100,000 shares of common stock at an exercise price of \$0.72 expired. During March 2017, a warrant to purchase 10,000 shares of common stock at an exercise price of \$1.69 expired. During May 2017, warrants to purchase 100,000 shares of common stock at an exercise price of \$1.20 expired. During June 2017, an option to purchase 200,000 shares of common stock at an exercise price of \$0.90 expired. During January 2017, an option to purchase 100,000 shares of common stock at an exercise price of \$1.69 forfeited.

**NOTE 8 STOCK BASED COMPENSATION**

The Company uses the Black-Scholes option pricing model to calculate the grant-date fair value of an award, with the following assumptions for 2017: no dividend yield, expected volatility, based on the Company's historical volatility, 64% to 75%, risk-free interest rate 1.76 to 1.97% and expected option life of 5 to 5.75 years.

As of June 30, 2017, there was \$343,128 of unrecognized compensation expense related to non-vested market-based share awards that is expected to be recognized through June 2019.

The following tables summarize all stock option and warrant activity of the Company during the six months ended June 30, 2017:

**Non-Qualified Stock Options and Warrants Outstanding and Exercisable**

|                                | <b>Number of<br/>Shares</b> |    | <b>Exercise<br/>Price</b> |    | <b>Weighted<br/>Average<br/>Exercise Price</b> |
|--------------------------------|-----------------------------|----|---------------------------|----|--|
| Outstanding, December 31, 2016 | 18,101,367                  | \$ | 0.57 -<br>\$1.69          | \$ | 0.90   |
| Granted                        | 1,555,000                   | \$ | 0.60 -<br>\$1.50          | \$ | 0.90   |
| Expired                        | (772,500)                   | \$ | 0.68 -<br>\$1.69          | \$ | 0.98   |
| Forfeited<br>Exercised         | (469,000)                   | \$ | 1.00 -<br>\$1.25          | \$ | 1.07   |
| Outstanding, June 30, 2017     | 18,414,867                  | \$ | 0.57 -<br>\$1.69          | \$ | 0.89   |
| Exercisable, June 30, 2017     | 17,691,742                  | \$ | 0.57 -<br>\$1.69          | \$ | 0.89   |



**LIGHTWAVE LOGIC, INC.****NOTES TO FINANCIAL STATEMENTS****JUNE 30, 2017 AND 2016****NOTE 8 STOCK BASED COMPENSATION (Continued)**

The aggregate intrinsic value of options and warrants outstanding and exercisable as of June 30, 2017 was \$10,372,903. The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying options and warrants and the closing stock price of \$1.48 for the Company's common stock on June 30, 2017. No options or warrants were exercised during the three and six months period ending June 30, 2017.

| Range of<br>Exercise<br>Prices | Non-Qualified Stock Options and Warrants Outstanding                  |  |   |
|--------------------------------|---|--|---|
|                                | Number<br>Outstanding<br>Currently<br>Exercisable<br>at June 30, 2017 | Weighted<br>Average<br>Remaining<br>Contractual Life | Weighted Average<br>Exercise Price of Options<br>and<br>Warrants Currently<br>Exercisable |
| \$0.57 - \$1.69                | 17,691,742  | 4.59 Years   | \$0.89  |

**NOTE 9 RELATED PARTY**

At June 30, 2017 the Company had a legal accrual to related party of \$47,992 and travel and office expense accruals of officers in the amount of \$1,592. At December 31, 2016 the Company had a legal accrual to related party of \$2,900 and travel and office expense accruals of officers in the amount of \$2,659.

**NOTE 10 RETIREMENT PLAN**

The Company established a 401(k) retirement plan covering all eligible employees beginning November 15, 2013. A contribution of \$9,799 and \$10,000 was charged to expense and accrued for the six months ending June 30, 2017 and June 30, 2016 to all eligible non-executive participants. A contribution of \$4,157 and \$5,000 was charged to expense and accrued for the three months ending June 30, 2017 and June 30, 2016 to all eligible non-executive participants.

**NOTE 11 SUBSEQUENT EVENTS**

During July 2017, the Company issued a warrant to purchase 150,000 shares of common stock at a purchase price of \$1.48 per share for accounting services to be rendered over a twelve month period commencing July 1, 2017. The warrant was valued at \$124,788, fair value, using the Black-Scholes Option Pricing Formula, vesting over the next twelve months with 12,500 vesting immediately, 12,500 vesting per month on the first day of the next ten months and 12,500 vesting on the first day of the twelfth month of the corresponding service agreement. The warrant expires in five years. The expense is being recognized based on service terms of the agreement over a twelve month period.

In August 2017, under the 2016 Equity Incentive Plan, the Company issued an option to an employee to purchase up to 10,000 shares of common stock at a purchase price of \$1.05 per share. Using the Black-Scholes Option Pricing Formula, the option was valued at \$6,169, fair value. The option expires in 10 years and vests 2,500 on August 15, 2017 and the remaining in equal three month installments of 2,500 commencing on November 15, 2017. The option is expensed over the vesting term.

