Fostering Security Innovation:
Silicon Valley VC Perspective
Doug Dooley

June 2016
Startups: When to get involved?

“Innovation distinguishes a leader from a follower.”  
–Steve Jobs

“The best way to predict the future is to invent it.”  
–Peter Drucker

8 years

Strategic projects (build the future)

Innovators  Early Adopters

Leaders (Early)

Tactical projects (optimize the present)

Early Majority  Late Majority  Laggards

Followers (Mainstream)
Agenda

• Background → Venrock and its security council

• Learning organization → assumptions, insights, outcomes

• Life of startups → time vs revenue vs value

• Disruptive innovation → core tenants

• Incumbents with aging products → interesting markets

• Final thoughts → glimmer of greatness
Who is Venrock?

Top Venture Capital Investors by IPO/M&A Share since 2009

<table>
<thead>
<tr>
<th>Investor</th>
<th>% of IPO Exits</th>
<th>% of M&amp;A Exits</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Enterprise Associates</td>
<td>28%</td>
<td>72%</td>
</tr>
<tr>
<td>Venrock</td>
<td>27%</td>
<td>73%</td>
</tr>
<tr>
<td>DAG Ventures</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>Kleiner Perkins Caufield &amp; Byers</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>Sequoia Capital</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>Greylock Partners</td>
<td>24%</td>
<td>76%</td>
</tr>
<tr>
<td>Bessemer Venture Partners</td>
<td>24%</td>
<td>76%</td>
</tr>
<tr>
<td>Polaris Partners</td>
<td>21%</td>
<td>79%</td>
</tr>
<tr>
<td>Foundation Capital</td>
<td>19%</td>
<td>81%</td>
</tr>
<tr>
<td>Benchmark Capital</td>
<td>19%</td>
<td>81%</td>
</tr>
<tr>
<td>Accel Partners</td>
<td>16%</td>
<td>84%</td>
</tr>
<tr>
<td>Battery Ventures</td>
<td>13%</td>
<td>87%</td>
</tr>
<tr>
<td>Draper Fisher Jurvetson</td>
<td>13%</td>
<td>88%</td>
</tr>
<tr>
<td>Charles River Ventures</td>
<td>12%</td>
<td>88%</td>
</tr>
<tr>
<td>Index Ventures</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>Menlo Ventures</td>
<td>10%</td>
<td>90%</td>
</tr>
<tr>
<td>Intel Capital</td>
<td>9%</td>
<td>91%</td>
</tr>
<tr>
<td>US Venture Partners</td>
<td>8%</td>
<td>93%</td>
</tr>
<tr>
<td>Lightspeed Venture Partners</td>
<td>7%</td>
<td>93%</td>
</tr>
<tr>
<td>Felicis Ventures</td>
<td>2%</td>
<td>98%</td>
</tr>
<tr>
<td>First Round Capital</td>
<td>2%</td>
<td>98%</td>
</tr>
<tr>
<td>SV Angel</td>
<td>2%</td>
<td>98%</td>
</tr>
</tbody>
</table>
A Typical Year for Many Venture Capitalists

300-500 entrepreneurs request a meeting

60-120 first meetings

30-40 deeper diligence

3-5 worthy deals

0-3 investments
Venrock’s security portfolio

Security Management
Configuration Management • Monitoring and Forensics • Risk Management • Threat Intelligence • Event Log Management • Policies and Procedures Governance, Risk & Compliance • Access Control/User Provisioning • Managed Security/Service Providers (MSSP) • Federated Identity/Management Information and Event Management (SIEM)

Network Security
Network Data Loss Prevention (DLP) • Network Access Control (NAC) • Anti-Botnet • Secure File Transfer • Secure Email Messaging • Firewall • Application Aware Firewall • Virtual Private Networks (VPN) • Advanced Anti-Malware & Incident Response • Intrusion Detection/Prevention Systems (IDS/IPS)

Infrastructure Security
Endpoint Data Loss Protection (DLP) • Anti-Spam • Key Management • Tokenization • Data Encryption • Web Content Filtering • Anti-Spyware • Vulnerability Management • Dual Factor Authentication • Anti-Virus • Host Intrusion Detection/Prevention Systems (HIDS/HIPS)

Application Security
Dynamic Code Analysis • Web-Application Security Vulnerability Scanners • Static Code Analysis • Web-Application Firewalls (WAF)
Entrepreneur → Venture Capitalist

