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Tsinghua x-lab
清华大学创意创新创业教育平台
Enabling students to imagine, innovate and implement
（三创空间）

清华经管学院
Tsinghua SEM

Competitive Advantage in the Knowledge Economy

Innovation – Intellectual Property – Business Strategy

Ian Harvey

February 24th, 2016

V3

2004: Lenovo buys IBM's PC business

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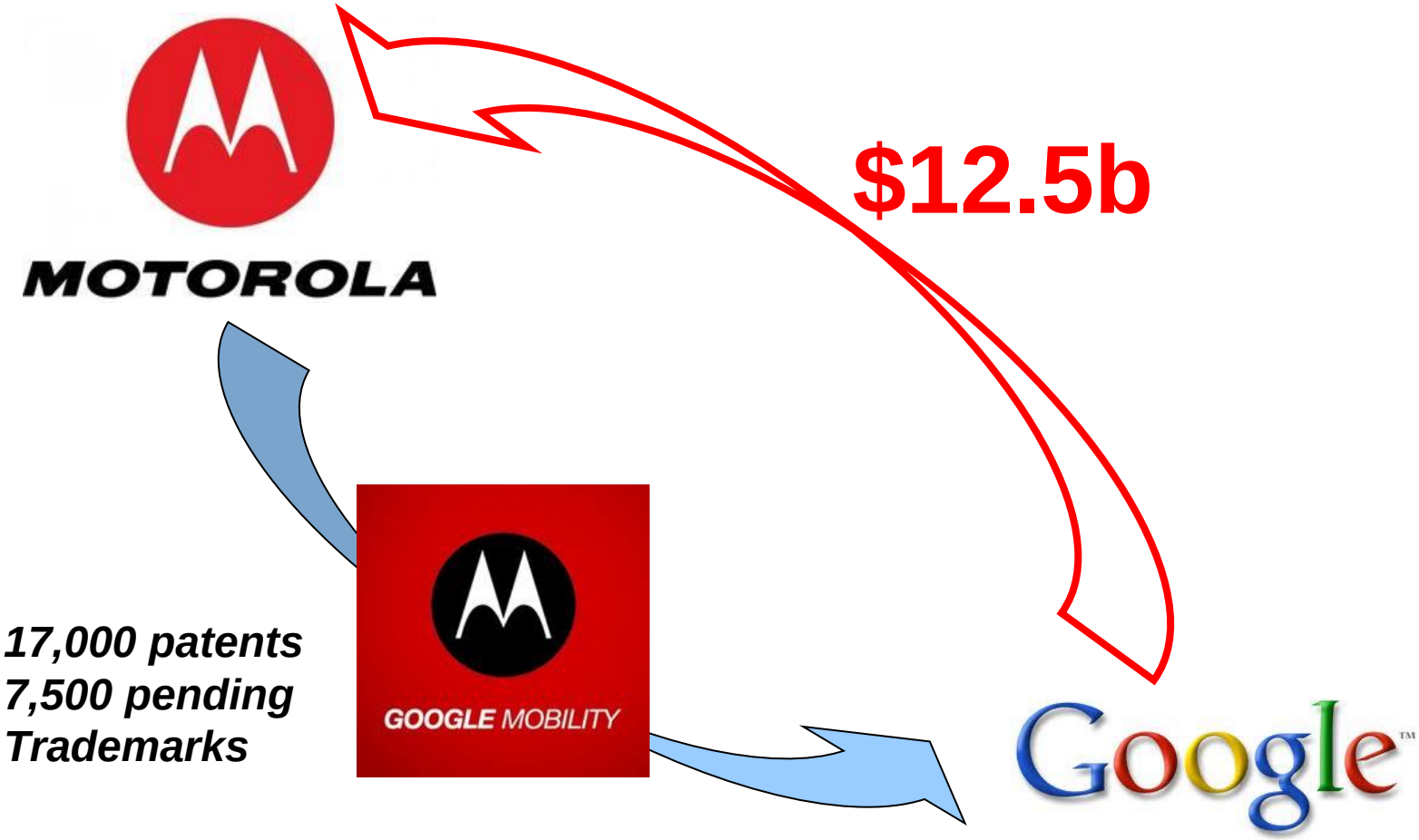
2011: Google buys Motorola's *Motorola Mobility* smartphone business