## Item 2

### Management's Discussion and Analysis of Financial Condition and Results of Operations

#### Overview

Lightwave Logic, Inc. (the **Company**) is a development stage company whose **ELC™** technology addresses advanced telecommunication, data communications, and data center markets utilizing its advanced organic electro-optic polymer systems. The Company currently has two business segments to support its development activities, its materials development segment located in Newark, Delaware, and its photonic device design and development segment located in Longmont, Colorado.

#### Materials Development

The Company designs and synthesizes organic chromophores for use in its own proprietary electro-optic *polymer systems* and photonic device designs. A polymer system is not solely a material, but also encompasses various technical enhancements necessary for its implementation. These include host polymers, poling methodologies, and molecular spacer systems that are customized to achieve specific optical properties. Our organic electro-optic polymer systems compounds are mixed into solution form that allows for thin film application. Our proprietary electro-optic polymers are designed at the molecular level for potentially superior performance, stability and cost-efficiency. We believe they have the potential to replace more expensive, lower-performance materials and devices used in fiber-optic ground, wireless and satellite communication networks.

Our patented and patent pending molecular architectures are based on a well-understood chemical and quantum mechanical occurrence known as *aromaticity*. Aromaticity provides a high degree of molecular stability that enables our core molecular structures to maintain stability under a broad range of polymerization conditions that otherwise appear to affect other current polymer molecular designs.

We expect our patented and patent-pending optical materials along with trade secrets and licensed materials, to be the core of and the enabling technology for future generations of optical devices, modules, sub-systems and systems that we will develop or potentially out-license to electro-optic device manufacturers. The Company contemplates future applications that may address the needs of semiconductor companies, aerospace companies and government agencies.

## Prototype Device Design and Development

### *Electro-optic Modulators*

The Company designs its own proprietary electro-optical modulation devices. Electro-optical modulators convert data from electric signals (binary data) into optical signals that can then be transmitted over high-speed fiber-optic cables. These devices are key components that have historically limited the ability of telecommunications, data communications, data centers networks to keep up with the seemingly endless flow of data in the form of voice calls, text messages, pictures, video streaming that are being transmitted to a growing array of devices.

### *Polymer Photonic Integrated Circuits (P<sup>2</sup>IC<sup>TM</sup>)*

The Company also designs its own proprietary Polymer Photonic Integrated Circuits. A Polymer Photonic Integrated Circuit is a photonic device that integrates several photonic functions on a single chip. We believe that our technology can enable the ultra-miniaturization needed to increase the number of photonic functions residing on a chip to create a progression like what was seen in the computer integrated circuits, commonly referred to as Moore's Law.

Current photonic technology is based on inorganic crystalline materials, which due to physical limitations have not been able to address devices such as slot waveguides that require highly miniaturized geometries. Slot modulators have the potential to scale in integration for increased functionality and would be highly beneficial to data center infrastructure. Organic electro-optic polymers have greater potential because they can be applied as a thin film coating. Our polymers are unique in that they can withstand extremely high semiconductor process temperatures to seamlessly integrate into existing CMOS manufacturing lines. Our devices, enabled by our organic electro-optic polymer material systems, work by affecting the optical properties of light in the presence of an electric field at extremely high frequencies (wide bandwidths) and possess inherent advantages over current crystalline electro-optic material contained in most modulator devices such as lithium niobate, indium phosphide and gallium arsenide.

## **Business Strategy**

Our business strategy anticipates that our revenue stream will be derived from one or some combination of the following: (i) technology licensing for specific product application; (ii) joint venture relationships with significant industry leaders; or (iii) the production and direct sale of our own electro-optic device components. Our objective is to be a leading provider of proprietary technology and know-how in the electro-optic device market. In order to meet this objective, we intend to:

- Further the development of proprietary organic electro-optic polymer material systems
- Develop photonic devices based on our P<sup>2</sup>IC™ technology
- Continue to develop proprietary intellectual property
- Continue to add device development capabilities
- Continue to add to material development capabilities
- Maintain/develop strategic relationships with major telecommunications and data communications companies to further the awareness and commercialization of our technology
- Continue to add high-level science and technology personnel in key areas of our materials and device development programs.

### *Create Organic Polymer-Enabled Electro-Optic Modulators*

We intend to utilize our proprietary optical polymer technology to create an initial portfolio of commercially feasible electro-optic polymer product devices and applications for various markets, including telecommunications, data communications and data centers.

We expect our initial product device line will be a high-speed 4 x 25 Gbps ridge waveguide modulator to compete in the growing 100 Gbps modulator market. This will be followed by a 4 x 50Gbps ridge waveguide modulator that will compete in the 400Gbps market.

### *Continue to Expand Our Intellectual Property Portfolio and Reliance on Trade Secrets*

We plan to continuously advance the development of unique organic electro-optic polymer materials along with proprietary designs and device configurations. We intend to protect our technology by filing patent applications where appropriate or by obtaining exclusive technology rights where available. However, in some cases, we will refrain from protecting certain proprietary with patents in favor of trade secrets.

