



Market Analysis

Biotech Connection: Bay Area

Former Oxbridge Biotech Roundtable

Stanford Innovation Farm Program

September 16, 2014

Executive Summary

1. Selecting a **successful product**
 2. Defining the **market**
 3. **Market analysis:** leveraging primary and secondary research to quantify value addition
 4. **Due diligence:** market and industry, path to mass production, substitutes, barriers to entry
-

Successful Product

PRODUCT

- **Proprietary** (Jack Daniels vs. whiskey)
- **Substitutes** (coke vs. sequencers)
- **IP** (patent)
- Us vs. them (Tesla vs. Ford)
- Can be **re-used** widely (wheel)
- Improve **user experience** (heated car seats)

MARKET

- **Size** (vanilla vs. garlic ice-cream)
 - **Growth** (iTunes vs. CDs)
 - **Segment** (beer vs. cognac drinkers)
 - **Competition** (space stations vs. mobile phones)
 - **Barriers** to entry (FDA)
 - **Industry** (high tech vs. woodwork)
 - **Drivers** (technology vs. rare disease)
-

Successful Product

CUSTOMERS

- **Who** (researcher? clinician?)
- **Need** (analytical assay vs. diagnostic tool?)
- **Want** (convenience? price?)
- **Now vs. future** (tattoos)
- **Reach** them (ads, shows, conferences, papers...)
- **Keep** them (customer service, improvements, consumables, barriers to move)

OTHER

- **Costs to launch** (R&D, regulations, infrastructure, marketing...)
 - ... vs. abilities (grant vs. cost)
 - **Profit** (luxury car vs. pen)
 - **Infrastructure?** (lab space? machinery?)
 - **Management?** (researchers vs. MBAs?)
 - **Suppliers?** (uranium vs. NaCl)
 - **Channels?** (CVS vs. hospitals only)
-

Product: SWOT analysis

Device, technology, piece of software etc. E.g. **medical device**

STRENGTHS

- Margins
- Access to incubators/innovation
- Hard to replicate
- New/best in class

WEAKNESSES

- Regulatory structure (FDA)
- Costs
- Customer pushback
- Price

OPPORTUNITIES

- Superconsumers (information-hungry)
- Mobile device compatible
- Fads

THREATS

- Device tax (may be removed)
- Tough to get funding
- Healthcare reform puts admins in charge (costs)

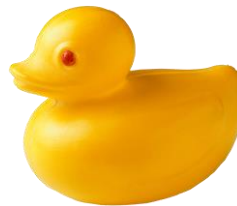
Market

Market is a mechanism through which a business delivers value proposition.

BUSINESS



CUSTOMER



Market

Market is a mechanism through which a business delivers value proposition.

