

A Formula for Innovation

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American Express v. Dow Jones Average



Sometimes innovation is not rewarded
 AXP Market Cap: \$68B

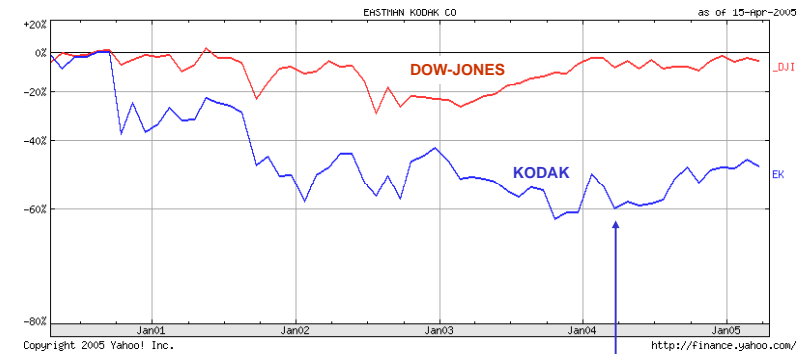
Google Two-Year Stock Performance



Sometimes innovation wins big
 GOOG Market Cap: \$201B

Are innovation and stock price connected?

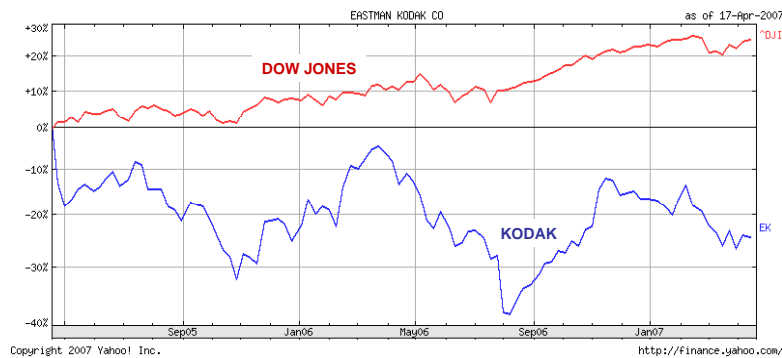
Death from Failure to Innovate Eastman Kodak 2000–2005



- DOW DOWN ~ 3%
- KODAK DOWN ~ 50%

KODAK DROPPED FROM DOW AFTER 74 YEARS

Kodak Loss Continues 2005-2007

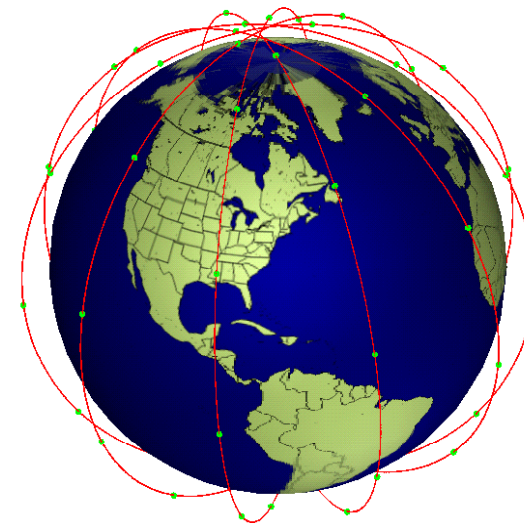


- DOW UP ~ 25%
- KODAK DOWN ~ 25%

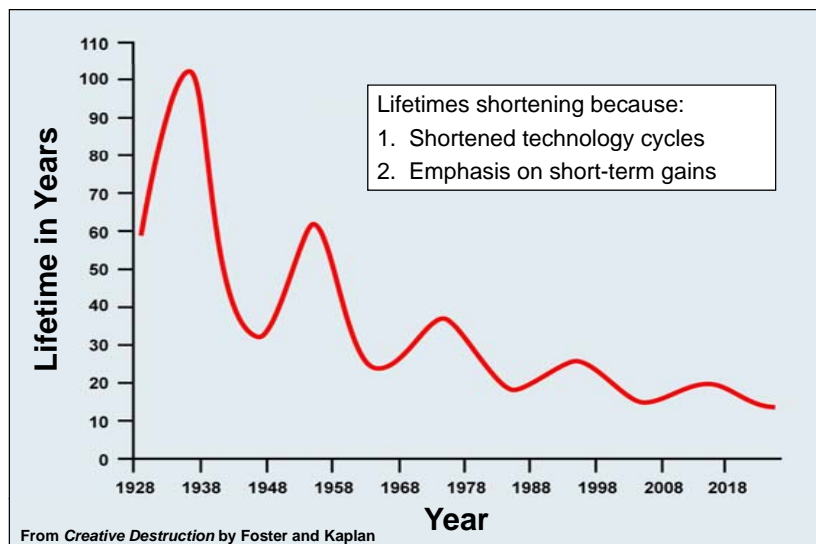
“The purpose of consulting is to help dinosaurs die more slowly.”