*Maintain/Develop Strategic Relationships Private Firms, and Academic Institutions*

Since the formation of our Company, we have had numerous strategic relationships with government agencies that have provided us with funding and access to important technology. From the time that we developed our own in-house testing capability and Class 100 clean room facility in Longmont, Colorado, we will utilize outside foundries as and when needed for specific tasks and processes.

After completion of our initial prototype ridge waveguide, we will seek to enter into partnership/JV discussions with outside parties to co-develop a slot waveguide modulator.

*Continue to recruit industry experts to gain technical expertise*

On April 1, 2017 Dr. Frederick Leonberger, PhD became a member of our Board of Directors and was appointed as a member of its Operations Committee. Dr. Leonberger is the former Chief Technology Officer of JDS Uniphase, Inc. Dr. Leonberger is presently assisting our Company with strategic planning and the design of optical modulators that we intend to develop. Dr. Leonberger has served our Company in various advisory and consulting roles since 2011.

## Proprietary Products in Development

As part of a two-pronged marketing strategy, our Company is developing several optical devices, which are in various stages of development and that utilize our organic nonlinear optical materials. They include:

### *Ridge Waveguide Modulator*

Our ridge electro-optic waveguide modulator was designed and fabricated in our Longmont, Colorado laboratory. The fabrication of our first in-house device is significant to our entire device program and is an important starting point for modulators that are being developed for target markets. We have multiple generations of new materials that we will soon be optimizing for this specific design. On December 27, 2016, we announced that our initial alpha prototype ridge waveguide modulator, enabled by our P<sup>2</sup>IC polymer system, demonstrated bandwidth suitable for data rates up to about 10 Gbps, which exceeds the telecom OC-48 standard (2.5 Gbps).

On April 26, 2017, we announced a significant improvement over our initial alpha prototype ridge waveguide modulator by achieving bandwidth suitable for 25Gbps data rates in our all-organic polymer ridge waveguide intensity modulator prototype, and on July 19, 2017 we further advanced its high-speed modulation performance to satisfy 28Gbps data rates for QSFP28 standards and 100Gbps data center applications (using 4 channels of 25 Gbps). This device, enabled by our P<sup>2</sup>IC polymer system, demonstrated true amplitude (intensity) modulation in a Mach-Zehnder modulator structure incorporating our polymer waveguides. We are optimizing relevant 28Gbps device performance parameters and are now focused on commercializing our ridge waveguide modulator. To that end, we have entered into a contract with a packaging partner that has deep experience in high-speed telecommunications and data communications optoelectronic devices. The partner will package Lightwave's 28Gbps modulators so further evaluations can be made--both internally and externally by potential customers.

Additionally, we are continuing to move towards extending our prototype ridge waveguide modulator to operate up to 50 Gbps. A 50Gbps device would be the key to open the door for our Company to address the next large market, 400Gbps nodes (e.g., using 8 modulators that are multiplexed together (8 x 50Gbps = 400Gbps)) or alternatively 4 modulators at 50Gbps (4 x 50Gbps = 200Gbps) and the use of PAM4 coding to double the modulated speed to 400Gbps (200Gbps x 2 = 400Gbps).

The ridge waveguide modulator represents our first commercially viable device, and targets metro networks (< 10Km) within large scale telecommunications and data communications networks and represents approximately a \$300MM per year market opportunity for us.

*Slot Waveguide Modulator*

Our functional polymer photonics slot waveguide modulator utilizes an existing modulator structure with one of our proprietary electro-optic polymer material systems as the enabling material layer, and is functional as an operating prototype device.

Preliminary testing and initial data on our polymer photonics slot waveguide modulators demonstrated several promising characteristics. The tested polymer photonic chip had a 1-millimeter square footprint, enabling the possibility of sophisticated integrated optical circuits on a single silicon substrate. In addition, the waveguide structure was approximately 1/20 the length of a typical inorganic-based silicon photonics modulator waveguide.

With the combination of our proprietary electro-optic polymer material and the extremely high optical field concentration in the slot waveguide modulator, the test modulators demonstrated less than 2.2 volts to operate. Initial speeds exceeded 30-35 GHz in the telecom, 1550 nanometer frequency band. This is equivalent to four, 10Gbps, inorganic, lithium niobate modulators that would require approximately 12-16 volts to move the same amount of information.

Our material also operates in the 1550 nanometer frequency band, which is suitable for data communications applications. We continued with our collaborative development of our SOH/ Polymer photonic slot waveguide modulator in 2014 and continued our collaboration with an associated third-party research group through 2016.



*Our Long-Term Device Development Goal - Multichannel Integrated Nanophotonic Transceiver*

While we consider our ridge waveguide and slot waveguide modulators currently under development to be commercially viable products, in another sense they are intermediate steps in the development of our long-term goal of a multichannel integrated nanophotonic transceiver for application in data communications.

The transceiver consists of a silicon photonic chip fabricated with nonlinear polymer infused modulators (polymer photonic), multiplexers, demultiplexers, detectors and grating fiber couplers to an external light source. The CMOS-compatible optical modulators are key components for future silicon-based photonic transceivers. Our solution, the silicon-organic hybrid (polymer photonic) platform has been proposed and is being prototyped. In the polymer photonic approach, the optical signal is guided by a silicon waveguide while an organic cladding provides the electro-optic effect.

