Competitive Advantage in the Knowledge Economy

Innovation – Intellectual Property – Corporate Strategy

MBA – IP Elective

Ian Harvey

February 6th, 2012
A patent gives you the right to use your invention

**True or False?**
Actress

“Ekstase” - 1933
“Invention: the next software”
“Future competition in the world is competition in IP ....”
Today

• History:
  – The Industrial (Steam) Revolution (1760 – 1800)
  – The Electrical Revolution (1880 – 1900)

• Where does IP fit The Basics of IP

• Success stories

• Disaster stories

• IP and corporate strategy
The Industrial (Steam) Revolution

James Watt
John Roebuck?
“Sun and Planet” drive avoids Pickard patent

Extended from 14 to 30 Years

Copyright 2012
The Electrical Revolution – *AC* vs *DC*

**Direct Current**

Thomas Edison

**Alternating Current**

Nikola Tesla + George Westinghouse

**Chicago World’s Fair 1893**

Westinghouse Tesla Polyphase System (AC)

- Patents
- Open Innovation
- Investment
- Litigation
The Software Revolution - Microsoft

- Bill Gates understood IP
- Microsoft built on copyright
- Then software patents
- IP is the “Bridge to collaboration”:
  - Collaborations:
    - 2003 = 0
    - 2009 = 500
  - Partnering with Open Source
Lessons from 250 years

• The heads of these successful companies (Watt, Boulton, Westinghouse, Gates) understood IP very well

• IP was essential to raising finance for developing their ideas, maintaining competitive advantage

• The heads of most companies today do not understand IP well – they delegate to their (often non-commercial) IP specialists

• You are much more likely to succeed if you are IP-literate
Impact of Technology on GDP Growth 1970-1990 Average 2.9%

Technology is the major driver of world growth

US Corporate Valuations: S&P500®

Intangible Assets
Tangible Assets


Intangible Assets: 83%, 68%, 32%, 20%
Tangible Assets: 17%, 32%, 68%, 80%
IP creates:

- The incentive to innovate and invest in risky new ideas
- The legal clarity and certainty to work with others:
  - Open innovation
  - Collaboration
  - Technology/patent pools
  - Licensing
- The choice to IP owners how their IP will be used
IP is a key strategic tool

- Enforceable in the courts
- Long lifetime but differing complexity and cost:
  - Copyright – 70/95 years – simple & free
  - Trademarks - for ever – quite simple and cheap
  - Patents - 20 years – can be complex and quite expensive
Copyright

• 70/95 years – simple & free
• international right, simple, zero cost, certain, use is simple
• managing artistic works, databases, software
Trademarks & Geographic Origin

- Last for ever – quite simple and cheap
- Country specific, relatively simple and certain, cheap
- Trademarks essential for brands
- *promise of quality: creating and managing consumer loyalty*
Lenovo buys IBM’s PC business

*Lenovo®+IBM®+ThinkPad® = a new Brand*
Patents are different …..

- Patents:
  - Last for 20 years – can be complex and expensive
  - **Country specific but conditionality is global**
  - **Not an absolute right**: conditionality - must be “new” and “not obvious”
  - They can be exceptionally valuable, but they are complex and expensive to acquire and defend
  - *Investing in innovative technology and products*
A patent is a potentially valuable but uncertain and expensive right

• Uncertainty:
  – a patent is not an absolute right:
    • Novelty: at any time new “prior art” from anywhere may invalidate patents everywhere
    • Obviousness: courts may decide it was “obvious”

• Expensive if international:
  – $250k lifetime for international patents
  – Enforcement: Germany $100k, UK $500k, US $5m, 2 – 7 years, China $20-120K & 2-14 months
What does a patent do for you?

• It gives you the right to *stop other people* from making, selling or using your invention commercially

• A patent does *not* give you the right to use your own invention!
Strong patents

Nespresso (Nestlé)
HBS: Nespresso Case History

**Description:**
Traces the development of the Nespresso System in a 100%-owned affiliate deliberately placed outside Nestle's main organizational structure. Highlights the team's successes and challenges in creating a new, small, niche segment in the mature coffee market and its prospects for growing the business from 150 million to 1 billion Swiss francs within the next decade. A radical departure from most Nestle lines of businesses targeted to the mass market, the Nespresso story offers provocative lessons about innovation in large, highly structured organizations.

**Subjects Covered:**
Direct marketing, Food, Innovation, New product marketing, Product development.

**Setting:**
Switzerland; Global; Coffee; Food industry; $150 million Swiss francs revenues; 1999
The best espresso needs:

• High quality coffee

• Uniform grinding size (uneven produces off-flavours)

• Coffee ground packing to allow water volume to flow through in 10-12 seconds – longer creates off-flavours

• Water:
  – High pressure (15 bar) with a reliable pump
  – Accurate temperature control 82°C - 84°C
  – Fast heat-up from switch-on
Nespresso does this:

- High quality coffee
- Uniform grinding size (uneven produces off-flavours)
- Coffee ground packing to allow water volume to flow through in 8 - 10 seconds – longer creates off-flavours

**Water:**

- High pressure (15 bar) with a reliable pump
- Accurate temperature control 82°C - 84°C

*Fast heat-up from switch-on* a hot water reservoir lets the water get stale and is not desirable. Quick use from start-up is important, so low thermal capacity and direct heating means that there is only a few second between start-up and having water at the correct temperature.
Coffee Varieties

Immediately after grinding, the coffee is packed in hermetically sealed capsules. Created exclusively by Nespresso, this innovative process not only allows us to guarantee coffee freshness but also preserves the flavour and aroma for several months. Each individual capsule contains the precise quantity of coffee needed for one cup, thereby guaranteeing a perfectly extracted espresso, cup after cup.

