Carnegie Mellon University
Center for Innovation and Entrepreneurship
Agile Innovation System

Lean Startup Concepts

Agenda

1.) Introduction to Agile & Lean Startups - Dave Mawhinney


3.) Videos, “How We Validated Customer Need”, Rob Daley, 4Moms

Dave Mawhinney
Serial Entrepreneur
June 2013
That Lean Startup Crap is just for lightweight Web 2.0

Elaine Chen “#Leanstartup – Hardware Edition”
http://www.slideshare.net/chenelaine/lean-startup-hardware-edition-20563840

Mike Kuniavsky “Lean Hardware startups”
http://www.slideshare.net/mikek/lean-hardware-startups-elements-of-a-ubiquitous-computing-innovation-ecosystem
There is Nothing New Under the Sun!!
Kaizen!

Rapid, Continuous, Incremental, Improvement

Source: http://en.wikipedia.org/wiki/Kaizen
In 1951, as part of the United States effort to rebuild Japanese industry, the Civil Communications Section’s (CCS) Economic and Scientific Section (ESS) developed the training film "Improvement in 4 Steps" (Kaizen eno Yon Dankai). This is the original introduction of "Kaizen" to Japan.

For the pioneering, introducing, and implementing Kaizen in Japan, the Emperor of Japan awarded the Second Order Medal of the Sacred Treasure to Dr. W. Edwards Deming in 1960.
2001: Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.
Why do most start-ups fail?

Will the dogs eat the dog food?

“A and C are a bit on the gritty side... B seems to have a bitter aftertaste... C has a good taste but a bit too mushy...”

They don’t talk to customers early and often enough!

© Dave Mawhinney 2012
Another Evolution: MVP
Minimal Viable Product – Lean Startups

Customer Development is as important as Product Development

Product Development

Concept/Bus. Plan → Product Dev. → Alpha/Beta Test → Launch/1st Ship

Customer Development

Customer Discovery → Customer Validation → Customer Creation → Company Building

© Dave Mawhinney 2012

Blank, Reis, Eisenmann
Customer Development meets Agile Product Development

The Lean Startup!
There is Nothing New Under the Sun!!

The Scientific Method

Observation: perform the experiment
Prediction: use the theory to make a prediction
Experiment: design an experiment to test the prediction
Theory: create or modify the theory

© Dave Mawhinney 2012
Phases in the Embryonic Stage

2. Feasibility
   - Benchscale Model
   - Lab Tests
   - Private Information Gathering
   - Preliminary Business Assessment

3. Verification
   - Prototype Product Design
   - "Quiet" Field Exposure
   - Real User Evaluations
   - "Seasoned" Management Team

4. Demonstration
   - Produce First Production Quantity
   - "Noisy" Customer Involvement
   - Replicate Formula for Success
   - "Seasoned" Management Team
   - Detailed Plan of Attack

5. Commercialization
   - Full Scale Production
   - Explosive Market Development
The Goodness Factor

Don Jones
Robot Entrepreneur & VC

If you enter a market that has an existing solution and your product is the same “price”, then you must be **THREE TIMES BETTER**.

Or, if you offer the same benefit, you must be **THREE TIMES CHEAPER**.

Why?

People are LAZY!!! The great HABIT FORCE is hard to break. So you must have a **GOODNESS FACTOR** to compel them to change!
The Goodness Factor

Don Jones
Robot Entrepreneur & VC
Quantitative Benefits

1. Saves Time

2. Saves/Makes Money

3. Hooks you up!

4. Fame/Recognition

5. Altruism/Doing Good
<table>
<thead>
<tr>
<th>KEY PARTNERS</th>
<th>KEY ACTIVITIES</th>
<th>OFFER</th>
<th>CUSTOMER RELATIONSHIPS</th>
<th>CUSTOMER SEGMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEY RESOURCES</th>
<th>CHANNELS</th>
<th>COST STRUCTURE</th>
<th>REVENUE STREAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---