**Target Markets**

*Cloud computing and data centers*

*Big data* is a general term used to describe the voluminous amount of unstructured and semi-structured data a Company creates -- data that would take too much time and cost too much money to load into a relational database for analysis. Companies are looking to cloud computing in their data centers to access all the data. Inherent speed and bandwidth limits of traditional solutions and the potential of organic polymer devices offer an opportunity to increase the bandwidth, reduce costs and improve speed of access.

While the number of data centers is declining, the overall square footage has been growing rapidly. Data centers are confronted with the problem of moving vast amounts of data not only around the data center itself, but also between data centers. The size of these data center links are often measured in kilometers and employ optical modulators to convert stored electrical/binary information to optical and back. Links that are shorter than 500 meters can employ direct modulation, which accomplishes modulation by mechanically turning a laser on and off. However, for links greater than 500 meters, it is necessary to employ optical modulators. We intend to target optical devices that are aimed at the 500m to 10km distance segment of the market. These are single mode fiber links and require polymer optical devices that operate in single optical mode. While some data center customers are planning their architectures using single mode fiber links even below 500m, others are focusing on cost-performance to make their decisions for their particular architectures. Our technology is both single mode and scalable, which means that it can be implemented in either data center application depending on how we achieve the customer metrics and specifications. We believe that our single mode modulator solutions will not only be competitive at 500m to 10km link distances, but

also at distances below 500m depending on the customer architecture designs.

### *Telecommunications/Data Communications*

The telecommunications industry has evolved from transporting traditional analogue voice data over copper wire into the movement of digital voice and data. Telecommunication companies are faced with the enormous increasing challenges to keep up with the resulting tremendous explosion in demand for bandwidth. This has been further exacerbated by a recent trend for content providers to store large amounts of data closer to the end user. This results in enormous demands on telecommunication metro networks (less than 10 Kilometers in length) and their ability to facilitate the transportation of content.

We believe that our ridge waveguide modulator, when completed will have the potential to address several segments within telecommunications networks.

### **Recent Significant Events and Milestones Achieved**

In December 2016, we achieved high-speed modulation in our first all-organic polymer ridge waveguide intensity modulator prototype, which constituted one of the most significant moments in the history of our Company. Our initial "alpha" prototype device, enabled by our P2IC polymer system, demonstrated bandwidth suitable for data rates up to about 10 Gbps. This performance exceeds the telecom OC-48 standard (2.5 Gbps). This device demonstrated true amplitude (intensity) modulation in a Mach-Zehnder modulator structure incorporating our polymer waveguides. Thereafter, we began to move towards extending our initial "alpha" prototype device to operate up to 25 Gbps, which is important to the optical networking industry because this data rate is a major node to achieve 100 Gbps (using 4 channels of 25 Gbps).

In April 2017, we successfully achieved bandwidth suitable for 25Gbps data rates in our all-organic polymer ridge waveguide intensity modulator prototype, and on July 19, 2017 we further advanced its high-speed modulation performance to satisfy 28Gbps data rates for QSFP28 standards and 100Gbps data center applications (using 4 channels of 25 Gbps), enabling our Company to address the explosive 100Gbps market for optical modulators using our P<sup>2</sup>IC Technology Platform. We are optimizing relevant 28Gbps device performance parameters and are now focused on commercializing our ridge waveguide modulator. To that end, we have entered into a contract with a packaging partner that has deep experience in high-speed telecommunications and data communications optoelectronic devices. The partner will package Lightwave's 28Gbps modulators so further evaluations can be made--both internally and externally by potential customers.

Additionally, we are continuing to move towards extending our prototype ridge waveguide modulator to operate up to 50 Gbps. A 50Gbps device would be the key to open the door for our Company to address the next large market, 400Gbps nodes (e.g., using 8 modulators or 4 modulators with PAM4 coding).

As we move forward through 2017, we expect to (i) bring in-house more specific skill sets in materials engineering and in device testing and fabrication, as well as personnel to orchestrate our various Company activities; and (ii) attract an industry partner with the synergistic capabilities necessary to help develop future products that are in various stages of design, such as a slot waveguide modulator and our integrated fiber optic polymer-based transceiver over and above device packaging competences.

## **Capital Requirements**

As a development stage company, we do not generate revenues. We have incurred substantial net losses since inception. We have satisfied our capital requirements since inception primarily through the issuance and sale of our common stock.

## **Results of Operations**

### **Comparison of three months ended June 30, 2017 to three months ended June 30, 2016**

Revenues

As a development stage company, we had no revenues during the three months ended June 30, 2017 and June 30, 2016. The Company is in various stages of photonic device and material development and evaluation. We expect the next revenue stream to be in product development agreements, prototype devices and sale of nonlinear optical polymer materials prior to moving into production.

