Value Propositions are business or marketing statements that summarize why a consumer should buy a product or use a service.

- Business buyers are rational buyers. So help them in their decision making process.
- The ideal value proposition is
  - concise
  - Appeals to the customer's strongest decision-making drivers.
  - Often fully quantified analyses of the impact of switching to your product, financially and from perspective of features
  - Substantiated and documented

- Companies pay a high price when customers lose sight of the company's value proposition.

(Source: www.investopedia.com)
(Most) Managers who make purchase decisions want to do business with suppliers that fully grasp critical issues in their business and deliver a customer value proposition that’s simple yet powerfully captivating.

James C. Anderson
Suppliers can provide such a customer value proposition by making their offerings superior on the few elements that matter most to target customers, demonstrating and documenting the value of this superior performance, and communicating it in a way that conveys a sophisticated understanding of the customer’s business priorities.

James C. Anderson
### WHAT SOLUTION DO YOU OFFER?

**ABOUT VALUE PROPOSITION:**

**SUBSTANTIATE & DOCUMENT**

- **Substantiate** your claim
  - Rockwell Automation precisely calculated cost savings from reduced power usage that customers would gain by purchasing **Rockwell’s pump solution** instead of a comparable offering.
  - Rockwell used **industry-specific metrics** to communicate about functionality and performance— including kilowatt-hours spent, number of operating hours per year, and dollars per kilowatt-hour

- **Document** the delivered value
  - Create written accounts of cost savings or added value that existing customers have actually captured by using your offerings.
  - Chemical manufacturer **Akzo Nobel** conducted a two-week pilot on a production reactor at a prospective customer’s facility to study the performance of its high-purity metal organics product relative to the next best alternative in producing compound semiconductor wafers.

---

**Power Reduction Cost Savings**

\[ \text{Power Reduction Cost Savings} = [\text{kW spent} \times \text{number of operating hours per year} \times \text{$ per kW hour} \times \text{number of years system solution in operation}] \text{ Competitor Solution} - [\text{kW spent} \times \text{number of operating hours per year} \times \text{$ per kW hour} \times \text{number of years system solution in operation}] \text{ Rockwell Automation Solution} \]
Value Proposition Example

Example: company that manufactured resins used in exterior paints

- Researched the needs of commercial painting contractors
  - key customer segment
- Learned that labor constituted the lion’s share of contractors’ costs, while paint made up just 15% of costs.
- -> emphasized that its product dried so fast that contractors could apply two coats in one day
  - substantially lowering labor costs.
- Customers snapped up the product while paying a 40% price premium

The resin manufacturer deepened its understanding of key customers in several ways

- enrolled managers in courses on how painting contractors estimate jobs
- conducted focus groups and field tests to study products’ performance on crucial criteria
- asked customers to
  - identify performance trade-offs they were willing to make
  - indicate their willingness to pay for paints that delivered enhanced performance
- joined relevant industry associations
Global packaging supplier headquartered in Hartsville, South Carolina

Although the redesigned packaging provided six favorable points of difference relative to the next best alternative, Sonoco chose to emphasize one point of parity and two points of difference in what it called its distinctive value proposition (DVP)

The value proposition was that the redesigned packaging would

- Deliver significantly greater manufacturing efficiency in the customer’s fill lines, through higher-speed closing
  - Allowing users to move from a seven-day, three-shift production schedule during peak times to a five-day, two-shift operation
- Provide a distinctive look that consumers would find more appealing
- All for the same price as the present packaging
- -> Sonoco chose to include a point of parity in its value proposition because, in this case, the customer would not even consider a packaging redesign if the price went up
PROBLEM / SOLUTION FIT

EXXONMOBIL CASE

(or See WPO)
2009 European PE Consumption in Film

Major drivers for primary, secondary and tertiary packaging growth:

- Trade and logistics
- Consumer markets evolutions

Data from: Applied Market Information
The business chain is characterized by two opposite flows:

- A cumulative set of Needs & Wants flowing from the end-user to the PE producer
- Products & Services going in the opposite direction
UNDERSTANDING THE MARKET...

Packaging and Product Bundling Trends & Drivers

Consumer – Retail
- Point-of-purchase differentiation impacts ultimate buying decision
- Advertisement spending shifts from traditional media to point-of-purchase influencing
- Increased emphasis on environmental impact – more sustainable flexible film solutions

Distribution Channels
- In-store cost reductions and more efficient waste stream management
- Package simplifications (e.g. removal of cardboards)
- Improved stock rotation
- Rise in warehouse & club-store retailing, outdoor displays

Packaging Trends
- Packaging functionality expands
- Shelf appeal becomes an ever more important dimension of packaging value
- Accelerated growth in multi-pack merchandising
- Display packaging grows at the cost of bundling in developing markets
- Source reduction and move toward single-material packaging systems
Collation Shrink Film Development Trends

- **Snug fit around the product**
  - Efficient/controlled shrinkage
  - ‘Bull’s-eye’ as handle
  - Stiffness

- **Packaging line performance**
  - Seal consistency
  - Efficient/controlled Shrinkage
  - Low coefficient of friction

- **Optical properties**
  - Low haze, good contact or ‘see-through’ clarity
  - High gloss for printing

- **Downdraught potential**
  - Source reduction
  - Unit cost reduction
  - More sustainable flexible film solutions

- **Package integrity**
  - Puncture Resistance
  - High holding force
  - No hole formation

ExxonMobil Chemical
Metallocene Catalysts vs. Ziegler Natta Catalysts

- More selective, more active catalysts
- Polymer molecules are very similar
- Significantly improved product properties
SEGMENTING THE OFFERING...

**mPE Value Proposition**

**Exceed™ mPE resin**
- Superior film toughness and strength
- Outstanding film impact resistance
- Excellent optical properties
- Superior film sealing performance

**Enable™ mPE resin**
Replacing LDPE resin-rich blends
- Equivalent processability
- Up to 25% downgauging
- LDPE shrink properties
- Excellent see-through clarity

Replacing LLDPE resin-rich blends
- Business simplification
- Up to 20% improvement in output
- Excellent bubble stability
- LL-HAO performance benefits

Exceed and Enable mPE resins form a unique portfolio that facilitates business opportunities expansion across the value chain
SEGMENTING THE OFFERING...
“Exceed™ mPE is the leading edge mPE that expands the possibilities for experts working in the most demanding film applications to meet, and often redefine, the film performance attributes demanded by the value chain globally.”

