



# Customer Needs Analysis:

How Scientist and Engineers can focus on the things  
that really matters to the Customer

Sydney Edwards, PhD

# Key points

- How scientist and engineers can become more effective communicators by using Customer Needs analysis & Storytelling
- Learn from
  - Steve Jobs & Apple Computer – Customer centric branding
  - Steve Blank's Customer Discovery & Development method
  - Tillman Gerngross – focus on Customer Needs
  - Allergan Portfolio Management –use of Customer Needs Analysis
  - Take-aways that you can use



# Apple uses poetry and art to connect w customers



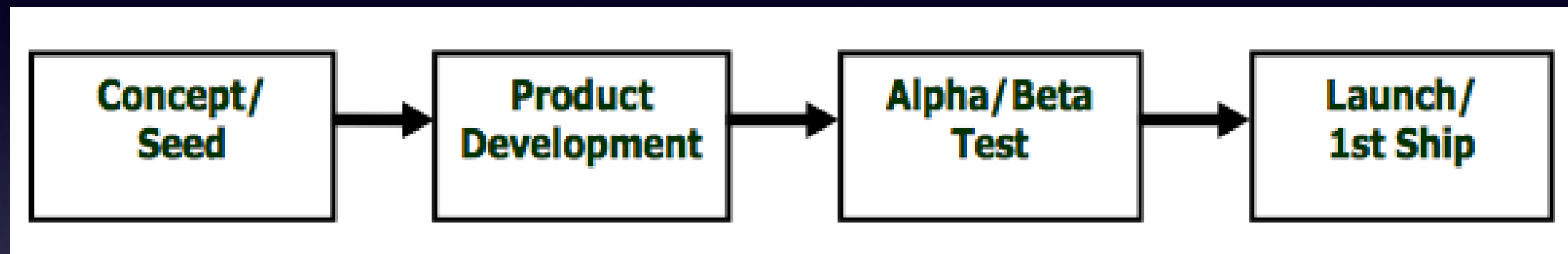
We don't read and write poetry because it's cute.

We read and write poetry, because we are members of the human race. And the human race is filled with passion. And medicine, law, business, engineering — these are noble pursuits and necessary to sustain life. But poetry, beauty, romance, love — these are what we stay alive for.

