IN THE LAND OF CHARLES DICKENS...

“It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness…”
THE BEST OF TIMES
2013 STOCK PRICE MOMENTUM IN THE SECTOR

YTD Returns: Comms Optics vs. NASDAQ

YTD as of 11/14/13. AAOI return since IPO on 9/26/13. Data from CapIQ.
VALUATIONS ARE APPROACHING POST ‘08 PEAKS

Comms Optics EV / LTM Revenues, 10/27/08 – 2013 YTD

Comms Optics Median Price / LTM EPS*, 10/27/08 – 2013 YTD

* Excludes data points with EPS close to $0.00. Data from CapIQ.
2013 SAW BIG PRIVATE CO EXITS FOR THE FIRST TIME IN YEARS

The first IPO in several years…

The largest private company sale in over a decade…

The highest sale multiple transaction in over a decade…
THE WORST OF TIMES
COMMS OPTICAL COMPONENT MULT’S TRAIL COMM IC MULT’S

Comms Optics

Comms IC

Data from CapIQ.
IN OVER A DECADE, VERY FEW BIG DOLLAR EXITS

Of the 7 IPO’s completed, 2 companies have merged away, 3 others are below their IPO price
IN OVER A DECADE, VERY FEW BIG DOLLAR EXITS

Technology IPOs Per Year, 2008 – Present

2008 2009 2010 2011 2012 2013-YTD
Comms Optics Industrial Optics Other Hardware Software

IN OVER A DECADE, VERY FEW BIG DOLLAR EXITS
IN OVER A DECADE, VERY FEW BIG DOLLAR EXITS

Only 7 private company sales above $100M in over 10 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Company 1</th>
<th>Company 2</th>
<th>Company 3</th>
<th>Company 4</th>
<th>Company 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>ADC / Fiber Optic Network Solutions</td>
<td>MRV Communications / Fiberxon</td>
<td>JDSU / Picolight</td>
<td>Opnext / Stratalight</td>
<td>Francisco Partners / Source Photonics</td>
</tr>
<tr>
<td>2013</td>
<td>Cisco / Lightwire</td>
<td>Avago / CyOptics</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: $ in millions.
Source: Company filings, press releases, conference call transcripts, FactSet, Capital IQ, and Wall Street research.
AND WITHOUT BIG EXITS, THERE IS LITTLE VENTURE INTEREST

Venture Capital Investment, 2008 – 2013 YTD

($ in millions)

Source: Company filings, press releases, conference call transcripts, FactSet, Capital IQ, and Wall Street research.
GETTING BEHIND THE HEADLINES
WHAT’S DRIVING INVESTOR SENTIMENT?

The “Macro”

Massive growth in next gen data centers
Migration to optics within data centers
Commercialization of silicon photonics

The Fundamentals

Scale
Growth
Profits
THE “MACRO” -- INTERNET DATA CENTERS

<table>
<thead>
<tr>
<th>Data Ctr Size</th>
<th>Square Room</th>
<th>Rectangular Room</th>
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</thead>
<tbody>
<tr>
<td>10,000</td>
<td>68</td>
<td>72</td>
</tr>
<tr>
<td>400,000</td>
<td>391</td>
<td>414</td>
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</tbody>
</table>

From: “LDC Operator Perspective” in 10x10 MSA White Paper, final_2, May'11 (Google only LDC Operator listed as co-author)

Link Span Distribution

- < 100m
- 100m - 500m
- 500m - 1000m

Source: Finisar

Installed Today
2014 Install Distribution
INVESTORS FOLLOW THE SPENDING…

CapEx for the quarter was $1.6 billion; the majority of our CapEx spend is related to data center construction, facilities-related purchases and production equipment. Our infrastructure will continue to be a strategic area of investment. It's one of the foundations of our future growth.

Google, Q2 2013 Earnings Call

“...The race to 100Gb/s in the data center is pushing the limits of copper/electrical signal transmission and component makers are focused on optical technologies to address the need for speed. This move is a significant opportunity…

- Joseph Wolf, Barclays, 9/1013

We spent $268 million on CapEx in Q2 as we continue to invest in our data centers....

- Facebook Q2 2013 Earnings Call
IDC EXPOSURE CONTRIBUTES TO VALUATION PREMIUM

Viewed as plays on internet data centers

Data from Capital IQ.
FOR INVESTORS, DATA CENTERS = SILICON PHOTONICS

We continue to believe *silicon photonics will win share in the data center optics market* as a function of data center link length increasing, inadequate reach of VCSELs, high cost of traditional single mode optics and (potentially) superior reliability.

