


290T: The Business of Software: Business Models, Plans, and Strategies



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Fall 2003
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Class News

- **Visitor Wednesday, Bob Dahlberg, Intel, Daisy, Synopsys, Consultant, VP of Marketing at Reshape**
- **Lots on projects in the middle of the lecture**
- **Write an email with a few bullet items to Niraj:**
 - **Name, email**
 - **Background**
 - **Market/product idea**
 - **Technology/product idea**
 - **Or interests**

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UC Berkeley Entrepreneurs Forum
Thursday, September 25, 2003
6:30 - 8:30 PM
Haas School of Business
Arthur Andersen Auditorium

Topic: "2003 Venture Capital Report: A Savvy Assessment of Current Financing Trends"
Sponsored by Fenwick & West LLP

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Many inter-related factors

- Founding and sustaining a successful software business requires managing a complex set of inter-related elements
- We will spend two weeks trying to untangle these



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Last week: Product concept

- Now that you've identified a market opportunity you need a product to meet that market opportunity



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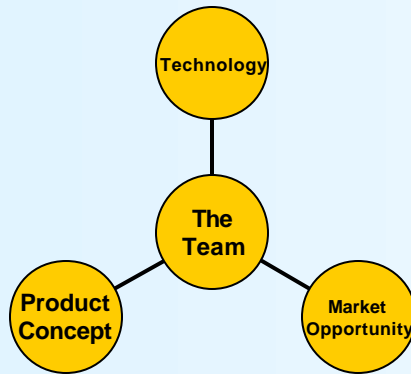
The Astute Marketer



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Identifying key technologies

- The business model will need to refine into product conceptualization and a product development plan



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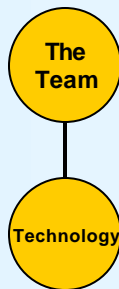
Not all teams start this way

- Remember our engineers?
- They get things started a bit differently

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Technology-driven team

- An engineering team will rarely operate in a vacuum, it's almost certain they have identified a new technology



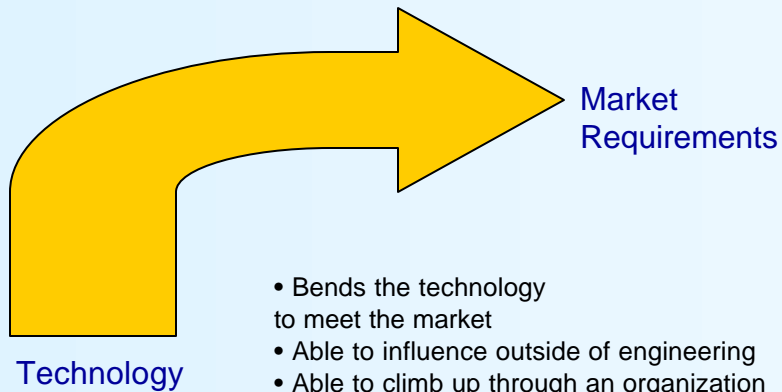
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The Technology

- Could be radically new and disruptive technology
 - Relational data bases
 - Logic synthesis
- Could be an incremental improvement (NB: Incremental improvements can still solve “headaches”)
 - Matlab accelerator
 - Compiled code Verilog simulation
 - Natural-language recognition
- Could simply be cheaper
- But a technology is still not a product – what does our engineer need to learn?

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The Savvy Engineer



- Bends the technology to meet the market
- Able to influence outside of engineering
- Able to climb up through an organization
- Able to found his/her own company

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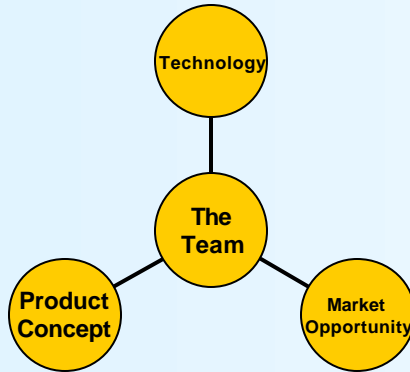
Product Concept/Market definition

- **Shape the technology into a product concept that meets the needs of an attractive market**
- **Often the technology is so flexible there is no pre-defined market for the technology**
- **The product concept and market identification must go together**
- **Because both the product concept and the market identification are fluid, more intuition (or superficial analysis anyway) will probably be performed**
- **Pairs of**
 - **product/target market**
- **must be quickly evaluated using informal models**