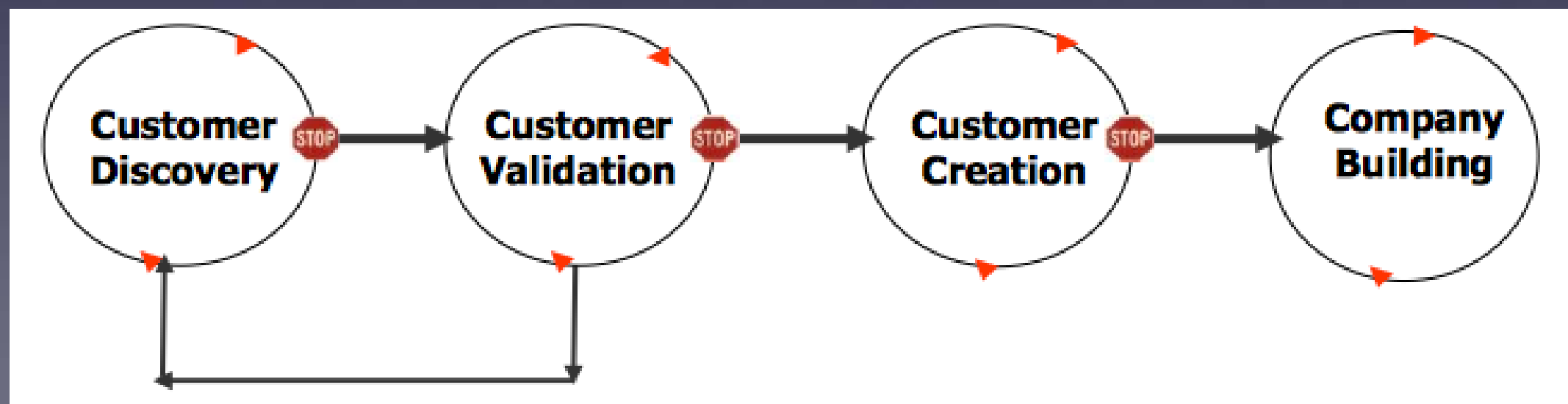
# Apple video

# Development of New Technology involves Connecting w the Customer

## Traditional approach



## Customer Needs & Problem/Solution definition



Source: Steve Blank, 4 Steps to the Epiphany & The Lean Startup

# Shortcomings of traditional method

Problem faced by science based entrepreneurs:

- Often our technical skills dictate the problems we focus on
- We disregard the quality of the problem we are trying to solve
- Pursue solutions looking for a problem
- Assumes build it and they will come mindset



# Benefits of a Customer Needs Analysis

The challenge of the scientific entrepreneur is to absorb information, process it and synthesize something new that serves relevant customer needs

As a scientific entrepreneur not all problems are worth solving, and your job is to figure out which one are. That is, what problems and solutions customers care about.