“I’m the plumber at Venrock. Security and Infrastructure are my focus areas.” – Doug Dooley

venrock
Security Council

MISSION
Foster Innovation in Security

Do's
Share Ideas
Seek the Truth
Support Each Other
Build Long Term Relationships
Take Risks, Entrepreneurial Spirit
Chatham House Rules Apply
Venrock Security Council → learning organization
Assumptions about the future
ROI for hacker innovation continues to be positive

bad guys can get financial payments with ease

Hacking Email and Social Media Accounts

<table>
<thead>
<tr>
<th>Account Type</th>
<th>Recent Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Popular U.S. Email Accounts (Gmail, Hotmail, Yahoo)</td>
<td>$129</td>
</tr>
<tr>
<td>Popular Russian Email Accounts (Mail.ru, Yandex.ru, and Rambler.ru)</td>
<td>$65 – $103</td>
</tr>
<tr>
<td>Popular Ukrainian Email Accounts (Ukr.net)</td>
<td>$129</td>
</tr>
<tr>
<td>Popular U.S. Social Media Accounts</td>
<td>$129</td>
</tr>
<tr>
<td>Popular Russian Social Media Accounts (VK.ru and Ok.ru)</td>
<td>$194</td>
</tr>
<tr>
<td>Corporate Email Accounts</td>
<td>$500 per mailbox</td>
</tr>
<tr>
<td>IP address of Computer User</td>
<td>$90</td>
</tr>
</tbody>
</table>

Secureworks Hacker Markets Annual Report – April 2016

time is not on our side these last 10 years

+70% breach notification by outsiders
VSC Discussion Topics – Mar 2016 (RSA)
Voted Topics – May 2016 (FS-ISAC)*

* Miami May 4: three votes per participant for top topics of interest, not done via survey like in past events
AI is eating the world

Artificial Intelligence

Data

World
Innovative outcomes
Emerging security categories

- **Analytics + machine learning platforms** (next gen SIEM)
  - Examples: Niara, Exabeam, Fortscale, Securonix, E8 Security

- **Automation and orchestration** (automates repetitive tasks)
  - Examples: Cloudpassage, Evident.io Invotas, Phantom, StackStorm

- **Threat intelligence** (external feeds, threat sharing platforms)
  - Examples: Anomoli, iSIGHT Partners, Flashpoint, Soltra, ThreatConnect

- **Cloud security gateways** (CASB, next gen proxies)
  - Examples: Adallom, NetSkope, Skyhigh, Zscaler

- **Security for endpoints** (next gen + mobile + browsing)
  - Examples: Bit9+CarbonBlack, Menlo Security, Skycure, Tanium

- **Risk ratings + cyber insurance** (financial coverage)
  - Examples: BitSight, SecurityScoreCard, future stealth startups
Question: Early Stage Technology

• How can I play a leadership role in shaping the future of security?
Startups: When to get involved?

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Late Majority
Laggards

8 years
Startups: Revenue vs Time

8 years average to exit

SEED
- Prototype

EARLY
- Alpha, Beta

MID/EXPANSION
- GA Release

LATE/MEZZANINE
- Established Offering

EXIT
- Broad Expansion

REVENUES

TIME

Break Even Point

Venture Capital

Angel Investors

Mezzanine Financing

Debt Investments

Private Equity
Technology cycles → create new opportunities
Disruptive innovation → core tenets

Three core tenets

1. **new product** or service designed for

2. **underserved customers** or market segment using

3. **new technology** and/or engagement model not popular with the vast majority of existing customers.

If the disruptive innovation is really successful, it will **LATER disrupt incumbents** and bring better-faster-cheaper to the mainstream.
Debate: can “high-end” innovation be disruptive?

**Debate**: disruptive innovation can only be low-priced offerings for low-paying customers. Not high priced luxury for already affluent customers.

**Examples**: Apple, Nest, Starbucks, Tesla, Uber… all provided higher priced products and services with unique engagement models that tapped into markets that were willing to pay premium for the innovation.
Tech + business model innovation → biggest disruptors

- Apple
- Uber
- Tesla
- Nest
- Cloudflare
- Velocloud
Incumbents with aging products → interesting markets

What channel is

The Netflix
Glimmer of Greatness