#### Operating Expenses

Our operating expenses were \$1,637,463 and \$1,039,330 for the three months ended June 30, 2017 and 2016, respectively, for an increase of \$598,133. The increase in operating expenses was due primarily to increases in non-cash stock option and warrant amortization, legal fees, product prototype development and material testing expenses, research and development salaries, patent amortization and patent related expenses, product development consulting expenses, recruiting fees, laboratory materials and supplies, shareholder annual meeting expenses and license fees offset by decreases in general and administrative salaries and research and development travel.

Included in our operating expenses for the three months ended June 30, 2017 was \$839,014 for research and development expenses compared to \$592,570 for the three months ended June 30, 2016, for an increase of \$246,444. The increase in research and development expenses is primarily due to increases in product prototype development and material testing expenses, research and development salaries, patent amortization and patent related expenses, non-cash research and development stock option and warrant amortization, product development consulting expenses, laboratory materials and supplies and license fees offset by a decrease in research and development travel.

Research and development expenses currently consist primarily of compensation for employees and consultants engaged in internal research, product development activities; laboratory operations, internal material and device fabrication testing and prototype electro-optic device design, development and prototype device processing; costs; and related operating expenses.

We expect to continue to incur substantial research and development expense to develop and commercialize our photonic devices and electro-optic materials platform. These expenses will increase as a result of accelerated development effort to support commercialization of our non-linear optical polymer materials technology; to build photonic device prototypes in our in-house laboratories; hiring additional technical and support personnel; engaging a senior technical advisor; pursuing other potential business opportunities and collaborations; customer testing and evaluation; and incurring related operating expenses.

Product prototype development and material testing expenses increased \$58,808 from \$22,972 for the three months ended June 30, 2016 to \$81,780 for the three months ended June 30, 2017.

Wages and salaries increased \$49,783 to \$310,775 for the three months ended June 30, 2017 from \$260,992 for the three months ended June 30, 2016.

Patent amortization and patent related expenses increased \$46,626 from \$3,973 for the three months ended June 30, 2016 to \$50,599 for the three months ended June 30, 2017.

Research and development non-cash stock option and warrant amortization increased \$45,551 to \$159,179 for the three months ending June 30, 2017 from \$113,628 for the three months ended June 30, 2016.

Product development consulting expenses increased \$26,195 from \$62,272 for the three months ended June 30, 2016 to \$88,467 for the three months ended June 30, 2017.

Laboratory materials and supplies increased \$12,413 from \$29,098 for the three months ended June 30, 2016 to \$41,511 for the three months ended June 30, 2017.

License fees increased \$7,500 from \$0 for the three months ended June 30, 2016 to \$7,500 for the three months ended June 30, 2017 for the license fee.

Travel expenses decreased \$5,616 from \$15,437 for the three months ended June 30, 2016 to \$9,821 for the three months ended June 30, 2017.

General and administrative expense consists primarily of compensation and support costs for management staff, and for other general and administrative costs, including executive, sales and marketing, investor relations, accounting and finance, legal, consulting and other operating expenses.

General and administrative expenses increased \$351,689 to \$798,449 for the three months ended June 30, 2017 compared to \$446,760 for the three months ended June 30, 2016. The increase is primarily due to increases in non-cash general and administrative stock option and warrant amortization, legal fees, recruiting fees and shareholder annual meeting expenses offset by a decrease in salaries.

General and administrative non-cash stock option and warrant amortization increased \$275,334 to \$317,248 for the three months ending June 30, 2017 from \$41,914 for the three months ended June 30, 2016.

Legal fees increased \$68,925 to \$160,526 for the three months ending June 30, 2017 from \$91,601 for the three months ended June 30, 2016.

Recruiting fees increased \$20,000 to \$20,000 for the three months ending June 30, 2017 from \$0 for the three months ended June 30, 2016.

Shareholder annual meeting expenses increased \$12,170 to \$51,088 for the three months ending June 30, 2017 from \$38,918 for the three months ended June 30, 2016.

General and administrative salaries decreased by \$16,567 from \$156,560 for the three months ended June 30, 2016 to \$139,993 for the three months ended June 30, 2017.

We expect general and administrative expense to increase in future periods as we increase the level of corporate and administrative activity, including increases associated with our operation as a public company; and significantly increase expenditures related to the future production and sales of our products.



#### Other Income (Expense)

Other expense increased \$29,168 to \$29,106 for the three months ended June 30, 2017 from (\$62) for the three months ended June 30, 2016, relating to the commitment fee associated with the purchase of shares by an institutional investor for sale under a stock purchase agreement.

#### Net Loss

Net loss was \$1,666,569 and \$1,039,268 for the three months ended June 30, 2017 and 2016, respectively, for an increase of \$627,301, due primarily to increases in non-cash stock option and warrant amortization, legal fees, product prototype development and material testing expenses, research and development salaries, patent amortization and patent related expenses, commitment fee associated with the purchase of shares by an institutional investor for sale under a stock purchase agreement, product development consulting expenses, recruiting fees, laboratory materials and supplies, shareholder annual meeting expenses and license fees offset by decreases in general and administrative salaries and research and development travel.