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Engineers get here too

-



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The Team at this Stage

If the plan is to start-up a company

- If the engineers and marketers are executives (VP and above), they better leave their company – they are supposed to be bringing these ideas to their current employer
- If they are junior they will probably wait till they think they can get some money – perhaps some seed (\$250K - \$500K) angel funding

If they are intra-preneurs (inside a larger company)

- Best-practice is to have an established method so that any individual in the company can get a new product idea noticed and formally reviewed
- So:
 - The engineers and marketers are still doing their old job but trying to get management attention for their new idea
 - The entrepreneur wants *even more* to spin-out the idea – or start a new business unit with profit and loss responsibility

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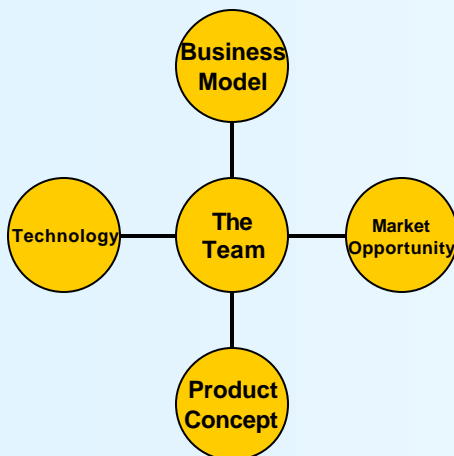
Now we need some funding

- Once the the key technologies identified, the product has been conceptualized, and its target market sized we're ready to really get started
- Everybody is ready to quit their job!
- But we still have bills to pay (most likely)
- Need some funding
- But first we need?

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The business model

- A business model is a system model for the inputs (intellectual property, human effort, capital) and outputs (products, revenue, earnings) of a business



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Simple Business Model

Depression era kid's business model (no, not me!)

- **Bootstrap:** Collect coal off train tracks, sell coal
- Use proceeds from coal to buy Newspapers, sell the newspapers on the morning trolley to commuters
- Use proceeds from newspapers to buy popcorn, pop the corn, sell pop corn on evening trolley to commuters

Has most of the key elements:

- **Team**
- **Capital, capital flow**
- **Customer identification**
- **Product identification**
- **Supply chain**