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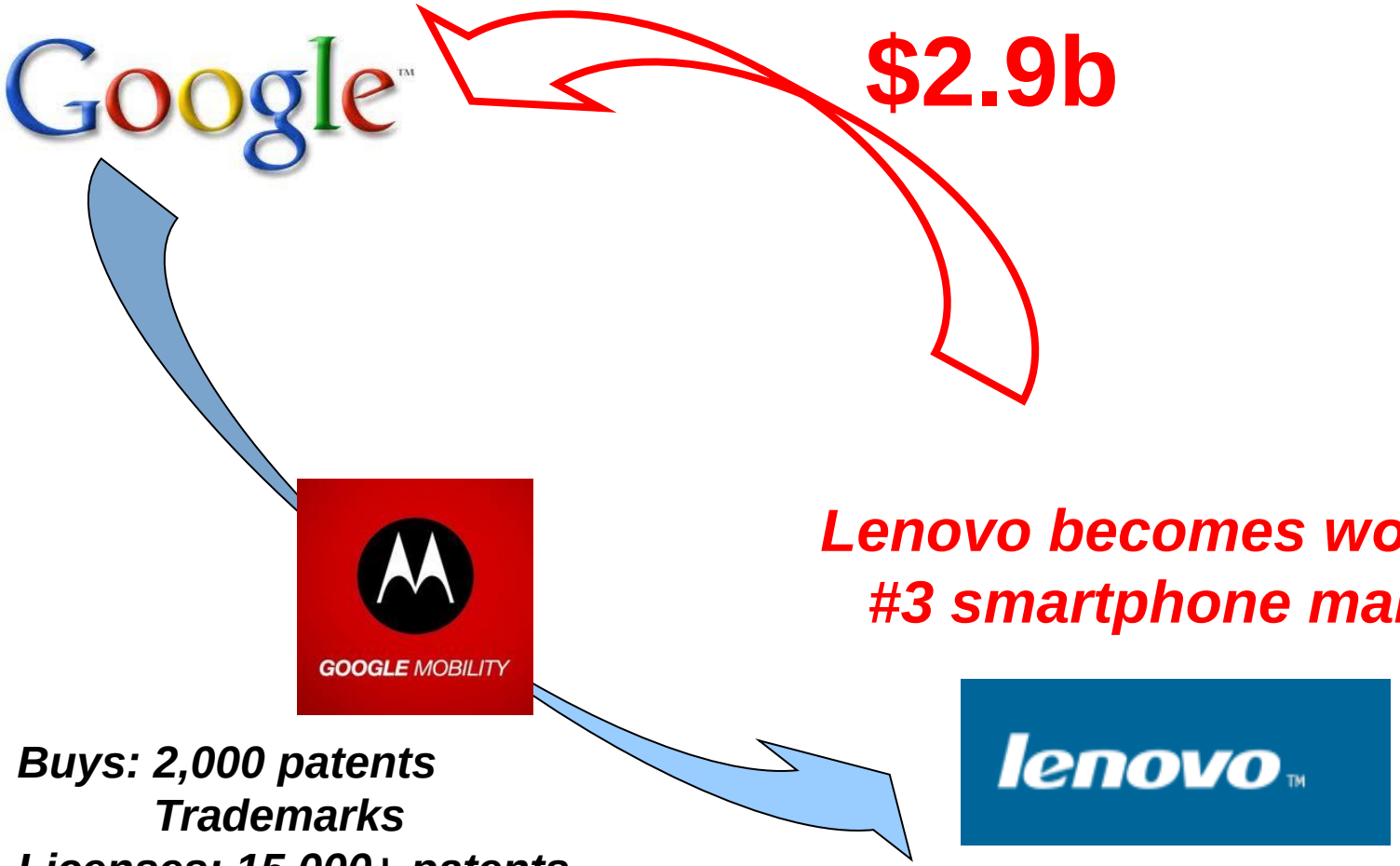
2014: Lenovo acquires rights to Motorola portfolio



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These huge IP transactions show how important IP is in today's business world

Today's lecture

- History:
  - The Industrial (Steam) Revolution (1760 – 1800)
  - The Electrical Revolution (1880 – 1900)
  - The Software Revolution (1990 – 2010)
- Introduction to the Basics of IP
- Success stories
- Disaster stories
- IP and business strategy
- Course overview

