



LIGHTWAVELOGIC™

Faster by Design

OTCQB: LWLG
Investor Presentation

September 2020

The information in this presentation may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. You can identify these statements by use of the words "may," "will," "should," "plans," "explores," "expects," "anticipates," "continue," "estimate," "project," "intend," and similar expressions. Forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those projected or anticipated. These risks and uncertainties include, but are not limited to, general economic and business conditions, effects of continued geopolitical unrest and regional conflicts, competition, changes in technology and methods of marketing, delays in completing various engineering and manufacturing programs, changes in customer order patterns, changes in product mix, continued success in technological advances and delivering technological innovations, shortages in components, production delays due to performance quality issues with outsourced components, and various other factors beyond the Company's control.

Lightwave Logic Overview

LIGHTWAVE LOGIC™

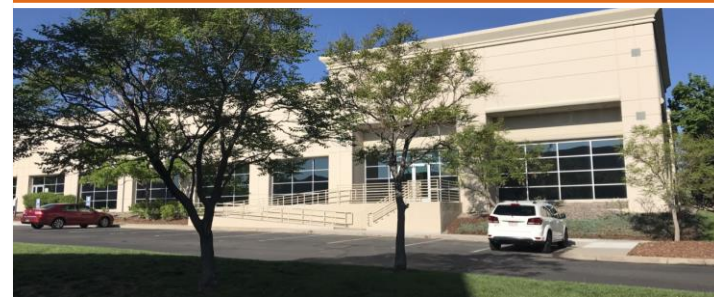
- **Lightwave Logic is a technology platform that is designed to help scale existing internet structure**
- Technology targeting **transmission of data at higher speeds with less power** (essential for data communications & telecommunications markets)
- Leveraging proprietary electro-optic (EO) polymers to create photonic devices that **convert data from electrical signals into optical signals**
- **Technology evaluation underway** with Tier-1 partners under NDA
- **In-house control of material supply, device fabrication & package design**
- **Strong Balance Sheet:** Financing facility in place with Lincoln Park Capital removes financial uncertainty
- **Strong IP position** with 51+ patents

Lightwave Logic OTCQB: LWLG

Share Price ¹	\$0.67
Market Cap ¹	\$62.5M
Cash ²	\$2.2M
Debt ²	\$0
Shares Outstanding ¹	92.9M
Float	73.4M
Insider Holdings	5.6%
Headquarters	Englewood, CO

1) At August 25, 2020
2) As of June 30, 2020.

Company Headquarters



Existing Internet Infrastructure is Stretched

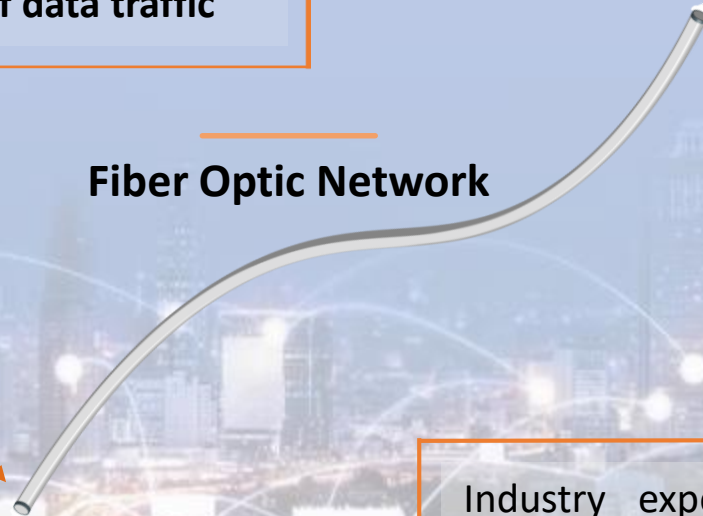
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Traffic jams within internet infrastructure are **increasing**, because the data “pipes” inside datacenters, between datacenters, and from datacenters to end-users are connected by fiber optic or photonic technology, which has **not kept pace with the immense growth of data traffic**

Fiber Optic Network



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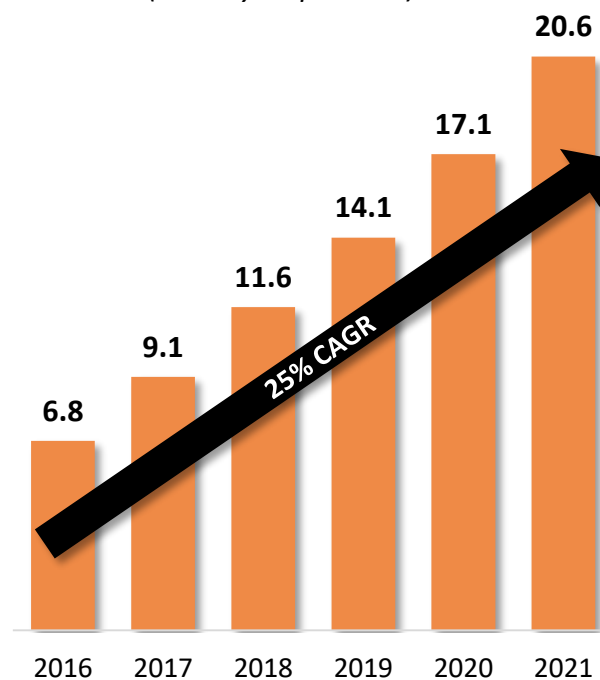
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Industry experts agree that **radical innovation is needed** to enable tomorrow's data services within the current framework of existing internet infrastructure

