How Venture Capital Screen Deep Tech

A Primer

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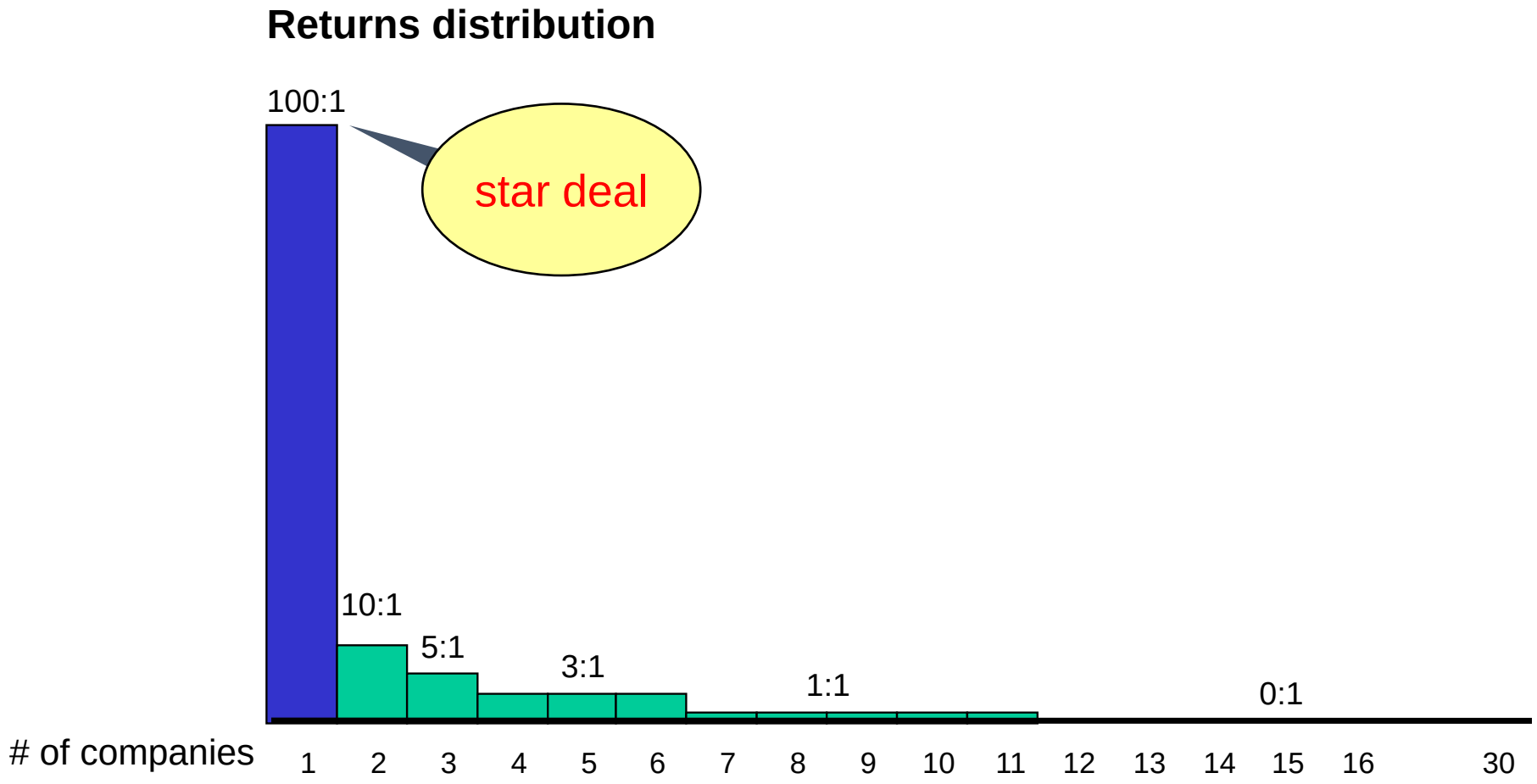
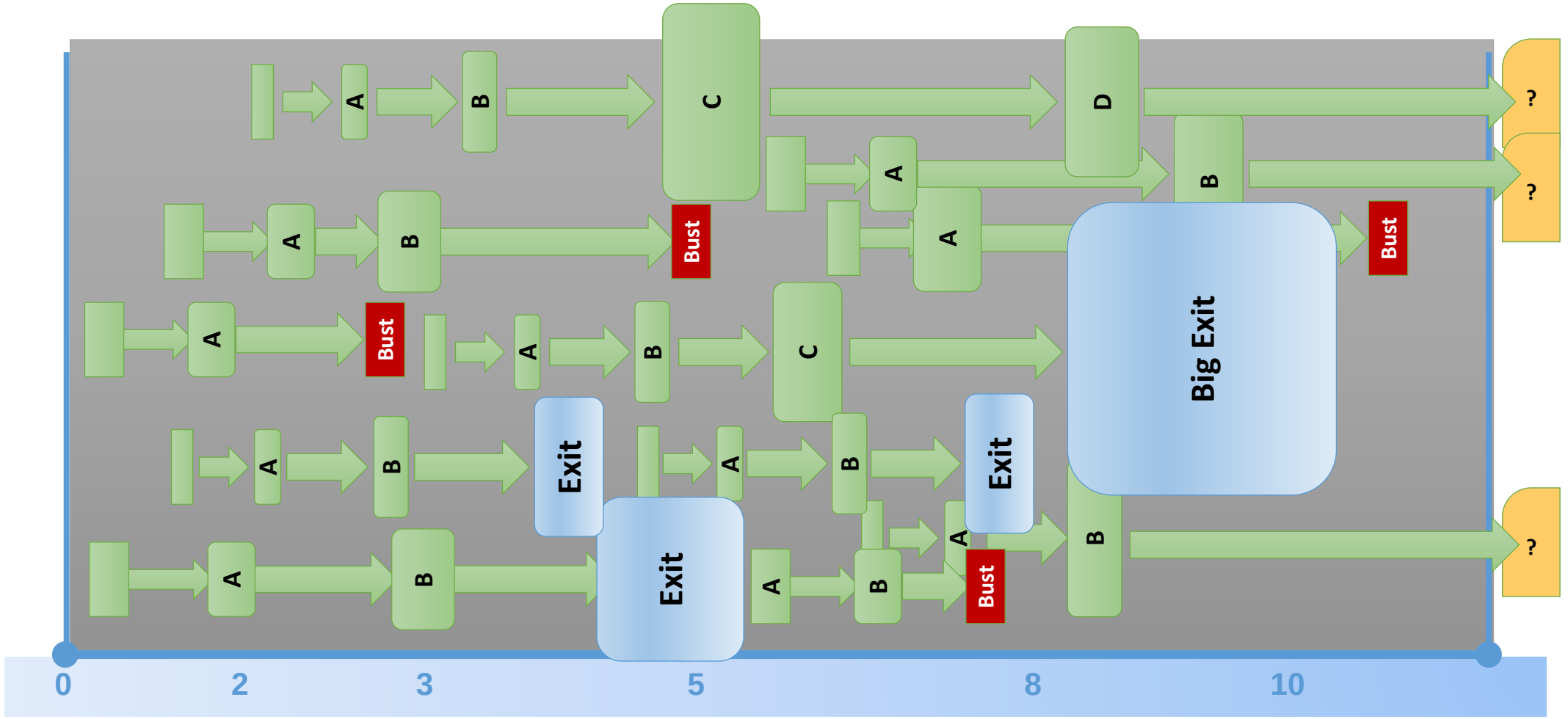
What is Venture Capital