*Source: It's the problem stupid, Nature, Bioentrepreneur*



# Lebanon, New Hampshire



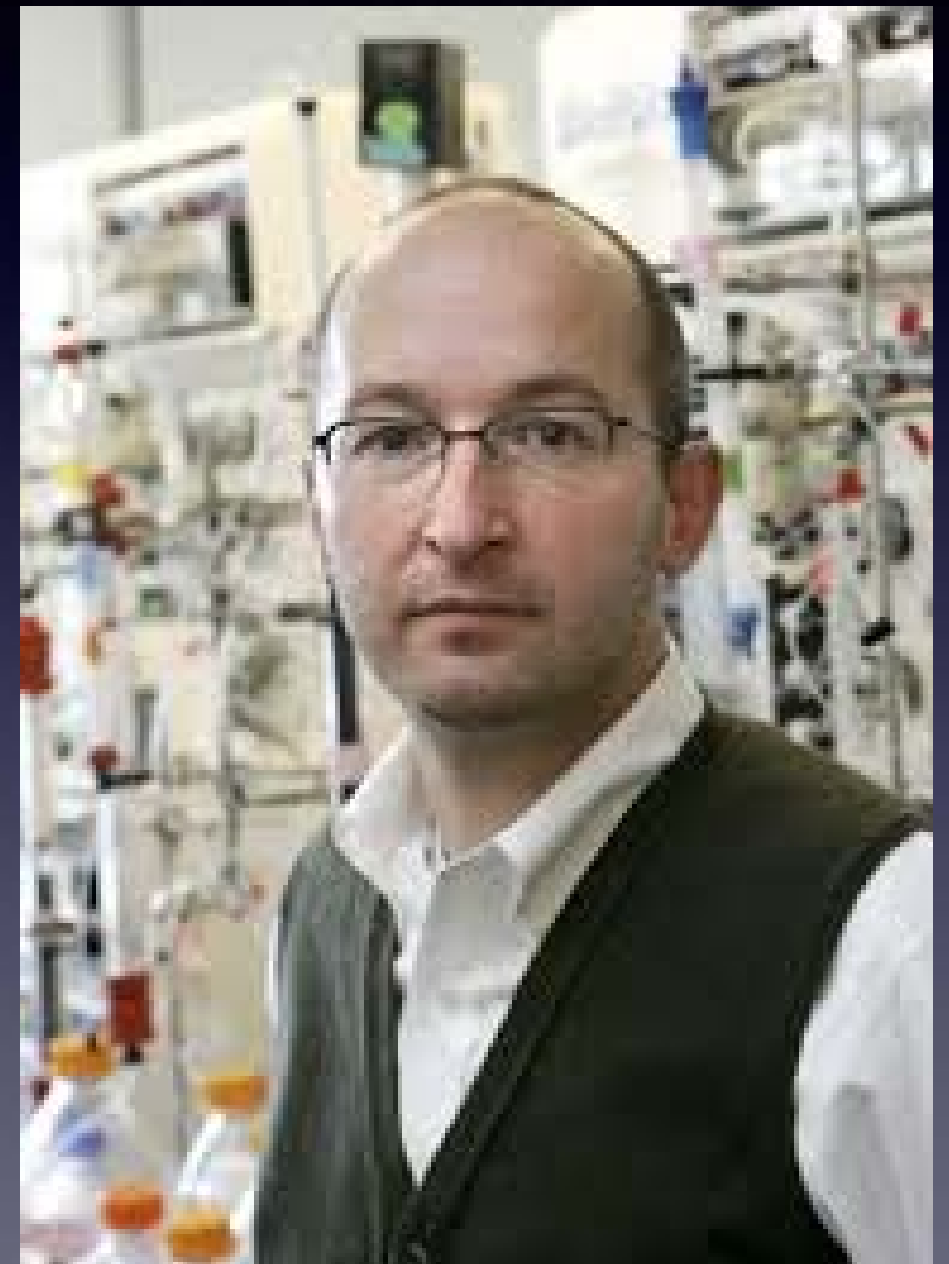
# Tillman Gerngross

Tillman Gerngross, PhD Dartmouth  
Professor

A serial entrepreneur learns that  
world's most exciting,  
groundbreaking technology is  
pointless if it is unable to address  
an urgent and relevant need

“It's the problem, Stupid!”

Nature Biotechnology 30, 742-744 (2012)



# Customer Analysis

Problem faced by Customers

The production of humanized glycoproteins drugs in yeast is attractive but technically complex for pharma and biotech companies

Solution to the Customer Need

Re-engineer yeast to allow it to make fully human glycoproteins.

# Gerngross Successes



May 9, 2006, 10:51am EDT

## GlycoFi grabbed by Merck for \$400M

A private biotech company in Lebanon, N.H., GlycoFi Inc., has been purchased by Merck & Co. Inc., for \$400 million in an all-cash transaction.

GlycoFi is focused on the field of yeast glyco-engineering and optimization of biologic drug molecules.

# Tillman Gerngross & TLO

Appointed Head of the Entrepreneurship and  
Technology Transfer Office at Dartmouth

His goal is to make Dartmouth's Tech Licensing office an  
enabler of value creation and manage the patent  
portfolio

Implications for Allergan – Portfolio management as an  
enabler for value creation & focus on customer needs

# Allergan's Portfolio approach has evolved

## Generations of Portfolio Management in Life Sciences

	First Generation	Second Generation	Third Generation
Purpose	Learn	Solve problems	Create new value