Superior film toughness and strength balance translate into significant film downgauging:
- Reduces costs (raw material, inventory, processing, delivery and disposal)
- Offers more sustainable solutions to brand owners and retailers through reduced packaging weight
- Less packaging lines shut-down (Stretch Hood)

Superior film impact resistance offers:
- Less application failure & after sales support from converters & packaging machine manufacturers (stretch hood)
- Improved package integrity
- Improved tamper resistance (beverages)

Superior film optical properties (gloss, haze & transparency) offer:
- Improved print quality
- Better packaged product appeal
- Improved consumer brand recognition leading to higher revenue (beverages)
- Improved bar code reading (appliances)

Superior film sealing performance offers:
- Increased packaging line speed at no cost (stretch hood)
- Delayed packaging line investment
- Improved integrity and shelf-life for packages relying on sealed layers (pouches, laminated bags, etc.)
- Less packaging lines shut-down (FFS)
Enable™ mPE resin – Value Proposition

“Enable™ mPE offers an unprecedented combination of film processing and HAO performance benefits in a single unique resin, leading to improved business operations and increase productivity”

Operational Stability: Have a broad operating window - on both LL and LD equipment - that withstands fluctuations in manufacturing conditions
  • Ability to extrude at lower melt temperature promotes greater bubble stability; improved melt strength and greater shear thinning
  • Stable, worry-free operations

Extended Output: Increase line capacity through faster processing
  • Increased output (up to 20%) at no additional cost when replacing LL-rich blends – increased revenue
  • Postpone future equipment investments
  • Reduce or eliminate the use of polymer processing aids – lower cost operations

Sourcing Simplicity: Simplify your sourcing and operations with a single unique resin designed to replace blends
  • Eliminate blending complexity and errors
  • Reduced inventory costs by reducing the number of resins needing to be sourced
  • Reduce or eliminate the need for sourcing LDPE

Versatility with HAO Performance: Meet the performance needs of several applications
  • Meet the mechanical performance requirements of LL-rich structures
  • Improve the toughness of LD-rich structures - 20% downgauging possible
  • Extend the life of LD equipment - opportunity to enter new applications
Enable™ mPE resin Based Collation Shrink Film

Enable™ mPE resin core layer offers
- Unit cost and weight reduction
- Lower logistics costs
- Leading to more sustainable flexible film solutions

Exceed™ mPE resin skin layer offers
- Improved optical properties
- Improved puncture
- Outstanding sealing properties

At 25% thinner gauge ...
- Equivalent toughness, improved puncture
- Equivalent shrinkage and holding force
- Low haze
- Good cut-ability

Data from tests performed by or on behalf of ExxonMobil
AND THEN…
EUROPEAN FOOD & BEVERAGE PLASTIC PACKAGING SUMMIT
16TH & 17TH FEBRUARY 2022 / ANTWERP, BELGIUM

Confirmed Speakers Include:

- Hans van Bochove
  Coca-Cola European Partners
- Feliks Bezol
  Mars, Inc.
- Gloria Giobellini
  PepsiCo
- Werner Bossens
  European Commission
- Hugo Menito
  Unilever
- Laura Draghi
  FoodDrinkEurope
- Graham Hindley
  CEFLEX
- Shauna Halverson
  IRGA Food

Key Topics

- Food & Beverage Plastic Packaging European Legislation Overview
- Making Reusable and Recycled Packaging Solutions
- Improving Sustainability & Circular Economy
- Assessing the Possibilities of Applications in Chemical Recycling
- Looking at Innovation in Packaging Materials
- Acknowledging Future Directions and Scientific Development
- Exploring New Recycling Technologies
Entrepreneurial strategy
Core assets
Problem/solution fit
**Product/market fit**
Perspectives on entrepreneurial strategy
What do you bring to the table?

What offering do you build based on this, what is the added value of this offer for your customers?

What is the concrete plan? How do you build and bring this offering to the market?
“Product / market fit is being in a good market with a product that can satisfy that market. It’s about capturing value.”

Marc Andreessen
DEFINING A PRODUCT FOR A MARKET

- Quite often not from scratch...
  - Often no-brainer, or +/- well-defined range of possibilities
  - Even at startup product/market is often known

- **Product starters**: they leave their existing employer when they have a concrete idea for a product, often for the customers of their current employer

- But for **Technology starters** finding a product/market for their core assets is often an issue
  - A technology in search of a market
  - Often the challenge is that the technology entrepreneur has no affiliation with the user industry

- You should consider and rank different product/market combinations
- In this part we focus on the analysis per product/market combination
<table>
<thead>
<tr>
<th>Core assets</th>
<th>Problem / Solution fit</th>
<th>Product / Market fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>What exactly are your core assets?</td>
<td>Who is your customer? What does he/she do today?</td>
<td>What will be your place in the supply chain/ecosystem?</td>
</tr>
<tr>
<td>Are your core assets exclusive?</td>
<td>What is his/her pain?</td>
<td>Who will be your key partners?</td>
</tr>
<tr>
<td>What strategy fits your core assets?</td>
<td>What solution do you offer?</td>
<td>Can you make money with this product / market combination?</td>
</tr>
<tr>
<td>In what stage of finalization are they? What remains to be done?</td>
<td>Why are you better than alternatives?</td>
<td>What resources do you need to start, grow?</td>
</tr>
<tr>
<td>Do you have freedom to operate?</td>
<td>Are there any show-stoppers?</td>
<td>Is it an attractive market?</td>
</tr>
</tbody>
</table>
You almost never can provide **the whole product** on your own

- There are exceptions...
  - Standard Oil, IBM in the 60’s came very close
  - Google, Facebook, eBay... (Don’t underestimate their core assets!)

- Full vertical integration = covering the full supply chain
  - From raw material to customer services

Different roles are possible

- Architect or module in the supply chain or ecosystem? Both can be realistic strategies, much depends on sector. Some examples:
  - Trinean: Full solution for biomedical lab analysis instead of just the reader component (‘it’s better to sell one copy at 100,000 euro than 1,000 at 100’)
  - BEST sorting: sorting equipment for food manufacturing
  - Intel: component -> subsystem

- Alternatives must be considered closely
  - Pixar...

- We will see later that keeping your options open might be a sensible approach

Role in ecosystem generally impacts many aspects:

- Competitive position; capital needs; minimum size; scalability...
Supplier of specific component (incl materials) to manufacturer downstream in value chain
- Plastics for packaging
- PDF editing tools for graphics arts market
- 3D chip, system, camera, subsystem...

How to be successful
- Competitive advantage through
  - IP, Speed, secrecy
  - Focus
- Relevance, added value

Sustainability!
- How long is your component needed?
- How long can you continue to be the best?
  - From when on is the component ‘good enough’, and do you lose your competitive advantage?
- Other players may embrace your field
  - Manufacturing of GSM components for PCs
  - Spreadsheet -> Office Suite
WHAT’S YOUR PLACE?

EXAMPLE COMPONENT SUPPLIER

Architect

- May require broad scope of activities at the outset
- Creates design rules, define visible information
- Convinces people this architecture will prevail
- As modularity is established, leads the evolution of the business ecosystem

Module player

- Conforms to the architecture, interfaces and test protocols established by others
- Masters the hidden information involved
- Relies on superior execution
What’s Your Place?

Scaleability: Services vs. IT and Manufacturing

- How easily can you grow in size?
  - Google vs. Colruyt vs. McKinsey
- Pure Internet is almost infinitely scalable
  - But how durable is the competitive advantage then?
- Service are very hard to scale
  - Consultancy
  - Creative services
Some elements of strategy

- Compatibility between versions
- Consistency of Application Program Interfaces (API’s)

Example Microsoft early 2000’s

- 40,000 employees
- In total 38,000 partner companies
- 5 million people develop software for/on Microsoft software (members MSDN)
- 2,000 people full time on developer support
THE ROLE OF INDUSTRIAL PARTNERS

- Often essential role
  - IBM for Microsoft
  - Adobe for Enfocus
  - Softkinetic (and others) for Optrima
  - Energy players as investors in Photovoltech

- Different formats for role
  - Investor
  - Customer, supplier
  - Joint marketing

- Different time frames
  - Dependant on volatility of market, evolution of industry

- Roles change, balance of power shifts

- Always be on the outlook for interesting partners

- ! There must be a clear strategic reason for the partnership on both sides
OUTSOURCING

= The **contracting out** of a business function - commonly one previously performed in-house - to an **external provider**

Deciding what to outsource and what to do internally is a major and very complex decision.

