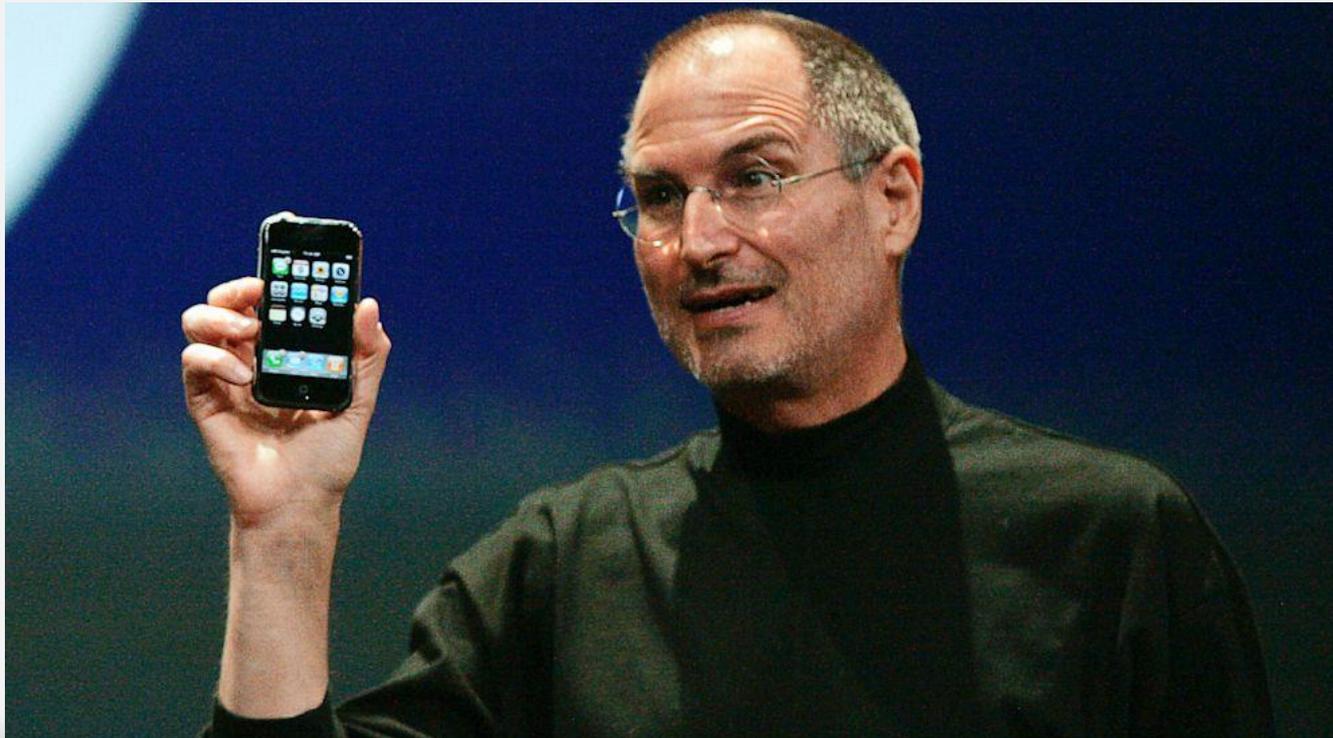


---

# Chap 7 Understanding the Business Model.

Dr. Jack M. Wilson

Distinguished Professor of Higher Education, Emerging Technologies, and Innovation



# Consider the case of Uber

---

- **History**

- Founded in 2009 by Garrett Camp and Travis Kalanick as “UberCab”
- Met at LeWeb in Paris, France in 2008, Camp wanted to solve the Taxi problem in San Francisco
- Original pitch split the cost of a driver, Mercedes S Class, and a parking spot with an iPhone app
- January 2010, service was first tested in New York
- Service launched in July 2010 in San Francisco
- From May 2011 to February 2012 Uber expanded into Seattle, Boston, New York, Chicago, and Washington D.C.
- First international expansion in Paris, France in December 2011

# Founders

---

- Garrett Camp

- Graduate from University of Calgary, Bachelors in Electrical Engineering and Masters in Software Engineering
- Founder of StumbleUpon, a web-discovery engine which he sold to eBay for \$75 million in 2007
- Also founded Expa in 2013, A startup studio that works to develop and launch new products



- Travis Kalanick

- Dropped out of UCLA in 1998, founded Scour Inc. with some classmates
- Founder of Scour and Red Swoosh, peer-to-peer file-sharing companies
- Scour filed for bankruptcy in 2000 to protect itself from a major lawsuit
- Served as the CEO at Uber until he was fired in 2017 after allegations of inappropriate behavior



