STAART with the BIG THREE

- **What** am I going to make/sell?
- **Can** I protect it?
- **Should** I protect/make/sell the invention?
The “What”

• Summarize the technology (the invention disclosure)
  – Provide a summary of the invention
  – List features/benefits
  – How much development is needed?
  – Sketch out the invention.
Can I protect it?
Patentability…The “Can”

• **Requirements** for a patent
  – Utility
  – Novel
  – **Non-obviousness**

• Summarize the **prior art** (prior art search)
  – Google Patent, [www.uspto.gov](http://www.uspto.gov), PubMed (or other)
  – Just because the product is not available does not mean no one has thought, published, presented or made it.

• **Be careful disclosing your invention(s)**
Intellectual Property (IP) is the ownership of an idea or improvement.

IP is like other physical property in that it can be protected from unauthorized use:

1. Trade Secrets
2. Trademarks
3. Copyrights
4. Patents
When should I Protect?

<table>
<thead>
<tr>
<th>BEST</th>
<th>Before Public Disclosure of Invention</th>
<th>U.S. and foreign patent rights intact, Time for evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>POOR</td>
<td>Presentation or Publication</td>
<td>Foreign rights lost, one year grace period for U.S. filing</td>
</tr>
<tr>
<td>WORST</td>
<td>&gt; One year post disclosure</td>
<td>No options for filing patents</td>
</tr>
</tbody>
</table>

The page is a table with headers 'BEST', 'POOR', and 'WORST'. Each category includes two columns: 'Before Public Disclosure of Invention' and another column that discusses U.S. and foreign patent rights, the time for evaluation, and foreign rights lost. The worst category also mentions a one-year grace period for U.S. filing. The page also includes a cartoon with the text 'Pepper . . . and Salt'.
The Patent Timeline

- Provisional patent filed.
- 1 year later – file a “full” patent application (US or International/PCT).
- ~2 years later – national stage filings (US, EU, JP, AU)
- Examination begins (2-3 yrs)
- Patent Issues
- Maintenance

- Timeline is set by Patent Office, can take 5+ years
- Costs accumulate throughout prosecution.
- Continued investment is continually re-evaluated (go/no-go) based on commercial and IP landscape, technology development stage, etc.
What is “Public Disclosure”?

- Publication in a journal, meeting proceedings, thesis, etc.
- Online publication of an article or abstract.
- Presentations, seminars, and poster presentations open to those outside of the University community.

Protect your invention as soon as possible!
Confidential Disclosure Agreements

• CDAs (or Non-Disclosure Agreements) bind an outside party to keep information confidential for a specific period of time.

• CDAs prohibit using the information for anything but determining an interest in future collaboration or licensing.

• Public disclosure does not occur under a CDA, and therefore patent rights are not compromised.
Should I protect it?
Market…The “Should”

• Summarize the commercial opportunity
  – Customer profile(s)
  – Potential market segments
  – Describe each market
    • Market size
    • What are the key issues driving the market?
    • Is the market growing, stable or contracting?
    • Total addressable market vs. Segmented addressable market vs. target market

• Be critical and reasonable
Now what?
Next Step:

• What do I want to do with this invention?
  – Start your own company
  – License to existing or startup company
  – Nothing

• Start with the business model:
  – A business model describes the rationale of how an organization (you or your company) creates, delivers, and captures value.

• Be reasonable and realistic
Most Inventions Do Not Succeed!

Franz Reichelt (d. 1912) attempted to use this contraption as a parachute.

Reichelt died after he jumped off the Eiffel Tower wearing his invention, which failed to operate properly as a parachute.

http://en.wikipedia.org/wiki/List_of_inventors_killed_by_their_own_inventions
The TVC Engine

2-Stroke → 4 Cylinder → V8

IP & Market → Testing & Validating Assumptions

Disclosures → High Medium Low

Low Technologies Iterate or Return

30% → 30% → 30%

License

High Ready

Pitch

Startups will be executing and licenses generating revenue

High
Step One: Define Technology and Product

• What is the technology/value proposition?
  – Development stage
  – Why should a customer care
  – Potential product/commercial application
  – Features and Benefits

• IP – Can the UU protect the invention?

• Market – Should the UU protect the invention?
**HIGH**

- Patent rights available
- Initial IP and commercial strategy completed
- Cooperative/communicative inventor
- Potential start-up opportunity
- Potential licensee(s) or partners identified
- Prototype or proof of concept data available
- Funding available for further development.
- Aggressive area of patent activity
- Large identified market opportunity

**LOW**

- Less than 3 yrs of patent life left
- Technology is not licensed, or previously licensed and returned
- Little to no market potential
- Inventor no longer at University
- No ongoing research effort on invention
- Significant marketing efforts made with no success
- Tech is lagging or outdated, or faces significant competition that is already in the market
- Technology is not licensed
- Technology has not proven technically viable (consider abandoning patents)
MEDIUM