Radical Innovation Needed for Network Capacity to Keep up with Demand for Data (The Network is Falling Behind the Traffic Growth)

- Network capacity is rapidly falling behind traffic growth with the exponential rise of consumer-level data usage
- **Radical innovation needed to enable future data services**
 - *Competing technologies are all university funded & not positioned for true commercialization*
- Network cost and energy consumption have become the new hot spot for data providers
- Total photonic components market forecasted to grow to \$44B by 2025¹

Global Data Center IP Traffic Growth
(Zettabytes per Year)



Source: Cisco Global Cloud Index

1) Oculi LLC.

Proprietary EO Polymer Technology

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Starting With Fiber Communications, Our Technology Can be Extended To More Applications

Lightwave's proprietary, internally-engineered organic polymer materials use **less power & increase data throughput in existing network infrastructure**

How? By developing **ultrafast optical modulators** using its polymers that convert ultra-high-speed electrical data to light that travels over existing fiber-optic networks



Current Applications

1. Initial prototypes cover today's state-of-the-art 50 Gbaud and the next-generation 100 Gbaud fiber optic applications
2. Target speeds up to 100 Gigabaud per device, 800 Gbit/s in aggregate
3. Voltage as low as 1V to minimize power use



Future Applications

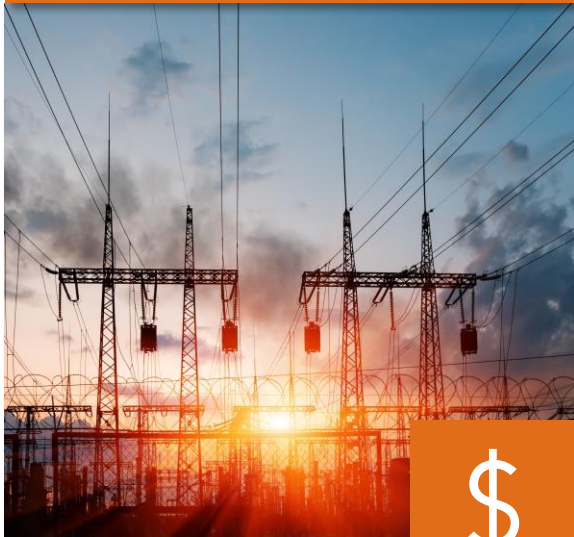
1. Modulators can be integrated to make more complex chips such as multi-channel modulators for higher aggregate speed
2. Potential development of new polymer materials for specific applications

Our Competitive Advantages

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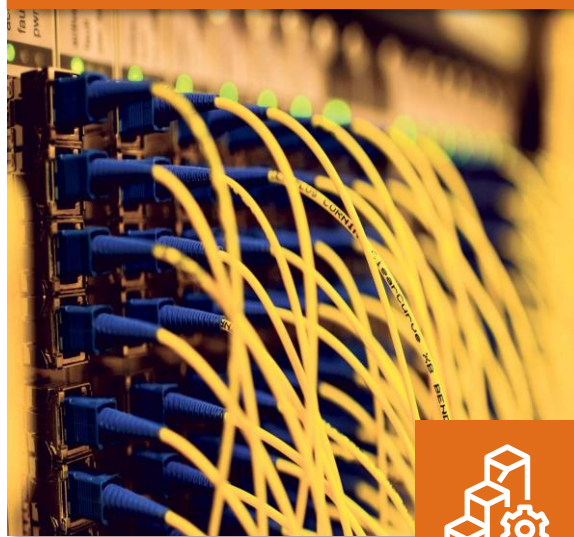
Our Technology Suite Addresses Major Pain Points Facing Network Operators

ENERGY SAVINGS



We reduce network energy costs.
Our low-cost, easy to fabricate modulators operate at a low voltage, saving network operators on energy costs as compared to competing solutions.

FASTER NETWORKS



We enable faster networks.
Our robust, stable Perkinamine™ family of materials allows network operators to squeeze more performance from existing network infrastructure.