## Investors in Uber

---

Here is a list of the early investors in Uber

- Lowercase Capital
- First Round
- Menlo
- Benchmark
- Goldman Sachs
- Google Ventures

# The Business Model

---

- Uber acts as a middleman between drivers and their clients
  - Uber takes 20 percent of each driver's earnings
  - Controls rate and can raise or lower as they please
  - Drivers are responsible for gas and repairs
  - Until March 2014 they were also responsible for insurance, but now Uber does that.
- Clients rate the drivers
  - Ratings encourage competition between drivers
    - Better ratings = more clients = more money
- Drivers also rate the clients
  - Which has led to unfriendly clients being shunned
- Uber's presence has resulted in protests and unionization by drivers in many cities
- Uber does not require drivers to have a commercial license

# Partnerships in the early years

---

- AT&T
  - Uber app is built into the new AT&T android phones
  - AT&T users will also get discounts
- NFL Players Association
  - Players get \$200 worth of credits
  - The NFL markets Uber as a safe alternative to driving home
- GM and Toyota
  - Financing and leasing deals for Uber drivers
- American Red Cross
  - 20% of total fare will go to Red Cross Disaster Relief Fund

# Challenges

---

- Uber has faced scrutiny over taxi regulation worldwide
  - (AUS, BEL, CAN, GER, POL, ROK, UK, USA, and IND)
  - Taxi service is a highly regulated industry that usually requires licenses and inspections for the cars as well as for the drivers.
  - They also often require special insurance, which Uber originally did not, but now does carry.
- Taxi commissions, drivers, and owners, in many cities have protested
  - Many states and municipalities have sent Uber cease-and-desist letters
  - Including Massachusetts, Virginia, and San Francisco
  - They accuse Uber of using unauthorized measurement methods to charge fares as well as other violations of the Taxi regulations.
  - San Francisco and Massachusetts have since reversed those actions, as national standards were changing and public pressure was put upon officials by Uber users and operators as well as by other entrepreneurial leaders who saw this as an attempt to stifle innovation.
- Uber has also suffered from some adverse public relations
  - Drivers with criminal records
  - Drivers denying service to the disabled
  - Car accidents including those involving pedestrians

# Ubers expansion

---

- Uber has expanded rapidly over 4 years
  - Currently in over 100 cities and 45 countries
  - Constantly looking to expand (Ex: Las Vegas, Daytona, Jakarta, etc.)
  - Due to this growth, competition has grown
  - Uber does not have patents protecting their service
  - Lyft and Sidecar are almost identical services, just with different apps and prices
- Because Uber is a strong and well established brand they seem to maintain a solid competitive advantage over other entrants into the industry.

# Business Model Comparison in the early years.

---

## Uber

- Company not licensed as taxi company
- Drivers do not need commercial license
- Drivers own cars
- Drivers provide gas and maintenance
- Company provides insurance –since 2014
- Rates are unregulated
- Drivers can refuse clients
- Clients rate drivers online
- Drivers rate clients online

## Taxis

- Company licensed by government
- Drivers specially licensed by government
- Company owns cabs
- Company provides gas and maintenance
- Company provides insurance
- Rates are government regulated
- Drivers cannot (legally) refuse clients
- Nobody rates anybody

# The Business Model

---

- How a company uses its resources, structures its relationships, interfaces with customers, creates value, and returns revenues and profits.
- Looking at the business model tells you how a company can become self sustaining.

# Business Model Comparison for Dell Computer

---

## **Traditional PC (HP or Lenovo)**

- Forecast demand
- Obtain subcomponents from suppliers
- Make basic components
- Assemble Complete PC
- Inventory
- Ship to retailer
- Retail inventory/display
- Consumer

## **Dell**

- Customer Places Order by phone or web
- Suppliers see order and ship components
- Dell assembles computer
- Maintains Customer relationship
- Ship to customer via UPS/FedEx

# Three Industries –Three Business Model Innovators

---

## Other examples of business model innovation

- Warby Parker –Eyewear
  - Direct internet sales to customer bypassing eyewear stores or optometrists
- Shopkick – Credit for visiting brick and mortar store
  - iPhone app recognizes when user enters a partner retail establishment
  - The shopper is given kickbucks, discounts, ads
  - Shopkick gets commission on sales
- SunRun
  - Installs solar power on customers roofs and shares in savings and sales or via lease payments (when regulations do not allow power purchase agreements)

# Why are Business Models Important?

---

The business model tell you:

- Does a Business make sense?
  - How does it make money.
  - Ongoing feasibility analysis.
- How do the pieces fit together to make a compelling whole?
- Provides the rationale for why the various stakeholders (customers, suppliers, etc) want to (need to) work together.
- Articulates a companies “**core logic**” to all stakeholders, including the employees and potential investors.
- **Core Logic** – Articulates the mission and business model.

