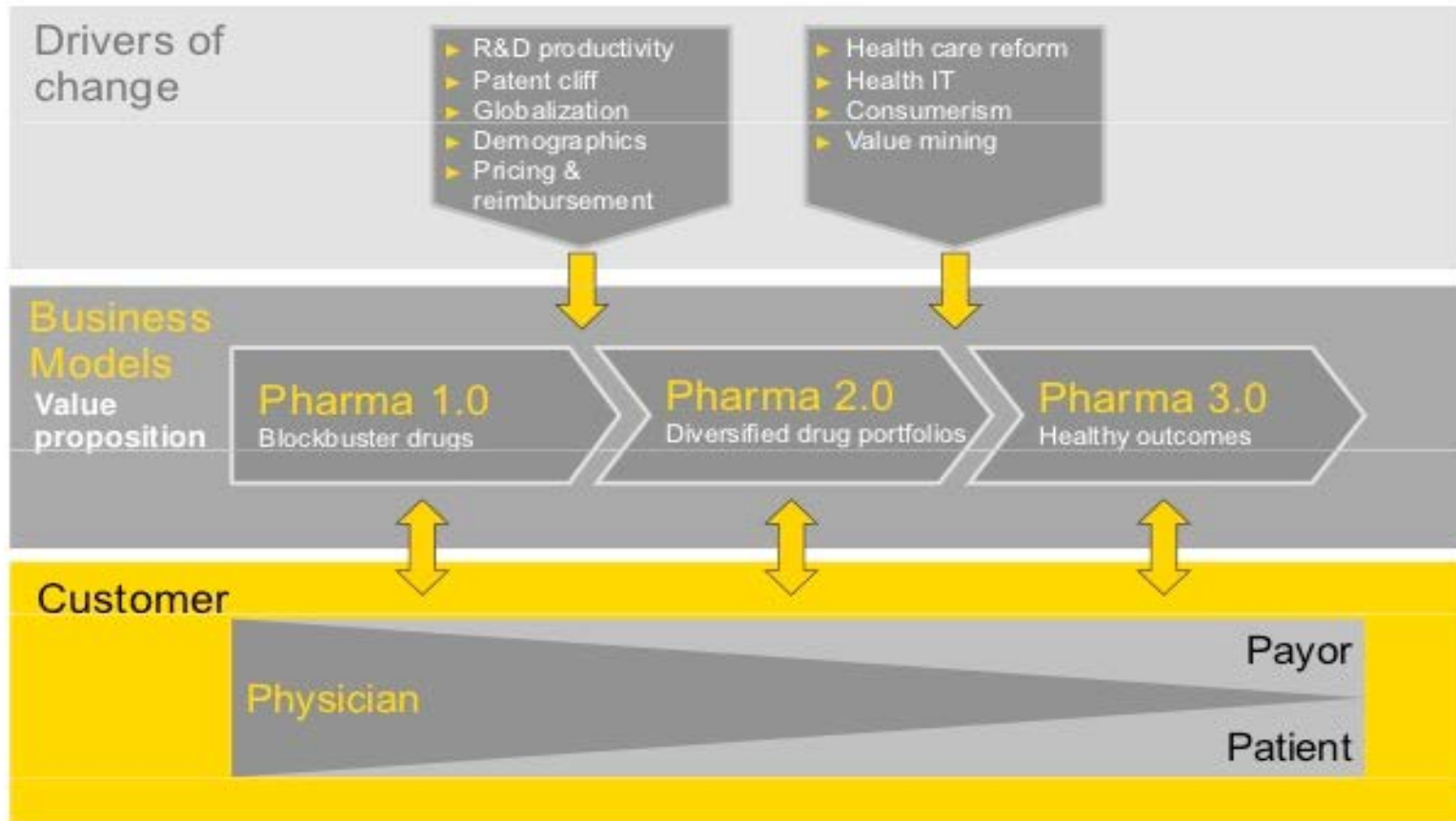


# ***Emerging Open Innovation Business Models to Accelerate Innovation in Biopharma***

