Translation, Intellectual Property and Venture Capital

July 29, 2015
3:00 PM ET
Moderator

- Ben Noe
  R&D Project Manager, Surgical Innovations
  Minimally Invasive Therapies Group
  Medtronic

BMES Industry Committee Chair
BMES Industry Committee

- Team of 46 professionals
  - 11-person Industry Advisory Board
  - 35-person operational team

- Four strategic focuses
  - Translation
  - Business Development
  - Talent Pipeline
  - BMES Industry Membership Services
BMES Industry Committee

- **2015 Annual Meeting – Industry Sessions**

**Thursday, October 8th**
- 12:30 – 1:45 PM  Engineer to Entrepreneur
- 2:00 – 3:30 PM  Product Development Panel: From Idea to Product
- 4:00 - 5:30 PM  Transitioning from Academia to Industry

**Friday, October 9th**
- 8:00 - 9:30 AM  Best Practices in Leadership and Management
- 9:30 – 10:30 AM  Industry Career Chat
- 12:45 – 1:45 PM  Best Practices in Quality and Regulatory
- 2:00 – 3:00 PM  Start-ups and Venture Capital: Navigating the Funding Process and Investment Pitches
- 3:15 – 5:00 PM  Tech Transfer and Licensing - Best Practices in Transferring Technologies from Academia and the Clinic into Industry

**Saturday, October 10th**
- 9:30 – 10:30 AM  BMES Industry Update
  *All BMES members welcome*
BMES Industry Committee

- Coming soon! → Corporate memberships

- Local Industry Networking Groups
  - Tuesday, August 18th from 2–3 PM Eastern
  - http://bmes.org/industry_networking
  - http://bmes.org/elearning

- For more information, please visit bmes.org
The archived recording, presentation slides and resources will be available a few days after the webinar at: http://bmes.org/elearning

You may submit questions throughout the webinar by using the online chat function. Your questions will be addressed after the featured speaker presentation.

Please take a few minutes to complete the brief survey following the webinar to provide us with your feedback.
Speaker

- Clark Wilson

Sr. Counsel, Merchant and Gould
Biomedical Engineering Society

Translation, Intellectual Property and Venture Capital

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Technology Transfer

The Cycle of Innovation

- Research
- Invention Disclosure
- Assessment
- Intellectual Property
- Licensing
- Selecting a Licensee
- Marketing to Find a Licensee
- Commercialization
- Royalties

*Stanford University Office of Technology Licensing Start-Up Guide
Technology Transfer

**Research** – Your research has developed/identified something new and useful:
- Machine
- Composition of Matter
- Article of Manufacture
- Process
- Improvement on existing technology (most common)
Technology Transfer

**Invention Disclosure** – Informing the University/Research Institution

- Locate an invention disclosure form at Technology Transfer Office
- List all inventors involved
- Describe the problem which initiated your research
- Describe the current technology used for this problem
- Describe the invention and the improvements it offers
- Do this BEFORE publication
- Update TTO with add-on developments
Technology Transfer

Assessment/Review – TTO considers potential for commercialization

• Search for patentability
• Market consideration
• Analysis of competition
• Do the inventors want to start their own company?
  • If so, does the TTO restrict them from continued employment at the research institution, or allow concurrent work?
  • Put together a proposal
• Inventors can assist with this analysis if helpful
Technology Transfer

**Intellectual Property** – TTO Prepares Patent Application(s)
- Detailed description of the preferred embodiment
- Often includes examples and date from research
- Significant involvement of inventors & outside attorneys
- Provisional Application is likely first step
- Patent examination can take years
- Continuation or Continuation-in-Part Applications?
  - Stay in contact with TTO
Technology Transfer

**Marketing** – TTO presents the technology to companies
- Inventors often involved in creating presentation
- Create list of potential interested companies based on experience
- Find ways to introduce the technology to those companies
- Evaluate their interest level and commercialization plans
Technology Transfer

Selecting the Licensee

- Which partner is in best position to commercialize
- Large company – resources and network, but less commitment
- Small company – high interest and drive, but less resources
- Evaluate specific plans for development
- Evaluate the leadership of the companies
- Possible to have 2 or more companies based on different industries
- Want to start a company? Prepare a proposal.
Technology Transfer

License Terms

• Between the research institution and the company or companies
• Exclusive or non-exclusive
  • Most startups request exclusive due to funding benefits
  • Can be restricted to particular form of use, region etc.
• Compensation - however it is negotiated
  • Ongoing royalties – per term, per unit sold
  • Required minimums
  • Lump payments
  • Required diligence
Technology Transfer