- **Professional investors specialized in start up financing**
- **VCs invest money in exchange of equity stake of a company**
- **In addition, they take part of the company governance**
- **VCs are usually clustered**
  - Geographically concentrated
  - Stage/industry focused
- **VCs are financial investors that gain when a company is sold**
  - Different from strategic investors that seek to achieve strategic objectives
- **VCs and entrepreneurs are aligned**
  - VC's make money in the same events as the entrepreneurs
  - In comparison, strategic investors often try to maximize their own value instead of that of entrepreneurs'

Return Distribution of VC Investments



Portfolio of 10-25 Investments



The VC Funnel

Typical sourcing, screening and investment ratios for VCs

Investment Opportunities: ~3,000 per year

Initial Meetings: 300~500 per year

Preliminary Research: 150~250 per year

Term Sheet: 80~120 per year

Final Due Diligence: 40~60 per year

Invested: 30-40 per year

What Venture Capitalists Look For?

- **Great People**
- **With a Great Idea or Technology**
- **Going after a Potentially Large Market**
  - with
    - Focus …
    - … Commitment …
    - … and a Credible Execution Plan

Screening Investment Opportunities

The largest chunk of VC's time

- **Sources of deals**
  - Deal flow from repeat entrepreneurs
  - Referrals from industry contacts
  - Entrepreneurship events, competitions, demo days
  - Direct contact by entrepreneurs
  - Relationship with research institutions
- **Most investments are screened on the basis of business plan**
- **Two major areas of focus in screening**
  - **Market Test**: Does this venture have a large and addressable market?
  - **Management Test**: Does the current management have capabilities to make this business work?

The Market Test

Does this venture have a large and addressable market?