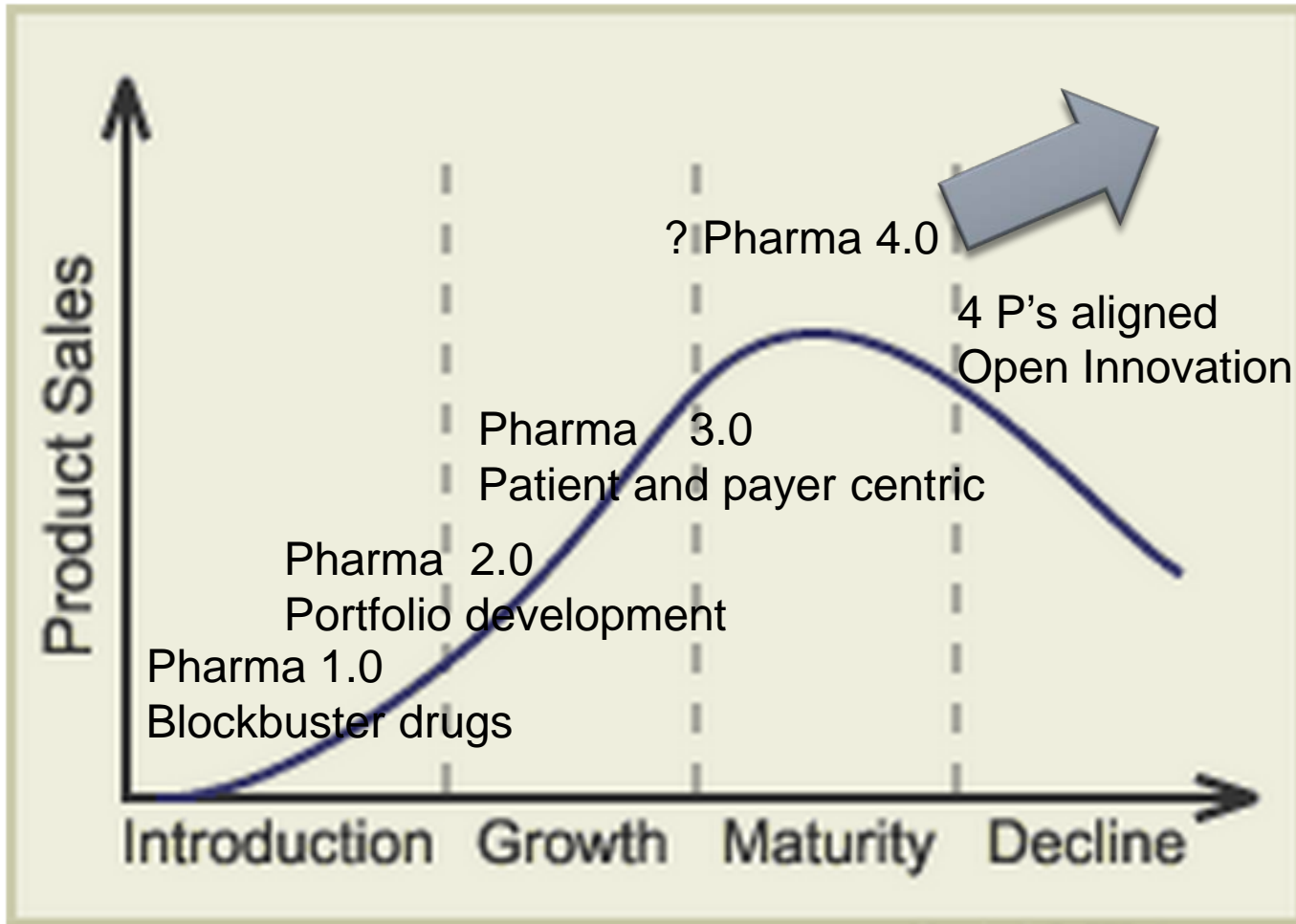
***Arthur A. Boni, PhD & Christopher W. Moehle, Ph.D  
J. Commercial Biotechnology, Vol. 20, pp. 37-44 (2014)***