# Six distinct ways to make money online

---

- Affiliate Programs –commissions from merchant to web site
- Pay-per-click –Advertiser places ad on website and pays for each click-thru
- Direct Ads –banner ads, skyscraper ads, pop-up ads, interrupting ads
- E-Commerce –direct online sales from the merchant (ie Amazon or Dell)
- Subscription Services
- Freemium Models- Basic web service is free, but a fee based premium service offers far more functionality.

# What is a Value Chain

---

- A string of activities that add (quantified) value as the product moves to market.
  - Primary Activities
    - Inbound logistics (from supplier to firm)->
    - Operations (creating/manufacturing the product)->
    - Outbound Logistics moving the product to the market->
    - Marketing and Sales->
    - Service
  - Then there are support activities
    - Firm Infrastructure
    - HR
    - Tech. Development
    - Resource procurement/purchasing

# Apple iPhone Value Chain

---

- Apple took a look at their entire value chain and decided which of these to do themselves and which they would contract to others.
  - *Simon Reading, Bernt Wahl, Hannes Hesse, Chris Volz, Johnson Nguyen*
    - [people.ischool.berkeley.edu/~hal/Courses/.../Tech/.../H-iphone.doc](http://people.ischool.berkeley.edu/~hal/Courses/.../Tech/.../H-iphone.doc)
- The value chain below illustrates the context in which Apple delivers value to the customer with the iPhone.
  - (Those with asterisks are outsourced)
  - **Network\***->**Billing\***->**Components\***->Design->**Build\***->Operating System/User Interface->Apps->Branding->Marketing/Sales->User

# Capturing Value in Global Networks: Apple's iPad and iPhone

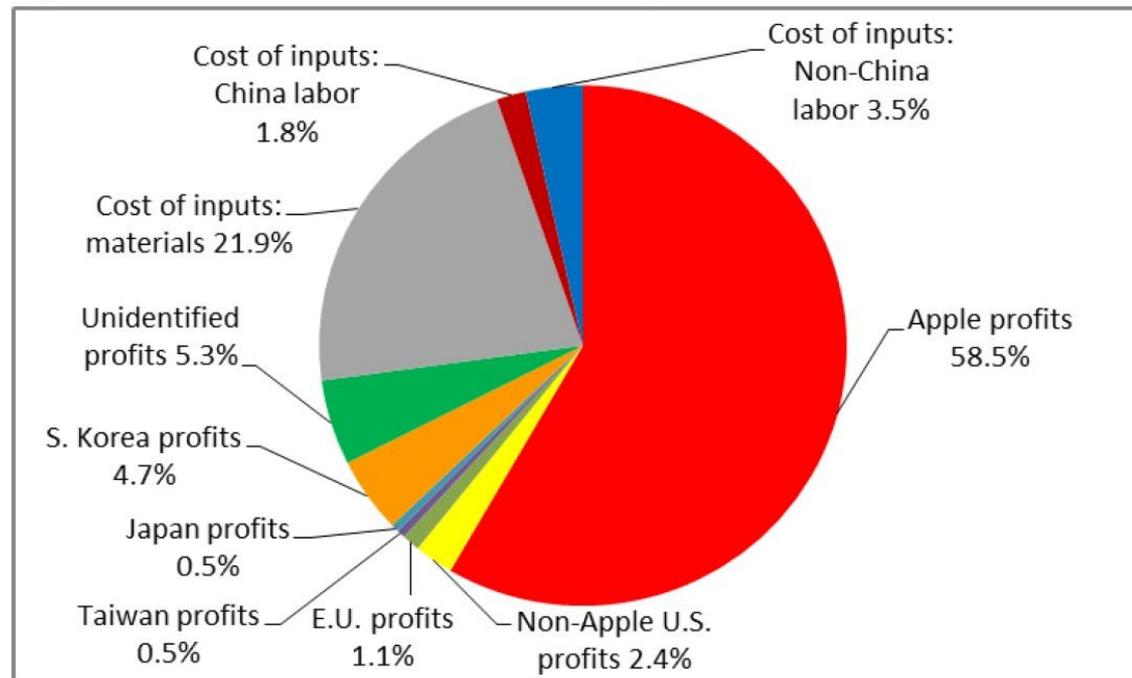
How does that value chain translate into the share of the value?