BUSINESS

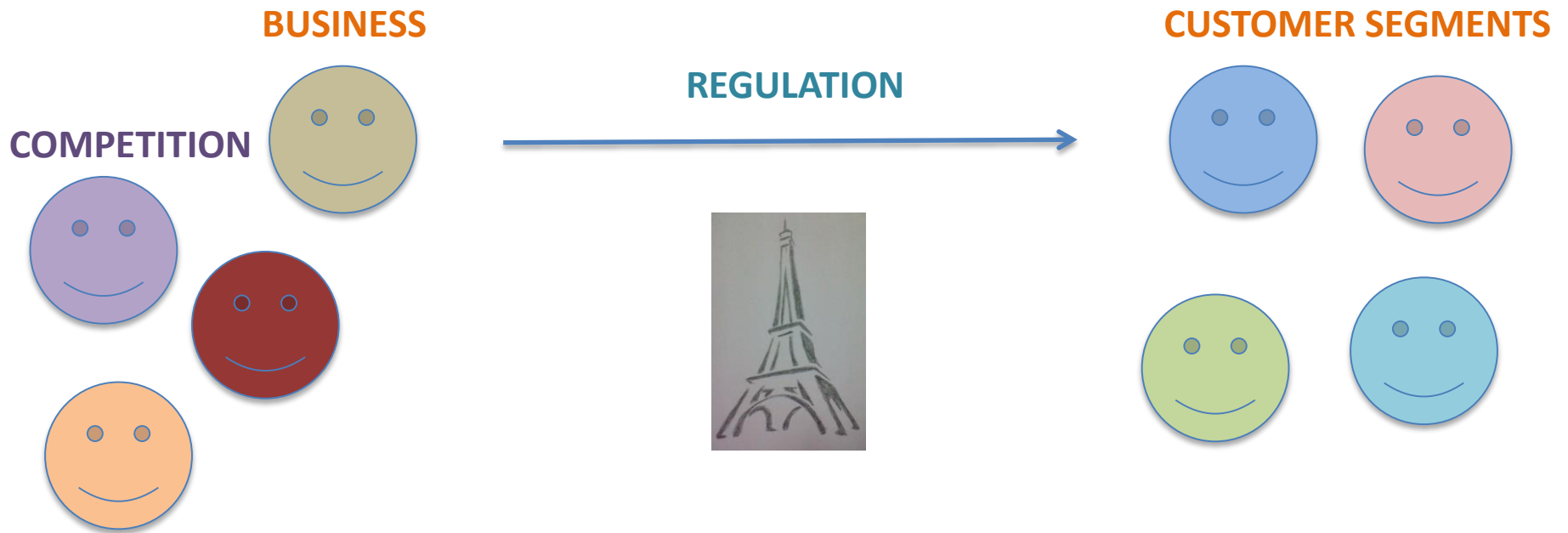


CUSTOMER



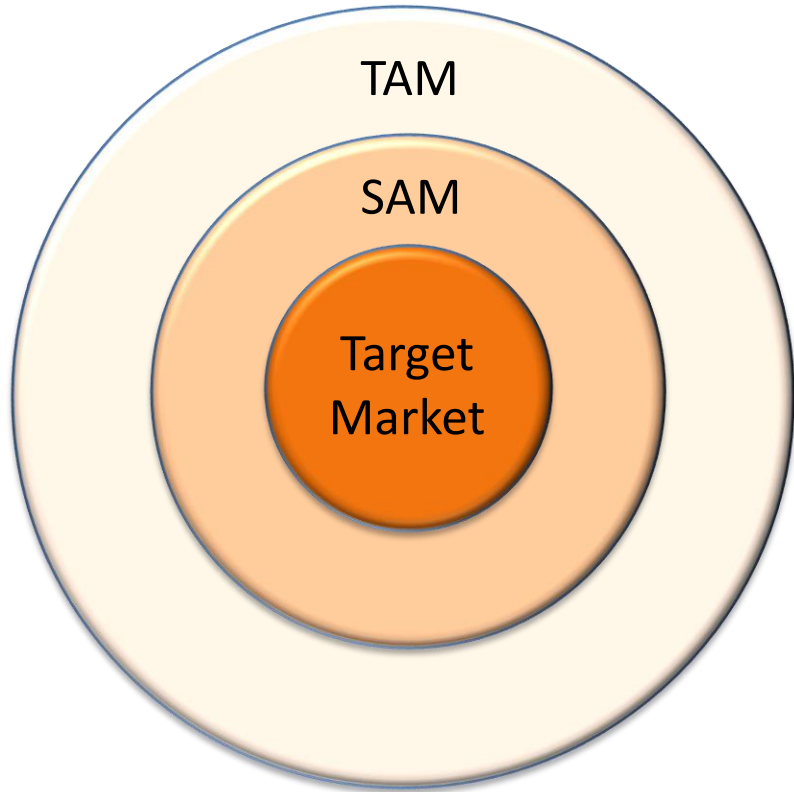
Market

Market is a mechanism through which a business delivers value proposition.



Estimating Market Size

- Quantifies the financial potential of your business
 - Helps you refine business model hypotheses:
 - Very small market size may not be worth pursuing
 - May be difficult to gain traction in a gigantic market
 - Two measurements:
 - Money (usually USD)
 - Units
 - People
 - Consumption (e.g. washloads, room nights, kilowatt hours, etc.)
-



Total Addressable Market (TAM):

Value of all of the buyer/seller relationships participating in the market

Served Addressable Market (SAM):