# Pharma 3.0

## From drugs to healthy outcomes

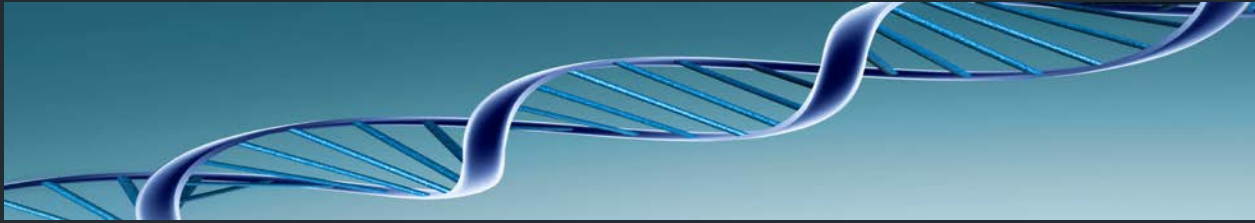


# Product Life Cycle Diagram



# *Evolution of “new DNA” for Biopharma Industry*

- Pharma 3.0 (and beyond)
  - Healthy Outcomes
    - User centric, focused on wellness and prevention
    - New collaborative business models and partners
      - Disruptive and sustained innovation
      - Social media, mobile health, open innovation, networked



## ***DNA for Collaborative Innovation***

An open innovation ecosystem (from Chesbrough)

- Collaborative networks – “outside in” and “inside out”
- Private/public partnerships