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A Basic Business Model

Your team

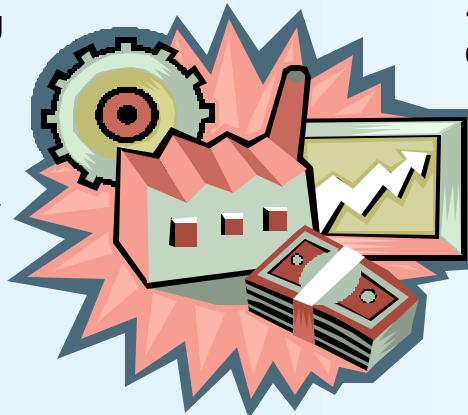
Factory/tooling

- Essential Infrastructure
- R&D Staff

Key technology

Capital needs

- Self-funded
- Angel, VC



Products/Services

- Product/service definition

Marketing

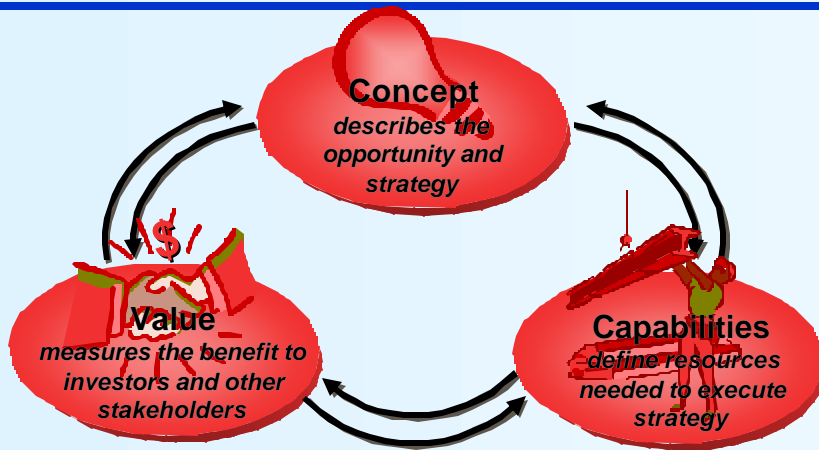
- Market sizing

Mktg/Sales

- Model of sales engagement

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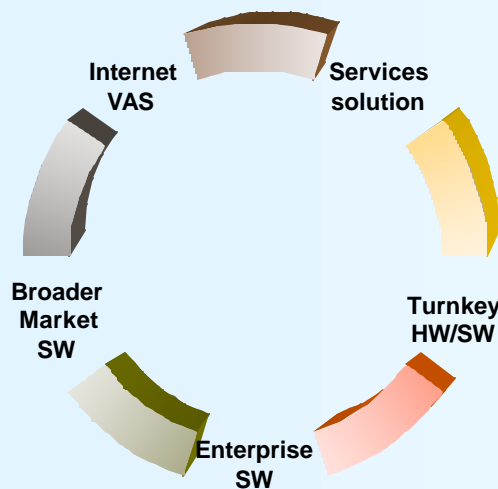
What is a Business Model?



Adapted from Applegate et al, *Corporate Information Strategy and Management*, Chapter 2
McGraw-Hill/Irwin 2003
Adapted by Ray Trygstad, Illinois Institute of Technology

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Each Point in the Cycle has its Own Business Model



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Getting 290T Projects Started

- **Marketing driven:**
 - Identify a market opportunity and
 - Size market
 - Develop marketing (product) requirements for product
 - Identify key technologies to realize the product requirements
 - Show the basic business model
- OR
- **Engineering driven:**
 - Given a technology
 - Show a number of ways of productizing the technology
 - Define the product that maximizes the opportunity including
 - Risk/Reward
 - Competitive environment
 - Barriers to entry

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290T Projects may be drawn from

- Your own technologies
 - Markets that you find/define
 - Locally identified (on-campus) technologies:
 - Ptolemy II – Contact Christopher Hylands
 - Randy Katz -<http://www.cs.berkeley.edu/~randy/research.html>
 - Dan Garcia <http://www.cs.berkeley.edu/~ddgarcia/software/gamesman/>
 - MESCAL: NP-CLICK – Will Plishker
 - Lava – Frank Gennari
 - Texas Hold-em – extraordinarily successful CS169 project – Niraj Shah
 - Feng Shui Software/Website – Kurt Keutzer
 - Product definition/marketing problems at commercial companies:
 - <http://www.catalytic-inc.com/>
 - <http://www.reshape.com/>
 - <http://www.pandorabots.com/pandora>
 - These are just some folks I know, or who have approached me
 - Or we'll help you make some contacts
- Get the latest on project ideas from:
- http://www-cad.eecs.berkeley.edu/~niraj/biz_sw/project.html
- May get “entrepreneurs at large” to help mentor projects

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Project Deliverables

- **Groups of 4 – each team has a Haas, SIMS, EECS representative**
- **May be either marketing or technology driven**
- **Must produce**
 - **Basic business model**
 - **Market opportunity**
 - **Product concept and market requirements**
 - **Technology inventory**
 - **Brief development plan**
 - **Sales model**
 - **Model customer engagement**
 - **Class presentation – 25 minutes**
 - **Short 3000 word (appendices don't count) written report**
- **IF it's natural you can present an entire business plan**

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A Detailed Model of Your Business Enterprise

Executive Management

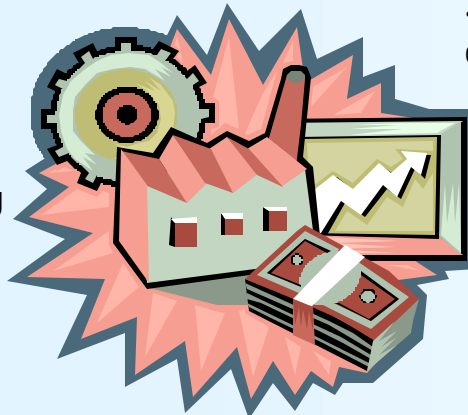
- CEO
- Mktg, Engr, Sales VPs

Factory/tooling

- Infrastructure
- Computing
- R&D Staff
- Support

Capital

- Self-funded
- Angel, VC



Products/Services

- Product/service definition

Marketing

- Market sizing
- Competition

Mktg/Sales

- Customers
- Model of sales engagement

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Are we there yet?