Perspective	Experiment	Minimize cost	Maximize return on investment
Impact on decision-making	None	Very little for most companies	Significant, identifiable directional changes
Value added	None	Rarely measurable. Mixed perceptions	Real, measurable Sustained advantage
Role of staff	Isolated	Provide "useful inputs"	Lead decision-making process Fully engage key players.
Line manager engagement	Not visible to line management	Choppy seas	All key players committed
Business process	None	Established, feeds budgeting	Well interlinked with business strategy, TA strategy, budgeting
Era	1980s thru mid-1990s	Mid 1990s to present	Now emerging

# New Product Strategy for R&D Portfolio Investing

## Needs analysis

Problem definition,  
Customers, IP &  
Technology Solution

## Build

Experiment w Prototypes  
thru Collaborations,  
Vendors

## Funding

Data generation, Teams,  
Milestones & Financing



# Allergan Repurposing: Botulinum Toxin A

Botulinum toxin is a therapeutic protein drug

Problem: Unmet need for chronic migraine headache treatments

Solution: Large clinical trials required to test BOTOX® as an injectable treatment

2010 FDA Approves BOTOX® for Chronic Migraine Headache

2012 Allergan acquires MAP Pharma for \$958 million; Levadex Inhaler for Acute Migraine

Acquisition will expand Allergan Leadership Position in Neurology and Migraine Specialty



# Allergan Entrepreneurial Portfolio approach: Repurposing of Bimatoprost

2001 Lumigan approved for Glaucoma

Problem - Could we repurpose Bimatoprost for use as an eyelash growth drug and obtain FDA approval?