Cross-disciplinary, 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, + ---

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

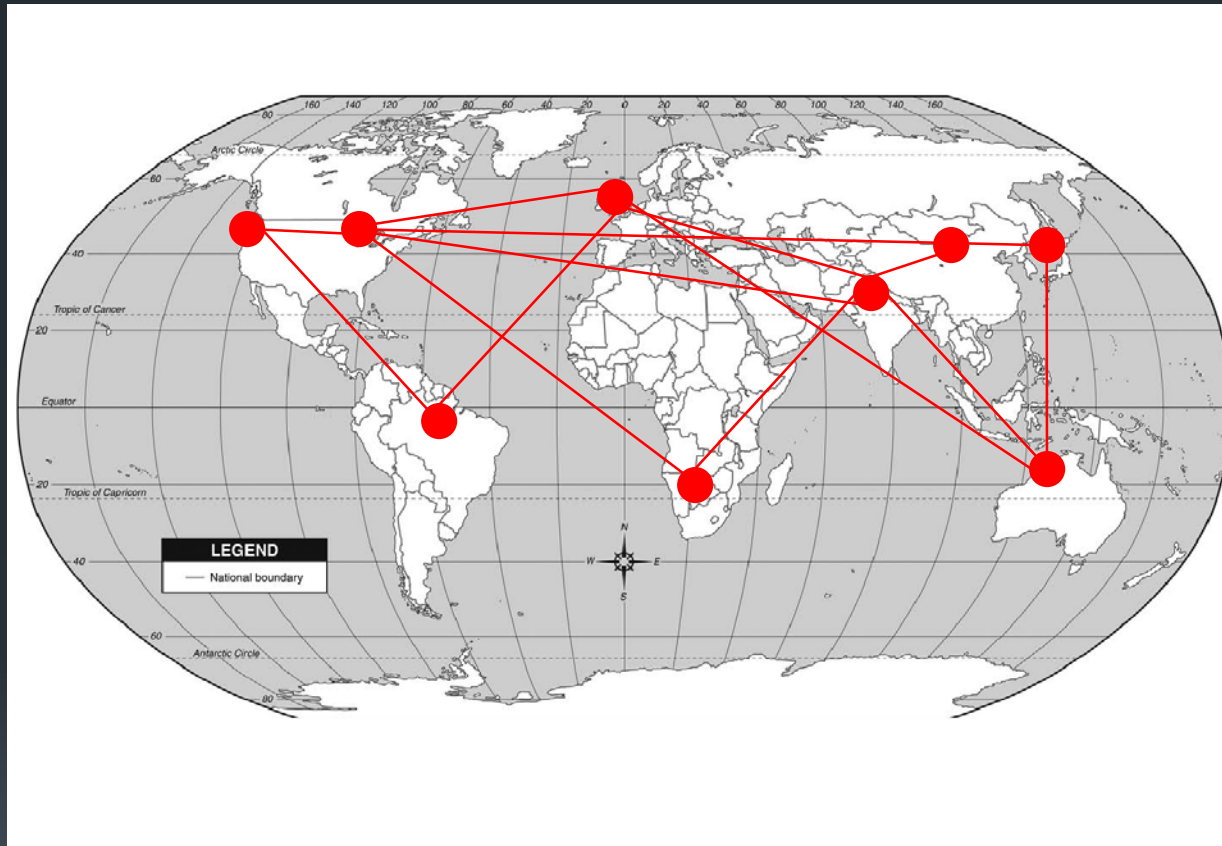


***Leverage academia, emerging companies, and industry to form extended teams across the value chain.***

# Ex 1: Eli Lilly's FIP Net Model Spans the Biopharma Value Chain and Globe

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# Ex. 2: *Enlight Biosciences*

## *Created by Pure Tech Ventures*

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*Consortium leverages selected market - driven opportunities*

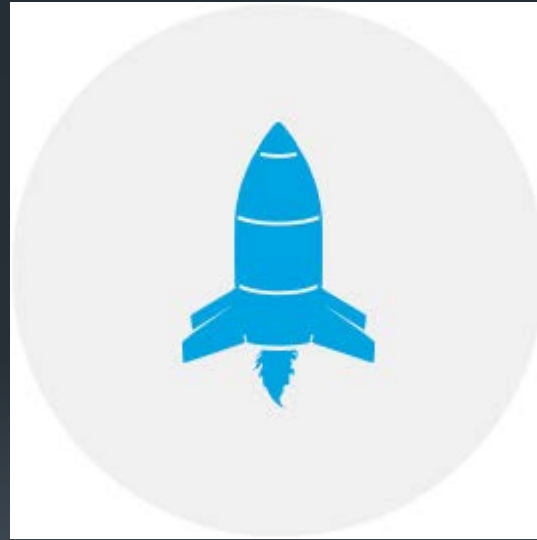
## ***Lesson 2: Create “Stage Appropriate” Financing Vehicles***

- 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”