- **Main focus**
  - Possibility of exit with an IPO within investment horizon with a decent valuation
    - **Investment Horizon**: Typically 3-5 years for US VCs, 2-3 years with Taiwan VCs
    - **Decent Valuation**: several hundred millions for US capital market, tens of millions for Taiwan stock exchange
    - **Alternative Exit**: merger and acquisitions
- **The market for the firm's products should be big enough and scalable**
  - A company developing a drug to treat breast cancer is likely to have a bigger market than a company developing a drug for a disease with only 1,000 sufferers (some counter examples)
- **Barriers to entry should not be too high in the firm's market**
  - A company that developed a new search engine algorithm does not have much chance against Google
  - On the other hand, copy barrier (IP, know-how, access to resources) should be high enough to avoid imitations
- **Sometimes there is no established market for the products and services (e.g., Facebook)**
  - In such cases, spotting potential winners is more of an art than science

The Management Test

Does the current management have capabilities to make this business work?

- **Ability / personality of the entrepreneur and the synergy of the management team**
  - This is often evaluated during the process of interaction, without entrepreneurs explicitly knowing it
  - Small talks are important
- **Repeat entrepreneurs with track records are the easiest to evaluate**
  - Experienced professionals are also preferred over newbies
  - Prepare your resume to enhance your credibility
- **Early stage investors may spend quality time with promising entrepreneurs**
  - Majority of investors will simply walk away from deals with obvious flaws
  - If early-stage investors find the team promising but has some fix-able issues, they may choose to help the team instead of rejecting them
- **An often spoken mantra among VC**
  - *I would rather invest in strong management with an average business plan than in average management with a strong business plan*

Basic Checklist for Screening

Determining if the opportunity is a fit for the venture capital

- Do I believe in the future of the industry and the business model?
- Do I believe the people involved can get the job done?
- Is the product properly defined and the market is sizable enough?
- Does the product/technology/company have a sustainable competitive advantage?
- Do I share similar expectations of value and outcomes with the team?
- Can I add value to the company/process given my involvement?

Due Diligence

What Does Venture Capitalists Look for?

Investors are actually looking for a reason NOT to do a deal…

The Due Diligence Process

How venture capitalists conduct due diligence

- Identifies areas of key risks, and address them in a systematic way
- Evaluates the team, the market, product roadmap, and sales pipeline
- Investors will call contacts in industry to refine their point of view
- 3rd Party Due Diligence: talking to suppliers, customers, key partners
- Volley questions back and forth with the startup

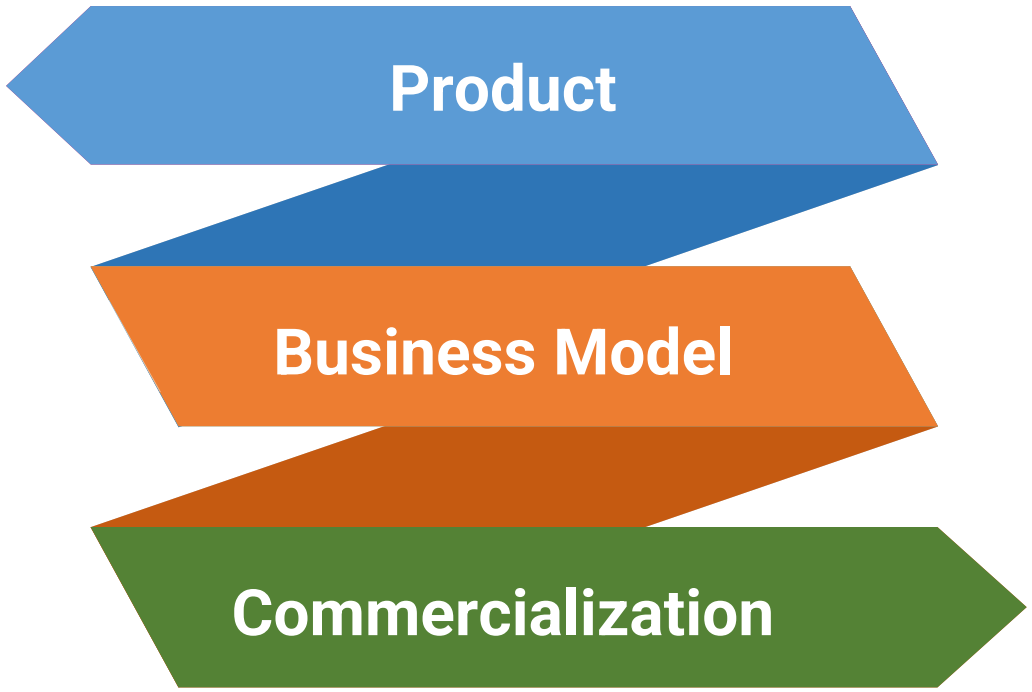
Risks and Mitigations

Is the team aware of the risks? How are major risks addressed?