- What are the core assets you wish to invest in? What is secondary?
- Is the required expertise really available @ partner?
- Will you depend on just one supplier?
- Will you be able to compete? Can you become large enough to compete, given the market, network effects and economies of scale?
- IP leakage: train your future competitor?

- Can provide shortcut to a more competitive product
- But it typically contributes little to building the people-embodied skills that are needed to sustain product leadership

**Example Chrysler**
- Engines and power trains just one more component, outsourced
- Becoming dependent on Mitsubishi and Hyundai
Mobile in 2001

Virgin Mobile, the first MVNO, emerged & targeted youth segment

Mobile reaching full penetration; mass marketing; beginning to give way to niche approaches

Infospace, a 3rd party wireless portal, is working with Virgin

Ericsson working with Microsoft on microbrowsers

Sychip has consolidated significant function in a chipset

Various announce development of powerful digital signal processors

Users
Computing
Network Operators/Service Providers
Applications
Design/Manufacturing
Operating Systems
Components
Virgin Mobile
Vodafone Group
IT
France Telecom
Deutsche Telekom
Telecom Italia Mobile
Telefónica
KPN
Others
Nokia
Motorola
Ericsson
Siemens
Alcatel
Philes
Panasonic
Mitsubishi
Mitsubishi
Sony
Others
Texas Instruments
Ericsson
Philips
Qualcomm
Alcatel
Intel
Lattice M
Motorola
Relatively little incursion to date from consumer electronics

Massachusetts Institute of Technology

Michael A M Davies
23 April 2007, Page 14
MAPPING THE BUSINESS ECOSYSTEM

- **Vertical axis**
  - Generally (extended, ‘whole’ product’) value chain
  - Relevance to subject at hand
    - Are you an industry analyst?
    - Or do you need it for company-strategic purposes?

- **Horizontal axis:**
  - Market (standards)
  - Adjacent markets

- **Cells**
  - Companies, products
  - Relative size

- **Dynamics**
  - Spot changes in different dimensions
  - At industry level, at company level
  - Identify opportunities and threats

- **Your position and strategy**
THE THREE ECOSYSTEM MAP DIMENSIONS

ARCHITECTURAL MAP
- How things work, roles
- Contributions of individual participants or business elements
- “You are here and there are your neighbors”
- Basic education about the STRUCTURE of the business, roles and niches, and who its competitors and complementors are

BUSINESS MAP
- Participants with relative share, at a point in time
- Optionally, adjacent ecosystems too
- “Who’s doing well”
- Illustrate relative SCALE or strength of a business, its competitors and complementors
- Can demonstrate ecosystem invasion

CHRONOLOGICAL MAP
- Detailed ecosystem changes (or events) over time
- Activity compared with competitors (benchmark)
- Evolution trajectory
- “What’s going on”
- Show historical or potential DYNAMICS in the ecosystem
- Show strategic intent
- Help plan for strategic goals
By 2004 - major contests

By 2004, it is likely that a robust ecosystem will be forming around Linux.

By 2004, consumer electronics players will significantly incursions into mobile.

As component vendors add functionality to chipsets, terminal vendors surrender value to them.

Major content providers enter as MVNOs.
Mobile Business Ecosystem
Business scale – share of 2005 spending (estimated)
By 2010:

Same markets?
Same players?
Same value chain?

What happened to Nokia?
Ecosystem positioning

- Tremendously important
- Extra dimension, for Optrima in big lines:
  - Consumer (= mainly TV, PC, Gaming)
  - Industrial (= many small ones)
  - Automotive
- Helps you make good decisions
- Important to forge partnerships
WHAT'S YOUR PLACE?

MAPPING THE BUSINESS ECOSYSTEM: OPTRIMA CASE

3D Ecosystem

- Mass volume
- Risky!
- Small margin

Systems
Software
Camera
Chip

CE/Gaming  Industrial  Automotive
# WHAT'S YOUR PLACE?

## MAPPING THE BUSINESS ECOSYSTEM: OPTRIMA CASE

### 3D Ecosystem

<table>
<thead>
<tr>
<th>Systems</th>
<th>More stable</th>
<th>Low volumes</th>
<th>High margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software</td>
<td>Fragmented</td>
<td>Slower</td>
<td></td>
</tr>
<tr>
<td>Camera</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chip</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **CE/Gaming**
- **Industrial**
- **Automotive**
3D Ecosystem

- Systems
- Software
- Camera
- Chip

CE/Gaming | Industrial | Automotive

- Very slow
- Very stable
- Mass volume
- Small margins
WHAT'S YOUR PLACE?

MAPPING THE BUSINESS ECOSYSTEM: OPTRIMA CASE

Diagram showing the placement of systems, software, camera, and chip in the CE/Gaming, Industrial, and Automotive sectors.
WHAT’S YOUR PLACE?

MAPPING THE BUSINESS ECOSYSTEM: OPTRIMA CASE
MAPPING THE BUSINESS ECOSYSTEM: OPTRIMA CASE

WHAT’S YOUR PLACE?
WHAT'S YOUR PLACE?

MAPPING THE BUSINESS ECOSYSTEM: OPTRIMA CASE
WHAT'S YOUR PLACE?

MAPPING THE BUSINESS ECOSYSTEM: OPTRIMA CASE

Ecosystem stimulating the value chain

Microsoft

Systems
Software
Camera
Chip

sys. integrators

Kinetic NV

PMD

MESA

CE/Gaming
Industrial
Automotive

Copyright © 2009 Optima N.V
Key Milestone for Optrima

- Announced 2009 → project Natal
- Worldwide Release November 2010
- Fastest selling CE product (8 million in 9 weeks)
XBOX Kinect: Good or bad?

- **Before/After Microsoft:**
  - Before: Market recognition lower
  - Before: A lot of explaining/evangelizing to do
  - After: There is a market for 3D ToF
- Microsoft is big, but cannot consume the whole market, main focus today is gaming, not TV, PC, STB
- Sony/Nintendo/??? also exist
- Microsoft wants the best technology
- People want to pay for independence
- Microsoft has been accelerator in non-microsoft markets, eg. security monitoring, automotive, ...
Microsoft To Acquire 3D Chipmaker Canesta (10/29/10)

SUNNYVALE, Calif. — Canesta Inc., which makes 3-D imaging chips, has agreed to be bought by Microsoft Corp. for an undisclosed amount.

The deal announced Friday comes less than a week before Microsoft is set to start selling Kinect, an add-on for Xbox 360 that can interpret players' body movements, using them to control what happens in the game. Kinect will allow people to play video games without having to mash buttons on a plastic controller.

Redmond, Wash.-based Microsoft worked with another 3-D sensor company, PrimeSense, in building Kinect. It had also acquired 3DV, a PrimeSense competitor, but did not end up using its technology.

Canesta, based in Sunnyvale, said the acquisition is expected to close before the end of the year.
Sony buys VUB spin-off SoftKinetic!

