Open Innovation 101
Capital Efficient Business Models to Accelerate Innovation

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Background
the pace of innovation is challenged

- Promoted by Henry Chesbrough
  - Exec Director of Open Innovation Institute at U. California, Berkeley (formerly at Harvard)
- New markets for knowledge driven by:
  - Increasing availability and knowledge of creative workers worldwide
  - Growth and maturation of the VC market
  - External options for ideas “on the shelf” or available (including crowdsourcing)
  - Increasing capacity of external partners for ideas
  - Global expansion of IT networks
  - Capital inefficiency of “vertical integration”
Open Innovation?

- **Boundaries between firm and environment are now permeable**
  - Vertical integration (or owning the entire value chain) is “disrupted”
  - Partner for access to resources not controlled by the firm
  - Expand ideas & paths to market - knowledge is distributed widely, so buy or license it
  - Some ideas cannot or should not, be pursued by the firm directly, so spin them off
    - Christensen’s Innovators Dilemma and Solution

- **Short list of who is using it:**
  - IBM, Intel, GE, Phillips, Google, Apple, Amazon, Siemens
  - Salesforce, UnderArmour, 3M, Kraft, P&G
  - Eli Lilly/Innocentive, J&J, GSK
  - 79% draw on innovations from outside their industry! (Nine Sigma & Harris Interactive)

- **Open source and open innovation are complements**
  - Shared software
  - Projects or communities act as innovation intermediaries
Open Innovation 101, <-> bidirectional

Inside

Out

Out-license Into Other Firm’s Market

Spinoff into New Markets

Current Market

Internal Opportunities

In-license for Organic Growth

Acquisitions for Inorganic Growth

Internal Culture and Approach Designed to Support Both Directions
DNA for Collaborative Innovation

An open innovation ecosystem (from Chesbrough)
- Collaborative networks – “outside in” and “inside out”
- Private/public partnerships

Cross-disciplinary, diverse, collaborative teams working across the product life cycle (from Pisano; Boni et al)
- Organizational structures to “translate research and technology from laboratory to market” efficiently
- Technology, Business, Design, + ---

Culture built around 5 behavioral traits: “base pairs” (from Christensen et al)
- Questioning, Observing, Experimenting, Networking + Associative Thinking (connecting the dots)
Three Fundamental Lessons

1. Focus on creative value sharing

2. Create stage-appropriate financing vehicles (to cross “valley of death”)

3. Develop and grow “seasoned” management teams through collaborations, accelerators, etc.
Lesson 1: Focus on Creative Value Sharing – the Collaborative Team

Leverage academia, emerging companies, and industry to form extended teams across the value chain.
Ex 1: Eli Lilly’s FIP Net Model Spans the Biopharma Value Chain and Globe
Ex. 2: Enlight Biosciences
Created by Pure Tech Ventures

A consortium leveraging selected market driven opportunities
Lesson 2: Create “Stage Appropriate” Financing Vehicles

- Create “stage appropriate” financing vehicles for “crossing valley of death” from laboratory to clinic to patient
  - Third Rock Ventures – ab initio formation and growth of Foundation Medicine using open innovation principles learned at Millennium Pharmaceuticals
  - The Harrington Project/BioMotiv
- Partnerships, staged financing, team building from experienced industry “veterans”
Ex 1: Third Rock Ventures

Discover
Launch
Build

Foundation Medicine – leadership in personalized medicine
Ex. 2 - Harrington/BioMotiv

Harrington Discovery Institute
Innovation Support Center

Consortium of academic medical centers and pharmaceutical development partners

Nonprofit

BioMotiv

For-Profit

Breakthrough Medicine

National bio-accelerator to promote commercialization & entrepreneurship in medicine
Lesson 3: Grow “Seasoned” Management Teams

Leverage Collaborations and Accelerators
Accelerators in Bioparma are Evolving
Jlabs, QB3, Rock Health, etc.

An example from enterprise software
Two Specific Best Practices

▪ Long development cycles and “high risk” suggest a portfolio-based approach

▪ While technology is a driver, need to instill market focus very early in the process – the “lean startup methodology”
Portfolio Based Approach

Open Innovation - collaborative development across innovation ecosystem

New Market Entry

Outside in
Ideas for $, expertise, channels

Inside out
Ability to create new business models
Instill Early Market Focus (with all P’s in biopharma and medtech)

Fix it here!
Validate entry point

Patients, Providers, Physicians, Payers

MVP
Build an OI Culture into your Business Model

“Defer to Open”
- Innovation comes from anywhere in the organization
- Be receptive & seek ideas from the outside
- Be prepared to spin off “opportunities” that don’t fit current business model

Operate Lean
- Keep cost of capital low while addressing product/market fit iteratively
- Leverage partnerships across the value chain!

Creative Financing
- Use for-profit and not-for profit sources and partnerships
- Milestone funding for potential new ventures

Create and Grow Innovation Teams
- Collaborative interdisciplinary teams evolve thru commercialization and growth phases
- Access expertise via extended networks