Anonymous accenture executive

Sometimes innovations die fast



Death Rate for S&P 500 Companies



What is innovation?

What is Innovation?

One of the most overused words in the business lexicon.

- Over 125 million “innovation” pages on Google
- Over 187,000 books returned by Amazon.com for ‘Innovation’

“Innovation” is used for everything from incremental improvements to fundamental, society-changing creations.



... it is customers and clients – not innovators – who determine how great ideas become successful innovations...
nothing happens until something gets bought

Michael Schrage – Harvard Business School

Most Innovation Talks are Not Innovative

- To prepare, I examined about 100 innovation presentations
- Highly repetitive
- Offered advice easier said than done
 - “Encourage entrepreneurial thinking”
- Message often not clear

Innovation Talks

Does this have any meaning at all?

Rand Blazer was fired the same year as his innovation talk (2004).
BearingPoint stock was down 50% since its IPO in 2001.

The stock is still down 50% today.
It hasn't moved in 3 years.

Summary of 100 Innovation Talks (on one slide)

- Promote and reward innovation
- Empower creative thinking
- Be open to new ideas; don't dump on other people's
- Let employees spend time innovating
- Encourage entrepreneurial thinking
- Institute a “process” for innovating
- Listen to your customers for product ideas
- Get lots of patents

Innovation is Darwinian

- **Self-replication/Inheritance:**
 - Entities must be able to reproduce; offspring inherit traits of their parents.
- **Variation:**
 - Must be a range of different traits in the entities, and a mechanism for introducing new variations into the population (mutation = innovation).
- **Selection:**
 - Inherited traits must affect the ability of the entities to reproduce themselves, e.g. by survival or ability to produce offspring.

These are the prerequisites for evolution

Darwinian Innovation

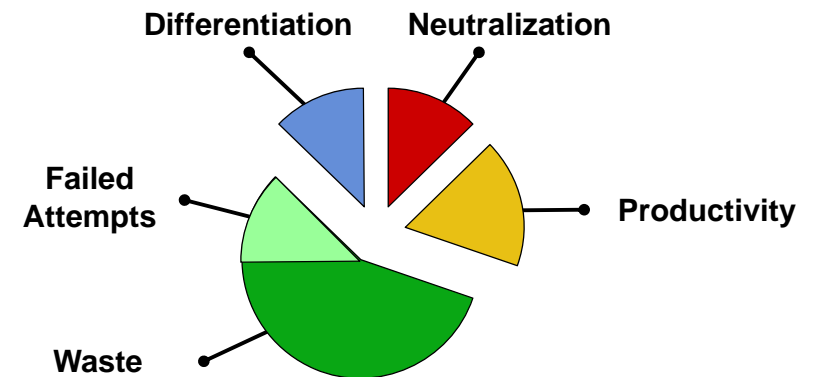
Darwin says to innovate you must:

- Generate mutations
 - Some are minor (“improvements”)
 - Some are deliberate (“developments”)
 - Some are lucky (“discoveries”)
 - Some are radical (“innovations”)
- Recognize which ones will succeed
 - In nature, some species are losers
 - Can’t let the company be one of those!
 - Monitor innovation for success
- Like Nature, it’s a numbers game
- Good recognition helps reduce the numbers

Types of Mutation

Mutation	Example
Product Innovation	New or improved product
Process Innovation	New or improved production process
Organizational Innovation	New organizational arrangement: a new venture division, a new internal communication system
Management Innovation	New managerial practice: TQM, BPR (business process re-engineering)
Marketing Innovation	New marketing practices: New financing arrangement, new sales approach
Service Innovation	New service concepts: online financial services

Outcomes of Innovation



Waste: Innovation projects that *even when they succeed* fail to create sustainable competitive advantage

SOURCE: TCG ADVISORS

Why Companies Fail

- Kodak: no innovation. No company left.
- Iridium: BAD evaluation function. No company left.

Why Companies Succeed

- HP: lots of innovation. Great company left.
- Procter & Gamble: GOOD evaluation function.
 - Beat Dow over 35 years 3500% to 1700%
 - Great company left.

Does the First Mover Win?