- Kenneth L. Kraemer, Greg Linden, and Jason Dedrick, U of California, Irvine, Berkeley and Syracuse University

» [http://pcic.merage.uci.edu/papers/2011/Value\\_iPad\\_iPhone.pdf](http://pcic.merage.uci.edu/papers/2011/Value_iPad_iPhone.pdf)

- Note that Apple harvests MOST of the value.

**Figure 1. Distribution of value for iPhone, 2010**



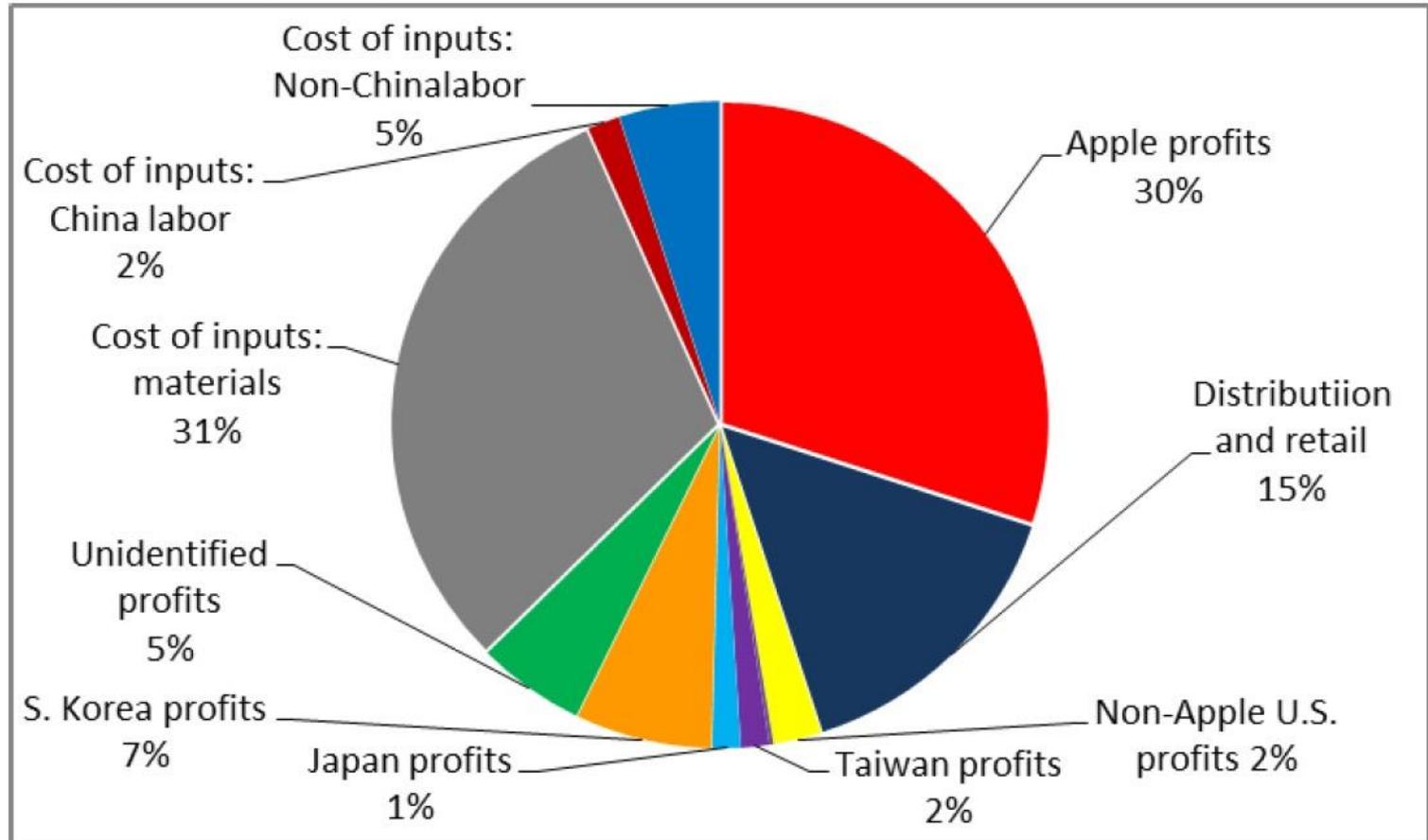
# Table of the values harvested (2010)

---

- 58.5% Apple Profits
- 21.9% Materials
- 5.3% Unidentified Profits
- 4.7% South Korea Profits
- 3.5% Cost of Inputs –Non-China labor
- 2.4% Non-Apple U.S. Profits
- 1.8% Cost of Inputs- China Labor
- 1.1% European Union Profits
- 0.5% Japan Profits
- 0.5% Taiwan Profits