ENGINEERING ADVANTAGE

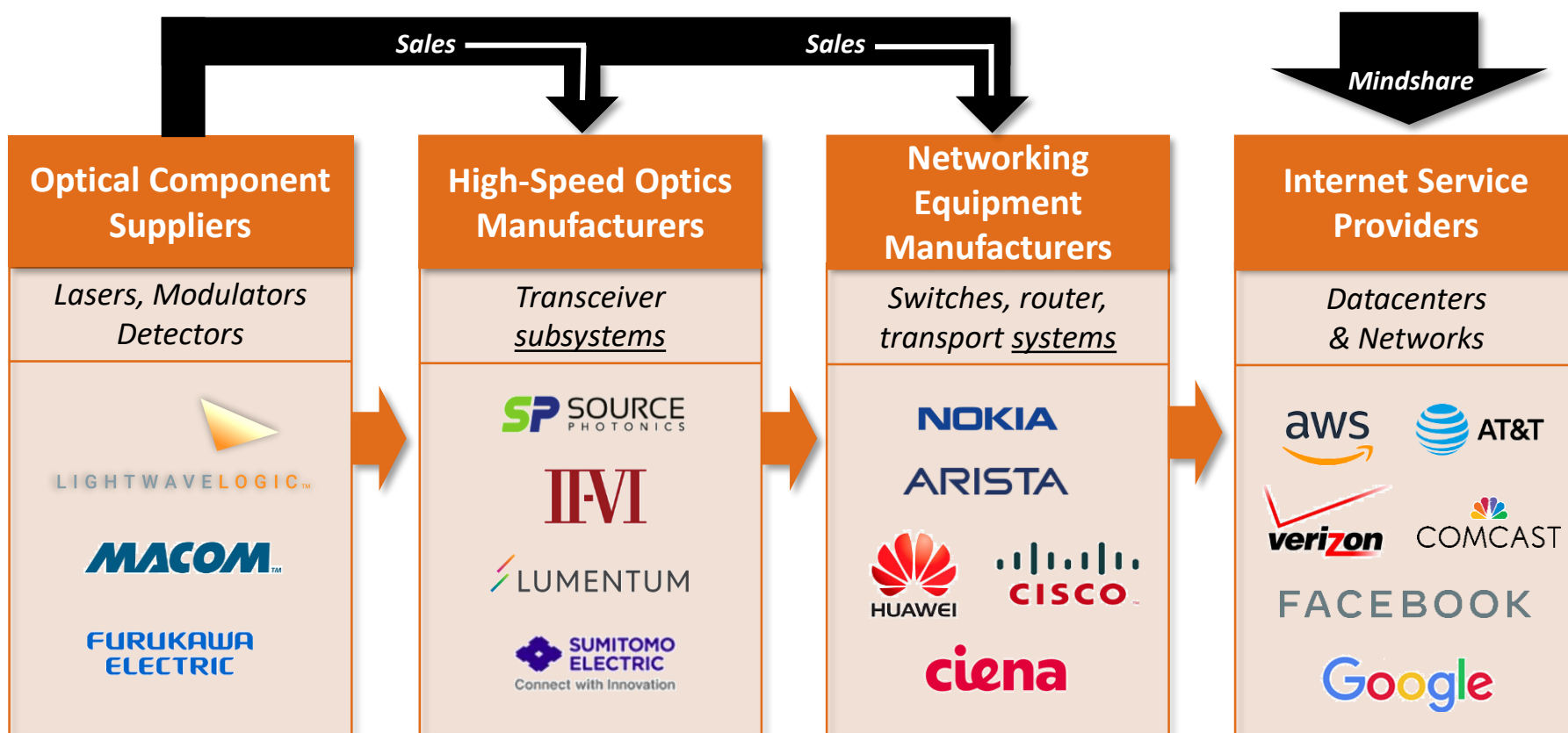


Technology Platform Flexibility
Full control from materials science to device & package design allows greater flexibility to adapt performance and cost to each individual application.