Business model should show a viable way of conducting the business

Look for innovative business models

- “The person who makes the rules is certain to win the game.” – Joe Costello – founder and CEO Cadence
- In an established market a successful product and business model may win market share, but a company that redefines the business model can own the market

With a business model are we ready to approach a VC for funding?

What collateral do we need?

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A Quantitative Detailed Model of Your Business Enterprise

Executive Management

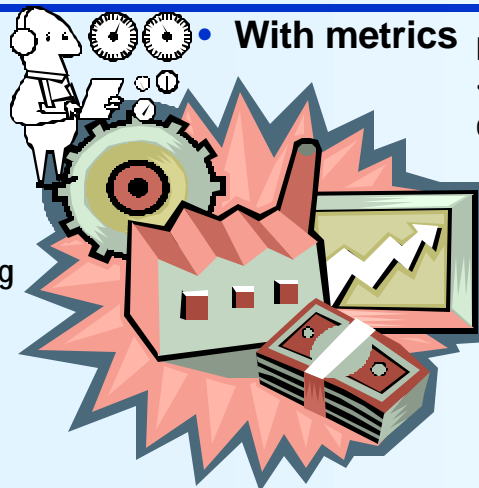
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• With metrics

Products/Services

- Product/service definition

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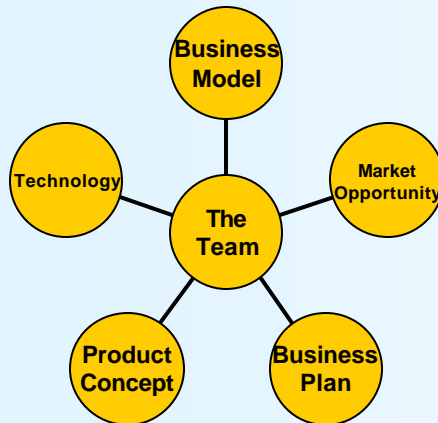
Mktg/Sales

- Customers
- Model of sales engagement

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Business plan

- Need a model of how the product is to be marketed and sold – with financials



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The business plan

The business plan is principally a codification of the business model

- Key questions to address:
 - Who are the customers? Target, alpha, beta
 - Why should they buy this product?
 - How will we validate that the product meets spec?
 - What is the “phrase that pays” for the product positioning
 - Is there a competitor that can cover your phrase? If not, who are closest competitors?
 - Who will be your reference customers?
 - What is the one action your competition could take in the next year that would hurt most?
 - What is the one action you could take that would hurt your competition most?

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Contents of a Strategic Business Plan for an Entrepreneurial Venture

I. Table of Contents	X. Human Resources Plan
II. Executive Summary	XI. Ownership
III. Nature of the Business	XII. Risk Analysis
IV. Strategy Formulation	XIII. Timetables and Milestones
V. Market Analysis	XIV. Strategy Implementation—Action Plans
VI. Marketing Plan	XV. Evaluation and Control
VII. Operational Plans—Service/Product	XVI. Summary
VIII. Financial Plans	XVII. Appendices
IX. Organization and Management	

**Wheelen/Hunger: STRATEGIC
MANAGEMENT AND BUSINESS POLICY, 8/e (Prentice-Hall, 2002)**

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Simple Outline of the Business Plan

- **Team overview**
- **Business environment**
- **Product Overview**
- **Sales and Marketing Plan**
- **Financial Summary**
- **Product Development Plan**
- **Final checklist**

Business plan should allow brilliance in:

- **Market identification**
- **Product and technology**
- **Business innovation**

to stand out

Business plan is not intended to hide flaws or baffle the viewer/reader

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The Team at this Stage

When presenting the business plan for funding the principals of the company must be available – even academics should be “on leave”

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Outline of the Business Plan

Well the business plan is almost a simple codification of the business model – what else do we need that's mentioned below?