- James Kisner, Jefferies, 6/12/13

**Why?**

- **Port Speeds and Link Spans Are Exhausting the Capability of Low Data Rate Optics:** VCSEL’s have long been used in datacom applications; what’s different now is that signals are 10G or more, and need to go 100s of meters if not kilometers, far beyond the physical limits of 850nm VCSELs – DFB’s must be used

- **Silicon Photonics Provides Numerous Advantages Over Traditional Optics Solutions:**
  - **Cost:** Think of all of the advantages of large scale CMOS wafer fab, and IC’s versus discretes
  - **Size:** Conformance to MSA form factors mitigates this factor, but theoretically, silicon photonic devices can be packaged more tightly with other silicon IC’s, and utilize emerging 3-D structures better
  - **Power:** Apples to apples (ie, traditional DFB based transceiver vs DFB based Si Photonics tcvr), Si Photonics prevails
  - **Reliability:** VCSEL’s tend to fail spontaneously, while DFB’s decay gradually (making failure more predictable)
VALUATION MULTIPLES STRONGLY CORRELATED TO PROFIT MGN

EV/R’14 vs. ‘14 Op Margin for Communications Semiconductor and Optical Component Co’s

Data from Capital IQ.
THIS CORRELATION HOLDS UP OVER TIME

Data from Capital IQ, company filings.
**PROFITABLE COMPANIES TRADE AT A PREMIUM**

*Profitable Optics Companies trade at EV/R multiples at least twice as high as those of the Unprofitable Ones*

![Graph showing EV/R multiples for profitable and unprofitable optics companies.](image)

Data from Capital IQ, company filings.
IPO PARAMETERS

IPO Deal Size (YTD 2013)

Median Deal Size: $101 million
Median % of Company Sold: 16.5%

IPO Pricing Premium / (Discount) to Comparable Companies (YTD 2013)

Median Pricing Discount: 23.2%
Tech Hardware Discount: 40%+
DETERMINING IPO “ESCAPE VELOCITY”

Using IPO Median Statistics

Implied Annual Revenue Needed

~ $500M

Implied Annual Net Income Needed

~ $60M

* Assumes a $100M IPO selling 17% of the company, with pricing discount of 23%

Data from Capital IQ, company filings.
DETERMINING IPO “ESCAPE VELOCITY”

Using AOI Statistics

Implied Annual Revenue Needed

$115 - 120M

Implied Annual Net Income Needed

$13 - 15M

* Assumes a $50M IPO selling 25% of the company, with pricing discount of 30%

Data from Capital IQ, company filings. Wall Street Research
SIMILAR THEMES DRIVE M&A...
CHASING THE LIGHT: BUYERS ARE LOOKING DOWN

[Diagram showing logos of various companies including Cisco, Mellanox, Huawei, Lightwire, Avago, Kotura, II-VI, Caliopa, NeoPhotonics, CyOptics, Oclaro, and Lapis.]
PROFIT MARGINS AND DIFFERENTIATION START AT THE DEVICE

Gross Margins Across the Comms Optics Value Chain

- Contract Manufacturer: 11%
- Module Vendor with Some Device Fab: 24%
- At Scale Integrated Device Mfg: 36%
- Pure Laser Manufacturer: 46%

Data from Capital IQ, company filings.
SILICON PHOTONICS IS ALSO DRIVING M&A

- LIGHTWIRE
- CISCO
- CyOptics
- Avago Technologies
- Kotura
- Mellanox Technologies
- Caliopa
- Huawei
- Luxtera

Purchase of AOC Technology
MULTIPLES CREATE A SOFT CEILING FOR M&A VALUES TOO

EV / NTM Revenue, Sale vs. Buyer at Announcement, 2010 – 2013

Source: Company filings, press releases, conference call transcripts, FactSet, Capital IQ, and Wall Street research.
BIG DEALS FOR THE SELLERS, NOT SO MUCH FOR THE BUYERS

$400 million = 4.5% of Avago’s market value

$82 million = 3.5% of Mellanox’s market cap

$271 million = 0.6% of Cisco’s market cap
HIGHLIGHTING THE HIGH FLYERS: THE HIGHEST VALUED SALES

All were acquired by an adjacent market participant—two of the three were bought by a system OEM

The transaction values were modest percentages of the buyer’s cash and market cap, and price multiples below the buyer’s trading multiple (for the 2 sellers with rev’s)

IP was an essential value driver

Silicon photonics influenced all the deals

Profit margin impact was a factor

The buyer saw value that others did not
CONCLUDING THOUGHTS
SO WHICH BOOK IS IT?

CHARLES DICKENS
A TALE OF TWO CITIES
1. Stocks have performed well

2. Multiples are at multi-year highs

1. Notable private company transactions

Source: Capital IQ.
WORST OF TIMES

1. High value private company exits are rare

7 IPO's in a decade 7 Sales >$100M in a decade

2. New company formation is limited, with capital to do so hard to come by

$59M YTD Venture Investment in Comms Optics

3. Valuation multiples for the sector lag other parts of the comms ecosystem

![Bar Chart: Comms Optics vs. Comms IC]

Source: Company filings, press releases, conference call transcripts, FactSet, Capital IQ, and Wall Street research.
A CASE FOR OPTIMISM

Secular trends favor optics

New entrants are disrupting the status quo with a willingness to deploy new technology

...And in doing so, prompting the incumbents to do the same

Announced a 1G service in Austin, one day after Google announced its plans.
“I fully expect you’ll see us doing multiple markets like this over the next few years”
- Randall Stephenson, AT&T CEO

X2 initiative for richer entertainment and faster Internet launches nationally in 2014

In turn fueling venture investment

<table>
<thead>
<tr>
<th>2013 Venture Financings</th>
<th>Raised ($MM)</th>
</tr>
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<tbody>
<tr>
<td>Apr KAIAM Corp.</td>
<td>20.0</td>
</tr>
<tr>
<td>Apr Acacia Communications</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Source: Company filings, press releases, conference call transcripts, FactSet, Capital IQ, and Wall Street research.