Ocularly applied bimatoprost 0.03% is associated with increased eyelash growth

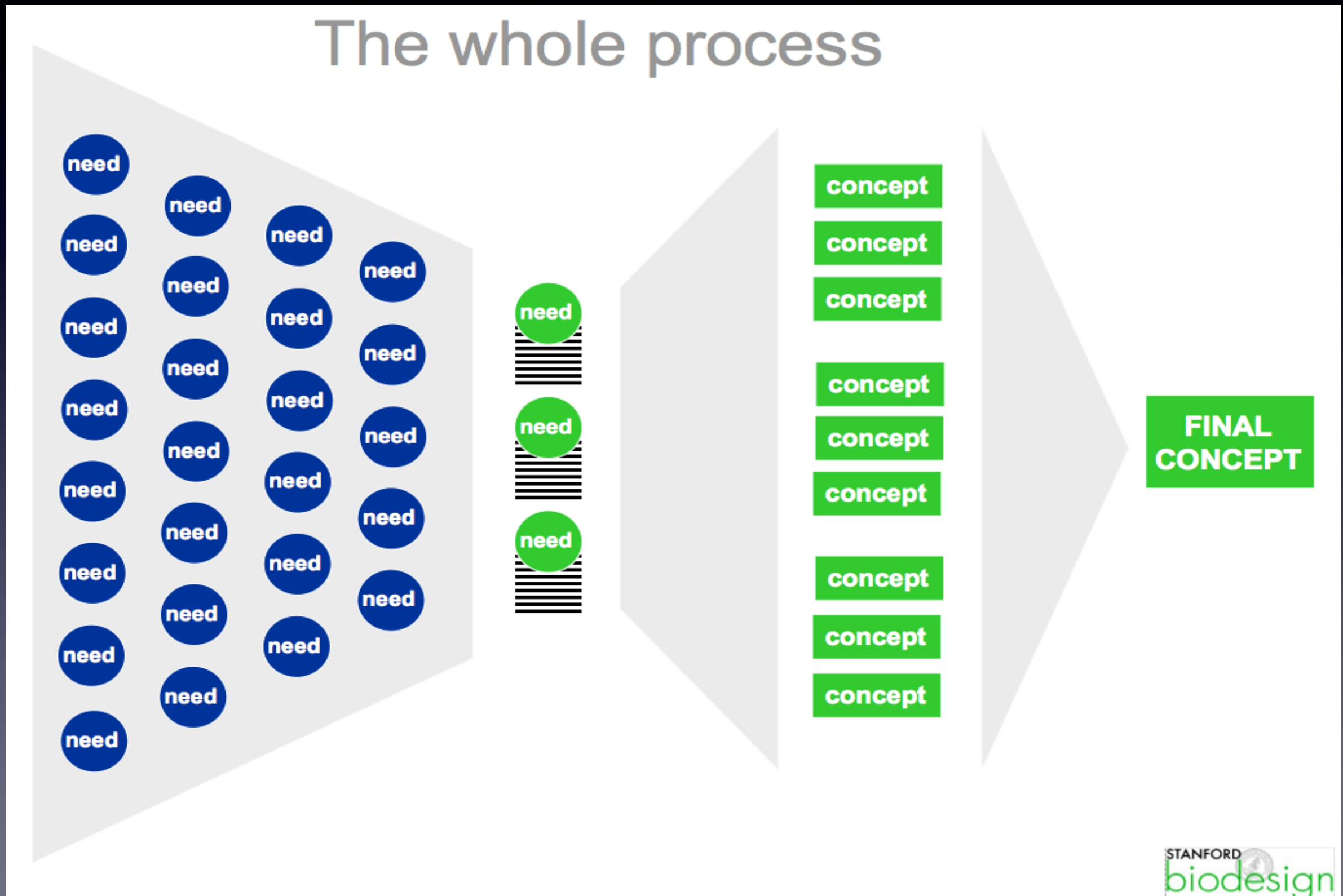
Allergan begins funding of Ph3 study in 2006;  
Global Development team led by S Edwards