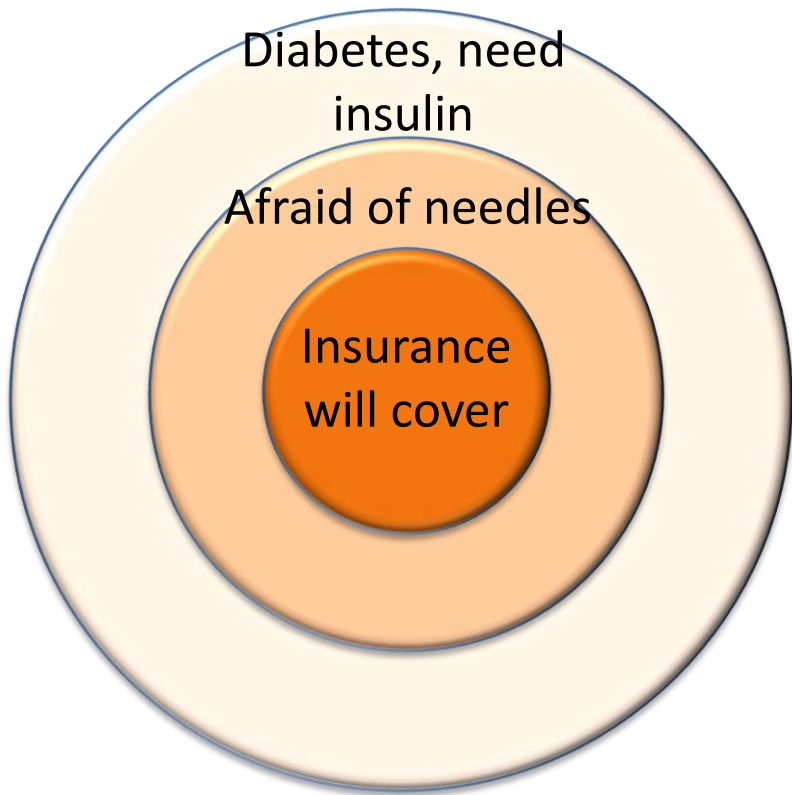
The part of the TAM for which your business model's value proposition is strongest

Target Market:

(Usually) demographic segment of the SAM with the most direct path to success

Target market should be proportionally larger than cost of development!

PRODUCT: Oral insulin formulation



Total Addressable Market (TAM):

Value of all of the buyer/seller relationships participating in the market

Served Addressable Market (SAM):

The part of the TAM for which your business model's value proposition is strongest

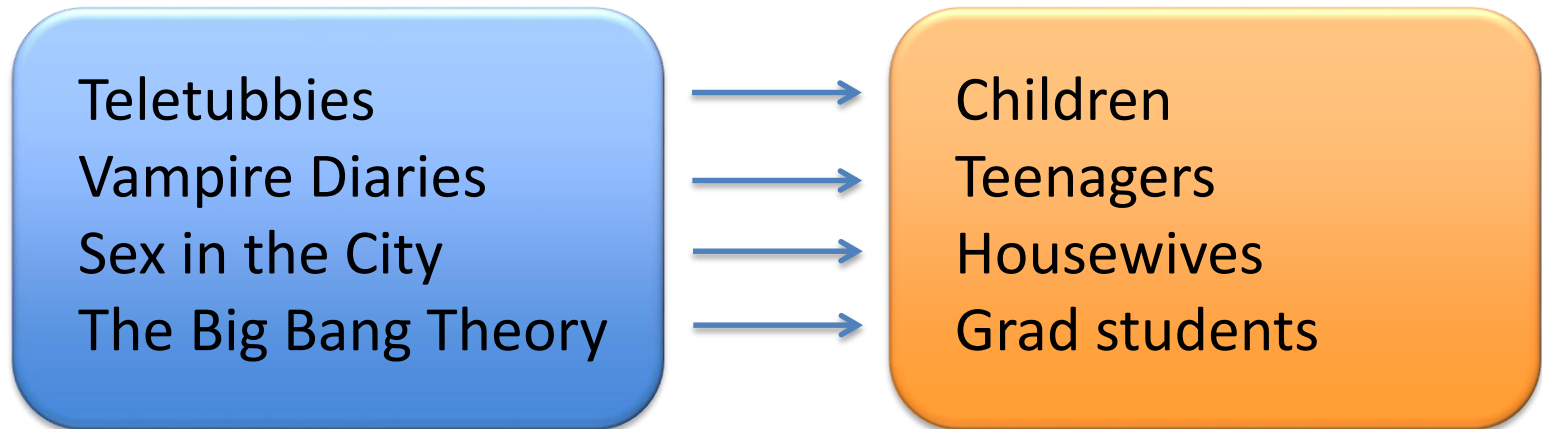
Target Market:

(Usually) demographic segment of the SAM with the most direct path to success

Target market should be proportionally larger than cost of development!

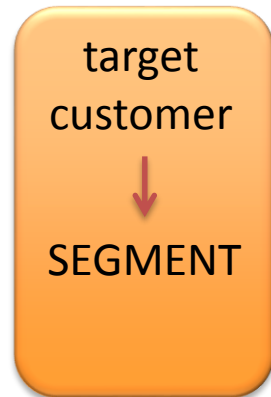
Identify Market Niche (Market Segmentation)

1. Key to understanding target market size and needs, as well as product fit.
2. Help identify point of entry.



Market Valuation

Good overview: http://www.lek.com/sites/default/files/Volume_IV_Issue_2.pdf



Number

- US Bureau of Economic Analysis
- US Census
- Hoovers
- Trade Associations
- Non-Profit Groups