- | | <u>Common Answers</u> | <u>Correct Answers</u> |
|----------------------------|-----------------------|--------------------------|
| • Personal computers | • Apple | • MITS (Altair) |
| • Video recorders | • Sony | • Ampex |
| • Disposable diapers | • Pampers | • J&J (1949) |
| • Light beer | • Miller Lite | • Piels Trommer's (1961) |
| • Safety razors | • Gillette | • Star (1875) |
| • Soft drinks | • Coca-Cola | • Vernor's (1896) |
| • Copiers | • Xerox | • 3M |
| • Word processing software | • WordPerfect | • IBM |
| • Online bookseller | • Amazon | • Books.com |
| • Commercial search engine | • Google | • Lycos |
| • Microprocessor | • Intel | • Intel |

Sometimes. But he might just cause spillover.

SOURCE: PETER GOLDER

Pioneers in 66 Markets

- Failure rate 64%
 - Market share 6%
 - Market leadership 9%
 - Median years of leadership 5 years
- Since 1974, current leaders have entered 5 years after pioneers

SOURCE: PETER GOLDER

What Happens When “Innovative” Public Companies Innovate?

- In the past 5 years the Dow has gained 42%
- Apple **(+1000%)**
- CEMEX **(+175%)**
- Coca-Cola **(DOWN 3%)**
- Dell **(+4%)**
- eBay **(+130%)**
- Intel **(DOWN 20%)**
- Merck **(DOWN 5%)**
- Motorola **(+20%)**
- NetFlix **(+190%)**
- Pepsico **(slightly below Dow)**

What Happens When “Innovative” Public Companies Innovate?

- Pfizer **(DOWN 20%)**
- PNC Financial Services **(tracked Dow)**
- Procter & Gamble **(tracked Dow)**
- Research In Motion **(+2000%)**
- Sirius Satellite Radio **(DOWN 20%)**
- Southwest Airlines **(DOWN 10%)**
- Starbucks **(+150%)**
- Teva Pharma **(+130%)**
- 3M **(tracked Dow)**
- TiVo **(tracked Dow)**

ALL LISTED IN “101 INNOVATION BREAKTHROUGHS”

What Happens When Public Companies Innovate?

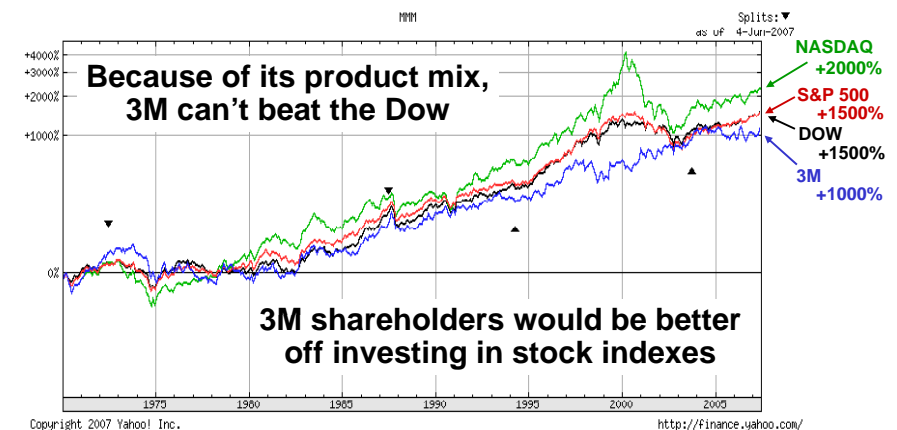
- Note: the losers range from –20% to +20%
- Winners range from +130% to +2000%
- When they beat the Dow, they beat it by a lot
- Very little connection between a reputation for innovativeness and stock price
- Possible confusion over what is “innovative”
- Innovativeness and longevity are related
- You have to be innovative just to match the Dow



Innovation at 3M

- Technical people encouraged to develop their own ideas in environment of innovation and creativity
- Corporate Innovation Council
- Failure an accepted and essential part of progress
- 3M is open, informal, and on a first-name basis
- 3M has grown mostly through evolutionary spin-off
- Diversified technology base - a strength & a challenge
- “Synergy is one of our greatest strengths”
- Technology exchange a essential part of success
- Requires 30% of sales each year in new products

3M 37-Year Stock Performance



Starbucks Innovations (All mutant – very Darwin)



- Differentiated business concept
 - Expensive coffee in a social environment, Internet, music
- Contrarian real estate strategy: clustering
- Partnerships
 - Barnes & Noble, Pepsi
- Almost no advertising (1% of revenue, 3% of profit)
 - At Verizon, it's 2.5% of revenue, 37% of profit
- Mine the wallet
 - Diverse products
 - Internet increases time-in-store, more coffee

How Does Google Innovate?