Execution	• Can the team execute on the plan and within budget in a timely fashion?
Market	• How big is the market opportunity? Is the market growth sustainable?
Product	• Do we have a product-market fit? Threats by alternatives and substitutes?
Business Model and Ecosystem	• Is the business model realistic? Does the team have enough bargaining power in the ecosystem?
Competition	• How does the competition compare in terms of cost and performance?
Technology	• Does the team has strong technology edge, and clean and blocking patents? Freedom to operate?
IP	• Does the company has freedom to operate? Can the company block others from competing?
Financing	• Can the company raise enough money to carry it through the development phases?

Challenges for Startups from Research Institutes

Translation from research to commercialization



1

Product Definition

Choosing the right problem to solve among dozens of potentials. Validate value proposition.

2

Models of Innovation

Identifying and addressing the challenges of different models of innovation

3

Plan for Commercialization

Development methodology. Team composition. Go-to-market strategy.

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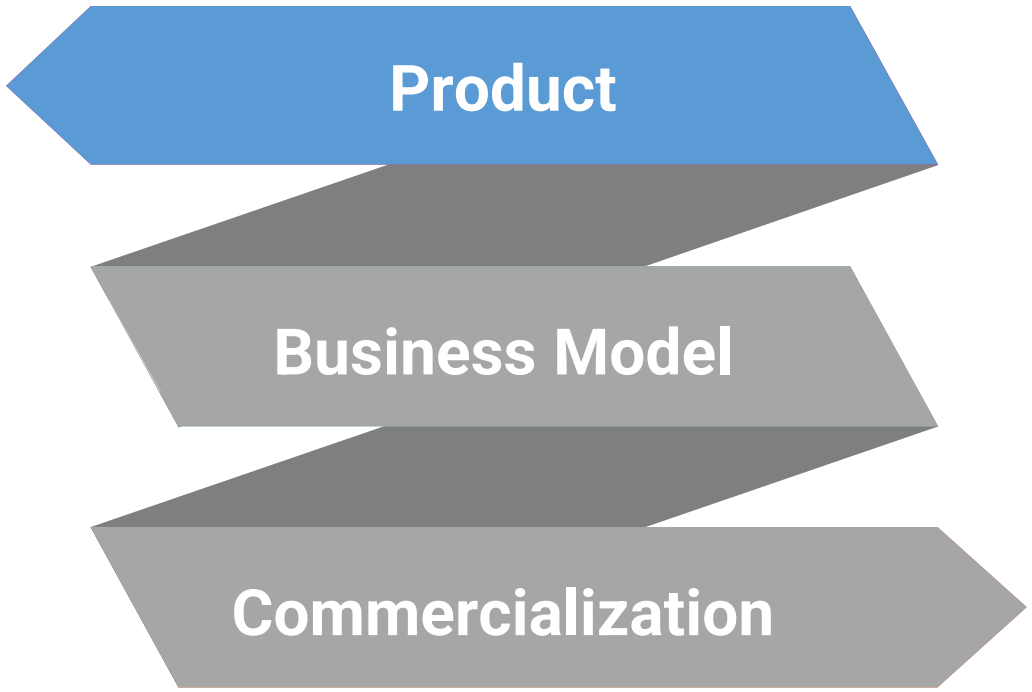

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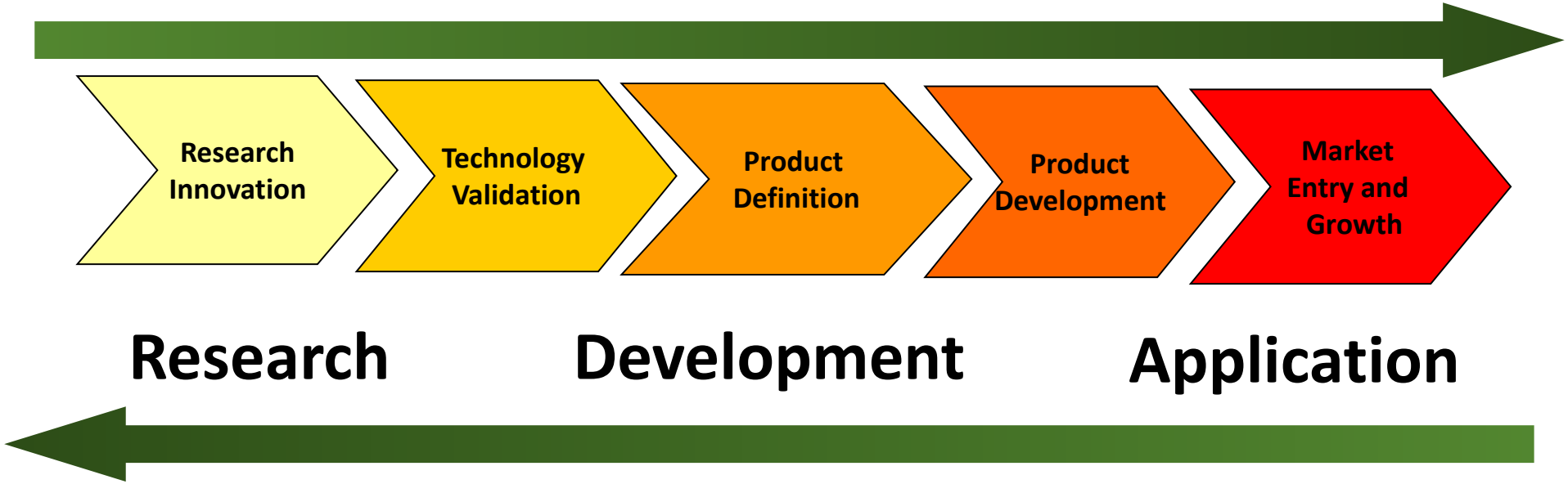
Which Direction to Start?