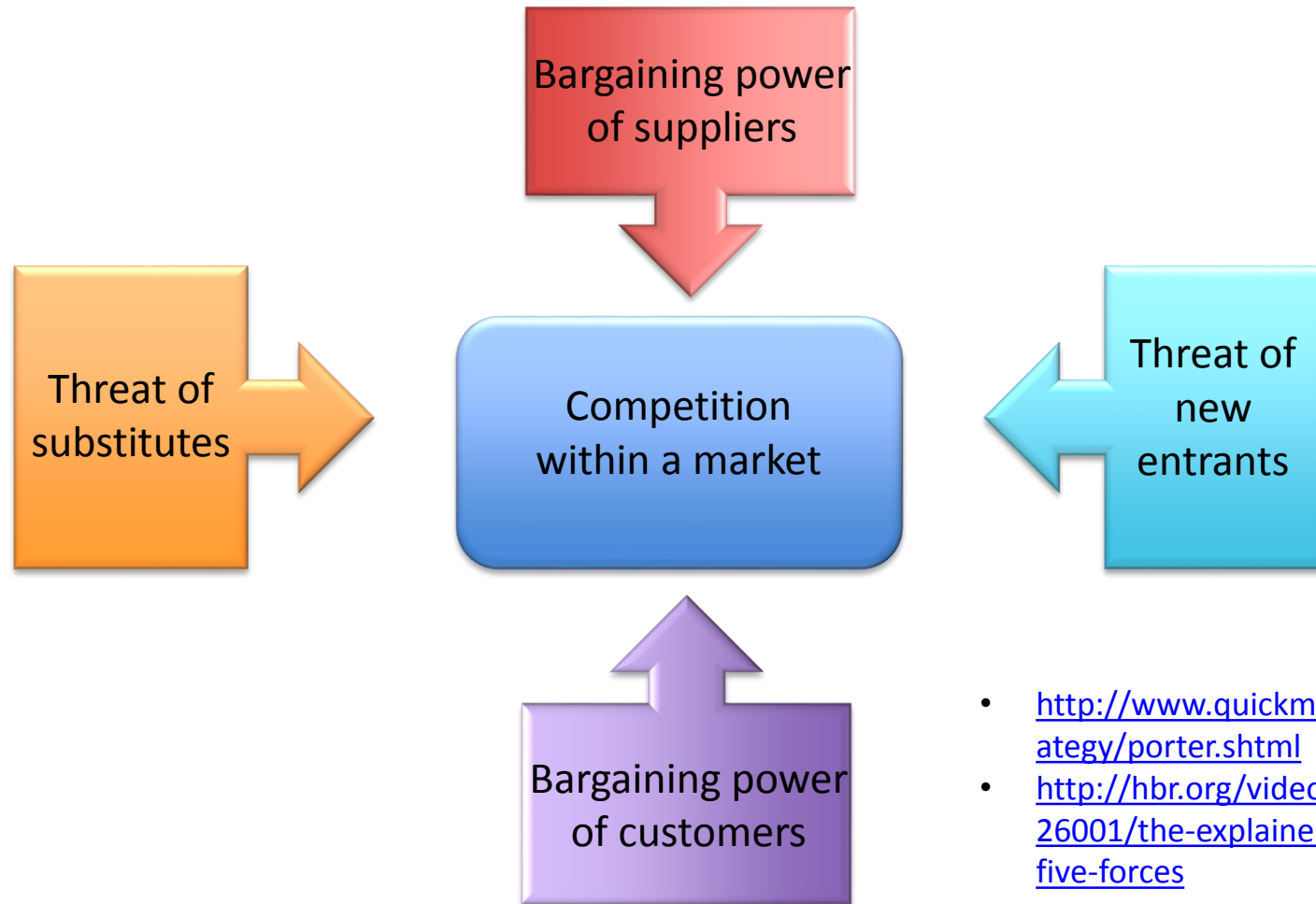
Penetration

- What percentage will use your product?