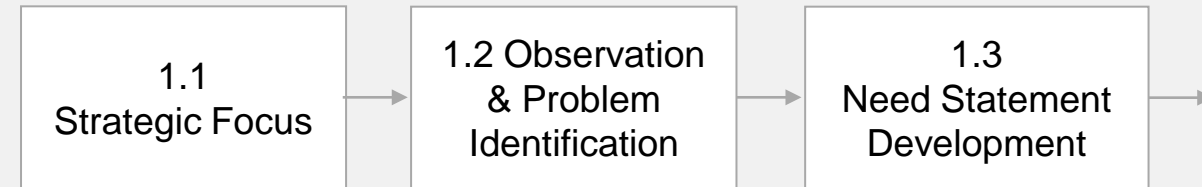
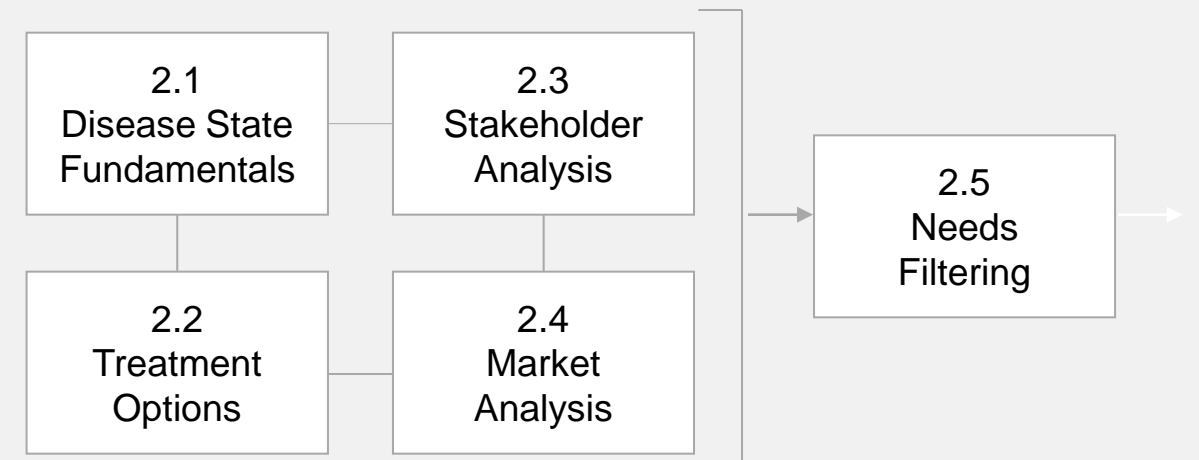
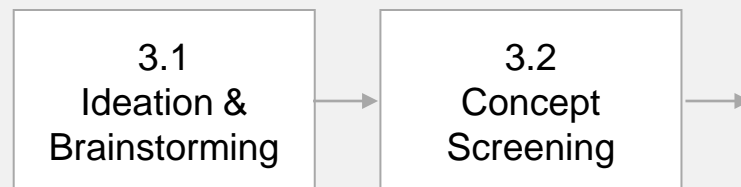
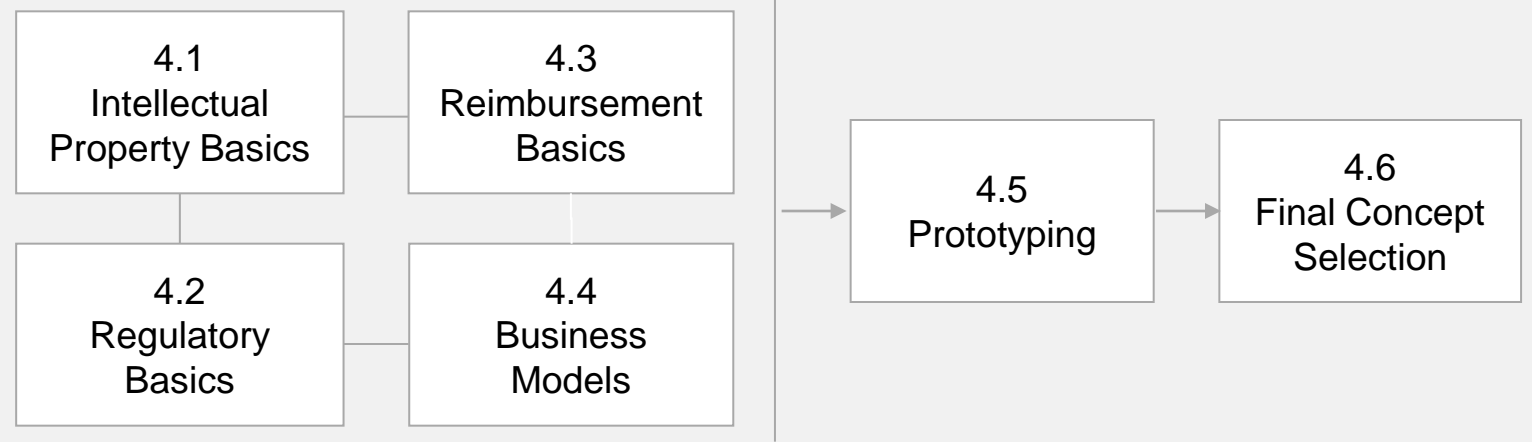