#### **Comparison of six months ended June 30, 2017 to six months ended June 30, 2016**

#### Revenues

As a development stage company, we had no revenues during the six months ended June 30, 2017 and June 30, 2016. The Company is in various stages of photonic device and material development and evaluation. We expect the next revenue stream to be in product development agreements, prototype devices and sale of nonlinear optical polymer materials prior to moving into production.

#### Operating Expenses

Our operating expenses were \$2,826,390 and \$2,098,641 for the six months ended June 30, 2017 and 2016, respectively, for an increase of \$727,749. The increase in operating expenses was due primarily to increases in non-cash stock option and warrant amortization, product development consulting expenses, product prototype development and material testing expenses, legal fees, patent amortization and patent related expenses, research and



development salaries, recruiting fees, license fees, shareholder annual meeting expenses and accounting fees offset by decreases in investor relations and general and administrative salaries.

Included in our operating expenses for the six months ended June 30, 2017 was \$1,567,528 for research and development expenses compared to \$1,195,833 for the six months ended June 30, 2016, for an increase of \$371,695. The increase in research and development expenses is primarily due to increases in product development consulting expenses, non-cash stock option and warrant amortization, product prototype development and material testing expenses, patent amortization and patent related expenses, research and development salaries and license fees.

Research and development expenses currently consist primarily of compensation for employees and consultants engaged in internal research, product development activities; laboratory operations, internal material and device fabrication testing and prototype electro-optic device design, development and prototype device processing; costs; and related operating expenses.

We expect to continue to incur substantial research and development expense to develop and commercialize our photonic devices and electro-optic materials platform. These expenses will increase as a result of accelerated development effort to support commercialization of our non-linear optical polymer materials technology; to build photonic device prototypes in our in-house laboratories; hiring additional technical and support personnel; engaging a senior technical advisor; pursuing other potential business opportunities and collaborations; customer testing and evaluation; and incurring related operating expenses.

Product development consulting expenses increased \$75,363 from \$117,625 for the six months ended June 30, 2016 to \$192,988 for the six months ended June 30, 2017.

Research and development non-cash stock option and warrant amortization increased \$110,405 from \$201,164 for the six months ended June 30, 2016 to \$311,569 for the six months ended June 30, 2017.

Product prototype development and material testing expense increased \$62,953 from \$47,690 for the six months ended June 30, 2016 to \$110,643 for the six months ended June 30, 2017.

Patent amortization and patent related expenses increased \$46,626 from \$7,946 for the six months ended June 30, 2016 to \$54,572 for the six months ended June 30, 2017.

Wages and salaries increased \$51,140 from \$544,784 for the six months ended June 30, 2016 to \$595,924 for the six months ended June 30, 2017.

License fees increased \$15,000 from \$0 for the six months ended June 30, 2016 to \$15,000 for the six months ended June 30, 2017 for the license fee.

General and administrative expense consists primarily of compensation and support costs for management staff, and for other general and administrative costs, including executive, sales and marketing, investor relations, accounting and finance, legal, consulting and other operating expenses.

General and administrative expenses increased \$356,054 to \$1,258,862 for the six months ended June 30, 2017 compared to \$902,808 for the six months ended June 30, 2016. The increase is primarily due to increases in non-cash stock option and warrant amortization, legal fees, recruiting fees, shareholder annual meeting expenses and accounting fees offset by a decrease in investor relations and salaries.

Non-cash stock option and warrant amortization increased \$290,699 to \$400,848 for the six months ending June 30, 2017 from \$110,149 for the six months ended June 30, 2016.

Legal fees increased \$62,442 to \$208,854 for the six months ended June 30, 2017 compared to \$146,412 for the six months ended June 30, 2016.

Recruiting fees increased \$20,000 to \$20,000 for the six months ended June 30, 2017 compared to \$0 for the six months ended June 30, 2016.

Edgar Filing: Lightwave Logic, Inc. - Form 10-Q

Shareholder annual meeting expenses increased \$12,170 to \$51,088 for the six months ended June 30, 2017 from \$38,918 for the six months ended June 30, 2016.

Accounting fees increased \$9,084 to \$54,084 for the six months ended June 30, 2017 compared to \$45,000 for the six months ended June 30, 2016.

Investor relations expenses decreased by \$20,102 from \$28,549 for the six months ended June 30, 2016 to \$8,447 for the six months ended June 30, 2017.

Salaries and wages decreased \$16,820 to \$306,836 for the six months ended June 30, 2017 from \$323,656 for the six months ended June 30, 2016.

We expect general and administrative expense to increase in future periods as we increase the level of corporate and administrative activity, including increases associated with our operation as a public company; and significantly increase expenditures related to the future production and sales of our products.

Other Income (Expense)

Other expense decreased \$184,039 to \$53,797 for the six months ended June 30, 2017 from \$237,836 for the six months ended June 30, 2016, relating to the commitment fee associated with the purchase of shares by an institutional investor for sale under a stock purchase agreement.