# Same authors of NSF study -iPad

**Figure 2. Distribution of value for iPad**



# Table of the iPad values harvested (2010)

---

- 30% Apple Profits
- 31% Materials
- 15% Distribution and Retail
- 5% Unidentified Profits
- 7% South Korea Profits
- 5% Cost of Inputs –Non-China labor
- 2% Non-Apple U.S. Profits
- 2% Cost of Inputs- China Labor
- 1% Japan Profits
- 2% Taiwan Profits

# Fatal Flaws in Business Models

---

There are at least two fatal flaws that will ruin any business model:

- A complete misread of the customer
  - Iridium by Motorola: everyone needs a satellite phone useable everywhere. Iridium has at least 66 low earth orbit satellites ready to relay your satellite phone calls anywhere in the world. Originally developed by Motorola, Iridium failed to attract the large customer base that they expected.
  - Apple Newton: Customers are ready for a clunky tablet. No they were not. Only a hard core group of early adopters bought the Newton. When Apple later brought out the iPad, customers were ready and bought in droves.
    - **Window of opportunity.** This illustrates just how important timing is. Windows of opportunity open at some time and then they close. Too early and the customer is not ready. Too late and the customer has already committed to other alternatives.
- Utterly unsound economics
  - “We lose money on every item, but make it up in volume.”
  - enough said.

# Components of an Effective Business Model

---

- Core Strategy –how a firm competes
- Strategic Resources –how it acquires and uses resources
- Partnership Network
- Customer interface

# Components of the Core Strategy

---

The Core strategy include the components:

- Mission statement-
- Product/market scope –
  - Defines the product and markets which the company will address
  - This can evolve
    - Amazon began as online bookseller –now sells everything
    - Google began as search engine, then added maps, navigation, books, etc.
  - Market segments
    - Dell- business and government
    - HP -individuals, small business, first time computer buyers
- Differentiation basis
  - Cost leadership strategy
    - Often requires economies of scale that are hard for new companies.
  - Differentiation strategy –unique products or capabilities

# Disruptive Innovation –a key strategy

---

- Clayton Christensen, Harvard
- Companies enter into a low-end or undesirable part of the market, are ignored by the players in the main market and then destroy the major players by growing capabilities into the main market.
  - Disk drives
  - Steel mini-mills
  - Japanese (and now Korean) cars
  - PC's versus the Massachusetts mini-computer industry.

# Business Concept blind-spot

---

Many companies have failed because they had a business concept blind spot. How many railroads became airlines? How many buggy manufacturers became automobile companies?

Here are a few recent examples that have been fatal or near fatal.

- Xerox
  - “The Document Company”
  - Focus on reproduction (old stuff!)
  - Missed creation/printing of digital documents
  - HP now dominates this market
- Kodak (or Polaroid)
  - Photography, but mainly a chemistry company!
  - Could not accommodate to digital photography.
- Wang, Digital, Data General –etc
  - (All created in northeastern Massachusetts!)
  - Computing is professional and not personal
    - Controlled by operators and not end users.
    - These minicomputer makers failed to see how microcomputer would make computing ubiquitous.

# Product/Market Scope

---

What is an organizations product and market scope and how is it changing?

- Amazon
  - Amazon began as a bookseller and is becoming an everything seller.
- Market Scope
  - HP- focused on the consumer market
  - Dell- primary focus has been business/government

# Differentiation Basis

---

There are two major ways that companies try to differentiate themselves:

- **Cost Leadership Strategy**
  - Walmart, Dollar General
- **Differentiation Strategy**
  - Quality, timeliness, service, etc
  - Abercrombie and Fitch
- **Note that Walmart versus Target uses both!**
  - Target tries to position itself as the upscale alternative to Walmart.

# Strategic Resources

## –Finding a Sustainable Competitive Advantage

---

- Core Competencies
  - Things the company does better than others-competitive advantage
  - Resource leverage –using core competencies to target new markets
    - This is important in the longer term
- Strategic Assets
  - sustainable competitive advantage –absolute key to success
    - Needs to be unique and not easy to imitate
    - Plant and equipment, location, brands, patents, customer data, highly qualified staff, or distinctive partnerships

# Partnership Network

---

- Partnership network
  - Suppliers-
  - Supply chain
    - Network of all the suppliers from raw materials to finished product.
    - Example: (Apple locked up aluminum CNC supplies)
    - Supply chain management
  - Other Key Relationships
    - Insourcing –a partner moves inside!
    - Outsourcing – getting external partners or suppliers to do things that the company does not do well or profitably.
  - Dangers here- partnerships founder at times.