**Commercialization**
- Can take years after the initial invention is realized
- Often requires further R&D by the licensee company
  - Often to determine how best to “sell” the technology
- Regulatory approvals, sales, etc.
- Want to form a Startup?
  - Network Network Network
  - Develop a Business Case
  - Use both to Seek Funding (Angels, VC’s, Crowdfunding)
Technology Transfer

Royalties

• Assuming the licensing company is commercially successful
• Inventors often share royalties with the institution (%)
  • Review the handbook
Technology Transfer

Where Researchers Take Wrong Turns

- Publish before Patent
  - Can prevent patent rights
- Incomplete lab notebooks (Date and witness everything)
- Not involving TTO early
- Not updating TTO with follow-on research after first Disclosure
Technology Transfer

**Why Good Technology Fails To Become Good Business**

- Management is inappropriate
- Bad/Incomplete IP protection
- No money
- No commercial need for the technology
- A very niche market
- Bad Luck/Timing
Thank you.

Clark A.D. Wilson

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404-954-5100
Speaker

David Kuraguntla, D.O.

Founder and CEO, Graftworx, and Founder, Spiral Arm Ventures
AM I A PRODUCT OR A COMPANY?

Answering this question is the most important step you can take.
COMPANIES GET BOUGHT, PRODUCTS GET SOLD

<table>
<thead>
<tr>
<th>Product</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niche market</td>
<td>Platform Technology</td>
</tr>
<tr>
<td>Single customer base</td>
<td>Several potential customers</td>
</tr>
<tr>
<td>Narrow, but well-defined IP</td>
<td>Broad IP base</td>
</tr>
<tr>
<td>Outsourced Team</td>
<td>Building a Large Team</td>
</tr>
<tr>
<td>Alternative Funding Model</td>
<td>Traditional Funding Model</td>
</tr>
<tr>
<td>- SBIR</td>
<td>- Angel</td>
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<tr>
<td>- Partnerships</td>
<td>- Venture Capital</td>
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<tr>
<td>- Early acquisition</td>
<td>- IPO</td>
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</tbody>
</table>
BUILD A STORY —
DON’T WRITE A BUSINESS PLAN

Investing is emotional — well-crafted stories are engaging
HOW SHOULD A STARTUP TELL ITS STORY?

We believe that \( x \) potential customers face \( y \) problem.

Our proposed solution to \( y \) problem is solution \( z \)
at a cost of \( q \) dollars

but we’re also going to test the effectiveness of solutions \( a,b,c \).

Here is our plan for testing that hypothesis.

*Traditional business plans assume their assumptions are correct, and startup business plans assume their assumptions are probably wrong.*
LEAN CANVAS

1. Problem
   top 3 problems

2. Customer segments
   Target customers

3. Unique value proposition
   Can’t be easily copied or bought

4. Solution
   top 3 features

5. Channels
   Path to customers

6. Revenue streams
   Revenue model, life time value, revenue, gross margin

7. Cost Structure
   Customer acquisition, distribution, people, etc.

8. Key metrics
   e.g. AARRR

9. Unfair advantage
   Clear compelling message. Why makes you different? Why pay attention to you?

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Lean Canvas, from Ash Maurya: Running Lean. Licensed under Creative Commons-Attribution-Share Alike 3.0
BOO ks TO R EAD

The Hard Thing about Hard Things – Ben Horowitz
Startup CEO – Matt Blumberg
Running Lean – Ash Maurya
The Lean Startup – Eric Ries
THANK YOU

Please feel free to reach out if you have any additional questions

david@spiralarmventures.com
QUESTIONS?
BMES Activities and Events

- **2015 Professional Development Webinars**
  [http://bmes.org/elearning](http://bmes.org/elearning)
  - Local Industry Networking Group: **August 18 @ 2pm ET**
  - Tenure Promotion Process: **September 15 @ 3pm ET**

- **2015 BMES Annual Meeting in Tampa**
  [http://bmes.org/annualmeeting](http://bmes.org/annualmeeting)
  **Oct 7–10, 2015**

- **2015 BMES Regional Events**
  - Southeast BME Regional Conference: **Oct 23, 2015 (Raleigh, NC)**
  - Midwest BME Regional Conference: **Nov 6, 2015 (Akron, OH)**