Targeting Large & Growing Markets

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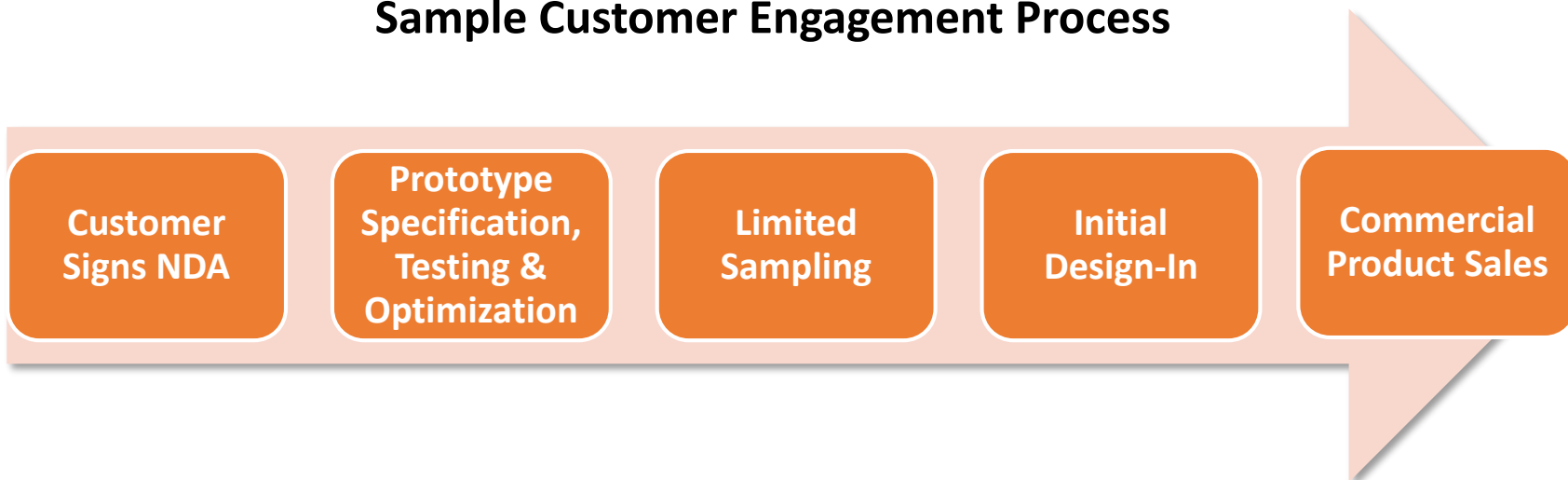
As an Optical Component Supplier, We Will Sell Into Both High-Speed Optics & Networking Equipment Manufacturers



Multi-Pronged Business Model:



Sample Customer Engagement Process



51 Issued Patents Covering Fundamental IP

Lightwave Logic maintains a strong intellectual property portfolio, encompassing the fundamental IP underlying key materials, processes, devices and packaging in all major global markets:



ISSUED	ISSUED	INTERNATIONAL
Heterocyclical chromophore architectures	Polymer Ridge waveguide modulator designs	USA, EU, Canada, Japan and China
PUBLISHED	ACQUIRED	FILING
Direct drive optical modulator	Lumera/Gigoptix Patent portfolio (15 Patents)	Innovative Polymers: Materials, devices & packaging (12 in 2017 & 2018)

Experienced Management & Board

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Dr. Michael S. Lebby - CEO

35+ years experience in photonics & semiconductors



Mr. Jim Marcelli - President & COO

35+ years experience in finance & operations



Rear Admiral Tom Zelibor, USN (Ret)
Chairman

35+ years experience in global operations & leadership



Dr. Joseph A. Miller, Jr.
Independent Director

35+ years chemistry and R&D experience



Dr. Fred Leonberger
Independent Director

35+ years leadership in optical modulators & systems



Mr. Ronald A. Bucchi
Independent Director

35+ years experience in accounting & finance



Mr. Siraj Nour El-Ahmadi
Independent Director

Leadership experience in telecom network equipment businesses



World Class Advisory Board

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Craig Ciesla

Innovator in optics, microfluidics, electronics and nanofabrication



Christoph Harder

Expert in photonics, technology development, and manufacturing and selling of photonics components and applications



Andreas Umbach

Coach and consultant on entrepreneurship and photonics technologies



Franky So

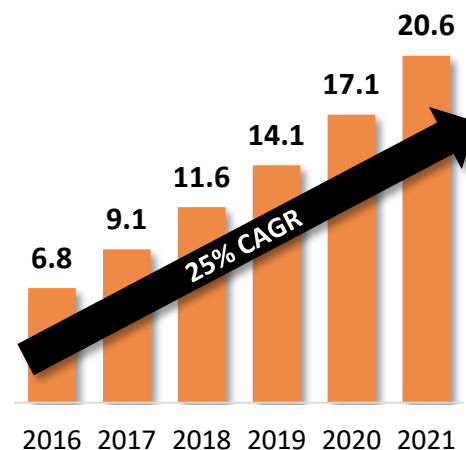
Leading materials research authority and thought leader in polymer-based OLEDs



Key Takeaways

- Our technology platform that is working to help **scale existing internet structure (enabling technology)**
- **Technology designed to transmit data at higher speeds with less power** (essential for data communications & telecommunications markets)
- **Leveraging internally-engineered electro-optic (EO) polymers** to create photonic devices that convert data from electrical signals into optical signals
- **In-house control of material supply, device fabrication & package design**
- Total photonic components market forecasted to grow to \$44B by 2025¹
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Global Data Center IP Traffic Growth
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Source: Cisco Global Cloud Index



1) Oculi LLC.

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