16 flavours/blends/roasts
The Nespresso World

The Concept

High quality technology

Creates consumer demand

Channels of distribution

Strong brand

Strong patent protection
The invention relates to a closed cartridge provided in order to be extracted under pressure, containing a substance for preparing a beverage, comprising a dish with an upper face and lateral wall having a substantially frustoconical shape and a lower face having a diameter greater than the upper face, in which the lower face is a protective cover welded onto the perimeter of the lower edge of the dish and consists of an oxygen-impermeable flexible material chosen from the group consisting of aluminium, an aluminium/plastic composite, an aluminium/plastic/paper composite, pure plastic or multi-layers.
- Forced Unilever to quit the coffee business
- P&G/Folgers could not compete in this segment “patents unbreakable”

2010:
- 10m Nespresso Club members
- 5+ billion capsules pa
- $3.4b revenues
- 20+% pa growth

Nestlé's fastest growing “Billionaire” business

Strength: 70+ patents & trademark/brand
Strong Patent Position - Nespresso

Nestec S.A., 04/27/1999, 5897899

Keurig, Inc., 06/27/2000, 6079315

Keurig, Inc., 02/06/2001, 6182554

Keurig, Inc.; 02/06/2001; [7] Beaulieu, Roderick H.; 12/30/1999; 6182554; Frequency: 1
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Setting:
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Weaker patents

dyson®
Lenovo buys IBM’s PC business

Creating the world’s best PC IP portfolio
And the failures………

- HIV - Pharma Industry did not understand:
  - Medicines for South Africa was not a patent issue
  - *But they made into one – damaged image of industry*
- Bristol-Myers-Squibb: CEO+General Counsel *fired (9/06)*
- RIM (Blackberry) vs. NTP *$612.5 million settlement – why?*
- Electronics company
  - ~$5 billion invested in patents - Neither sued nor licensed
  - *Are their shareholders getting value for money?*
IPRs provide:

- The incentive to innovate and invest in risky new ideas
- The legal clarity and certainty to work with others:
  - Licensing
  - Technology/patent pools
  - Collaboration
  - Open innovation
- The choice to IPR owners how their IPRs will be used
IP and Corporate Strategy

• What are our business objectives?

• How does our IP strategy support our business strategy?

• Why do we have IP?
  – Is it to block competitors, protect our products
  – Do we have “freedom to operate”?
  – Do we collaborate in the marketplace?

• Where will the new IP come from?
  – In-house R&D, licensing in, acquiring patents or companies, collaboration, open innovation?
Buys

Buys

Patent portfolio for

Copyright 2012
Google Buys Motorola $12.5 billion

Sues HTC Patent infringement

Sues Samsung Design infringement

Galaxy Tab withdrawn
Buys 9 patents* from Counter-Sues

For infringing patents

*Motorola, Palm patents
palm

= 1,600 patents

Nortel Networks

= 6,000 patents

Motorola

= 17,000 patents

IP Value ≈ $750,000 per patent
A patent gives you the right to use your invention

*False*
Hedy Lamarr: Inventor
Spread Spectrum Radio Technology

- Actress – “Ekstase” - 1933
- Co-inventor (with Antheil) of Spread Spectrum radio technology
- US Patent No: 2,292,387 1942 (Lamarr-Antheil)
- Cited by over 1000 subsequent patents including CDMA, TDMA, GPS and 802.11 wireless internet (WiFi)
Lamarr-Antheil Spread Spectrum Patent

**Disclosure**

**Patent**


Died June 24, 1941

**Fig. 1.**

**Fig. 2.**

**Fig. 3.**

Inventors

Copyright 2012
“INVENTION: THE NEXT SOFTWARE”

NATHAN MYHRVOLD,
Former CTO - Microsoft
Founder, Intellectual Ventures
U.S. Capitol
March 7, 2006

From transcript by: Federal News Service, Washington, D.C.
“future competition in the world is competition in IP ….,”

Wen Jiabao - Chinese Prime Minister
June 2004 et seq
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Reading: IP Strategy

THE INVISIBLE EDGE

Using Intellectual Property to Take Your Strategy to the Next Level

Mark Blaxill and Ralph Eckardt

Foreword by Kevin G. Rivette, author of Rembrandts in the Attic
Reading: The AC/DC Electrical Revolution

“Empires of Light: Edison, Tesla, Westinghouse and the race to electrify the world” Jill Jonnes

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Reading: China - high quality, low cost innovation
Reading: The Industrial Revolution

“Easy reading”

“Academic”
Further Reading

Edison in the Boardroom
HowLeadingCompaniesRealizeValueFromTheirIntellectualAssets
Julie L. Davis
Suzanne S. Harrison

Einstein in the Boardroom
MovingBeyondIntellectualCapitaltoI-Stuff
Suzanne S. HarrisonPatrick H. Sullivan