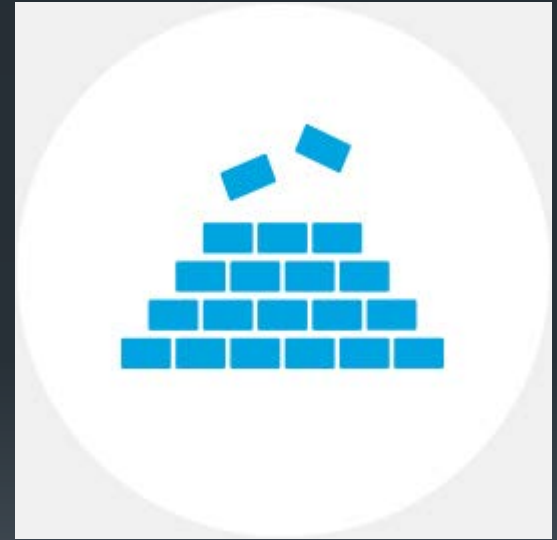
# *Ex 1: Third Rock Ventures*



*Discover*



*Launch*



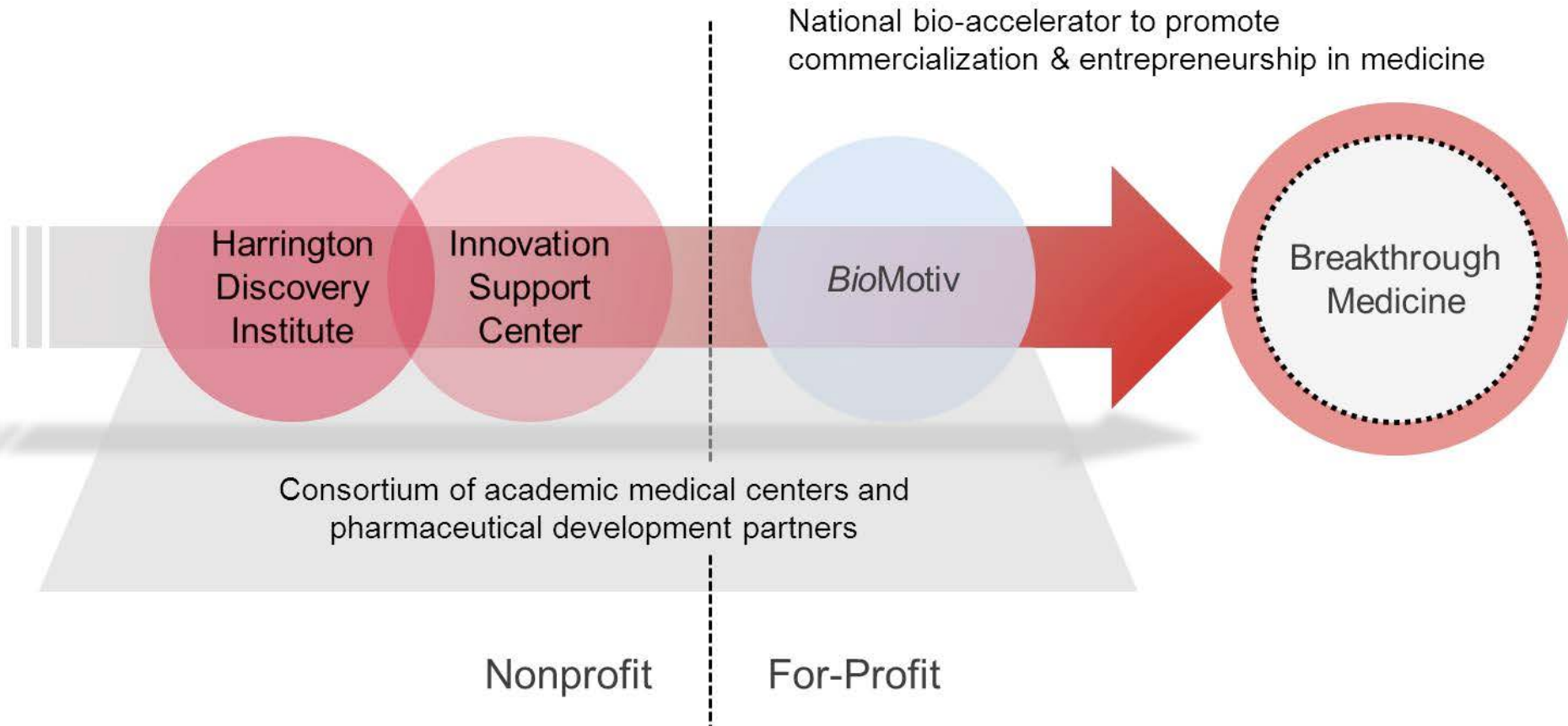
*Build*

***Foundation Medicine – leadership in personalized medicine***

# Ex. 2 - Harrington/BioMotiv

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# *Lesson 3: Grow “Seasoned” Management Teams*

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*Leverage Collaborations and Accelerators*

