

Entrepreneurship 101, OR
What's a nice PhD student like
you doing in a course like this?

Chris Riesbeck
Electrical Engineering and Computer Science
Cognitive Systems Brown Bag
January 28, 2014

- *Most of my curriculum development effort these days is spent on:*
 - ***agile software development (EECS 394)***
 - *how to develop software using modern sustainable team practices that deliver value as quickly as possible to the client, the team, and the organization*
 - ***software project management (MPD 405 and MSIT 490)***
 - *how to define and manage the development of software to achieve maximum value as early and sustainably as possible*
 - ***(agile development for) lean startups (EECS 473 NUvention: web)***
 - *how to create viable innovative software ventures*

NUvention: Web (EECS 473)

- *Two-quarter Kellogg / McCormick course where teams create and launch a viable software-based startup business*
- *Primary faculty:*
 - *Mike Marasco (Clinical Full Professor, Director of the Farley Center for Entrepreneurship and Innovation)*
 - *Todd Warren (advisor to and an investor in Divergent Ventures, former EECS alum and Microsoft product manager)*
 - *Steve Olechowski (Google Product Manager, former COO of Feedburner)*
 - *Rich Gordon (Professor Medill; Director of Digital Innovation)*
 - *Chris Riesbeck*
- <http://fcei.northwestern.edu/curriculum/nuvention/web.html>

Are Such Courses Relevant To Cognitive Systems PhD Students?

No!

- *They take time away from doing real research*
- *They focus on developing the team and the product, not you, the individual*
- *There's nothing academically interesting about product development or entrepreneurship*



Science vs Business

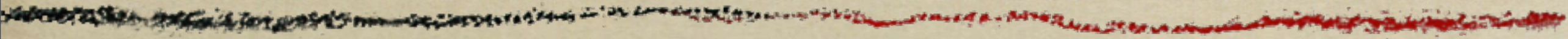
Science

- *Goal: facts and models about the real world*
- *Methods: formal models, empirical studies*
- *Progress: knowledge accumulation and paradigm shifts*

Business

- *Goal: profit, growth*
- *Methods: Trendy buzzword of the month*
- *Progress: booms and busts*

*Developing software startups is business,
not science*



Or is it?