# Key types of business partnerships

---

- Joint Ventures (JV) -two organizations join to create a new JV
  - Sony-Ericsson was a joint venture by the Japanese consumer electronics company Sony Corporation and the Swedish telecommunications company Ericsson to make mobile phones. The stated reason for this venture is to combine Sony's consumer electronics expertise with Ericsson's technological leadership in the communications sector. Sony later bought out Ericsson.
- Network- Hub and spoke coordinated group
- Consortia-Peer network of similar groups
- Strategic Alliance – no JV but a win-win business relationship
  - Starbucks and Barnes and Noble in the early days
  - Microsoft and many smaller software creators
  - Sprint and Microsoft provide business and consumer applications delivered via Sprint's wireless services as well as solutions that provide network security and reliability.
- Trade Associations
  - Often important for government relations
  - General public relations
    - Example- API –American Petroleum Institute deals with contentious issues in fossil fuels
      - Addresses both public concerns and lobbies governments

# Customer Interface

---

- Customer Interface
  - How the firm interacts with its customers
  - Target market
  - Fulfillment and Support- how to get to the customer
  - Pricing -one of the famous “4Ps” of marketing
  - Product, Price, Place, Promotion, (more in later chapter)

# Apple supply chain

---

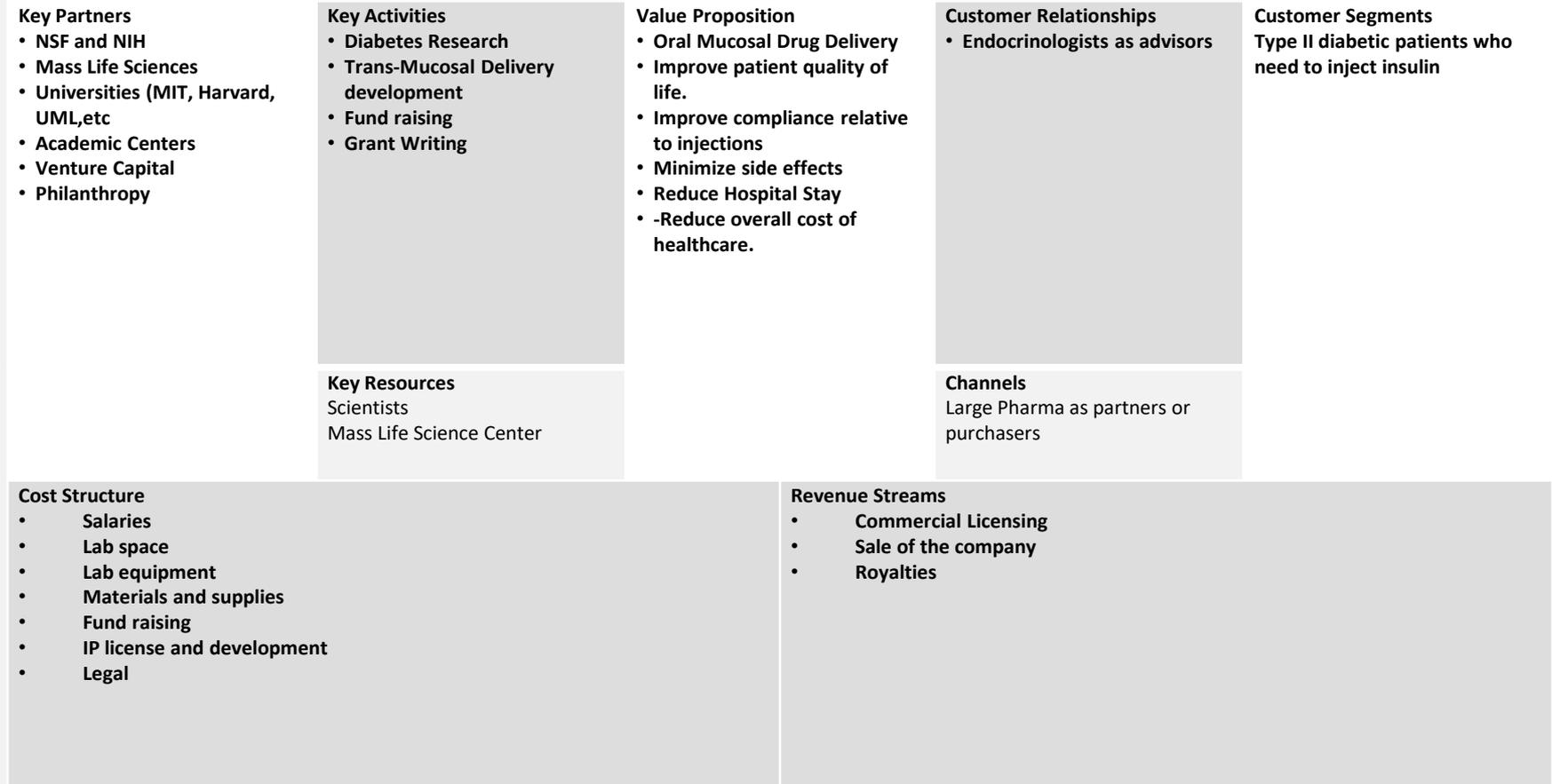
- Apple's wild success with unibody construction for all models of the MacBook appears to be having a negative effect on the competition in more than just reduced sales -- the other vendors can't get their hands on the CNC (computer numerical control) lathes that are required to make ultra thin magnesium-aluminum shells to encase the electronics of Intel's UltraBook design guideline.
- 
- According to Taiwan-based electronics industry site Digitimes, Catcher Technology and Foxconn Technology both have more than 10,000 of the expensive CNC lathes used to make notebook chassis. These two companies are major suppliers to Apple, which means that companies wishing to make metal UltraBooks have to compete for capacity on those lathes. That's a hindrance to high-capacity production, so many manufacturers are choosing a different material.
  - <http://www.tuaw.com/2011/08/04/apples-hold-on-metal-chassis-supply-chain-hinders-competition/>