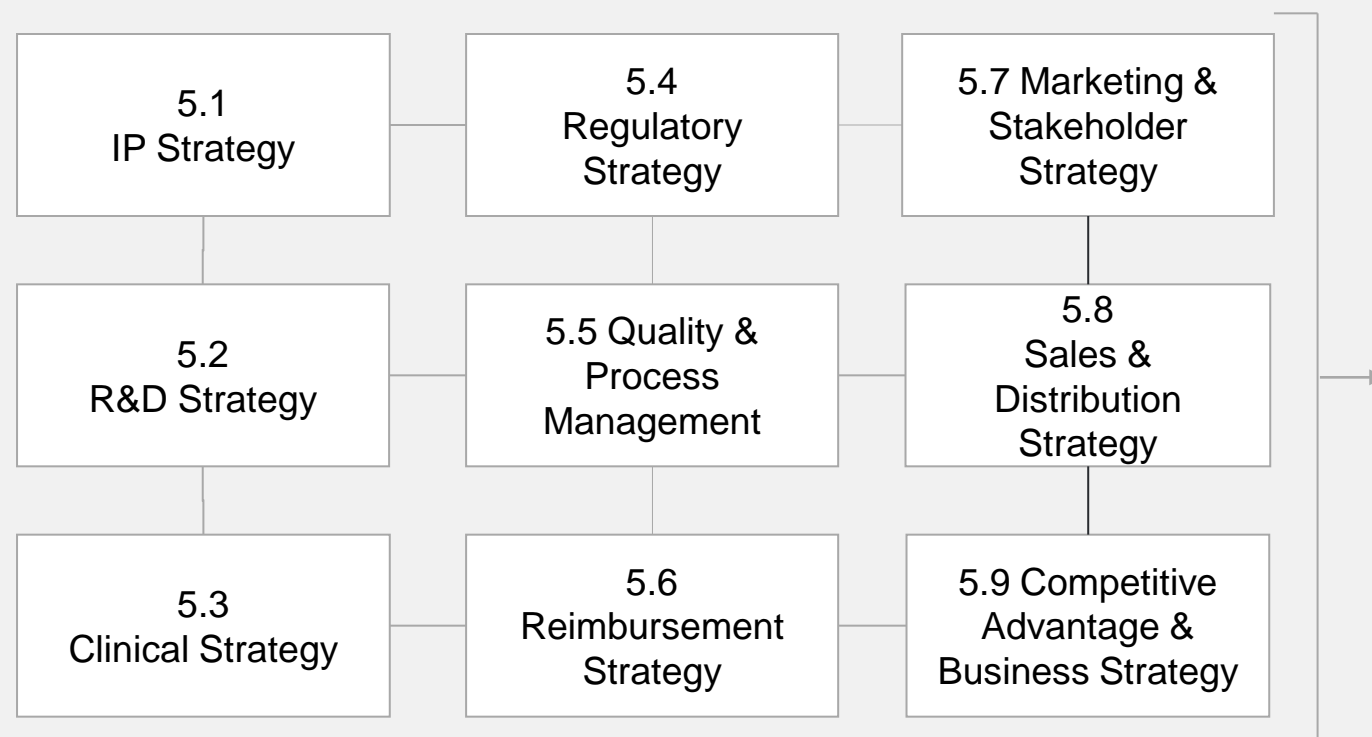
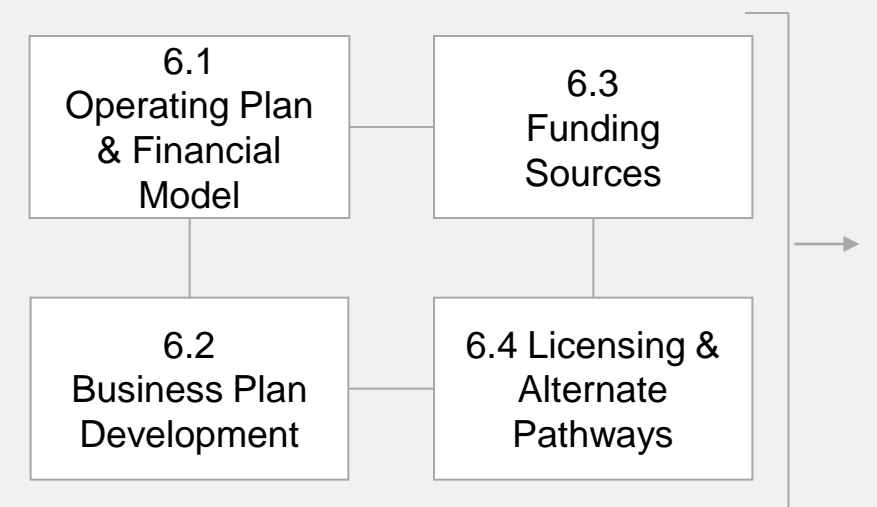
Dec 2008 - FDA approves Bimatoprost 0.03% for increased eyelash growth based on Phase 3 study