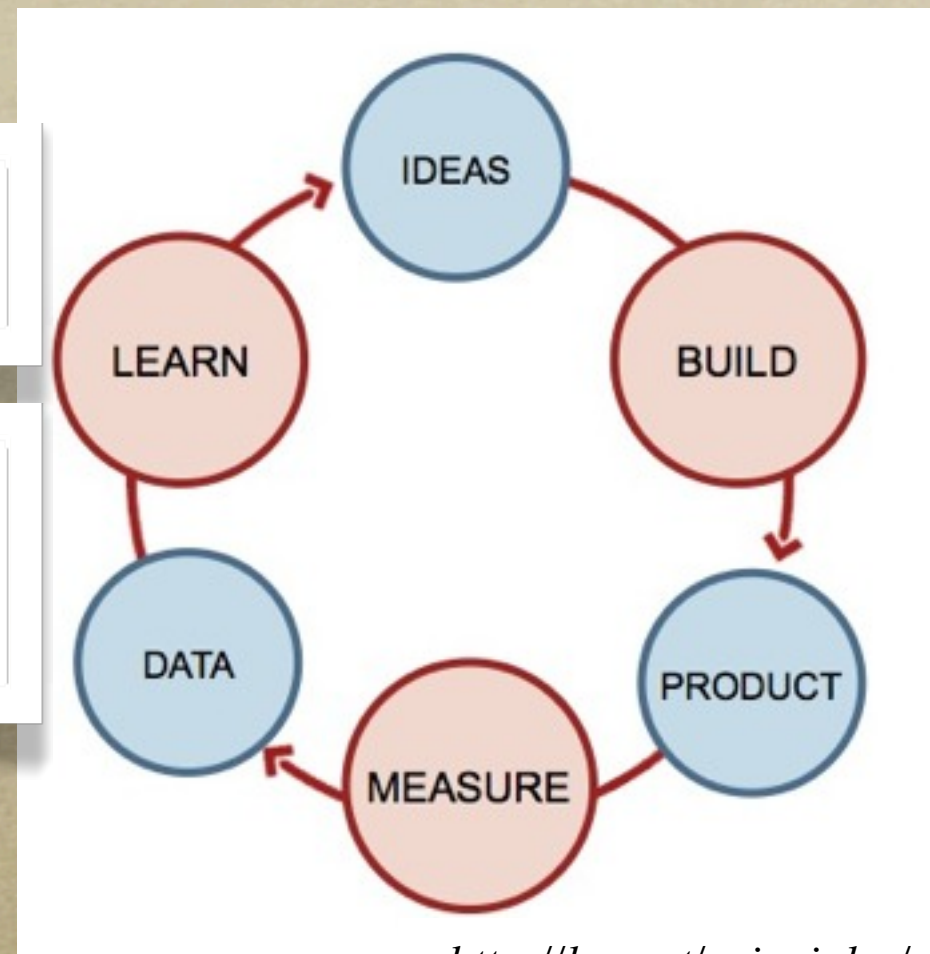
What These Courses Are About

Lean Startups

A business model describes how your company creates, delivers and captures value.

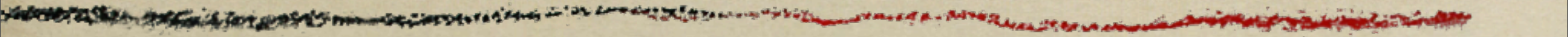
A startup is a temporary organization designed to search for a repeatable and scalable business model.

<http://steveblank.com/2010/01/25/whats-a-startup-first-principles/>



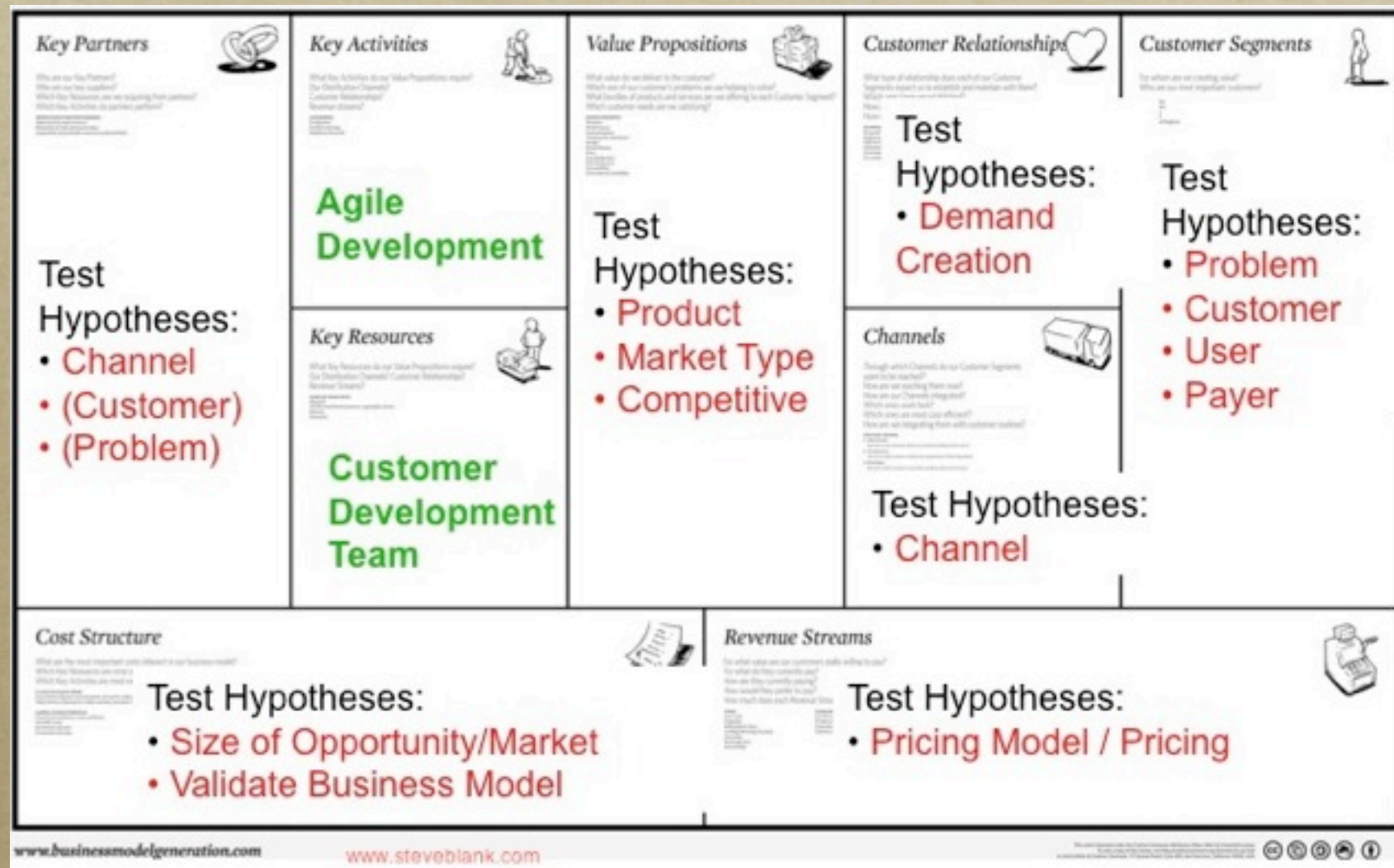
<http://lean.st/principles/build-measure-learn>