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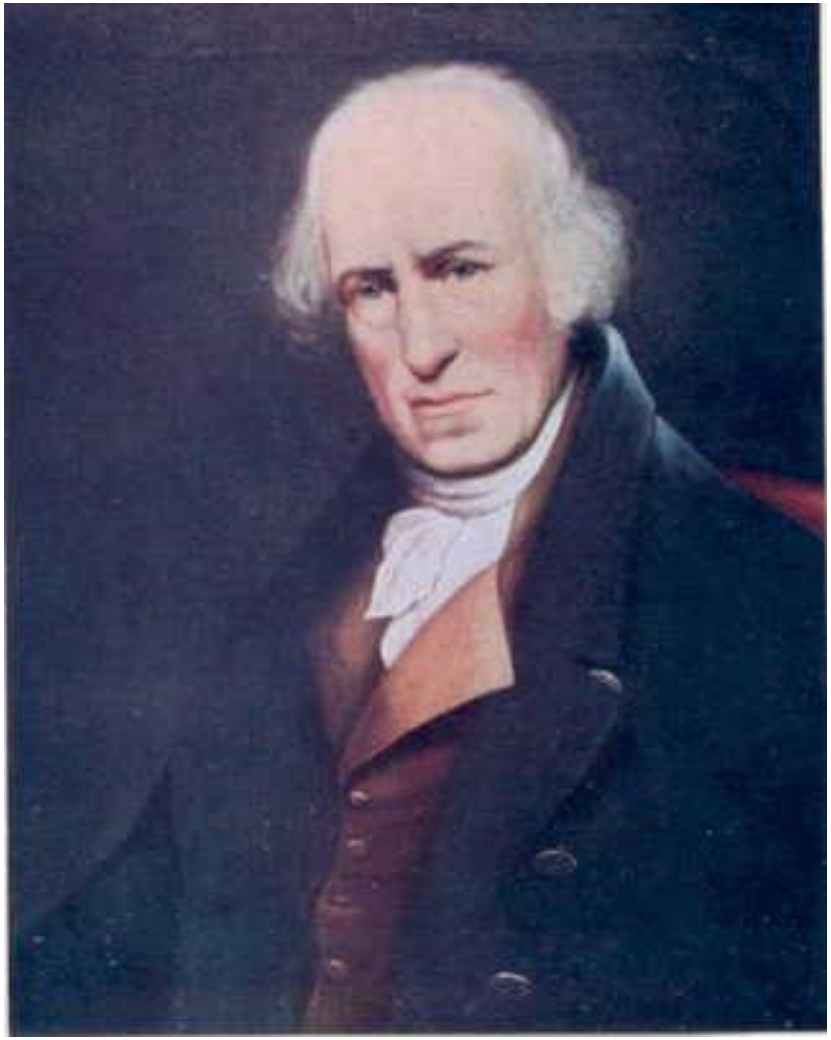
The Industrial (Steam) Revolution



James Watt

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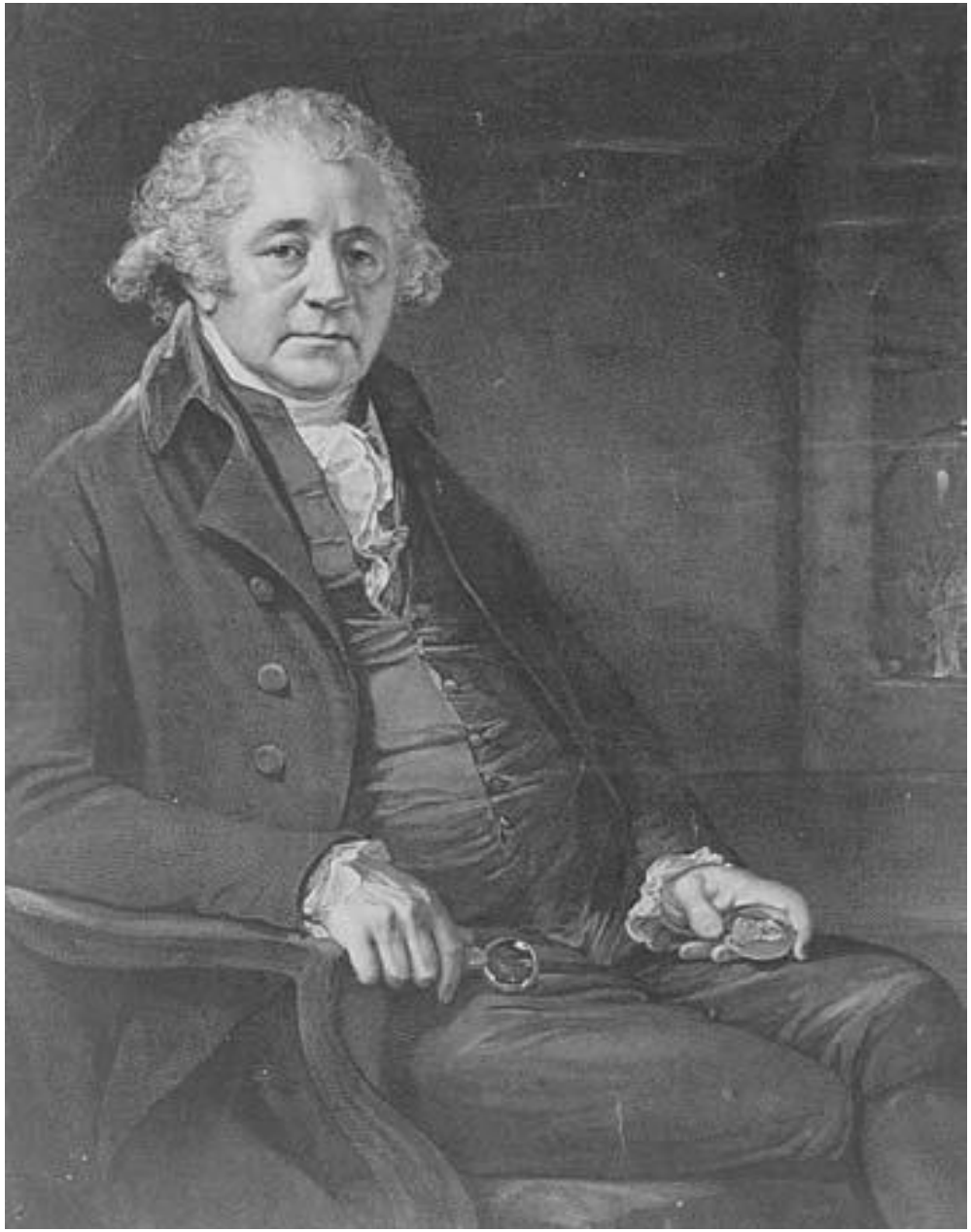