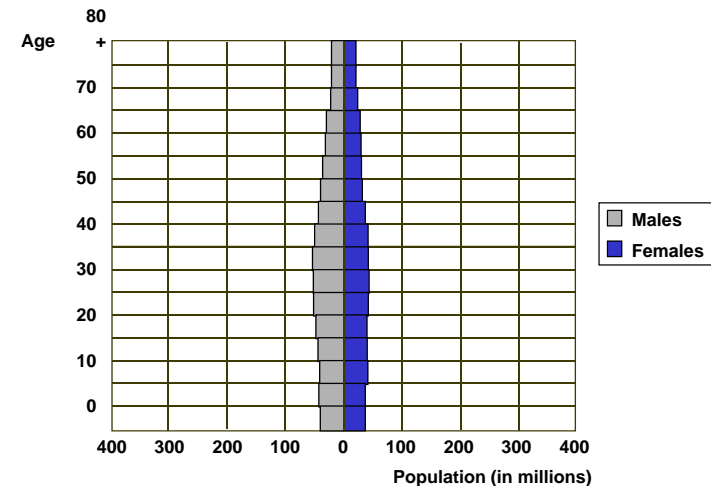
- 20% time: 1 day a week free to innovate
- Brainstorming every 6 weeks with 100 engineers
 - 6 concepts pitched for 10 minutes each
- Big Think
 - Ideas that can have major impact
- Googlettes: internal, baby Googles
 - Google understands its toughest competition may come from within
- Collaborative tools
- Research lab on Carnegie Mellon Campus: 150 employees
- Innovation by acquisition



“You’ve got to go out on a limb sometimes because that’s where the fruit is.”

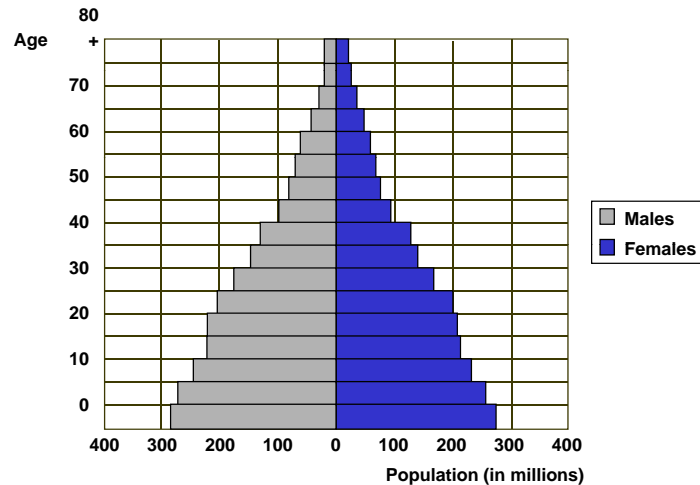
Will Rogers

Population in Developed Countries



SOURCE: JOE PANNETIERI

Population in Developing Countries



SOURCE: JOE PANNETIERI

Purpose of Innovation

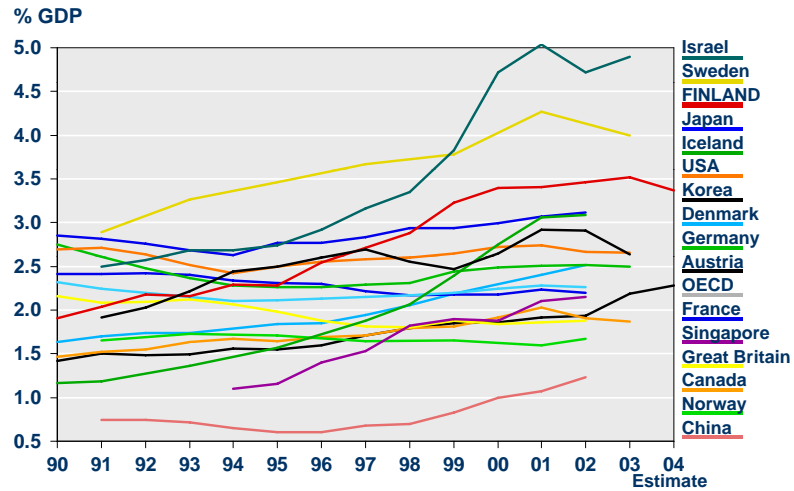
- Ultimately the company is the creation
- The company is the innovation
- Products themselves are not the objective
- The innovative company follows Darwin, tries many products and services
- Function of innovation: build an unassailable company

“The difficulty lies not in the new ideas, but in escaping from the old ones.”

