the 21st century start-up environment
the 21st century start-up environment
déjà vu all over again …

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### Not long ago…

<table>
<thead>
<tr>
<th>company</th>
<th>at IPO</th>
<th>founded</th>
<th>IPO</th>
<th>valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitesse</td>
<td>“GaAs ICs”</td>
<td>1986</td>
<td>1991</td>
<td>122 M</td>
</tr>
<tr>
<td>Uniphase</td>
<td>“gas &amp; GaAs”</td>
<td>1979</td>
<td>1993</td>
<td>33 M</td>
</tr>
<tr>
<td>SDL</td>
<td>“OEICs”</td>
<td>1983</td>
<td>1996</td>
<td>101 M</td>
</tr>
</tbody>
</table>

- 5 – 15 years
- 1 – 4x sales, 12 – 60% growth, 4 – 16 Q’s profitable
- 10 – 30 M raised
A late 20th century solid-state product:

Spectra-Physics Gives the Green Light to Solid State

Welcome to the new Millennia—the 5W, 110V, solid-state alternative to ion lasers.

Millennia™ is the first commercial, visible, high-power, diode-pumped laser. It produces over 5W of green output with beam quality, beam pointing, and amplitude stability equal to or better than ion lasers. Millennia integrates our patented PClear™ and QMAQ technologies for unprecedented efficiency, low optical noise, and performance that’s proven in tough OEM applications. Plus you get the added reliability and efficiency of all solid-state design. It’s truly the green machine, and it’s available now!

SPL, 1995

Late 20th century: “SLPSSL”
### Not long ago…. typical <1995 VC-model

<table>
<thead>
<tr>
<th>round</th>
<th>year</th>
<th>$ raised MM</th>
<th>pre-$ valuation</th>
<th>multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td>seed</td>
<td>1990</td>
<td>0.2 – 0.5</td>
<td>1 - 2</td>
<td>10 – 100x</td>
</tr>
<tr>
<td>A</td>
<td>1992</td>
<td>2 - 5</td>
<td>4 - 6</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>1993</td>
<td>5 - 10</td>
<td>12 - 15</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>1994</td>
<td>10 - 15</td>
<td>30 - 50</td>
<td>1.2 – 3x</td>
</tr>
<tr>
<td>IPO</td>
<td>1995</td>
<td></td>
<td>100 - 150</td>
<td></td>
</tr>
</tbody>
</table>

- Total VC investment **17 - 35 million**
- Milestone – funded
- Ideal < 5 years
- Many took/take 5 – 10 years …
Our late 20th century bubble:

- Confluence of factors:
  - Internet, telecom dereg, Y2K, NASDAQ, debt …
  - P/E → P/E/G → P/S …. 
- Start-up funding food chain follows suit in reverse:
  - Valuations based on 100’s P/S
  - “Speed-to-market” to get any “S”
  - …. 
- Inefficient deployment of capital
- Over – but still a hangover
**Median Premoney Valuations by Round Class**

Source: VentureOne

**Sellers market!**
Median Premoney Valuations by Round Class

Median Premoney Valuation ($M)

- Later Rounds
- Second Round
- First Round
- Seed

Source: VentureOne

NOT a sellers market!
21st century post-bubble

- Public valuations < 1x sales (no “E”, declining “S”)
- Various scandals
- IPO market return not expected until 2004
- Public-M&A-IPO-mezzanine-D-C-B-A-seed…

- A poll of VCs:
  - VC-funded success might someday be $150M
  - 5 …. 7 years from seed to exit
  - Company must be built for <20M VC investment
  - Early valuations 2M, or 1M, or …
21\textsuperscript{st} century post-bubble

- Public valuations < 1x sales (no “E”, lowered “S”)
- Various scandals
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- Public-M&A-IPO-mezzanine-D-C-B-A-seed...

A poll of VCs:
- VC-funded success might someday be $150M ...like 1995!
- 5 .... 7 years from seed to exit ...like 1995!
- Company must be built for <20M VC investment ...like 1995!
- Early valuations 2M, or 1M, or ... ...like 1995!