Approaches of technology innovation

Technology-Driven Innovation

- Novel technology with broad potential applications
- Availability of skilled personnel with appropriate knowledge and understanding of the market



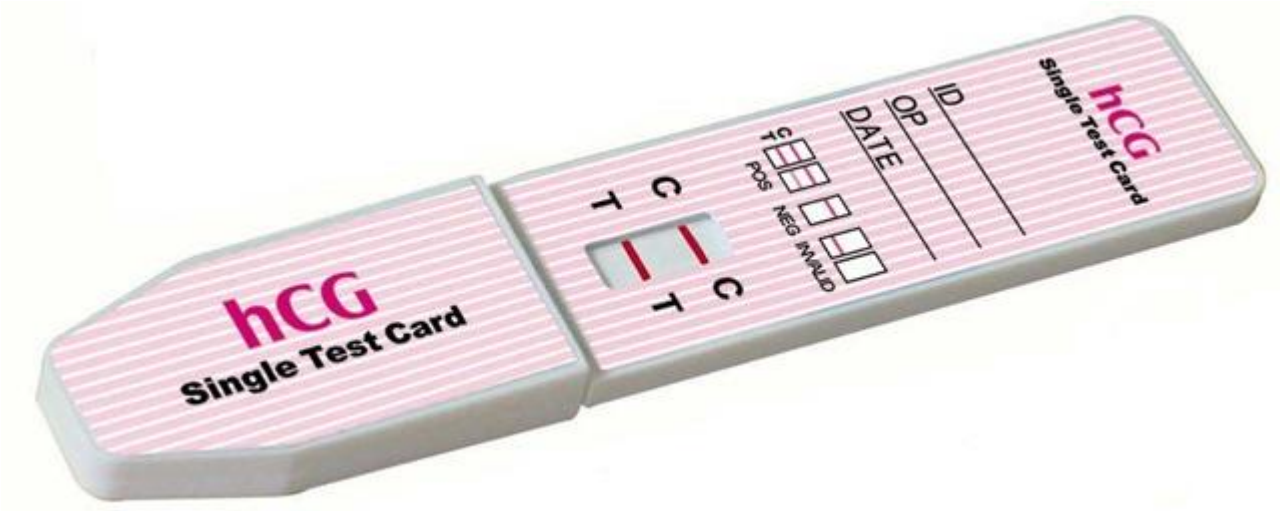
Market-Driven Innovation

- Gaps and unmet clinical needs
- Well-defined market opportunities

Main Commercialization Challenge

Identifying and defining appropriate application/product for a given technology

- **Example: Pregnancy Test**
  - What are the products that can be derived from Human Chorionic Gonadotropin hCG assays?