Lean startup = startup + agile development



Is creating a lean startup science?

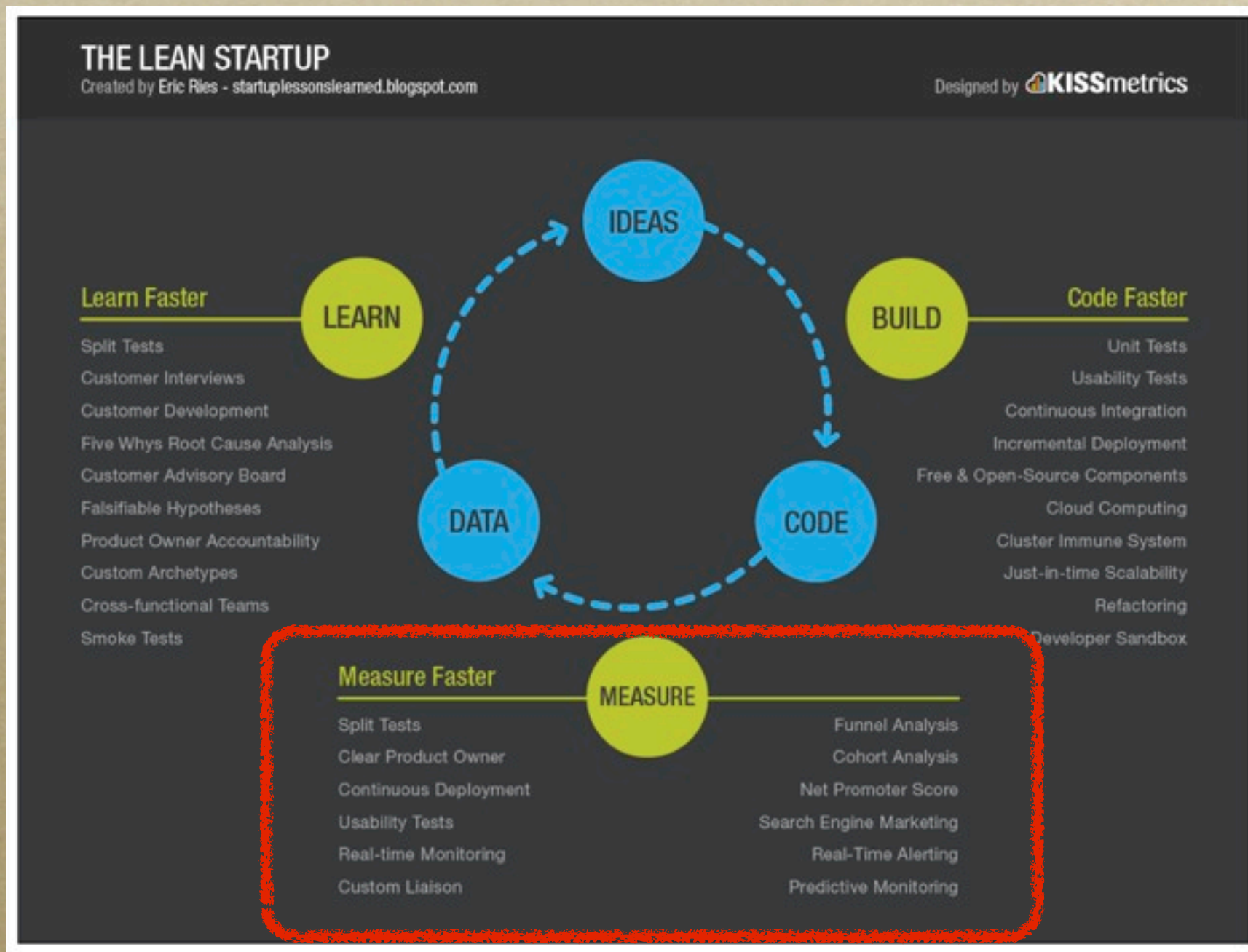
There Are Hypotheses



"One of the key tenets of Customer Development is that your business model is nothing more than a set of untested hypotheses."