# Privo

- Now let us take a look at a company that was founded and is led by Manijeh Nazari Goldberg, who took two degrees (engineering and computer science) from Umass Lowell and then one each from Harvard and MIT.
- Privo Technologies was formed to commercialize a discovery made in Robert Langer's laboratory at MIT that allowed the delivery of various drugs through encapsulation using nan-technology
  - Privo was a winner of the MIT 100 K Business Plan Competition
    - Their original idea was Nano delivery of insulin by chewing gum
  - Nano Drug Delivery
- In a very tough area of raising money to commercialize. It can take a billion dollars to bring a new drug to market.
- The next page will show their initial business plan canvas.



# Privo Business Model Canvas –First version



# Privo: Learn and Pivot

---

- As they moved forward they learned both from their successes and their mistakes –and got lots of advice along the way.
- They Interviewed
  - 20 Physicians
  - 40 Scientists
  - 12 Attorneys
  - 6 Multinational Pharmaceutical Co.
- They wrote many Grants (that were peer reviewed) for
  - NCI (National Cancer Institute)
  - NIH (National Institute of Health)
  - MLSC (Mass Life Science Center)
  - NSF (National Science Foundation)
  - Next (Rare Disease services)
  - NCL (Nano Characterization)
  - Deshpande –MIT
- They met with the governments of 7 other countries

# Business Model after pivot (as of 2014)



## Current Business Model Canvas

<p><b>Key Partners</b></p> <ul style="list-style-type: none"> <li>• NSF, NIH, NCI</li> <li>• Mass Life Sciences</li> <li>• Universities</li> <li>• Academic Centers</li> <li>• Angel Investors</li> <li>• Venture Capital</li> <li>• New England Hospitals</li> <li>• Global Hospitals</li> <li>• CRO's for manufacturing, preclinical and</li> </ul>	<p><b>Key Activities</b></p> <ul style="list-style-type: none"> <li>• Fund Raising</li> <li>• Grant Writing</li> <li>• Optimize Formulation</li> <li>• Build Partnerships</li> <li>• Mfg NP's</li> <li>• Pre-clinical trials</li> <li>• Phase 1 Clinical Trials</li> </ul>	<p><b>VALUE PROPOSITIONS</b></p> <p>Replacing existing intravenous Oral Cancer chemotherapy</p> <ul style="list-style-type: none"> <li>• Much Higher efficacy</li> <li>• Better quality of life</li> <li>• Vastly lower toxicity</li> <li>• Ease of use</li> <li>• Lower Total Cost</li> </ul> <p><b>Other applications</b></p> <ul style="list-style-type: none"> <li>• Deliver other drugs through buccal tissue using NP permeation</li> <li>• Use NP loaded Chemo-Wafer (CW) to deliver drugs to target other cancers</li> </ul>	<p><b>Customer Relationship</b></p> <ul style="list-style-type: none"> <li>• Oncologists as advisors</li> <li>• Pharma as advisors/mentors</li> <li>• Oncology radiologists</li> </ul>	<p><b>CUSTOMER SEGMENTS</b></p> <p><b>Chemo-Wafer Patients</b></p> <ul style="list-style-type: none"> <li>• Age 62+ at diagnosis</li> <li>• Early Stage OC patients</li> <li>• Later Stage OC patients</li> <li>• HPV Patients (male age 40-59)</li> <li>• Oncology surgery patients</li> </ul> <p><b>Head &amp; Neck Oncologists Surgeons</b></p> <ul style="list-style-type: none"> <li>• Maxillofacial and oral surgeons</li> <li>• General oncology surgeon</li> </ul> <p><b>Large Pharma</b></p> <ul style="list-style-type: none"> <li>• Licensing out</li> </ul>
<p><b>Cost Structure</b></p> <ul style="list-style-type: none"> <li>• Salaries</li> <li>• Lab space</li> <li>• Lab equipment</li> <li>• Materials &amp; Supplies</li> <li>• Fund Raising</li> <li>• IP License &amp; Development</li> <li>• Legal</li> </ul>		<p><b>Revenue Stream</b></p> <ul style="list-style-type: none"> <li>• Commercial Licensing</li> <li>• Sale of the company</li> <li>• Royalties</li> </ul>		