Example: Pregnancy Test

The same technology can be translated into different products

For Those Who are Trying to Conceive

For Those Who are Trying NOT to Conceive

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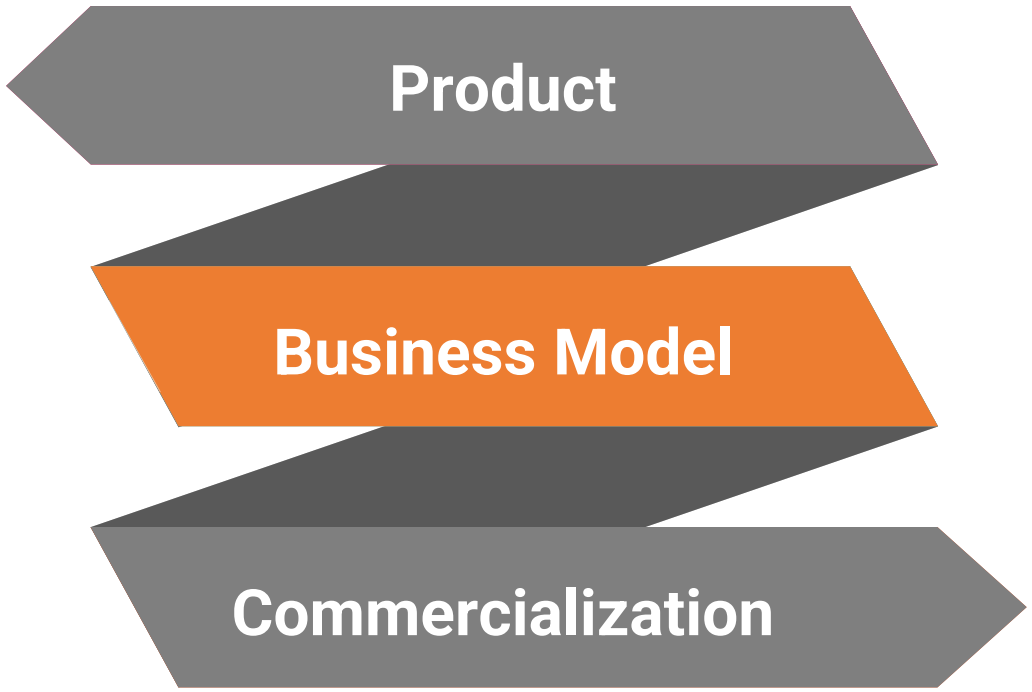

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Choices of Business Models for a Given Technology

OPTION 01

Technology Provider

License enabling technology to downstream players. Profit from licensing fee.

OPTION 02

Component Provider

Transform key technology (software and/or hardware) into a key component. Generate revenue by selling components.

OPTION 03

System Provider

Comines key technology with other components into a system. Generate revenue by selling the system.

OPTION 04

System Integrator

Use key technology as core to integrate systems for customers. Generate revenue through customization projects system integration fee.

OPTION 05

Service Provider

Use key technology as core of certain subscription / pay-per-use service. Generate revenue by providing service to users.

OPTION 06

Solution Provider

Combine key technology with other components into a total solution/service package. Sells / leases the solution for revenue.

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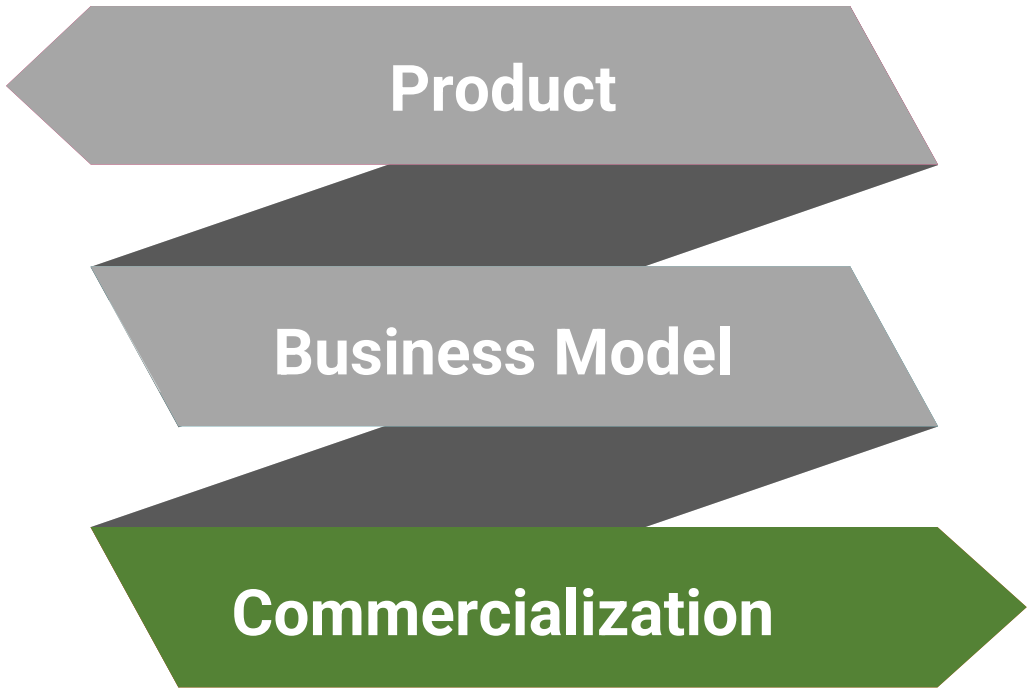

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Thin Innovation versus Thick Innovation