09.10.2015

The Brussels company SoftKinetic, producer of 3D Sensors, has been sold to Sony. Their sensor was invented and developed at the ETRO lab from Vrije Universiteit Brussel with support from FWO, IWT and the Brussels Region.

Professor Hugo Thienpont, Vice Rector for Innovation and Valorisation of Vrije Universiteit Brussel: "In the future it is expected that this original VUB technology will become widespread."

SoftKinetic makes hardware and software that can detect and analyze movements in 3D. The technology is after all already in use at BMW and Facebook, the latter for its 3D glasses Oculus Rift. The hard and software of Softkinetic will undoubtedly become mainstream the coming years. The technology will not only be used in game consoles, but also in the automotive industry, such as self-driving cars and virtual reality applications.

And in 2015...
Sony Acquires Softkinetic

in its Push Toward Next-Generation Range Image Sensors and Solutions

Application areas:
- surveillance cameras
- factory automation
- Internet of Things
- drones
- automotive applications

Sony

possesses expertise in
- advanced camera technologies,
- lenses
- signal processing
- recognition algorithms
- power consumption management

acquired Softkinetic Systems in order to gain technology and business know-how for developing new applications and moving into new markets

Sony will focus on

combining Softkinetic's ToF range image sensor technology expertise with its own technologies

with the aim of developing the next generation of range image sensors and solutions

not only in the field of imaging, but for broader sensing-related applications as well

No material impact is anticipated on Sony's consolidated financial statements
WHAT’S YOUR PLACE?

MAPPING THE BUSINESS ECOSYSTEM:

- Your position and strategy
  - What is your place
  - Evolution: strategy

- Why you do this
  - Required understanding of your market
  - Anticipate changes, define own strategy

- To be used by entrepreneur in an intelligent way
  - Scale, degree of detail... depend on requirements of project
  - In some circumstances it may be overkill
COMPLEMENTARY ASSETS

Who will be your key partners?

- Your core assets generally are not sufficient to have a rounded offer to the market, complementary assets may be required
  - Especially if you are a small startup...
  - Complementary assets generally linked to value chain of industry, or to product complements
    - Biotech & pharma,
    - Apple & music labels for iPod

- If there are players with important and ‘exclusive’ complementary assets: you may need to team up with them, and share the value

- Owners of strong complementary assets may also consider entering in your market
  - Can you forbid them (patent?)
  - Does it make sense for them, does it fit in their strategy?
  - Speed versus resources...

- Note on terminology
  - ≈ Complementary goods/services: are traded on markets
  - vs. Complementary assets: has strategic importance to a firm and may lead to a competitive advantage and generation of value. Usually you need these assets to offer a rounded product/service to the market, but other may have control over them. (e.g. can be infrastructure, specific human resources...)
WHO WILL BE YOUR KEY PARTNERS?

- **EMI**: electronics company active a/o in sound equipment, ended up in recording business
- The CAT Scanner was a medical imaging system developed by Godfrey Hounsfield at EMI.
- EMI had **no track record in medical electronics** but was so confident of the success of the product that it decided to develop its own scanner business.
- This market attracted entrants by established medical imaging companies. These were **better placed to sell and support this equipment**.
- Although EMI had applied for a number of **patents**, this **did not prevent** the appearance of competing machines. By 1976, EMI had lost market leadership in the US market.
- EMI was beginning to have difficulties in other parts of its business. In 1979, EMI was sold. The buyer immediately **sold off the CAT scanner business to GE at a knockdown price**.
- Godfrey Hounsfield shared the Nobel prize for **medicine** in 1979.
WHO WILL BE YOUR KEY PARTNERS?

COMPLEMENTARY ASSETS: EMI EXAMPLE

Core assets
- Relevant
  - Nobel prize-level knowledge of CAT scanners
  - Patents
  - First mover advantage
- Irrelevant
  - Consumer brand name
  - Knowledge of movie and recording industry

Needed complementary assets
- Experience in manufacturing medical products
- In-depth understanding of hospital market
  - Investment decision making, key players,...
- Expertise in reimbursement processes by national social security organizations
- Sales and marketing channels
  - GE: 300 persons
- Service and support system
  - GE 1200 persons

Threat of entry
- General Electric, Siemens, Philips = incumbents in medical equipment market
  - Posses complementary assets
  - Virtually unlimited resources
COMPLEMENTARY ASSETS: THROMBOGENICS

Beursparcours Oxurion
(herberekend naar OXURION NV, total return indexen)

Bron: Refinitiv Datastream
Key questions: are the complementary assets you need owned (more of less) exclusively by specific players in the market? Or are they readily available, or easy to build up yourself?
WHO WILL BE YOUR KEY PARTNERS?

COMPLEMENTARY ASSET STRATEGIES

Managing innovation & entrepreneurship, Fiona Murray, MIT Sloan School of Management, 2008
### Who Will Be Your Key Partners?

**Complementary Asset Strategies**


<table>
<thead>
<tr>
<th>Can innovation by the start-up preclude effective development by the incumbent?</th>
<th>Do incumbent’s complementary assets contribute to the value proposition from the new technology?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No: The Attacker’s Advantage</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes: Reputation-Based Ideas Trading</td>
</tr>
<tr>
<td></td>
<td>No: Greenfield Competition</td>
</tr>
<tr>
<td></td>
<td>Yes: Ideas Factories</td>
</tr>
</tbody>
</table>
Strong intellectual property protection by startup but incumbents control the complementary assets
- Biotechnology, electronics components
- Key issue is not longer whether to pursue a cooperation strategy but when and how
- Start-up with leading technology will focus on research and commercialize through reinforcing partnerships

Ideas factories can
- Enhance the competitive advantage for incumbents by reinforcing the basis of advantage for those established firms
- Offer a fertile source of new innovations for incumbents, especially when the start-up’s technology is complementary to the existing value proposition

Return on innovation will depend on the bargaining power of the start-up
- And its bargaining skills!
- Hire accordingly

How to enhance the bargaining power of your start-up
- Clearly signal and demonstrate the value of the technology
- Disclosure does not undermine bargaining power because appropriability is strong!
- Play established firms against each other in a bidding war
WHO WILL BE YOUR KEY PARTNERS?

COMPLEMENTARY ASSETS IN BIOTECH
BioNTech

- German company founded by Ugur Sahin and Ozlem Tureci
- Pioneering work on vaccines made with mRNA
  - the molecules in our cells that pass genetic instructions from our DNA to particles that make proteins, the building blocks of life.
- Initially, mRNA was mainly used to treat cancer.
  - The technology is very suited for oncology, as the DNA of every tumor is different.
- Collaborated with Pfizer on a flu vaccine.
- In 2019 the company made €109m, compared with Pfizer’s $52bn.

On January 24 2020
- Sahin and Tureci read an article about a mysterious disease in Wuhan, China
- “We knew that we are most likely running into a global pandemic”
- We started to think about how to implement a vaccine development
- To do that we had to pivot the entire company.
- ‘We felt the responsibility to start to develop a vaccine, because we knew the potency of our technology’
Old-school vaccines
- are made with real virusses, often grown slowly in eggs

mRNA molecules
- are produced rapidly in a lab, programmed with a bit of the virus’ genetic code
- the vaccine instructs your cells to make replicas of the spikes of the coronavirus
- These replicas can’t make you sick but they do teach the immune system what the virus looks like.
- -> If the real virus shows up, the immune system will attack
- Since the human body produces the viral proteins itself, mRNA vaccines are easier and faster to produce
  - in a few months instead of 1-2 years
- The production of these vaccines can also be scaled up more quickly.