John Maynard Keynes (1936)

Q&A

R&D Investment as Percentage of GDP



Source: OECD, Main Science and Technology Indicators Database

The Trend is Not Good

In 2004,



China graduated over 600,000 engineers



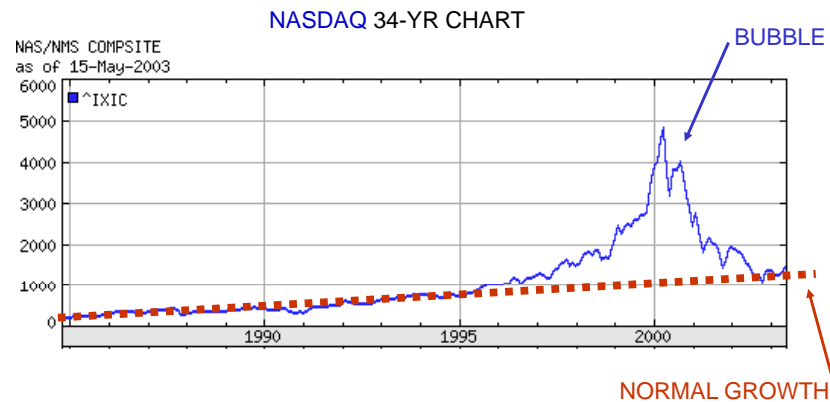
India 350,000



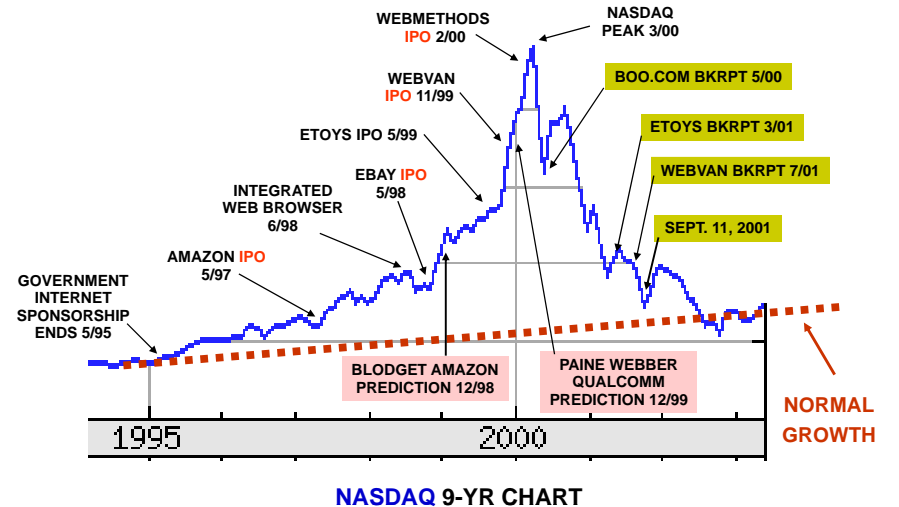
U.S. about 70,000

SOURCE: GEOFF NICHOLSON, 3M

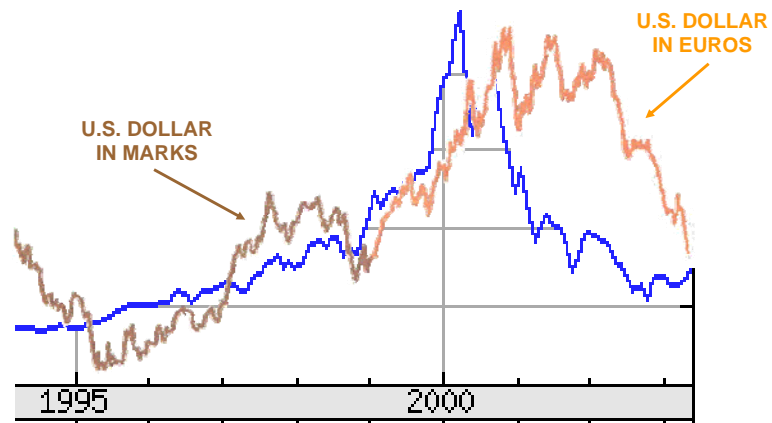
The Internet Bubble



The Bubble Expanded



The Internet Bubble



NASDAQ 9-YR CHART

“Even if you are on the right track, you’ll get run over if you just sit there.”

Will Rogers