Matthew Boulton

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John Roebuck

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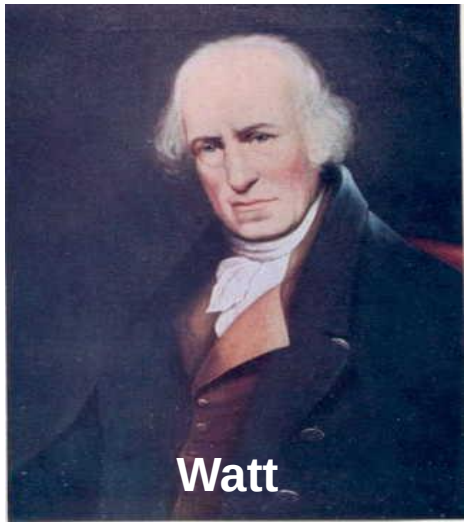

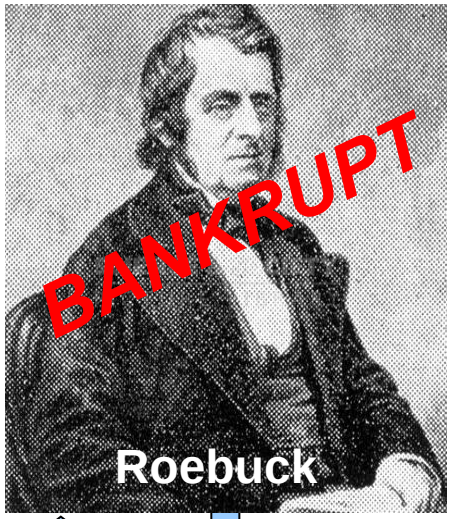

1761-65

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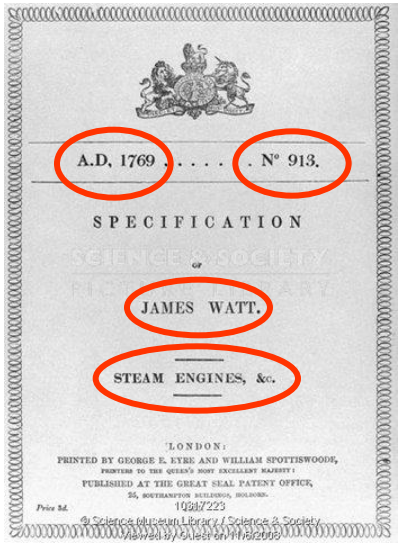
Assigned

£..£

1773
FAILURE



A.D. 1769 . . . . . N° 913.

SPECIFICATION

OF

JAMES WATT.