By February 2020 (!) BioNTech had produced 20 different versions of mRNA that triggered immune responses in mice and monkeys

-> so, what’s next?
what remains to be done...
  - medical trials
  - manufacturing
  - distribution
  - administration

Sahin knew his small company would need help
  -> he called his friend at Pfizer, Kathrin Jansen
    - Senior VP and Head of Vaccine R&D

Earlier, Pfizer's CEO, Albert Bourla had been pressing Pfizer scientists to develop a vaccine quickly.
  - Kathrin Jansen convinced Bourla that mRNA technology had the best chance of meeting his tight deadline.
  - Bourla signed off on the partnership

50/50 split of Gross profit from revenues
By May 2020, Pfizer was ready to start testing the vaccine in the U.S.

- Dr. Mark Mulligan, director of NYU-Langone vaccine center in Manhattan.
  - worked on HIV/AIDS vaccines, Zika, Ebola– flu pandemic vaccines.
  - +/- 44,000 people mostly between 16 and 85 around the world volunteered for double blind trials, testing the vaccines against a placebo.

Normally medical trials run sequentially through three phases. To speed up the process, the FDA allowed the COVID-19 vaccine trials to run simultaneously.

- “Given the huge public health emergency that we're in internationally, it was appropriate that all speed be used. I promise no corners have been cut on the usual safety evaluations.”

In November 2020 the Food and Drug Administration (FDA) confirmed that vaccine is over 90% efficacious.
Albert Bourla: “When we made our vaccine, no mRNA vaccine or drug was produced anywhere in the world. We had to create the production infrastructure from scratch.

But with
- our 172 years of drug manufacturing experience
- substantial capital commitment
- an army of highly trained scientists, engineers and manufacturing workers

... we have developed in record time the most efficient production machine for a life-saving vaccine the world has ever seen.”

Availability of the raw materials.
- the vaccine requires 280 different materials and components sourced from 19 countries around the world.
- Many of these suppliers received significant technical and financial support from Pfizer to ramp up production

distribution of the vaccine
- must be transported at -70°C, which poses significant logistical challenges
- In 2020, United Parcel Service (UPS) began building two giant cold stores that can will house 600 freezers with 48,000 vials of vaccine each at -80 Celsius.
GREENFIELD COMPETITION

- Strong intellectual property protection and incumbent complementary assets are unimportant
  - Doesn’t happen that often... (e.g. Xerox)
  - Start-up innovators can preclude effective imitation

- The power to determine the most effective commercialization strategy lies with the start-up innovator
  - Both competition and cooperation may be effective

- Ability to control the development and evolution of platforms and standards may be decisive
ATTACKER’S ADVANTAGE

- Poor IP protection + incumbents don’t control the complementary assets
  - happens quite often
- Startups must exploit the blind spot of current market leaders & target the underserved customer groups
  - “stealth” is a crucial element of an effective strategy
  - don’t moon the giant!
- Competition is likely to be intense
  - start-ups and incumbents are on a “level playing field”
    - start-ups can overturn established positions and capture market leadership
  - incumbents can imitate once they recognize the threat
    - easy imitability weakens position of initial innovator
    - increases risk of getting only small share of the value over the long-term
    - reduces advantage from either cooperation or competition
- Speed is essential
  - be faster, so as to be systematically ahead of competition
  - applies as long as one can make the difference based on technical advantage
- Ecosystems properties such as network effects and lock-in determine whether first mover can build sustainable advantage
  - Facebook
- Poor IP protection and incumbents control the complementary assets necessary for effective commercialization
- Disclosure problem !!
- In capital intensive industries, incumbents are tempted to expropriate technology revealed to them (e.g. Automobile, aircraft..)
- Start-up has to rely on reputation-based ideas trading
### MIT research on commercialization strategies

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- No: 14%  
- Yes: 34%
- No: 30%  
- Yes: 56%

**WHO WILL BE YOUR KEY PARTNERS?**

**COMPLEMENTARY ASSET STRATEGIES**
A business model describes the rationale of how an organization creates, delivers, and captures value.

Osterwalder et al.
2010
“...a business model is (...) defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit”

David Teece

2010
A business model answers two key questions in finding a product/market combination:

1. **Can you make money with this product/market combination?**
   - It is the Zen description of the way you make money
   - Different ways to make money (see next slide)

2. **What funding (resources) do you need to start, grow? (see also entrepreneurial finance)**
   - The amount of cash required before a company achieves positive cash flow
     - Investments
     - Losses during startup period
     - Money tied up in the process (stock, payment conditions...)
   - What is the maximum financing need of the business model?
   - Over what period of time is the investment required?
   - At what point does the cash flow of the company turn positive? What is the break-even point?
   - Where do you (plan to) get the money from? How does this affect your company?

These are reflected in the **value chain** of a company
- **Different Ways to Make Money**

  - **Build and maintain an expensive infrastructure and let users pay for the services you deliver over it**
    - French highway network operators
    - Electrabel
    - Belgacom, Telenet...
  
  - **Sell equipment at low cost and make money on consumables**
    - Printers
    - medical equipment
  
  - **Provide free-of-charge service to a wide audience and make money on linked services offered to third parties (often ads)**
    - Gouden Gids
    - Metro
    - Google
  
  - **Provide expert services to customers for a fee**
    - Legal, IT, cooking...
  
  - **Sell made-to-order PCs direct to end-users**
    - Dell
  
  - **Often the business model is a no-brainer**
    - Horeca, consulting, taxi’s...
  
  - **Sometimes business model innovations fail...**
    - Netscape
  
  - **Complexity, needed resources and expertise, longevity may vary**
DIFFERENT WAYS TO MAKE MONEY: DEVICE CONSUMABLES

- Sale of two interdependent products
  - equipment or instruments,
  - consumables

- Examples
  - Printers and ink
  - Medical devices and consumables

- You can decide to price the equipment low and rely on sales of consumables
  - Sales of the consumables is dependent upon the installed base
**BUSINESS MODEL**

**DIFFERENT WAYS TO MAKE MONEY**

- Online auction company; create IT infrastructure that allows people to communicate for a modest fee

**The Company:**
- takes no part in transactions
- has no responsibility for
  - goods offered at auction
  - collecting the payments
  - shipping the goods
- Receives revenues from seller fees
- Pays the cost of
  - building and maintaining the online infrastructure
  - marketing, product development
  - general and administrative expenses

**The internet economy**
- Relatively low fixed costs and no variable costs gives the company enormous operating leverage
- Small number of salaried employees can handle huge and growing volume of business
- Compare what it takes to run eBay and Colruyt
- A increase in transaction volumes and revenues can be achieved with modest extra investments