# Business Model after pivot (as of 2014)

<b>Key Partners</b> <ul style="list-style-type: none"> <li>• NSF and NIH and NCI</li> <li>• Mass Life Sciences</li> <li>• Universities (MIT, Harvard, UML, etc)</li> <li>• Academic Centers</li> <li>• Venture Capital</li> <li>• Philanthropy</li> <li>• <i>New England Hospitals</i></li> <li>• <i>Global Hospitals</i></li> </ul>	<b>Key Activities</b> <ul style="list-style-type: none"> <li>• <del>Diabetes Research</del></li> <li>• <del>Trans-Mucosal</del> Delivery development</li> <li>• Fund raising</li> <li>• Grant Writing</li> <li>• <i>Optimize Formulation</i></li> <li>• <i>Build partnerships</i></li> <li>• <i>Manufacturing nanoparticles (NP's)</i></li> <li>• <i>Pre-clinical trials</i></li> <li>• <i>Phase 1 clinical trials</i></li> </ul>	<b>Value Proposition</b> <ul style="list-style-type: none"> <li>• Oral Mucosal Drug Delivery for oral cancer chemotherapy</li> <li>• Improve patient quality of life.</li> <li>• <del>Improve compliance relative to injections</del></li> <li>• Minimize side effects</li> <li>• Vastly lower toxicity</li> <li>• Ease of use</li> <li>• <del>Reduce Hospital Stay</del></li> <li>• Reduce overall cost of healthcare.</li> </ul>	<b>Customer Relationships</b> <ul style="list-style-type: none"> <li>• <del>Endocrinologists as advisors</del></li> <li>• Oncologists as advisors</li> <li>• Pharma as advisors/mentors</li> <li>• Oncology radiologists</li> </ul>	<b>Customer Segments</b> <ul style="list-style-type: none"> <li>• <del>Type II diabetic patients who need to inject insulin</del></li> <li>• Chemo-wafer cancer patients</li> <li>• Age 62+ at diagnosis</li> <li>• Early stage oral cancer (OC) patients.</li> <li>• Later stage OC patients.</li> <li>• HPV patients (male 40-59)</li> <li>• Oncology surgery patients</li> <li>• Head and neck oncologists and surgeons</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Chief Research Officers (CRO) for manufacturing and pre-clinical.</i></li> </ul>	<b>Key Resources</b> <ul style="list-style-type: none"> <li>• Scientists</li> <li>• Mass Life Science Center</li> </ul>	<ul style="list-style-type: none"> <li>• <i>other applications</i></li> <li>• <i>Deliver other drugs through buccal tissue using NP permeation</i></li> <li>• <i>Using NP loaded chemo-wafer to deliver drugs to other targets.</i></li> </ul>	<b>Channels</b> <ul style="list-style-type: none"> <li>• Large Pharma as partners or purchasers for <b>Global Marketing Sales and Distribution</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Maxillofacial and oral surgeons</b></li> <li>• <b>General oncology surgeons</b></li> <li>• <b>Larger pharma –licensing</b></li> </ul>
<b>Cost Structure</b> <ul style="list-style-type: none"> <li>• Salaries</li> <li>• Lab space</li> <li>• Lab equipment</li> <li>• Materials and supplies</li> <li>• Fund raising</li> <li>• IP license and development</li> <li>• Legal</li> </ul>		<b>Revenue Streams</b> <ul style="list-style-type: none"> <li>• Commercial Licensing</li> <li>• Sale of the company</li> <li>• Royalties</li> </ul>		

# Now THAT is quite a pivot!

---

- You can now see why effectual entrepreneurship focuses on the iterative relationship between means, goals, interactions, and commitments.
- EE is far less goal oriented and far more interested in how one can use the resources at hand to create something of value.