Thin Innovation

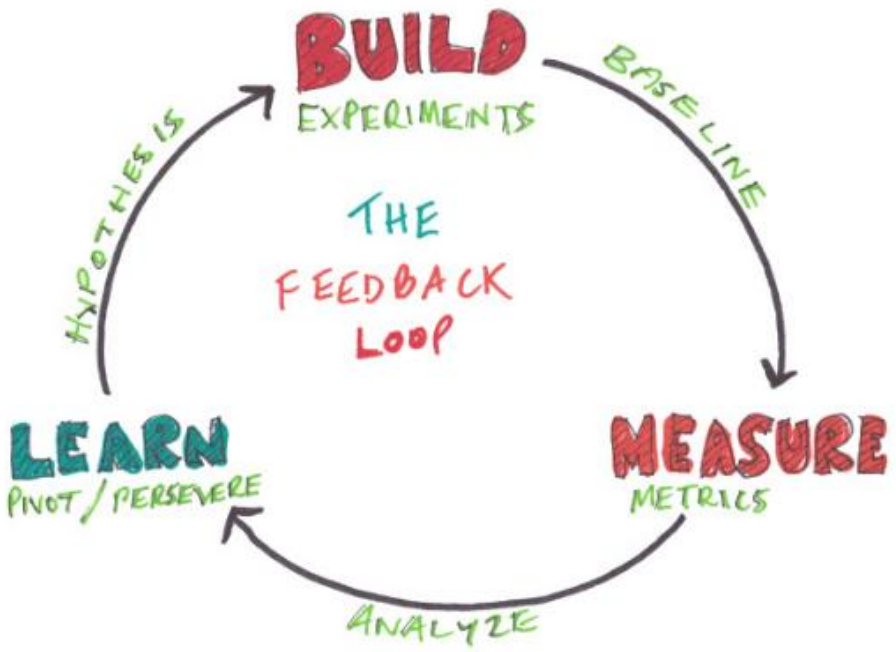
- Industries: Internet, O2O, Mobile Internet
- Derived from a smart idea or business model
- Often has a low technology barrier
- Typically a multi-sided platform with strong winner-takes-all economics
- Suitable for lean startup model
- Key Success Factors
  - Time to market
  - Proximity and intimacy with target market
  - Adaptive team with strong execution

Thick Innovation

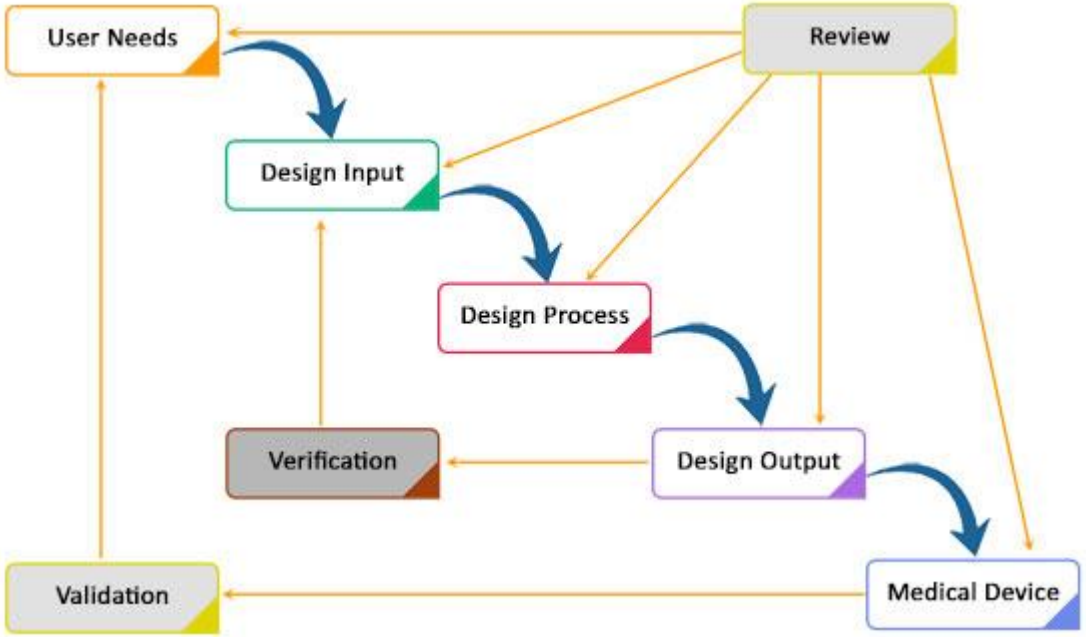
- Industries: Material Sciences, Biotech, Energy, Clean-tech
- Derived from multiple years of advanced researches
- High technology copy barrier protected by strong IPs and technology know-how
- Often require large amount of R&D and Capex
- Key Success Factors
  - Solid technology and IP
  - Detailed planning
  - Feasible and realistic funding plan