**Network effects**
- Very strong first mover advantage
DIFFERENT WAYS TO MAKE MONEY: EBAY vs. WEBVAN

**Webvan**
- was an online grocery business
- embraced a total customer satisfaction model with a 30 minute delivery window
- invested $1 billion in warehouses, bought a fleet of delivery trucks, and at least 115 Herman Miller Aeron chairs (at over $800 each)
- At its peak, it offered service in ten U.S. markets
- None of Webvan's senior executives or investors had any experience in the supermarket industry.
- Orders were smaller than the minimal order size to be profitable, so money was lost per order
  - ‘Its business model was profit proof’

**Webvan**
- went from a $1.2 bn company with 4,500 employees to bankruptcy in under two years.
- Investors including Sequoia Capital (Apple, Google) saw Webvan’s stock plummet from $30 to just six cents in a few months.
DIFFERENT WAYS TO MAKE MONEY: EBAY VS. WEBVAN

EBAY
- Very low investments
- Very low operational costs
- Little marketing expenses
- High margins
- Low risks

WEBVAN
- Huge up-front investments (minimal threshold to run business: distribution centers, logistics...)
- Huge operational costs
- Requires major change in daily habits of customers: requires time and marketing efforts to win them over
- Cost model of Webvan is on at least one points worse than traditional distribution: in the supermarket order picking is done by the customer
- Distribution is very low margin business
- Distributors have huge buying power, receive lower prices
- Business model requires minimal sales value per transaction
- Very high risk: Up-front investment

BUSINESS MODEL
Entrepreneurial strategy
Core assets
Problem/solution fit
Product/market fit ctd.
Perspectives on entrepreneurial strategy
Figure 1. Global recorded music industry revenue 1999-2020 (USD Billions)

Global streaming music subscription market, Q2 2021

Source: MIDiA Research Music Subscriber Market Share Model 11/21
A strategic management template used for developing new business models and documenting existing ones

The nine "building blocks" of the Business Model Canvas were initially proposed in 2005 by Alexander Osterwalder

Infrastructure
- **Key activities:**
  - The most important activities in executing a company's value proposition.
- **Key resources:**
  - The resources that are necessary to create value for the customer; can be human, financial, physical and intellectual.
- **Partner network:**
  - Organizations usually cultivate buyer-supplier relationships so they can focus on their core activity.

Offering
- **Value propositions:**
  - The collection of products and services a business offers to meet the needs of its customers. According to Osterwalder (2004), a company's value proposition is what distinguishes it from its competitors.
BUSINESS MODEL CANVAS

Markides, 1999; Osterwalder & Pigneur, 2002; Osterwalder et al., 2010
BUSINESS MODEL CANVAS

DEVELOPED BY ALEXANDER OSTERWALDER,
## Business Model Canvas

### Key Partners
- Who are our Key Partners? Who are our key suppliers? Which Key Resources are we acquiring from partners? Which Key Activities do partners perform?
- MOTIVATIONS FOR PARTNERSHIPS: Optimization and economy, Reduction of risk and uncertainty, Acquisition of particular resources and activities

### Key Activities
- CATEGORIES: Production, Problem Solving, Platform/Network

### Key Resources
- TYPES OF RESOURCES: Physical, Intellectual (brand patents, copyrights, data), Human, Financial

### Value Propositions
- What value do we deliver to the customer? Which one of our customer's problems are we helping to solve? What bundles of products and services are we offering to each Customer Segment? Which customer needs are we satisfying?
- CHARACTERISTICS: Newness, Performance, Customization, "Getting the Job Done", Design, Brand/Status, Price, Cost Reduction, Risk Reduction, Accessibility, Convenience/Usability

### Customer Relationships
- What type of relationship does each of our Customer Segments expect us to establish and maintain with them? Which ones have we established? How are they integrated with the rest of our business model? How costly are they?

### Customer Segments
- For whom are we creating value? Who are our most important customers? Is our customer base a Mass Market, Niche Market, Segmented, Diversified, Multi-sided Platform

### Channels
- Through which Channels do our Customer Segments want to be reached? How are we reaching them now? How are our Channels integrated? Which ones work best? Which ones are most cost-efficient? How are we integrating them with customer routines?

### Revenue Streams
- For what value are our customers really willing to pay? For what do they currently pay? How are they currently paying? How would they prefer to pay? How much does each Revenue Stream contribute to overall revenues?
- TYPES: Asset sale, Usage fee, Subscription Fees, Lending/Renting/Leasing, Licensing, Brokerage fees, Advertising
- FIXED PRICING: List Price, Product feature dependent, Customer segment dependent, Volume dependent
- DYNAMIC PRICING: Negotiation (bargaining), Yield Management, Real-time-Market

### Cost Structure
- What are the most important costs inherent in our business model? Which Key Resources are most expensive? Which Key Activities are most expensive?
- IS YOUR BUSINESS MORE: Cost Driven (leastest cost structure, low price value proposition, maximum automation, extensive outsourcing), Value Driven (focused on value creation, premium value proposition).
- SAMPLE CHARACTERISTICS: Fixed Costs (salaries, rents, utilities), Variable costs, Economies of scale, Economies of scope

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Designed by: The Business Model Foundry ([www.businessmodelgeneration.com/canvas](http://www.businessmodelgeneration.com/canvas)). PowerPoint Implementation by: Neos Chronos Limited ([https://neoschronos.com](https://neoschronos.com)). License: [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/)
BUSINESS MODEL

CANVAS EXAMPLE: ZIPCAR

142
Pay-per-use business model


- Insurance companies
- Post service
- Parking places
- Online paying platforms (credit cards)
- Legal support
- Marketing support
- Accounting support
- Gas stations
- Garage
- University Campuses
- Airports
- Network providers
- Unlock technology providers

On-demand access to drive cars by the hour or the day in cities, airports, and campuses around the globe

Company cars on-demand

Development & support of online platform (website, applications for Android and iOS etc.)

- Cars maintenance
- Logistics/scheduling
- Help center (online, phone)
- Car fleet
- Office facilities
- Human resources
- Parking places
- Location-specific wireless technologies, GPS
- Unlock technology
- Fuel card, Zipcard

Self-service online system (website, app)

Help service 24/7

FAQ

Promotional activities
- Facebook, Twitter, Instagram, Youtube
- LinkedIn

- Cars points
- Website
- Application Android & iOS
- Salespersons

One time registration fee 19 €

All in rate (parking, fuel, insurance, 100 km): 0,25 €/minute, 11 €/hour, 69 €/day (24h)

Extra 0,16 € fee per km after 100km, 50 € late fee

Monthly or annual subscription fee (in some countries)

Damage fee 750 €

Administrative costs (in case of a fine, damage)

- Fixed costs: cars, parking, insurance, depreciation, human resources (salary..), call center/help center, website & app development
- Variable costs: fuel, car maintenance, transaction costs for payments, marketing, website & app maintenance

Urban commuters:
- go to the airport, from home to work, afterwork
- drink

Short trips
Long trips
Day trips

Universities (users are students, faculty staff – private use, personal payment)

Companies (users are employees of these companies – separate business and private trips)

European vs US markets
<table>
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<td>Self-service online system (website, app), Help service 24/7, FAQ, Promotional activities, Facebook, Twitter, Instagram, Youtube, LinkedIn</td>
<td>Urban commuters: go to the airport, from home to work, afterwork drink, Short trips, Long trips, Day trips, Universities (users are students, faculty staff – private use, personal payment), Companies (users are employees of these companies – separate business and private trips), European vs US markets</td>
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<td>Key Resources</td>
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BUSINESS MODEL CANVAS EXAMPLE: STARBUCKS
Remember these examples?
WHAT IS THE PROJECT?