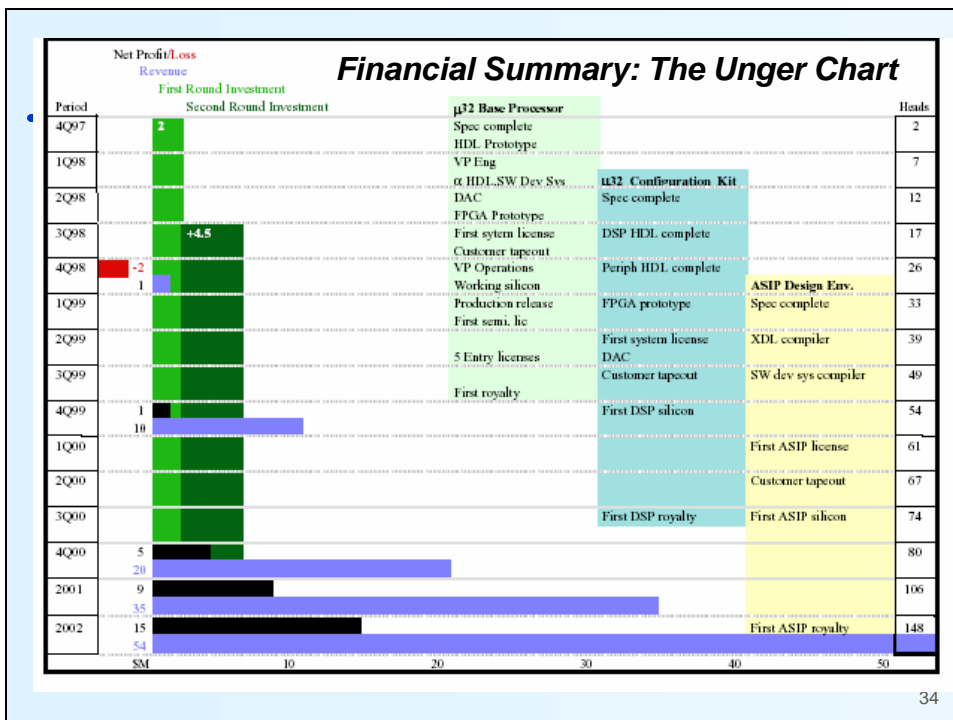
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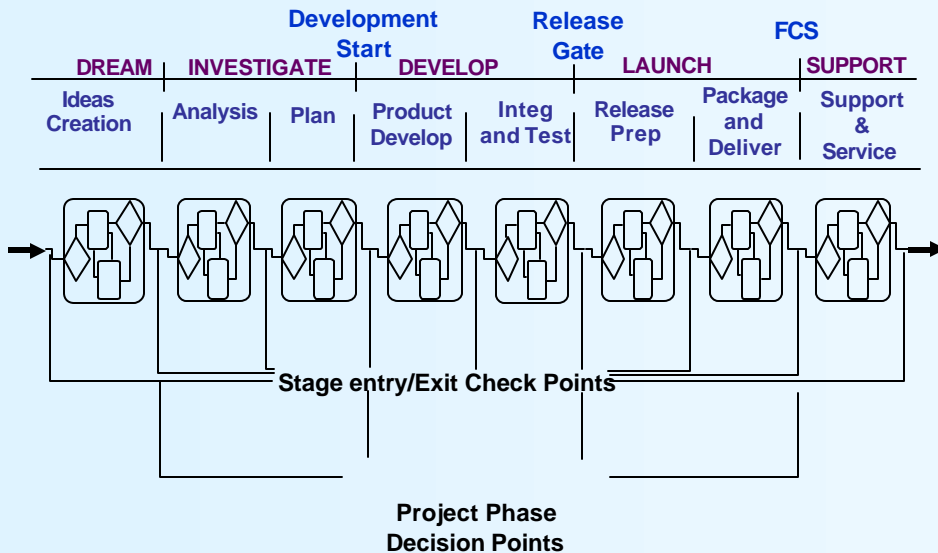
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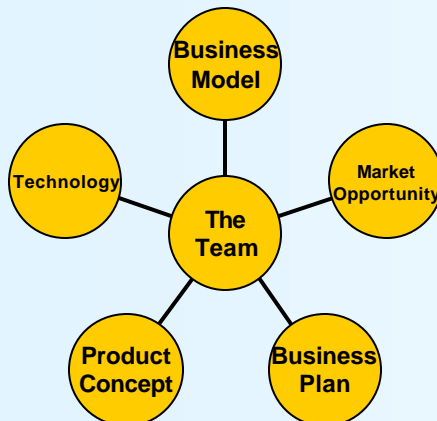
Semi-Waterfall Software Development Process



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Now we get funded? Right?