# CITRIX® Startup Accelerator



## What We Do.



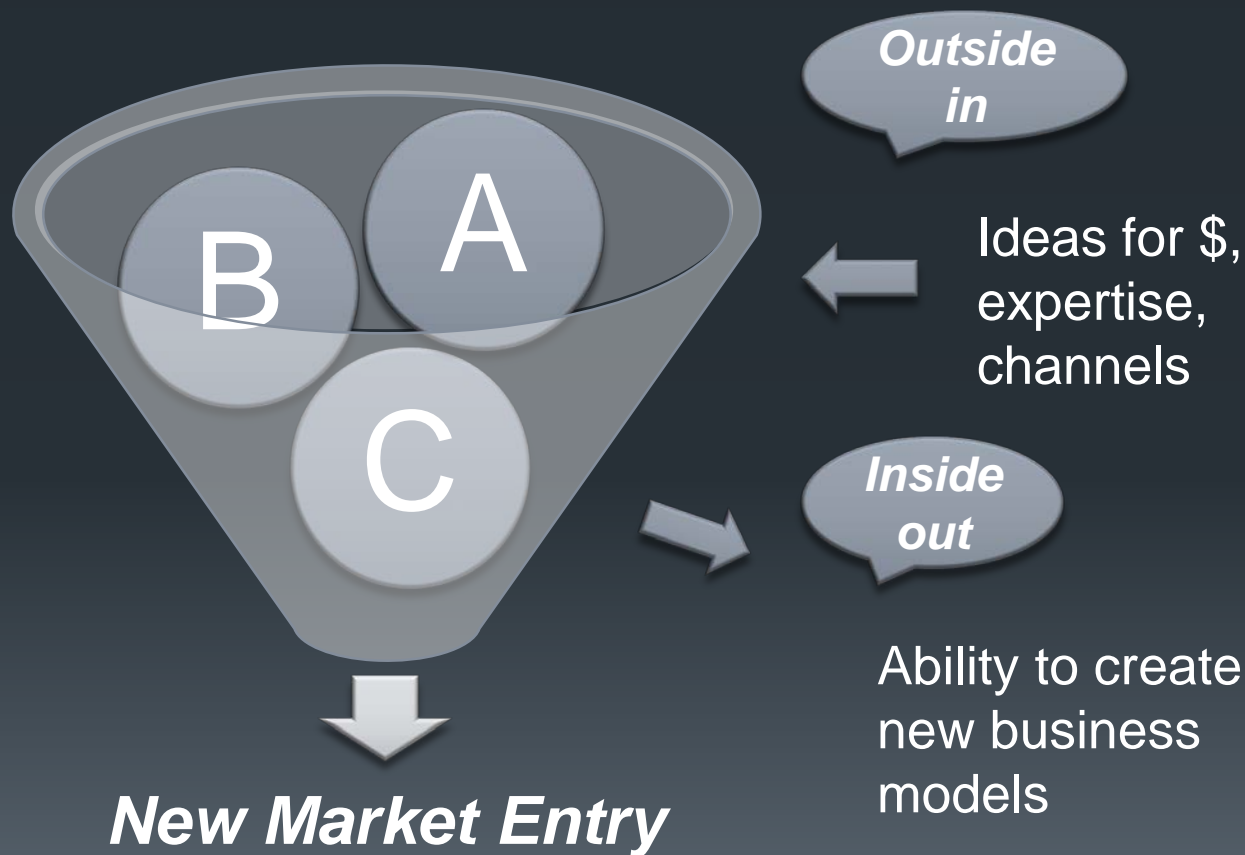
*One example from enterprise software*

## *Two Specific Best Practices*

- Long development cycles and “high risk” suggest a need for a portfolio based approach
- Need to instill market focus very early in the process

