

Research base

- ◆ 100 Inc. 500 founders
- ◆ Mail survey of HBS alums
- ◆ 200+ critical biographies
- ◆ 20 Case studies

Today

- ◆ **'Promising' startups**
- ◆ Corporate initiatives
- ◆ VC backed startups
- ◆ 'New Economy' implications

awkward phraseology

Two engineers in a garage


- ◆ \$500 capital
- ◆ Foot fault indicator, harmonica tuner audio-oscillator
- ◆ pricing: \$54.40, '54 40 or fight'

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Big money paradigm

- ◆ Experienced founders
- ◆ Careful market research
- ◆ Business plan
- ◆ Top notch team
- ◆ Venture capital

Sustainable advantage



IPO

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Compaq	Lotus
◆ Rod Canion, Jim Harris, Bill Monroe	Genentech
◆ Plan to take on IBM	Sun Microsystems
◆ Ben Rosen + \$20 m	
◆ Experienced managers	
◆ National dealer network	
◆ \$100 m sales	
<u>VS.</u>	
H-P	Dell
Wal-Mart	Cisco
EDS	Microsoft
	Inc. 500 cos.

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Improvised startups
Meager endowments

Lack

- ◆ Track-record
- ◆ Breakthrough ideas and technologies

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Imitation or mundane modification

- ◆ 50% + replicated previous employers idea
- ◆ or, "undifferentiated" response to opportunities
- ◆ 6% claimed "no substitutes"
- ◆ 3 patents
- ◆ Student papers/'celebrated' entrepreneurs

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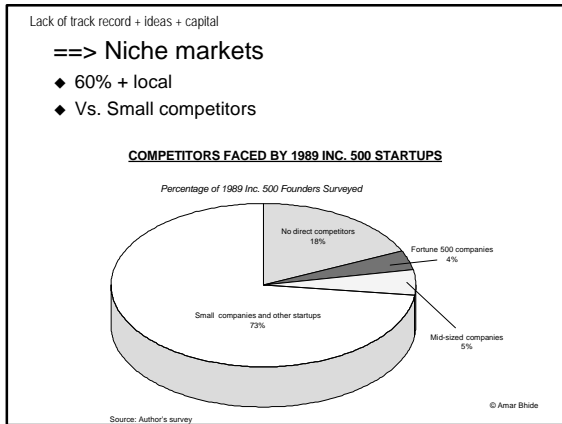
Lack of track record + ideas

Inability to raise professional capital

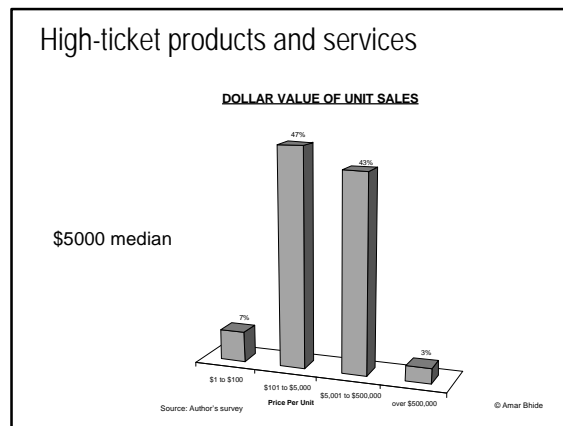
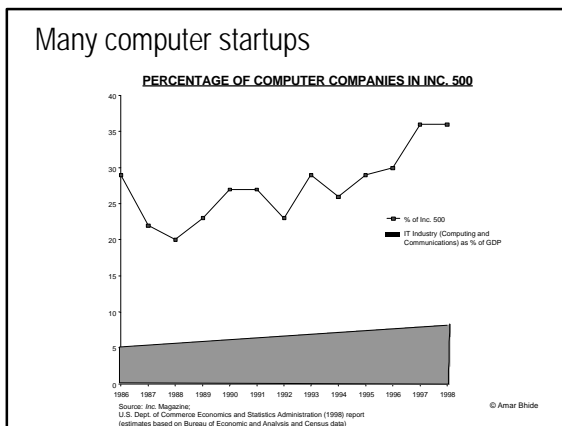
Inc. 500 startups:

- ◆ 80% self financed
- ◆ Median start-up capital = \$10,000
- ◆ Under 5% raised VC funding

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- Not uniformly distributed
many excluded sectors
- ◆ Mining
 - ◆ Textiles
 - ◆ Process industries -- paper, petro-chemicals
 - ◆ Automobiles (1)
 - ◆ Hotels, Airlines
 - ◆ Restaurants (1)
 - ◆ Bio-technology (1)
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- High-ticket products and services
- ◆ Direct sales 90%
 - ◆ 75% sales cycle from days to months
 - ◆ Customization
- 86% business-to-business**
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Contrast with marginal startups

MOST POPULAR STARTUPS, 1996

Type of business	Number of start-ups
Construction	24,797
Restaurant	22,781
Retail Store	21,081
Cleaning services (residential, commercial)	19,642
Real Estate	17,549
Automotive Services and Repair	16,158
Consultant	15,835
Beauty Salon	11,762
Computer Service and Repair	11,111
Designer	10,676
Management and Business Consulting	9,865
Arts and Crafts	9,412
Painter	9,156
Lawn Maintenance	8,498
Marketing Programs and Services	8,314
Landscape Contractor	8,268
Investment Broker	8,206
General Contractor	8,137
Communications Consultant	8,022
Building Contractor (remodeling, repairing)	7,998

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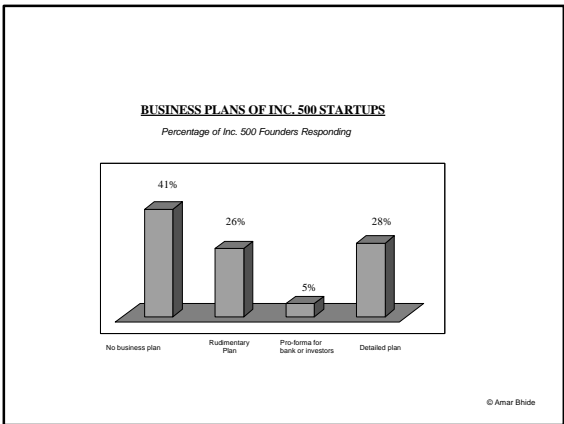
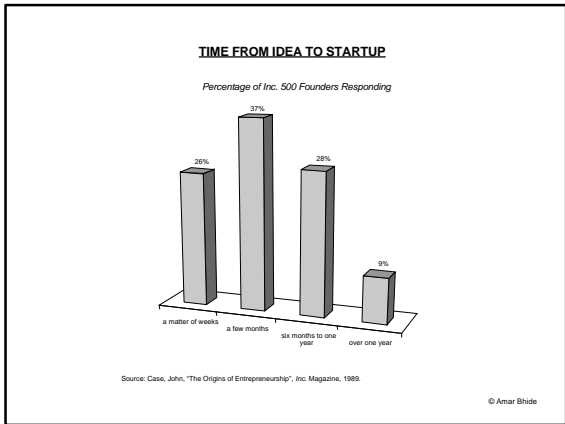
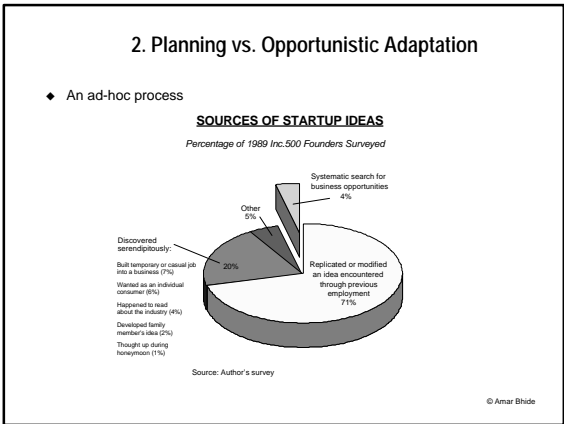
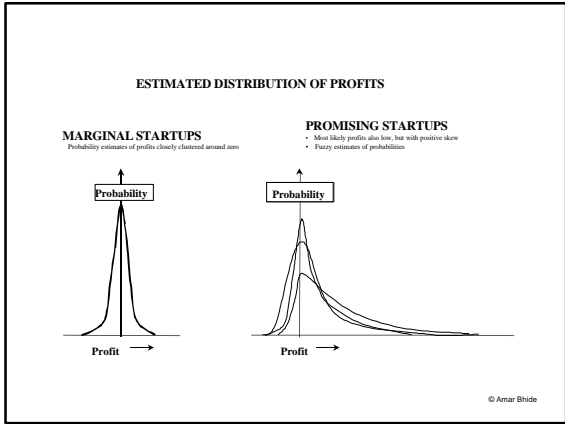
Proposition: Entrepreneurs w/meager resources thrive in niche markets with high uncertainty:

- ◆ Market turbulence and/or
- ◆ Founder's capacity to satisfy fuzzy wants

↓

- ◆ Arbitrage or heads I win, tails I don't lose much
- ◆ Limits competition from established companies & well capitalized startups

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planning/research: costs > benefits

- ◆ **Uncertainty ==> limited data, costly delays**
- ◆ **Small markets/likely profit**
- ◆ **Capital constraints**
- ◆ **Limited downside**

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High uncertainty, limited planning ==>
Opportunistic Adaptation

triggered by:

- ◆ Failure to generate sales. (Factor-Fox)
- ◆ Declining profitability. (Compu-Link)
- ◆ Saturated Niche. (H-P audio-oscillator)
- ◆ Unexpected Opportunities. (MS-DOS)

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Example:

Eaglebrook's Evolution

- Brokers for scrap plastic (1983)
 - \$700 grinder
 - \$25,000 grinder
 - Purification of paper contaminated scrap (1985)
 - Recycling plastic bottles (1987)
 - Plastic Lumber (1989)
 - Styrofoam Recycling (1990)

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3. Securing resources: customers, employees, suppliers...

The 'liability of newness':

- ◆ Rational concerns
- ◆ Cognitive biases and reflexive behavior

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Securing resources: customers, employees, suppliers...

Overcoming the liability of newness:

- ◆ Special deals and benefits
- ◆ Mimicry
- ◆ Framing
- ◆ Broad search
- ◆ Incremental commitments
- ◆ Second-tier resources

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"We were careful to make sure that we only employed people who were unemployed. Not unemployable, but unemployed. We did this for two reasons. One, we were cheap. Two, for conscience reasons--if we went under and it didn't work out for them, we wouldn't feel so bad."

John Greenwood, Micron Separations

To get hired into this organization was a joke. I mean if you came in and we needed a warm body, you were hired. Literally for any position. Our turnover was high because we had to fire many employees. Grounds for termination were a bad attitude and undermining the company--

Robert Rodriguez, Natcomm

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Personality traits of the entrepreneur

Many hypotheses about attributes

- ◆ Need for achievement
- ◆ Risk-taking propensity
- ◆ Internal locus of control
- ◆ Type A behavior
- ◆ ...

But unconvincing results

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Inferences about traits and skills:

Propensity to start

- ◆ **Optimal human capital and background**
 - ◆ 81% college degrees
 - ◆ Middle class
- ◆ Tolerance for ambiguity

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Inferences about traits and skills:

Adaptation

- ◆ Decisiveness
- ◆ Open-mindedness
- ◆ Managing Internal Conflict

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Inferences about traits and skills:

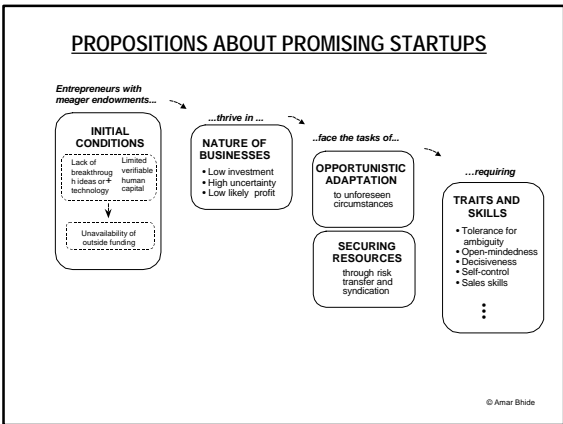
Securing resources

- ◆ Tactical Ingenuity
- ◆ Self-control
- ◆ Perceptiveness (“Allocentric” orientation)
- ◆ Sales Skills