## Net Loss

Net loss was \$2,880,187 and \$2,336,477 for the six months ended June 30, 2017 and 2016, respectively, for an increase of \$543,710, due primarily to increases in non-cash stock option and warrant amortization, product development consulting expenses, product prototype development and material testing expenses, legal fees, patent amortization and patent related expenses, research and development salaries, recruiting fees, license fees, shareholder annual meeting expenses and accounting fees offset by decreases in commitment fee associated with the purchase of shares by an institutional investor for sale under a stock purchase agreement, investor relations and general and administrative salaries.

## Significant Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates based upon historical experience and various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Our actual results may differ materially from these estimates.

We believe our significant accounting policies affect our more significant estimates and judgments used in the preparation of our financial statements. Our Annual Report on Form 10-K for the year ended December 31, 2016 contains a discussion of these significant accounting policies. There have been no significant changes in our significant accounting policies since December 31, 2016. See our Note 1 in our unaudited financial statements for the six months ended June 30, 2017 as set forth herein for a complete discussion of our Company's accounting policies.

## Liquidity and Capital Resources

During the six months ended June 30, 2017, net cash used in operating activities was \$1,891,833 and net cash used in investing activities was \$77,899, which was due primarily to the Company's research and development activities and general and administrative expenditures. Net cash provided by financing activities for the six months ended June 30, 2017 was \$2,153,314. At June 30, 2017, our cash and cash equivalents totaled \$2,140,426, our assets totaled \$3,500,624, our liabilities totaled \$387,691, and we had stockholders' equity of \$3,112,933.

During the six months ended June 30, 2016, net cash used in operating activities was \$1,606,832 and net cash used in investing activities was \$19,970, which was due primarily to the Company's research and development activities and general and administrative expenditures. Net cash provided by financing activities for the six months ended June 30, 2016 was \$0. At June 30, 2016, our cash and cash equivalents totaled \$2,103,903, our assets totaled \$3,346,768, our liabilities totaled \$114,899, and we had stockholders' equity of \$3,231,869.

### **Sources and Uses of Cash**

Our future expenditures and capital requirements will depend on numerous factors, including: the progress of our research and development efforts; the rate at which we can, directly or through arrangements with original equipment manufacturers, introduce and sell products incorporating our polymer materials technology; the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; market acceptance of our products and competing technological developments; and our ability to establish cooperative development, joint venture and licensing arrangements. We expect that we will incur approximately \$4,800,000 of expenditures over the next 12 months. Our cash requirements are expected to increase at a rate consistent with the Company's path to revenue growth as we expand our activities and operations with the objective of commercializing our electro-optic polymer technology during 2017.

Our business does not presently generate the cash needed to finance our current and anticipated operations. We believe we have raised sufficient capital to finance our operations through February 2018; however, we will need to obtain additional future financing after that time to finance our operations until such time that we can conduct profitable revenue-generating activities. Such future sources of financing may include cash from equity offerings, exercise of stock options, warrants and proceeds from debt instruments; but we cannot assure you that such equity or borrowings will be available or, if available, will be at rates or prices acceptable to us.

On January 29, 2016, we signed a purchase agreement (the "Purchase Agreement") with Lincoln Park Capital Fund, LLC ("Lincoln Park") to sell up to \$20,000,000 of common stock whereby subject to certain conditions and at our sole discretion, Lincoln Park has committed to purchase up to \$20,000,000 of our common stock over a 36-month period. In April 2016, our registration statement became effective, which registered for resale by Lincoln Park under the Purchase Agreement 5,000,000 shares of our common stock. Pursuant to the Purchase Agreement, Lincoln Park is obligated to make purchases as the Company directs in accordance with the Purchase Agreement, which may be terminated by the Company at any time, without cost or penalty. Sales of shares will be made in specified amounts and at prices that are based upon the market prices of our common stock immediately preceding the sales to Lincoln Park. We expect this financing to provide us with sufficient funds to maintain our operations for the foreseeable future. With the additional capital, we expect to achieve a level of revenues attractive enough to fulfill our development activities and adequate enough to support our business model for the foreseeable future. We cannot assure you that we will meet the conditions of the Purchase Agreement with Lincoln Park in order to obligate Lincoln Park to purchase our shares of common stock. In the event we fail to do so, and other adequate funds are not available to satisfy long-term capital requirements, or if planned revenues are not generated, we may be required to substantially limit our operations. This limitation of operations may include reductions in capital expenditures and reductions in staff and discretionary costs.

There are no trading volume requirements or restrictions under the Purchase Agreement and we will control the timing and amount of any sales of our common stock to Lincoln Park. Lincoln Park has no right to require any sales by us, but is obligated to make purchases from us as we direct in accordance with the Purchase Agreement. We can also accelerate the amount of common stock to be purchased under certain circumstances. There are no limitations on use of proceeds, financial or business covenants, restrictions on future funding, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. Lincoln Park may not assign or transfer its rights and obligations under the purchase agreement.

We expect that our cash used in operations will increase during 2017 and beyond as a result of the following planned activities:

.

The addition of management, sales, marketing, technical and other staff to our workforce;

.

Increased spending for the expansion of our research and development efforts, including purchases of additional laboratory and production equipment;

.