- Project = new product, new service (in startup or established company).
- You always need to make an overall assessment of a project, and often you have to choose between options and scenario’s
- **Criteria** you should include in your assessment
  - Financials (see entrepreneurial finance)
    - Capital needs
    - Potential return
  - Strengths of project
    - Unique competitive position?
    - Soundness of overall project
  - Time-to-market
    - Short term horizon or long shot?
  - Project complexity
  - Validation stage of project
  - Competitive position
  - ...
THE PIMENTO MAP

- a fast, easy and accurate way to
  - evaluate the chances of success of a business model
  - identify strengths, weaknesses or points of attention
  - validate the time-to-market readiness.
- helping managers, coaches, mentors or community managers to take decisions
- created by the Virtuology Academy team
  - based on in-depth research on hundreds of businesses
  - gives indication on which actions to prioritize and how to minimize risks
- 18 questions, 4 possible answers
  - gives 72 potential scenarios to consider
Some markets are more attractive than others

Main elements in Porter’s 5 Forces:

- **Rivalry**: who are your competitors?
- **Barriers to entry**: is the market easy to enter for newcomers?
- **Threat of substitutes**: do alternative ways of responding to customer need exist?
- **The number of players in the supply chain**
  - Are you dependent on a limited number of suppliers?
  - Are you dependent on a limited number of customers?
  - Few customers / suppliers = weaker bargaining position

Some elements I would add

- **Market dynamics**
  - Market growth? Stage on ILC?
- **Regulatory context**
  - Government related aspects

Porter’s five forces (1979) + our additions
"Using Porter’s five forces model: is the professional photography industry an interesting industry?"
Porter’s Five Forces:

Photographer’s market in 2010: lousy!
- Direct competition: lots of competitors, easy entry, attractive job
- Substitute products: journalists that take the photographs themselves, image banks (+ amateur photographers for weddings)
- Few and +/- shrinking customers (press)

Versus photocopier market in 1960’s: great! (for Xerox...)
- Huge need, no substitute
- No competitors thanks to patent
- Lots of customers, no key suppliers
PESTEL ANALYSIS FACTORS

**P** - Government policy
- Political stability
- Corruption
- Foreign trade policy
- Tax policy
- Labour law
- Trade restrictions

**E** - Economic growth
- Exchange rates
- Interest rates
- Inflation rates
- Disposable income
- Unemployment rates

**S** - Population growth rate
- Age distribution
- Career attitudes
- Safety emphasis
- Health consciousness
- Lifestyle attitudes
- Cultural barriers

**T** - Technology incentives
- Level of innovation
- Automation
- R&D activity
- Technological change
- Technological awareness

**E** - Weather
- Climate
- Environmental policies
- Climate change
- Pressures from NGO's

**L** - Discrimination laws
- Antitrust laws
- Employment laws
- Consumer protection laws
- Copyright and patent laws
- Health and safety laws

**PESTEL** stands for Political, Economic, Social, Technological, Environmental and Legal factors.
You will need to do the numbers:
- Market size
- Market share
- Price, margins
- Return on investment
- This can be extremely hard, but you will get better at it as time goes by.

Market sizes vary enormously:
- Game consoles vs milking robots
- You can make (a lot of) money in smaller markets too!

Some early stage investors will look at the long term overall market potential of your project; if this is sufficiently huge they will be interested.
the network effect can be broken down into a trio of underlying forces:
- the Acquisition network effect
- the Engagement network effect
- the Economic network effect

The Acquisition Effect
- the ability for a product to tap into its network to acquire new customers.
  - Only networked products mobilize existing users to attract new users from their personal networks
  - keeps customer acquisition costs low over time
  - tools: referral features that reward users when they invite others; tapping into contacts to create suggestions for who to add to an app
- examples of acquisition effect
  - hoplr: offers neighbours a free and closed social network
The “Engagement Effect”
- describes how a denser network creates higher stickiness and usage from its users
- For example, Twitter
  - early days: an app to stay in touch with friends
  - now
    - tracking political news
    - keeping abreast of what’s happening in your industry
    - keeping up with your favourite celebrities
    - ...
  - more engagement directly drives key metrics
    - number of sessions per user
    - the number of active days per month
- Retention curves can be improved as stickier use cases emerge

The “Economic Effect”
- the ability to accelerate its monetization, reduce its costs, and otherwise improve its business model, as its network grows
  - app stores and other marketplaces will grow their average revenue per user as the number of listings increases
HOW TO START A NETWORK EFFECT

-> The Cold Start Problem
- a.k.a. “chicken and egg” situation, needing to “bootstrap” a community.
- how to start a networked product
- The first stage of creating a network is the hardest

the solution: create the atomic network
- the smallest network needed that can stand on its own
- Networked products often start small, in a single city, college campus, or in small beta tests at individual companies
- and then duplicate: 2, 10 or 100 networks...
- -> Copy and paste many times
- example: Uber

the networked product should be launched in its simplest possible form
- a dead simple value proposition
- and focus on building density

do whatever it takes to get momentum
- $5 referral fee at PayPal
- “Uber Ice Cream” promotions: letting people order soft-serve ice cream via the rideshare app.
WHAT IS THE MINIMAL SIZE OF AN ATOMIC NETWORK?

Your product’s first atomic network is probably smaller and more specific than you think

- Uber
  - in the earliest days, the focus was on narrow, ephemeral moments: San Francisco 5pm at the Caltrain station at 5th and King St

- Slack:
  - 3 person groups that are the minimum required to be called a customer
  - once they reach a threshold of appr. 2,000 messages 93% of those customers continue using Slack”
  - first focus: “The Q2 planning cycle in the Product team at Chase Bank”

The more users you need to get to an atomic network, the harder it is to create

- There are networked products with small minimum size requirements
  - the telephone
  - Zoom
  - these can be build bottom-up

- If you need hundreds of users on the same platform at once, company-wide coordination is needed
  - Workday (a financial HR management tool)
Bank of America invented the credit card
picked Fresno, California, as its first test site.
- population around 250,000; the critical mass the bank thought necessary to make a credit card work
- 45 percent of Fresno’s families did business with the Bank of America

the bank mailed 60,000 Fresno residents a BankAmericard.
- no application process
- the card arrived in the mailbox, ready to use
- consumers received between $300 and $500 in instant credit
  -> On day 1, cardholders simply existed.

focused on the segment of small merchants in the downtown corridor of the town to complete the other side of the network.
- not the retail giants like Sears
- more than 300 Fresno merchants signed up
hard sides exist because there are tasks that requires more work
- they do more work and contribute more to the network
  - social networks: content creators
  - app stores: developers
  - workplace apps: managers that author and create documents and projects, and who invite coworkers
- a minority of users creates disproportionate value
  - as a result these have disproportionate power
- example Wikipedia:
  - 0,02% of the total viewer pool are active contributors
  - about 4,000 people make more than 100 edits in a month
- the easy side of a network are generally the consumers
  - are typically cheaper, easier to attract and retain
- users on the hard side
  - may expect status benefits and financial outcomes
  - will try competitive products to compare
  - -> their expectations are higher
  - -> difficult to engage and retain them
acquiring the hard side of the network and keeping them happy is paramount to setting up an atomic network

one should know how a product caters to users of the hard side from the start

one should be able to answer detailed questions:

- who is the hard side of your network, and how will they use the product?
- what is the unique value proposition to the hard side?
- how will they first hear about the app, and in what context?
- why will users on the hard side come back more frequently and become more engaged as the network grows?
- What makes them sticky to your network such that when a new network emerges, they will retain on your product?