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<p>Critical traits and skills:</p> <ul style="list-style-type: none"> ◆ Tolerance for ambiguity ◆ Open-mindedness ◆ Managing Internal Conflict ◆ Tactical Ingenuity ◆ Self-control ◆ Perceptiveness ◆ Sales Skills 	<p>In contrast to:</p> <ul style="list-style-type: none"> ◆ Tolerance for risk ◆ Breakthrough creativity. ◆ Vision and foresight. ◆ Grand ambition. ◆ Charisma. ◆ Using power. ◆ Administrative abilities.
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Today's talk:

- ◆ 'Promising' startups
- ◆ **Corporate initiatives** ←
- ◆ VC backed startups
- ◆ 'New Economy' implications

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Fama and Jensen..

SEPARATION OF OWNERSHIP AND CONTROL

Facilitates..

..And requires

RISKY INVESTMENT
(Access to capital)

**SEPARATION OF DECISION
MANAGEMENT
AND CONTROL**
("Checks and Balances")

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Distinctive Endowments ("Initial conditions") dictate nature of opportunities..

INITIAL CONDITIONS

Capital

Checks and balances

Objective Evidence

Aversion to Uncertainty

High profit threshold

NATURE OF OPPORTUNITIES

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...and significant investment in research and planning

Large, low uncertainty projects

Disciplined approach

- Systematic search
- Investment in research
- Extensive planning

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variation and horror stories, but..

Gordon Moore on Intel's R&D budget

•"Each product group is required to submit a project list ordered in decreasing priority, explain in sometimes excruciating detail why the list is ordered as it is, and indicate where the line ought to be drawn between projects to work on and projects to put off."

•Only a "small group" tries to "stay abreast with what is going on more broadly in the semiconductor industry" and even this group avoids programs that will generate results only after ten years.

•Avoid technologies which are too far ahead of the market - in the 1970s developed and sold complete speech recognition systems at the rate of two per year.

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Inevitably, slower:

BASIC for MITS's Altair vs.

3M Post-It: patented 1974, launched 1980

Intel Pentium, initiated 1989, launched 1993.

Gillette Mach3, research initiated 1985, launched 1998

....but it works.

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Determinants of Success

Basic concept/plan

Coordination and teamwork.

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Unusual founders

Due diligence and monitoring

- ◆ Cannot free-ride or blindly diversify
- ◆ Must satisfy clients
- ◆ Fixed capacity

→

- ◆ Large payoffs
- ◆ 4-6 year exit

→

Entrepreneurs with

- ◆ Proprietary ideas
- ◆ Deep experience

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But many entrepreneurs lack:

High potential idea

Credible experience and verifiable human capital

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Kapoor vs. Gates

Kapor 1982:

- ◆ Yale cybernetics, business school, MIT
- ◆ Tiny troll, Visiplot, Visitrend software
- ◆ Product manager for Visicalc

Market/concept

- ◆ 836,000 personal computers shipped in 1981
- ◆ Spreadsheet category established
- ◆ "Significantly" superior product to Visicalc
- ◆ Conservative projection of \$25 million

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Kapoor vs. Gates

Gates/Allen 1975:

- ◆ second year of college
- ◆ no serious business or management experience

Undeveloped market/industry

Much slower growth

- ◆ \$5 million in revenues after 5 years
- ◆ Several niche products
- ◆ Nine years to match Lotus year 1 revenues
- ◆ 10 years to IPO

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Implications:
an 'in-between' phenomena

Uncertainty

- ◆ lower tolerance than self-financed entrepreneurs
- ◆ more tolerance than corporations

Minimum profit/investment

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Implications -- an 'in-between' phenomena

Adherence to planning

- ◆ less pressure to adapt
- ◆ VC/entrepreneur contracts
- ◆ but persistence can pay

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Only 1/3rd seed or early stage

Later stage investments

- ◆ "proven technology and market"
- ◆ larger capital requirements
- ◆ faster exit

