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

Kodak Loss Continues 2005-2007

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

Anonymous accenture executive
Sometimes innovations die fast

Iridium
- 1985: Motorola engineer envisoned a constellation of 77 satellites to provide global phone service
- Element 77 in the periodic table is Iridium
- 1991: Motorola established Iridium separately
- Investment: $6.6 billion, enough for 66 satellites
  - Element 66 is Dysprosium
- 1998: Service begins. $3K handset, $3-8 per minute
- Disaster obvious by April 1999
- CEO quits before first quarter report
- Bankruptcy filed Friday, August 13, 1999
- Assets sold for $25M

Death Rate for S&P 500 Companies

Lifetimes shortening because:
1. Shortened technology cycles
2. Emphasis on short-term gains

From Creative Destruction by Foster and Kaplan

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

SOURCE: “LEADING THROUGH INNOVATION,” RAND BLAZER, FORMER CEO, BEARINGPOINT
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**

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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

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Types of Mutation

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

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Outcomes of Innovation

- **Differentiation**
- **Neutralization**
- **Failed Attempts**
- **Productivity**
- **Waste**

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?**

- **Common Answers**
  - Personal computers
  - Video recorders
  - Disposable diapers
  - Light beer
  - Safety razors
  - Soft drinks
  - Copiers
  - Word processing software
  - Online bookseller
  - Commercial search engine
  - Microprocessor

- **Correct Answers**
  - Apple
  - Sony
  - Pampers
  - Miller Lite
  - Gillette
  - Coca-Cola
  - Xerox
  - WordPerfect
  - Amazon
  - Google
  - Intel

  **Sometimes. But he might just cause spillover.**

**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

**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 20%)
- Starbucks (+150%)
- Teva Pharma (+130%)
- 3M (tracked Dow)
- TiVo (tracked Dow)

ALL LISTED IN “101 INNOVATION BREAKTHROUGHS”

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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

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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

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3M 37-Year Stock Performance

Because of its product mix, 3M can’t beat the Dow

3M shareholders would be better off investing in stock indexes

SOURCE: GEOFF NICHOLSON, 3M

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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

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)
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

NASDAQ 34-YR CHART

NASDAQ 9-YR CHART

The Bubble Expanded

NASDAQ PEAK 3/00

GOVERNMENT INTERNET SPONSORSHIP ENDS 5/95

NORMAL GROWTH

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

Will Rogers