2012 Product Sales ~\$100 Million



# Greater emphasis on the patient needs analysis to drive the product concept description & portfolio



**1. NEEDS FINDING****2. NEEDS SCREENING****3. CONCEPT GENERATION****4. CONCEPT SELECTION****5. DEVELOPMENT STRATEGY & PLANNING****6. INTEGRATION**

# Innovation approach for Allergan: Combine Silicon Valley + Lean Startup ideas

An approach for translating science to commercial practice

Focus on the problem that customers care about solving

Technology solution - is it differentiated?

Technology - is it practical or over-shoot the needs?

Technology solution - is it patentable?

Measurement - how do you provide convincing data?

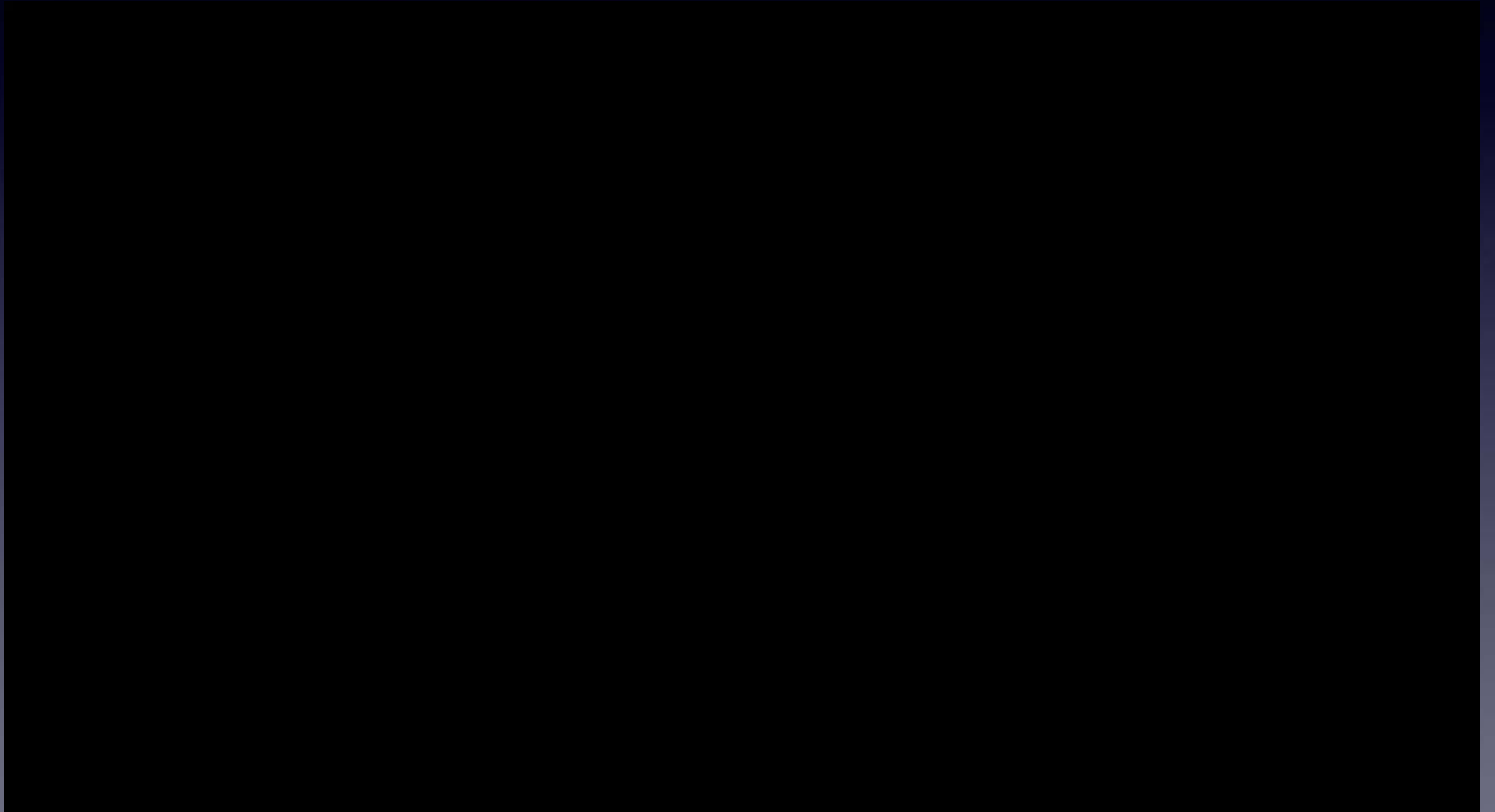
Technology needs to follow the customer's problem

# Steve Jobs: Secret of Life

Believe in your ideas and  
connect with others to  
improve it



# Steve Jobs video





Q&A