- Concept stage, still awaiting proof of concept data (i.e. Hold for More Data status).
- No market analysis, or further analysis needed.
- Funding prospects low or unclear.
- Prior marketing efforts with no success/pitches have been made.
- Industry feedback is neutral or ambivalent.
- Licensed, with minimal involvement with licensee.
- Difficulty in identifying infringement, if practiced.
Only move forward with HIGH priority ideas

- **Focus** is essential
- **Ideas** are cheap
- **Strategy** is essential but easy when compared to…
- **Execution** on the strategy is HARD
Step Two: Implementing Commercial Strategy

• Seek market/customer input to guide development
  – GET OUT OF THE BUILDING
• Identify resources for technology development
• Startup Company Formation
  – Management team
  – SBIR/STTR grants
  – Financing
• License negotiations
• Marketing and Outreach
Business Model Canvas

www.udacity.com

(Business Model Canvas Introduction)
Success vs. Failure
Why do Inventions Fail?

FAILED INVENTIONS

Technology Issues

Business/Market Factors

Intellectual Property Challenges
Technology Issues

- Insufficient proof of concept/ validation
- Invention remains stuck at early stage
- New developments make invention obsolete
- Failure to obtain needed regulatory approvals
- Lack of resources ($$, time).
Business/Market Factors

- Product/invention does not meet/create a demand
- Small market does not support investment
- Competitive market, invention is redundant
- Poor business strategy, understanding of market fit
- Lack of solid business leadership
Intellectual Property Challenges

• Existence of dominant IP (patents held by others)
• Lack of freedom to operate
• Invention is not patentable or otherwise protectable
• Patent cannot be enforced
Why Do Inventions Succeed?
Which Inventions Succeed?

Technology and Product Development

Product/Market Fit Value Proposition Partnership

Strong IP Position

SUCCESSFUL INVENTIONS

How can you increase your chance of success?
Technology

• **Define** the product
• Understand the level of $ & **resources** needed
• Strategy for technology **development/derisking**
• Understand **regulatory** needs
• **Re-evaluate** commercial value of invention as the landscape evolves
Business/Market

- Identify a clear need/demand
- Define **features that differentiate** you from competitors
- Use **feedback from potential customers/end-users** to guide development
- Seek **experienced and qualified partners** to commercialize your product/invention
Intellectual Property

- Evaluate the **novelty** of your invention in light of earlier work by yourself and others
- Provide **data** which meets the enablement requirements for patentability
- Understand how the patent **claims relate to your product** and how they might be **enforced**
What are investors looking for?
Show me...

1. somebody who can **sell** – preferably the CEO
2. a bottoms up sales projection
3. an “unfair” advantage
4. some team skin in the game

Adapted
Show me...

5....some **economic sacrifice** – and low overhead
6....some **passion** – fire in the belly
7....some **team depth**
8....some **reality** in the financial projections

Adapted
Show me...

9....some valuation reasonableness
10....some respect for the competition
11....a segmented market target
12....EVIDENCE OF CUSTOMER INTEREST

Adapted
Resources at University of Utah
Lassonde Entrepreneur Institute

www.lassonde.utah.edu
Service at the Marriott Library:

- **Patent search assistance** by appointment at YOUR convenience.
- **Patent document copy assistance** for U.S. and international patents, international patent families.
- **Full-text and images of U.S. patents and trademarks** on DVDs, 1790 to present, and on the Web.
- **Annual indexes** and other historical U.S. patent information back to 1790.
- Access to PubWEST, **Cassis**, **Esp@cenet** and other U.S. and international patent search tools.
- Weblinks to Intellectual Property (IP) resources from our Government Documents homepage.
Patrons can reach us:

• Marriott Library, Knowledge Commons (2nd Floor) and 1st Floor Reference Desk
  – (801) 585-6802

• USPTO Help Desk: 1-800-786-9199
  – Recorded info available 24/7.
  – Live assistance available East Coast business hours – 8:30 a.m. to 5:30 p.m.

• Dave Morrison Marriott Library
  – dave.morrison@utah.edu
  – (801)585-6802
‘Patent Searching Resources’

• U.S. Patent & Trademark Office (USPTO)
  – www.uspto.gov
• Important USPTO web pages
  – Portal.uspto.gov/pair/publicpair
• Google Patent
• Google Scholar, PubMed & general internet searching
Examples
LiveWire

- Early & Late – Sell in fault detection equipment
- Early funding: Grants
- Later funding: Investment
Echelon Biosciences

- University of Utah spin-off
- Early – sell reagents made at UU
- Late – Sell in house assays and reagents
- Early funding: Grants (SBIR)
- Later funding: Product Sales
Frontier Scientific

- University of Utah spin-off
- Early – sell reagents made at USU
- Late – Sell in house assays and reagents
- Early funding: Product Sales
- Later funding: Product Sales
Quansys Biosciences

- Early & Late – Sell in house assays and reagents
- Early funding: Research Foundation
- Later funding: Product Sales