Volume and
value

- Final number x price

Market Profitability: Porter's Five Forces



- <http://www.quickmba.com/strategy/porter.shtml>
- <http://hbr.org/video/3590615226001/the-explainer-porters-five-forces>

Market analysis: Research Product/Market and Ensure Value Addition

1. Primary research (**interviews and surveys**): expert opinion, KOLs, inventors, customers
 2. Secondary research: internet, printed documents;
 - Benchmark against existing products and companies
 - Look at companies who have recently failed
 - Sources: Frost and Sullivan, ISIS, data monitor reports, SEC filings/10k/annual reports
-

Market Analysis: Primary Research

SURVEYS AND QUESTIONNAIRES

- Use Google Survey or Survey Monkey
 - <https://www.google.com/insights/consumersurveys/home>
 - <https://www.surveymonkey.com>
 - Decide on questions and response matrix
 - Should be specific, not for general information gathering
 - Distribute in many ways (social media, emails, word of mouth) to potential users – avoid bias!
-

Market Analysis: Primary Research

INTERVIEWS

Provide in-depth expert information

In-person, emails, phone calls

Key opinion leaders: internet, personal connections, conferences, published literature

Identify pain points! Ask why questions!

OUR ADVANTAGES

Typical response rate: 5-10%

Use academic email, network and reputation: ~15-17%

Silicon Valley Culture helps (but avoid **BIAS!**)

TO OBTAIN A REPRESENTATIVE SAMPLE: START ON DAY 1!!!

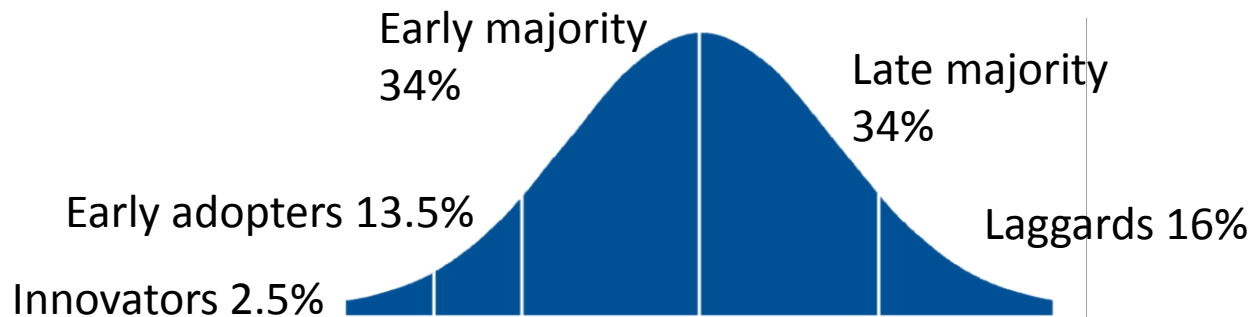
Due Diligence

- 1. Market and industry** – Is there need? Target market size? Growth? Volatile? Competitive response?
 - 2. Path to mass production** – Cost? Technical concerns?
 - 3. Substitutes**
 - 4. Barriers to entry**
-

Due Diligence: Market and Industry

- 1. Need:** Common sense, primary and secondary research.
- 2. Target Market Value:** Calculate – important for investors VCs, business angels - (~\$ 1bln)
 - <http://www.marsdd.com/mars-library/how-to-estimate-market-size-business-and-marketing-planning-for-startups/>
 - <http://analysights.wordpress.com/2009/05/01/8-steps-to-determining-market-size/>

Product Adoption Curve



Due Diligence: Market and Industry

3. **Growth:** secondary research, common sense

- a. Drivers: population data, sales in similar sectors, technology
- b. Extrapolating historical data (imperfect)

4. **Competitive response:** Players - consolidated, fragmented?

What will they do? Pre-emptive measures?

- [http://www.mckinsey.com/insights/strategy/beating the odds in market entry](http://www.mckinsey.com/insights/strategy/beating_the_odds_in_market_entry)
 - http://businomics.typepad.com/businomics_blog/2008/01/starbucks-strat.html
-

Due Diligence: Path to Mass Production

1. Total **cost of development** – must be a fraction of target market size (less than 10% ideal)
 - a. Financing

 2. **Technical concerns:**
 - a. Testing (6 months? 5 years?)
 - b. Suppliers (location, availability, price)
 - c. Technology – proprietary? Regulated?
 - d. Scaling up from prototype (automation, cost structure)
 - e. Design (convenience?)
-

Due Diligence: Substitutes

1. What are they – barriers?

- Coke vs. sequencers

2. What drives customer choice

- a. Product quality and price
- b. Brand loyalty
- c. Switching costs (e.g. Apple and Google)
- d. Marketing campaigns
- e. Long-term commitment (customer service, contracts)



Due diligence: Barriers to entry

1. Many possible!

- Examples

http://en.wikipedia.org/wiki/Barriers_to_entry#Barriers_to_entry_for_firms_into_a_market

2. Key for us:

1. Government regulations (FDA)
 2. Intellectual Property (Freedom to Operate analysis)
-

Summary

Pick a killer product

Understand and Size the Market

Address Risk

Develop a Business Plan

Have Fun!
