Commercialization for Researchers

A guide for business planning by scientists and engineers

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Technology Commercialization

- Commercialization is the monetization of innovation
- Commercialization occurs through
  - Licensing
  - Development as part of a large company
  - Development as an entrepreneurial venture
- Commercialization interests
  - Universities and Research Laboratories
  - Sponsoring Corporations
Forms of Entrepreneurial Organization

- Wheeler-Dealer Business
- Lifestyle Business
  - Licensing Strategy
- Glamour Business
  - Rapid Growth
- Establishment Business
  - Managed Growth
About Risk

- **Technological Risk**
  - Will it perform?
  - Is it scalable?

- **Market Risk**
  - Who is the customer?
  - What is the price point?

- **Financial Risk**
  - Investment Alternatives
  - Timing of Investment Return

- **Management Risk**
  - Management Capacity
  - Organizational Team
Commercialization Team

- Inventor/Scientist
- Monitor
  - Tech Advisor, Validator
  - Professional Consultant
  - Approval Agency
- Champion
- Sponsor
  - Investor
  - Resource Provider
- Stakeholder
  - Potential Customer
  - Related Beneficiary
The Business Plan

- Detailed map of structure, strategy and finances of a business
- Appropriate for strategic planning
- Appropriate for seeking debt and equity financing
- Inappropriate as a starting point
The Business Model

- Similar to a Theoretical Model
- Key Components of the Business Model
  - What need will you satisfy?
  - Who are your potential customers?
  - What is your unique value proposition?
  - What is your cost structure?
  - What will be the revenue streams?
One version of a business model canvas
Needs and Customers

- What need will you satisfy?
  - Three most important problems you innovation solves
  - Pain points
  - Are they strong Wants?

- Who are the potential customers?
  - Characteristics of the customer (person or organization)
  - Reasons they want the solution
Value Proposition

- Reasons solution will be chosen by the customer over other possible solutions and other possible money uses

- Supporting Components
  - Solution Description
  - Metrics that drive customers to the solution
  - Unfair advantage over alternatives
  - Channels to the market
Cost and Revenue

- Cost Structure
  - Production or Sourcing, Inventory
  - Management team and employees
  - Marketing and Distribution

- Revenue Streams
  - Who will pay? How will they pay? How much will they pay?
  - Accounts Receivable. Collections.
Testing the Model

- Testing Assumptions about Customer Wants
  - Review of Competitor Offerings and sales
  - Survey of customers, distributors
- Testing Assumptions about Distinct Advantage
  - Marketplace Technology Developments
  - Marketplace sales channels
- Testing Assumptions about Cost Structure
Moving to the Business Plan

- Investor Perspective
  - Experience of the Investor
  - Alternatives of the Investor
  - Timing of the Investment and the Payoff
  - Desires of the Investor

- Presentation of the Plan
  - Completeness builds confidence in the entrepreneur
  - Must be the entrepreneur’s plan
The People

- Founders
- Members of the Team
  - Do they provide skills needed to support the founders?
  - Are they committed to the vision of the enterprise?
- To be employed in the venture
- To provide support to the venture
  - Monitors & Sponsors
The Opportunity

- The Product or Service
  - Does it have a discernable advantage?
- The Market
  - Is the market large or growing?
- The Industry
  - Is the industry structurally attractive or can it become so?
  - Do industry practices require customer or supplier financing?
The Opportunity

- Will the customer understand the product or service?
  - How much education does the customer need?
  - Is this a compelling customer purchase?
  - How much does it cost to acquire a customer?

- Are customers a potential target for related or follow-on products or services?
  - Does the product or service have the potential to build loyalty?
The External Context

- General Market Context
  - Are investors looking for opportunity or holding cash?

- Alternative Products and Services
  - Will market conditions or familiarity encourage customers to stay with existing solutions?

- Financial Context of Industry
  - What is the history of financial success in the industry?
The Pro Forma Financials

- Income Statement
  - Quarterly for three years
- Balance Sheet
- Sources and Uses of Funds
- Cash Flow Analysis
  - Monthly for three years
The Deal

- From whom should the money be raised?
  - Debt
  - Equity
  - Suppliers or Customers

- How much money is needed and for what purpose?

- What deal terms are fair and provide appropriate incentives for each side under a wide range of scenarios?
NBDC Resources

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