Increased spending in marketing as our products are introduced into the marketplace;

Developing and maintaining collaborative relationships with strategic partners;

Developing and improving our manufacturing processes and quality controls; and

Increases in our general and administrative activities related to our operations as a reporting public company and related corporate compliance requirements.

### **Analysis of Cash Flows**

For the six months ended June 30, 2017

Net cash used in operating activities was \$1,891,833 for the six months ended June 30, 2017, primarily attributable to the net loss of \$2,880,187 adjusted by \$146,814 in warrants issued for services, \$565,603 in options issued for services, \$61,921 in common stock issued for services, \$152,813 in depreciation expenses and patent amortization and noncash expenses, (\$97,515) in prepaid expenses and \$158,718 in accounts payable and accrued expenses. Net cash used in operating activities consisted of payments for research and development, legal, professional and consulting expenses, rent and other expenditures necessary to develop our business infrastructure.

Net cash used by investing activities was \$77,899 for the six months ended June 30, 2017, consisting of \$22,070 in cost for intangibles and \$55,829 in asset additions primarily for the Colorado lab facility.

Net cash provided by financing activities was \$2,153,314 for the six months ended June 30, 2017 and consisted of \$1,656,760 in proceeds from resale of common stock to an institutional investor and \$502,500 from the exercise of warrants offset by \$5,946 repayment of equipment purchased.

For the six months ended June 30, 2016

Net cash used in operating activities was \$1,606,832 for the six months ended June 30, 2016, primarily attributable to the net loss of \$2,336,477 adjusted by \$46,738 in warrants issued for services, \$264,575 in options issued for services, \$249,965 in common stock issued for services, \$97,573 in depreciation expenses and patent amortization expenses, \$59,496 in prepaid expenses, \$11,942 in accounts payable and accrued expenses and \$644 gain on disposal of property and equipment. Net cash used in operating activities consisted of payments for research and development, legal, professional and consulting expenses, rent and other expenditures necessary to develop our business infrastructure.

Net cash used by investing activities was \$19,970 for the six months ended June 30, 2016, consisting of \$15,565 in cost for intangibles, \$23,905 in asset additions primarily for the new lab facility and \$19,500 in proceeds from sale of equipment.

Net cash provided by financing activities was \$0 for the six months ended June 30, 2016.

## **Inflation and Seasonality**

We do not believe that our operations are significantly impacted by inflation. Our business is not seasonal in nature.

## **Item 4**

### **Controls and Procedures**

*Evaluation of Disclosure Controls and Procedures.* The Company's management, with the participation of the Company's Principal Executive Officer and Principal Financial Officer, evaluated the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of June 30, 2017. Based on this evaluation, the Company's Principal Executive Officer and Principal Financial Officer concluded that, as of June 30, 2017 the Company's disclosure controls and procedures were effective, in that they provide reasonable assurance that information required to be disclosed by the Company in the reports that it files or submits under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and



forms, and is accumulated and communicated to the Company's management, including the Company's Principal Executive Officer and Principal Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

*Changes in Internal Control Over Financial Reporting.* There were no changes in our internal control over financial reporting during the quarter ended June 30, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**PART II OTHER INFORMATION****Item 2****Unregistered Sales of Equity Securities and Use of Proceeds**

| <b>Date</b>    | <b>Security/Value</b>   |
|----------------|---|
| Apr. June 2017 | Common Stock 2,599 shares of common stock at average price of \$0.77 per share issued for services. |

No underwriters were utilized and no commissions or fees were paid with respect to any of the above transactions. We relied on Section 4(a)(2) and/or Regulation D of the Securities Act of 1933, as amended, since the transactions did not involve any public offering.

**Item 6****Exhibits**

The following exhibits are included herein:

| <b>Exhibit No.</b> | <b>Description of Exhibit</b>  | <b>Location</b>  |
|--------------------|--|--|
| <u>10.1</u>        | Director Agreement Frederick J. Leonberger   | Incorporated by reference to the Company's Current Report on Form 8-K as filed with the SEC on April 3, 2017 |
| <u>10.2</u>        | Statement of Operations Committee Work - Frederick J. Leonberger   | Incorporated by reference to the Company's Current Report on Form 8-K as filed with the SEC on April 3, 2017 |
| <u>31.1</u>        | Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, executed by the Principal Executive Officer of the Company. | Filed herewith   |
| <u>31.2</u>        | Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, executed by the Principal Financial Officer of the          | Filed herewith   |

|             |   |                |
|-------------|---|----------------|
| <u>32.1</u> | Company.<br>Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, executed by the Principal Executive Officer of the Company. | Filed herewith |
| <u>32.2</u> | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, executed by the Principal Financial Officer of the Company.             | Filed herewith |
| 101         | XBRL  | Filed herewith |

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

**LIGHTWAVE LOGIC, INC.**

Registrant

By: /s/ Michael S. Lebbby  
Michael S. Lebbby,  
Chief Executive Officer  
(Principal Executive Officer)

Date: August 14, 2017

By: /s/ James S. Marcelli  
James S. Marcelli,  
President, Chief Operating Officer  
(Principal Financial Officer)

Date: August 14, 2017