# Portfolio Based Approach

**Open Innovation** -  
collaborative  
development across  
innovation ecosystem

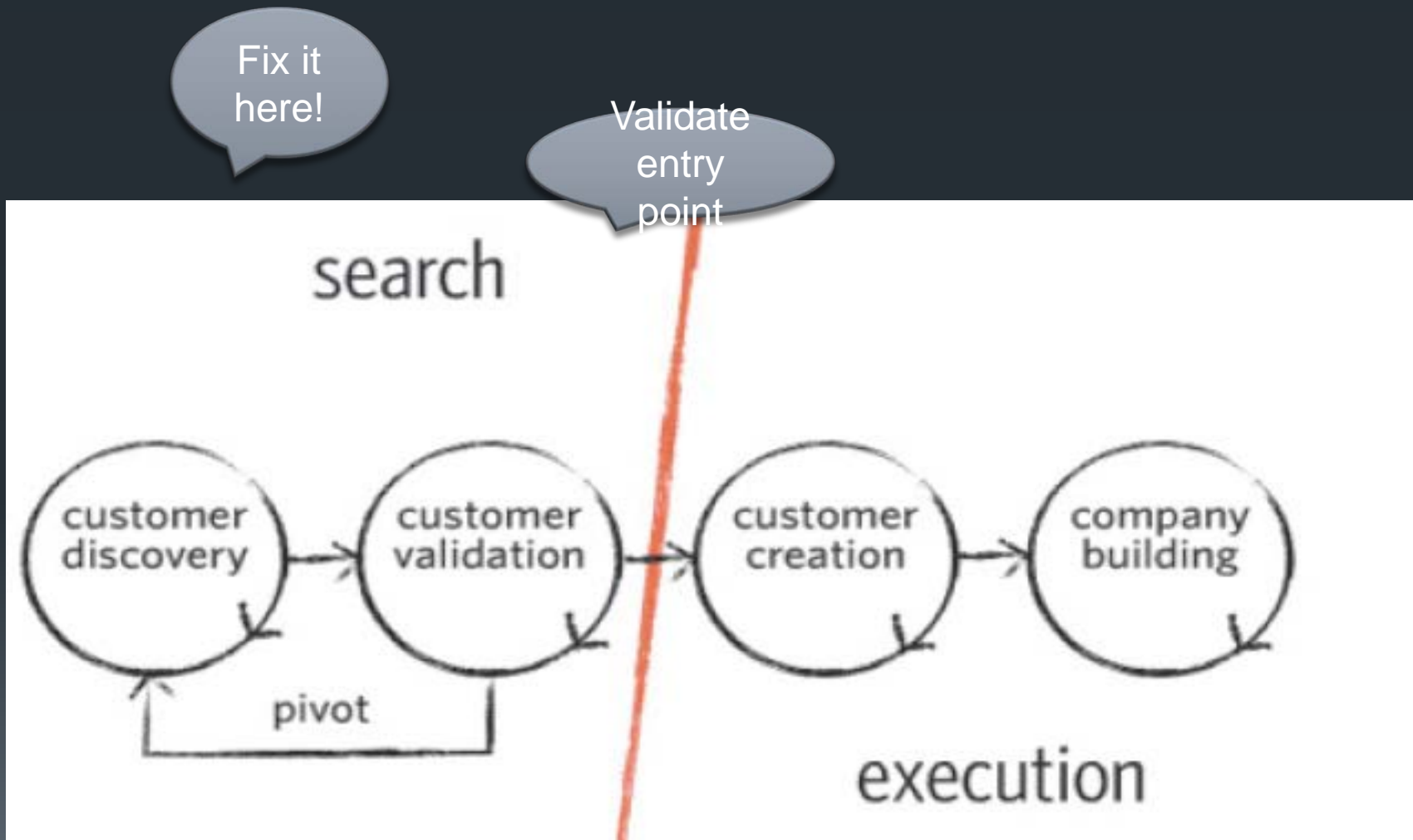




# Instill Market Focus Early

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# Four Closing Principles That Apply<sup>18</sup> Cross Industries

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## ▪ Operate Lean

- Keep cost of capital low while addressing product/market fit

## ▪ Agile Development

- Team business and technology expertise learn and adapt to market

## ▪ Creative Financing

- Use for profit and not-for-profit sources and partnerships

## ▪ Create and Grow Innovation Teams

- Collaborative interdisciplinary teams evolve thru commercialization phases
- But, some of the “DNA” embedded at the earliest stages must persist