These are difficult answers, and require a deep understanding of the motivations of your users

The motivations of the hard side depend on the product category

- content creators have different goals than marketplace sellers or those who use workplace collaboration tools
- understanding these diverse points of view makes it easier to serve them
a distinctive quality of networked products is that they do one thing well
- Snapchat lets you send photos to friends
- Uber lets you hit a button to get a ride
- YouTube lets you watch videos
- Dropbox is a magical folder that syncs your files
- Slack is a chat product for your coworkers

The dead simple nature of these products means that they often lack technology differentiation or defensibility
- Both Snapchat and Facebook were built by college students
- Uber’s app was initially outsourced to Mexico
- but network effects create defensible barriers

networked products love to be free
- charging customers directly is a straightforward way to generate revenue, but it adds friction for every new user to join the network
killer products often emerge at the moment the world changes
  - Zoom emerged together with
    - widespread broadband
    - remote professional work
    - accelerated by the pandemic
  - previous world-changing innovations
    - Macintosh and the graphical user interface
    - the internet, smartphones
  - In future years:
    - voice gadgets
    - AR/VR
    - the metaverse
    - or something else entirely

the companies that build the killer products on new platforms often create some of the most valuable companies in the industry
  - Apple, Microsoft, Google, Facebook, Amazon, etc
the killer product is just one ingredient in solving the Cold Start Problem
- Zoom had to find the user that adopted the product
  - Stanford Continuing Education Program
  - small Bay Area colleges could teach

A product that hasn’t yet solved its Cold Start Problem will fail to deliver any magic in its early days
- the network will seem empty, like a ghost town

But once the network forms, the Magic Moments start to happen all the time—that’s when the product is ready to expand. That’s when you know the Cold Start Problem has been solved.

a product delivers its core value once the killer product and the first atomic networks are built
- entertainment
- dating
- games, ...

-> then a company starts to create “Magic Moments”
Entrepreneurial strategy
Core assets
Problem/solution fit
Product/market fit

Perspectives on entrepreneurial strategy
If you assume, you make an ass out of u and me.

John Barton
The more novelty and the bigger, the more complex

Complexity for the firm
- Market, customers:
  - New? Familiar?
  - Markets, channels, type of customers
  - Sale methods, skills, contacts...
- Technology
  - How new for the firm?
  - + how far from mass production?
- Impact on processes within company
  - Is your organization equipped to deal with the project?
- Complementary assets
  - Do you need new partners? Do you have agreements with them?
- Team members’ experience in domains
  - Do you know the industry?

Complexity for the customer
- novelty of offering for customer
- (behavioral) change for customer
- dis-benefits to customer
  - These weigh heavily in decision making process
- + Cost; return on investment, total cost of ownership

There’s nothing wrong with complexity
- By doing complex things you build competitive advantage
- But you do have to cope with it

You need to assess your project’s complexity
- Can you decrease complexity?
- How will you cope with this complexity?
### PERSPECTIVES ON ENTREPRENEURIAL STRATEGY

#### PROJECT COMPLEXITY

<table>
<thead>
<tr>
<th>Technology Knowledge Decrease</th>
<th>Market Penetration</th>
<th>Business Extension</th>
<th>New Business Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability of success (%)</td>
<td>75%</td>
<td>50%</td>
<td>0.03%</td>
</tr>
</tbody>
</table>

- **Decreasing knowledge of the technology**

![EMI CAT scanner](image-url)
Some dimensions to take along when defining the degree of validation (and therefore of risk) of a project
- Seed money is essentially destined to move the project up the validation scale
- What do you have today?
- Technology
  - Lab demonstrator
  - Engineering specifications
  - Operational prototype
  - Value chain in place
  - 10.000 copies manufactured
- Intellectual property (see TT & IP session)
- Market
  - End-user customers, channel:
  - Letter of intent
  - Test installation
  - Signed customers
  - Operational customers, re-ordering, referenced
  - Market validation through customers
  - Installed base, recurring business
- Organization
  - Team composition vs. needs
- Financial
  - Revenue stream
  - Cash break-even?
    - UBER? Amazon? Spotify?
  - Profitable
- Project validation is the result of finding a product/market fit.
STRATEGIES FOR UNCERTAIN MARKETS

- Defining strategies based on narrow predictions is entirely the wrong mind-set for an inherently uncertain world
- We should take a cue from nature: rely less on our ability to make accurate predictions and more on the power of evolution
- Businesses should not have a singular focused strategy but instead cultivate and manage populations of multiple strategies that evolve over time
- Parallelism: the more places you are simultaneously exploring the more likely you are to find a higher peak in your fitness landscape

Eric D. Beinhocker Sloan Management Review Spring, 1999:

- Not only are the market applications for disruptive technologies unknown at the time of their development, they are unknowable
  - Market research is not an option for disruptive innovations
- Strategies and plans should be plans for learning and discovery rather than plans for execution
- The risk: spreading too thin
  - As with everything: local circumstances (company, industry) determine the right balance
  - Elk voordeel heb z’n nadeel
STRATEGIES FOR UNCERTAIN MARKETS: EXAMPLE HP

- Introduced in 1992
  - 1.3 inch form factor
  - Capacity of 20 MB

- Massive investment on forecasted market: PDA’s
  - Product optimized for this use

- Turned out the market didn’t materialize

- Other markets (GPS, gaming) did, but with different requirements
  - Cost vs. sturdiness

- Product was insufficiently flexible to adapt

- HP patience had dried up, project was halted
1988 Operating Systems landscape
- Largest market share: DOS 4.0
- Sexiest product: Apple Macintosh
- Range of vendors with proprietary OS: IBM, DEC, Siemens...
- Major developments in PC/Workstation OS market
  - IBM & Microsoft: working on OS/2
  - Microsoft: working on Windows 2
  - Sun+AT&T+Xerox: Unix Open Look
  - HP, DEC, Apollo, Siemens Nixdorf: Open Systems Foundation (Unix)

1988 Microsoft Strategy
- Continue to develop DOS
- Become the largest software developer for Apple Macintosh:
  - Word, Excel
- Develop Windows 1->2->3->95...
- Co-develop OS/2 with IBM

Microsoft...
- Couldn’t know what would happen
- Did have its preferred outcome: Windows domination
- But had options for other outcomes
  - Macintosh -> applications
  - OS/2: co-ownership
  - Unix: a major player
- And in parallel was building the core assets that were needed in any outcome
  - Graphical user interfaces
  - Object-oriented programming
- Buy SCO Unix, the largest provider of PC-based Unix Operating Systems
STRATEGIES FOR UNCERTAIN MARKETS: EXAMPLE MICROSOFT

Strategies are never cast in stone

You must systematically reassess the soundness of the strategy...

But you shouldn’t change course at every corner/issue either...

Illustration: Source Daniel van Nieuwenhoven
QUESTIONS?

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