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Today's talk:

- ◆ Entrepreneurship education and research
- ◆ 'Promising' startups
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Deviations from historical pattern

Stock market:

- ◆ Development stage IPOs
- ◆ Tolerance for uncertain initiatives
- ◆ Pro-forma oversight

VC industry

- ◆ Much more capital
- ◆ Greater uncertainty
- ◆ Different role

Off-diagonal initiatives

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Normal evolution: Cisco Systems

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Sun (Feb '82) vs Chemdex (Sept '97):

- ◆ Years to IPO
4 yrs vs. 2 yrs
- ◆ Pre-IPO FY revenues/net income
Sun: \$115 m revenues, \$8.5 net income
Chemdex: \$29K revenues, \$8.5 m loss

Sun: Profitable from Q1

We didn't have a big overhead structure because we didn't have any money to spend. We matched our expenses to our revenue real tight. You might ascribe this to my Indian heritage -- \$100k was a huge sum on money. On the first anniversary they presented me with a sharp pencil, because one, I needed it, and two, that was all they could afford they said. But that was pretty much the culture of the company.

We were unlike most startups. Most startups have everything -- marketing, sales, support, advertising, and PR -- in place before they have a product to sell. They get up to \$600,000 to \$800,000 a month of expenses before they've really started selling anything.

Since we finished the first year and were profitable, people started to look at us seriously. They started to consider us viable. People feel a lot more comfortable with something there and running and profitable, even if it is small, relative to nothing there. There's a radical, nonlinear function between those two.

Source: Bhide "Vinod Khosla and Sun Microsystems: A"

- ◆ ...also H-P, Oracle, Microsoft, Cisco...

IPO markets unfazed by red ink

We have a history of losses and anticipate continued losses for the foreseeable future.

We have had substantial losses since our inception. We currently expect our losses to increase in the future and we cannot assure you that we will ever achieve or sustain profitability.

Source: Chemdex prospectus

- ◆ Pervasive faith in

First mover advantages, land grabs precludes gradual development.

“Success or failure lies in conformity to the times”

Fedex -- old economy infrastructure play

Extensive national network
\$8m family money + \$50m VC and bank financing
Inc. June '71, first profitable month July '75
Missed projections, near death experiences
Accumulated losses \$29.3 m.

vs.

Chemdex, accumulated losses of \$57m by 12/31/99
iVillage accumulated losses of \$193 million
and
3 year wait to IPO (April 78)

Interpretations..

Once-in-a-lifetime inflexion point

New paradigm

“Irrational exuberance”

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Consequences

- ◆ Weaker expense control
- ◆ Limits trial and error
- ◆ Chemdex to Vestro

How might this end?

Interpretations..

- Once-in-a-lifetime inflexion point**
- New paradigm**
- “Irrational exuberance”**

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Limiting mechanisms

Possible market demand side rationality

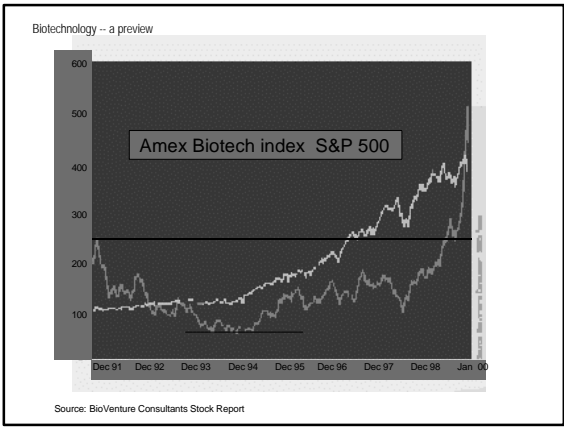
Inherent contradiction:

- Market anticipates large long-term profit
- Incentives for serial entrepreneurship

Increased supply

- VC returns up..
- ...encourage entry (Investment banks, Acquarium ventures) and substitutes (incubators, business plan contests)

...Not the end of the world -- healthy cleaning out



Interpretations..

- Once-in-a-lifetime inflexion point**
- New paradigm**
- “Irrational exuberance”**

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