University Startups
Strong IP Portfolio, Weak Business Models

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Startup Background

• Co-Founder and CTO
  
  *May 2005 - July 2012 (Acquired)*

• Co-Founder and Chief Scientist
  
  *March 2013 – present*

• Advisor, Tilofy
  
  *May 2013 - present*
OUTLINE

• Disclaimer
• University IP
• Geosemble Experience
• ClearPath Experience
The purpose of this talk is to share the lessons I learned involving with three startups

Disclaimers:
- The processes discussed are simply my understanding!
- They may be wrong! Do NOT quote me 😊
- There are always exceptions!
- Try to figure the details yourself before taking any serious action.
- Take what I am saying as just an informal (perhaps incomplete or even inaccurate) introduction to the process.
- No lawyers have been harmed in the preparation of this presentation!
University IP

• Faculty members are involved with several cutting-edge technologies coming out of “sponsored” research
• Universities encourage the transfer of the technology to industry (it can be profitable to U.)
• Government funding agencies (NSF, DARPA, NASA) allow (actually encourage) tech-transfer as well
• IP is owned by U.; Government agency has non-exclusive right to use for non-profit within government (Bayh-Dole Act)
• Options:
  – Free dissemination (publications, open source software)
  – Licensing the technology
  – Starting a company
• [Tough] decision by inventors
University IP ...

**IP Licensing**

- Work with Office of Technology Transfer (USC Stevens Institute)
- File an invention disclosure (protects you for one year inside US)
- If OTL sees excitement from one or more industries or if the inventors show too much enthusiasm (read, beg!) or for any other unknown reason(!), U. may file a patent before the end of the one year period
- U. pays for the patent expenses 😊
- Any time during this process the technology may be licensed to a third-party company
- The license deal is negotiable (royalty, equity, upfront fee)
- There will be performance milestones or the license will be revoked
- The income will be shared between U. and inventors
University IP ...

**Startup Company**

- More involvement from inventors with potentially more reward (and perhaps greater chance of success for the technology)
- The licensing process needs to be done first (because U. owns the IP)
- The startup will license the technology the same as the process discussed before, except:
  1. Inventors cannot double-dip!
  2. U. is more flexible in the negotiation 😊
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Experience

- One of our PhD’s (Jason Chen) work showed promise (short term application, good result way ahead of the state-of-the-art, ...)
- Hence, in late 2004 I co-founded Geosemble Technologies
- Geosemble “exclusively” licensed the “geospatial data integration” technology from USC
- USC got equity in Geosemble
- Geosemble paid for patenting the technology (patent still owned by USC)
- Jason joined the company in May 2005 and we officially started (my role: CTO 20% rule)
Struggle
(Initial Funding)

• Need initial funding for:
  – Paying attorneys for patent (~ $10k+) and official docs
  – Office space (rent, furniture, ...)
  – Infrastructure (Phone, Internet, computers,...)
  – Administration staff (secretary, IT, finance)
  – Marketing staff
  – Salary for executives (CEO, CFO)
  – Salary for engineering staff

• Options: Angel funding, Founders personal fund, Incubators
• Geosemble used Fetch Technologies, another USC startup, as its incubator (Fetch got equity in the company)
• Shares divided between: founders, incubator, funding entities, inventors, ...
Struggle
(Continuation Funding)

• Raise funding: lose more equity! 😞
  – Not a good idea with powerpoint slides unless year < 1998
• Geosemble used government contracts (and grants) to pay engineering salary (overhead goes towards infrastructure and stuff!)
  – SBIR, STTR and other programs for small companies
  – Subcontracts on USC grants (need to be careful with COI; there are forms to fill!)
  – Works when founders have credentials and connections!
• Warning: don’t become an R&D lab; pick the contracts carefully (consistent with your company’s strategy)
• Meanwhile, develop “product” or “services” that can eventually bring commercial customers
Variable Business Model!

- Geosemble sustained on government grants with minimal outside investment
- Developed 5 products
  1. **Vector conflation** → Main customers (municipalities) didn’t have real money
  2. **Parcelizer** → The “service” model didn’t scale for real customers with large data (Zillow)
  3. **Geo-Register** → New technology rendered us obsolete
  4. **Lead generator** → The pricing couldn’t compete with current (manual) market
  5. **GeoXRay** → Win!
Lessons Learned

• Geosemble acquired by TerraGo in July 2012 (cash deal)
  – All investors in black
  – Good packages and re-hiring for employees

• Good:
  – Incubation
  – No VC funding
  – Solid IP
    • We hired a law firm (Carr & Ferell) to systematically file IP → 6 patents filed, 3 granted already

• Bad:
  – Government contracts sometimes distracted us from the main goal
  – Building product before deep analysis of market was unwise

• Ugly:
  – The acquisition negotiation with multiple buyers simultaneously
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Funding, funding, funding!

• Need large and fast investment
  – Going after large VC funds

• Alternative business models
  – B2B: Delivery business
    • Penetration need credential and network → money to hire the right people
  – Partnership: Car companies, online maps and navigation companies
    • Need street-credit and network → money to build a product
  – B2C: app and websites
    • Need to show users → money to develop the app and acquire users

• Current plan
  – Inject investment as “resources”
  – Acquire customer
Conclusion

Would I do it again?
Absolutely!
LA Auto Show 2013: Connected Car Expo unveils apps that bark, predict, navigate

The LA Auto Show kicked off Tuesday with a press-only Connected Car Expo, a showcase for the technologies that are transforming the automobile into a device that knows everything. Entrepreneurs even had a special competition, pitting their big ideas to a panel of judges. (The show opens to the public on Friday)

The ideas included an app called RodeoDog that barks at smartphone users if they try to text while driving. Another device deploys a flash when it senses a car has been in an accident. Green Driver's Enlighten app will tell a driver how long a traffic light will last, while the green light will help reduce fuel consumption.

Co-founder of ClearPath, Igor Deminychev demonstrates a version of the ClearPath app at the Connected Car Expo.

UPDATE: Sony to cut $250 million from entertainment unit

43 MINUTES AGO

How does a $12 billion JPMorgan settlement affect SoCal?