- With a promising market, an experienced team, a viable product plan, and reasonable financials funding is landed



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The BP Review Process

- Have an investment philosophy – be looking for the right deal
- Review the summary – especially the team.
- First meeting for about an hour, usually have associate there. **THE FIVE QUESTIONS**
- Do some due diligence
- Another meeting with other partners and more of the team, site visit if possible
- More due diligence, talk to other potential investors
- See if terms are in the ballpark, present to all the partners, make final offer, legal paper work, close

Reviewing a business plan for investment from a VC perspective
David Ladd/Bill Unger, Mayfield

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Q #1: Is your product or service a vitamin or a painkiller?

- Vitamins are nice to have
- Painkillers are essential and usually addictive
- Can you foresee a way to make your vitamins become one-a-day?
- What are your unique insights into the problem?
- How does your technology provide a compelling solution?
- How big is the market?
- Can you be ***THE*** market leader?
- Will the marketplace provide a runway long enough to create a company?
- Will customers seek you out for your solution?



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Q #2: What is the day in the life of your user?

- Do you know who will use your product or service?
- How much time will they spend with it?
- What other products or services do they use?
- What do they do from 8:00 a.m. until 6:00 p.m.?
- Do you know how they think?
- Will they buy it or will they give “permission” for other revenue-generating means (e.g., advertisement, usage data, etc.)?



MAYFIELD

Venture Capital with Impact™

KK: Do you know your customer?

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Q #3: Who are your competitors?

- Obvious question, but.....
- Are they giants who are likely to trample you?
- Do they want to work with you?
- Is your success based on others' failure?
- Are there 3 other groups just like yourself -- all starting companies?



MAYFIELD

Venture Capital with Impact™

KK: Do you know your competitors?

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Q #4: How far will this money take you?

- How much total money will you need?
- The better the team and the further along you are in proving the market, the cheaper the money.
- You need a financing plan just like a development plan
- Raise a little more than you need to reach a financing milestone, and raise cheaper money
- Missing your plan causes venture capitalists to become vulture capitalists
- What is the exit strategy?

Question #5: Do you have a CEO?

- What is your role?
- Who else do you need to make you successful?
- Share equity -- somehow make the pie bigger
- CEO really is the most important person in a start-up
- Markets, People, Products

Venture Capital Valuation Statistics



MAYFIELD

Venture Capital with Impact™

	1996	2000
1 st Round	\$5M/\$10M	\$10M/\$30M
2 nd Round	\$7M/\$35M	\$20M/\$120M
3 rd Round	\$15M/\$100M	\$100M/\$400M
IPO	\$40M/\$400M	\$150M/\$1.5B

\$s Raised / Post-Money Value



A return to pre-1997 valuations, "ancient history"?

Venture Capital Outcome Statistics



MAYFIELD

Venture Capital with Impact™

	1996	2000
Failure	Lose all your money	Sell for \$100M
Modest Success	Sell for \$100M (after 4 years)	Sell for \$400M (after 18 months)
Big Success	Sell or IPO at \$400M (after 4 years)	Sell or IPO for \$1.5B (after 2 years)
Huge Success	Market Cap of \$10B (after 10 years)	Market Cap of \$10B (after 3 years)



A return to pre-1997 outcomes, "ancient history"?

Now we're a real company



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Likely scenarios after 2 years

Examining the tremendous variety of post funding software business issues will take the rest of the semester, but we can break things down to a few likely scenarios

Product development, marketing, sales forecasts on target – a few satisfied customers

- Should be a viable candidate for series B funding to build sales channel
- Some companies may be interested in acquiring this company at a premium

Development of product on target and a few successes but sales not ramping up – still company does achieve break-even status or mild profitability

- Still a viable candidate for series B funding to sustain company
- If the market is attractive then it should be a viable acquisition target

Development of product on target but sales not ramping up – company does NOT achieve break-even status