<http://steveblank.com/2010/10/25/entrepreneurship-as-a-science---the-business-modelcustomer-development-stack/>

There Are Metrics



<http://startitup.co/guides/294/becoming-a-lean-startup-guru>

There are Curricula



<http://www.slideshare.net/sblank/lean-launchpad-educators-curriculum/34>

There's A Body of Practice

including...



<p>PROBLEM Agile / Lean change not effect desired level of transformation Very difficult to navigate / mitigate risks on Agile change programs Matching context to tactics left to judgement of Coach, requires massive experience</p> <p>EXISTING ALTERNATIVES Existing Agile change methods (Scrum, Open UP) Guidance from change / transformation experts (eg Kotter) Kanban</p>	<p>SOLUTION Adapt running lean to IT Agile change (canvas, stack, meta-iteration cycle, etc) Kanban to verify quantifiably Behaviour model to validate qualitatively Kanban to verify quantifiably</p> <p>KEY METRICS Number of coaches mention using the method Number of IT departments who mention using the method</p>	<p>UNIQUE VALUE PROPOSITION Validated Learning Method for Agile IT Organizational Change</p> <p>HIGH-LEVEL CONCEPT Lean Change = Lean Startup for Agile IT Transformation</p>	<p>UNFAIR ADVANTAGE Real experience running enterprise scale IT agile/lean transformations Real experience applying Agile, Kanban, Lean Startup in corporate settings</p> <p>CHANNELS Online (blog, wiki, etc) Agile community (conferences and online)</p>	<p>CUSTOMER SEGMENTS Agile Coaches and Change Agents users: change recipients undergoing change led by change agents</p> <p>EARLY ADOPTERS Change agents passionate about Kanban, leanstartup, bmgm, and Agile</p>
<p>COST STRUCTURE Package/Publish Develop base method Refine on real transformation</p>		<p>REVENUE STREAMS Community Mindshare (sell ??? books) Consulting work</p>		

There's NSF Funding!



The image is a screenshot of a web browser displaying the NSF I-Corps website. The browser's address bar shows the URL http://www.nsf.gov/news/special_reports/i-corps/. The page features the NSF logo and the text "National Science Foundation WHERE DISCOVERIES BEGIN". A navigation menu includes links for HOME, FUNDING, AWARDS, DISCOVERIES, NEWS, PUBLICATIONS, STATISTICS, ABOUT NSF, and FASTLANE. A prominent banner for "CORPS NSF Innovation Corps" is displayed, featuring a grid of blue and yellow squares and a photograph of a scientist wearing safety goggles. Below the banner, there are sections for "I-Corps Home", "About I-Corps", and "I-Corps Components". A main heading "NSF Innovation Corps" is followed by a paragraph: "The NSF Innovation Corps (I-Corps) is a set of activities and programs that prepare scientists and engineers to extend their focus beyond the laboratory and broadens the impact of select, NSF-funded, basic-research projects."

http://www.nsf.gov/news/special_reports/i-corps/

There Are Theories

- *Effectuation: a logic for entrepreneurial planning*
- *Instead of: find best means to achieve a specified goal*
- *Experiment with what can be achieved given current abilities*
- *Effectuation heuristics:*
 - *Bird-in-hand,*
 - *Affordable loss*
 - *Make lemonade*
 - *Partners not competitors*

Saras D. Sarasvathy Effectuation: Elements of Entrepreneurial Expertise

Saras D. Sarasvathy Entrepreneurship as a Science of the Artificial



Returning to the original question...

Are Such Courses Relevant To Cognitive Systems PhD Students?

Maybe. Perhaps we need a new model for what a PhD student does.



NUvention: Research?

*Minimum Viable Product **Thesis***
Fast Build-Measure-Learn loop
Out of the building exploration
Thesis Pivots

Development

Idea Testing

Team development (ILS model)
Partners (sellers, maintainers, not just co-authors)
Test-driven development

Agile

Funding

Design

MVP

Design

HCI

*Business **Funding** model, i.e., what will sustain the deployment and development of your idea?*

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