Differences in Development Methodology

Lean Startup Model



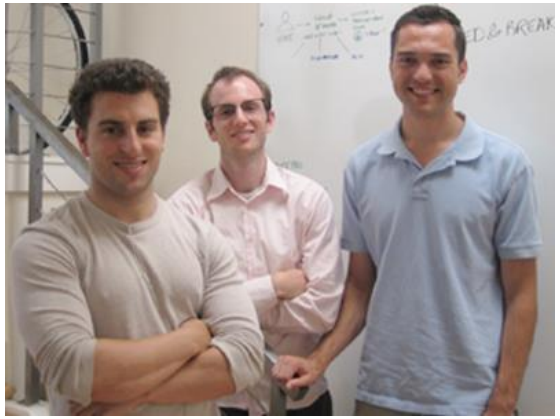
FDA Waterfall Model

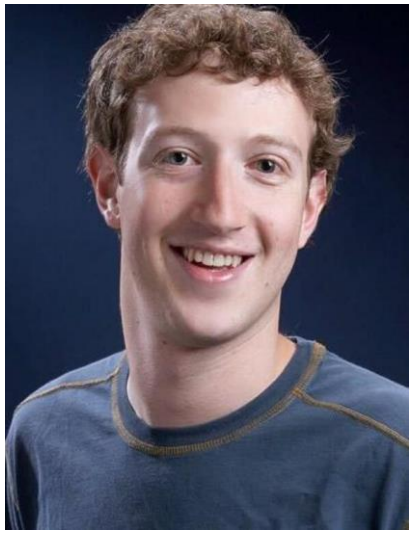


Differences in Entrepreneurs

Young and energetic versus seasoned and experienced

Internet Entrepreneurs

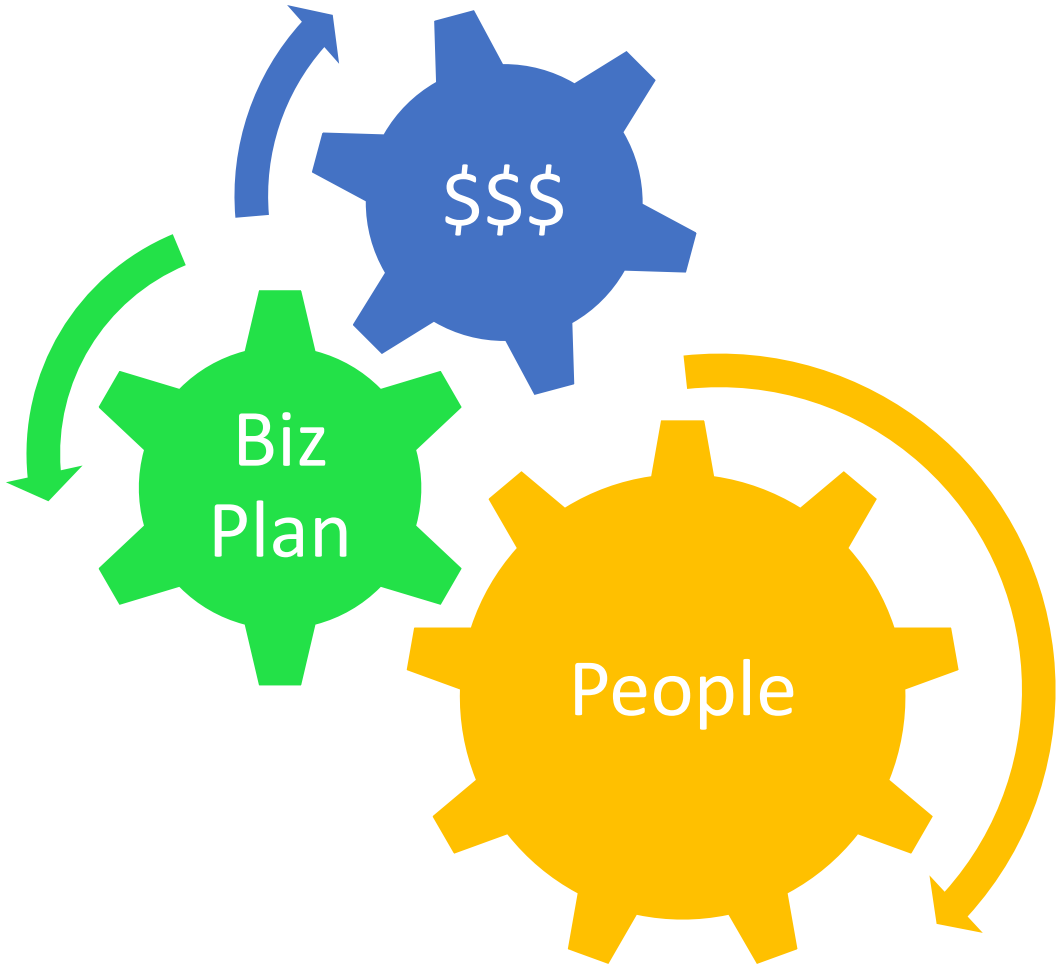




Biotech Entrepreneurs

Getting the Business Started

Key ingredients in technology startup

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