- Strong management team may sustain the company and succeed in acquiring more funding
- May be acquired at a significant discount – perhaps venture capitalists (and other investors with preferred stock) will break even or suffer a mild loss

Product unfinished or fails to get any market traction- steps to fix this unclear or too expensive

- Fire sale

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Likely scenarios after 3 - 4 years

Examining the tremendous variety of post funding software business issues will take the rest of the semester, but we can break things down to a few likely scenarios

Product development, marketing, sales forecasts on target

- Should be a viable initial public offering (IPO) candidate

Development of product on target but sales not ramping up – still company does achieve break-even status or mild profitability

- If the market is attractive then it should be a viable acquisition target

Development of product on target but sales not ramping up – company does NOT achieve break-even status

- May be acquired at a significant discount – perhaps venture capitalists (and other investors with preferred stock) will break even or suffer a mild loss

Product unfinished or fails to get any market traction- steps to fix this unclear or too expensive

- Fire sale

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And soon we'll get go public

- Given proper execution of the business plan we should be able to go public – right? That's why the VC's gave us the money based on the business plan



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What's the hold up?

- What else is Wall Street looking for from us? (Hint: It's more important than the business plan!!!)



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Business strategy

- Nobody wants to invest in a “one hit wonder”
- Public investors are looking for a sustained business strategy



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From Business Plan to Business Strategy

The business plan

- Gave a system model of a viable business focused on one or a few products
- Showed a roadmap to profitability
- Probably had a “sustained strategy” but nobody believed it

The business strategy

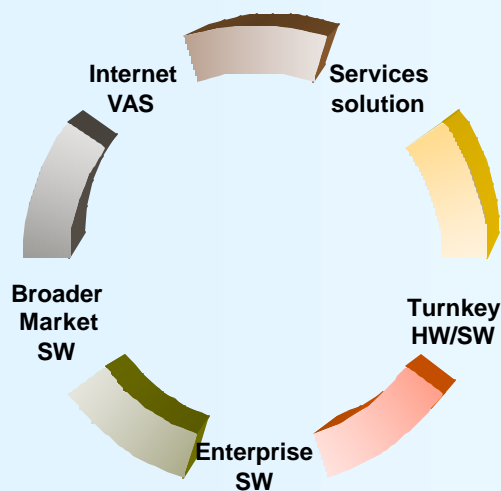
- Gives the over-riding strategy by which the company will remain successful
 - “Leader in human-relations management software”
 - “The (Integrated Circuit Logic) synthesis leader.”
 - “The Checkpoint software of the wireless networked world.”

Synopsys business plan got funded based on a single product

- Companies toughest challenges was when they outgrew their successful business strategy – how to grow a new one
- Developed into a \$1B company with 50+ software products

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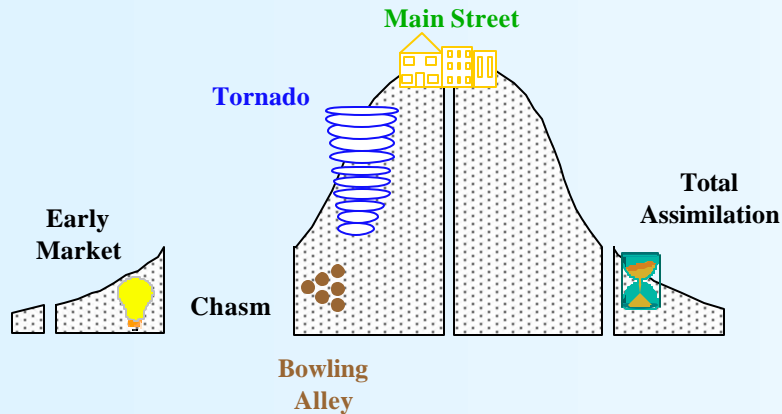
Demonstrated Ability to Move Through Cycles if Necessary



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You have (or can) survive the tornado

Geoffrey Moore: High-Tech Market Development Model



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Summary

- **Building a successful software company entails**
 - **Building a team**
 - Capitalizing on a new technology or
 - Identifying a new market opportunity
 - **Coming up with a product concept**
 - **Building a business model**
 - **Translating that into a business plan**
 - **Building a corporate business strategy and surviving:**
 - Evolution of the software cycles
 - Crossing the chasm

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