- Hey, what century is this.... ???
IPO companies must be mature (again)…

**Time From Initial Equity Funding to IPO**

![Bar chart showing the age at IPO for companies funded from 1994 to 2001.](chart)

- **Source:** VentureOne

**Notes:**
- The chart illustrates the average time from initial equity funding to IPO for various years from 1994 to 2001.
- The years with the highest average ages at IPO are 1995 and 1999, with ages of 4.1 and 2.9 years, respectively.
- The years with the lowest average ages are 1996 and 1997, with ages of 3.1 years.
- The trend shows an increase in the average age at IPO from 1994 to 2001, with a peak in 1999.
Asymmetry… for now

Large gap: funds raised vs funds invested

Source: VentureOne
Asymmetry… for now

Large gap: funds raised vs funds invested

- Investment
- Fundraising

Source: VentureOne

$6.6, $9.8, $12.8, $17.6, $29.8, $47.2, $90.1, $91.6, $32.1, $48.2

$10 – 12B?
That desired <1995 VC-funded company…

VALUE

EVENT
(t = 5 years)

YEARS

Seed (t = 0)
A (t = 1 or 2)
B (t = 3)
C (t = 4 or 5 years)
A new solid-state tech company: when?

EVENT

VALUE

YEARS!

YEARS

Pre-company (t = -3, 4, … 10)
Seed (t = 0)
A (t = 1 or 2)
B (t = 3)
C (t = 4 or 5 years)

VALUE

(Physics)

(science)
Hype Cycle of Emerging Technology

Source: Gartner Group

PERCEIVED VALUE?

(pre-company) YEARS 2, 5, ... 10?
Back to traditional early resources, plus...

New:
- Early stage VC
  - Small $ early

Traditional VC model:
- Large $ later

Seed (t = 0)
“re-seed” (t = 2 - 3)
A (t = 3 or 4)
B (t = 5)
C (t = 6 or 10 years)

STRATEGIC
DARPA
ATP
SBIRs

VALUE

EVENT

YEARS

YEARS
A solid-state technology example:

LIGHTCONNECT

(pre-company) YEARS 0 1 INCUBIC
2001: product launch, B round

2002: 50 design wins, management, C round

INCUBIC
Early 21st century solid-state product:

- Low cost devices with high-performance chips
  - TO can w/MEMS
  - TO can w/10 Gbps chipset
- Low cost by design
- Trend: extremely small size, power dissipation
## Funding a 21st century solid-state start-up:

<table>
<thead>
<tr>
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<th>year</th>
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<th>pre-$ valuation</th>
<th>multiple</th>
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</thead>
<tbody>
<tr>
<td>seed</td>
<td>2002</td>
<td>0.2 – 0.5</td>
<td>1</td>
<td>10 – 100x</td>
</tr>
<tr>
<td>SBIR, DARPA</td>
<td>2004</td>
<td>0.2 – 0.5</td>
<td>same</td>
<td></td>
</tr>
<tr>
<td>A plus contract</td>
<td>2005</td>
<td>2 – 5, plus 1</td>
<td>4 - 6</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>2006</td>
<td>5 - 10</td>
<td>12 - 15</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2008</td>
<td>10 - 15</td>
<td>30 - 50</td>
<td>1.2 – 3x</td>
</tr>
<tr>
<td>IPO</td>
<td>2010</td>
<td>100 – 150</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Total SBIR, contract: 1, 3 – 5 million
- Total VC investment: **17 - 35 million**
- Milestone – funded
  - early: results
  - later: visibility to exit
- Ideal 90% of VC investment in last ~5 years
- Exit based on old-economy metrics!
Solid-state opportunities:

- Nanotechnologies
- GaN
- Organic semiconductors
- MEMs
- RF materials

Health, happiness, security, productivity
How do you help a customer succeed?

Problems: opportunities for solutions
- Terrorism: security
- Travel: communications
- Post bubble: fundamental economics

“Pain” points
TriQuint to Acquire Agere's Optics

Oct. 22, 2002
< 1x sales … buy!

Nov. 13, 2002
> 3x sales … sell!
21\textsuperscript{st} century start-ups:

- Deja vu all over again
  - Start-up metrics point back to 1995 fundamentals
- Excellent start-ups will obtain funding
  - Even very early stage
  - Key: matched expectations
  - A focus on serving customers
- Patience, diligence, real value creation is again required
- Solid-state technology has intrinsic value
  - Where in the hype cycle … ?