STEAM ENGINES, &c.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
26, SOUTHAMPTON BUILDINGS, HOLBORN.

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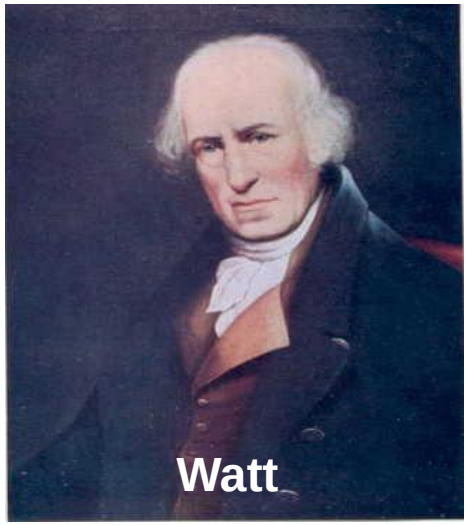

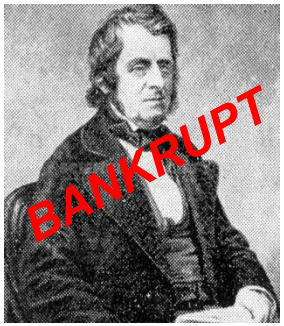

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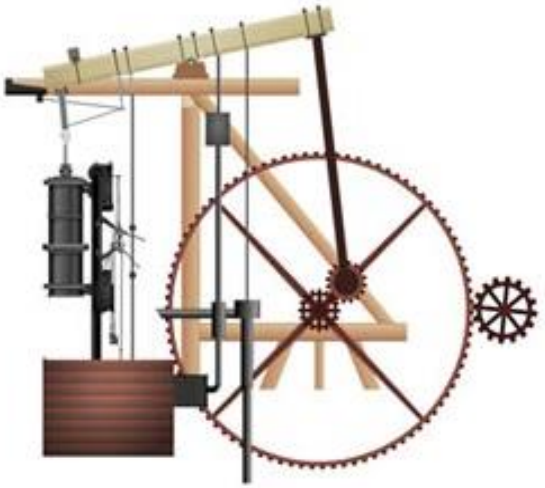

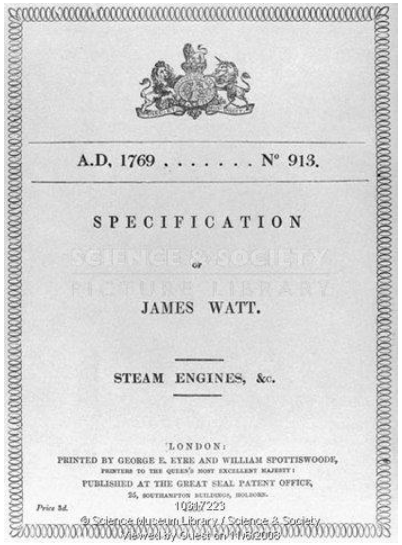

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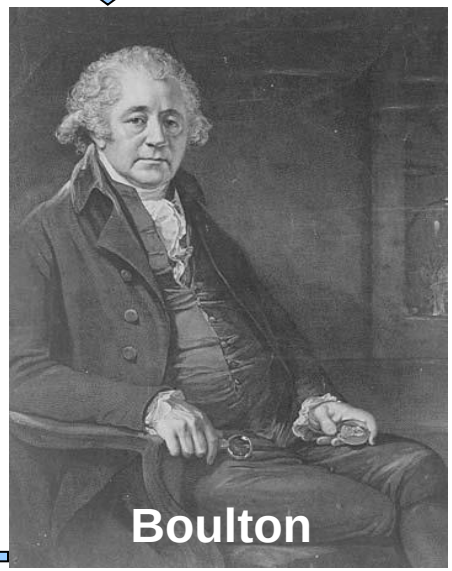

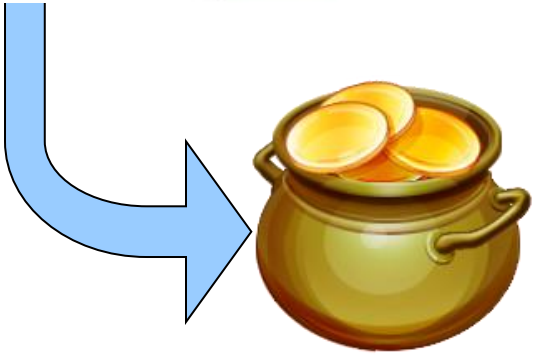

Extended from 14 to 30 Years

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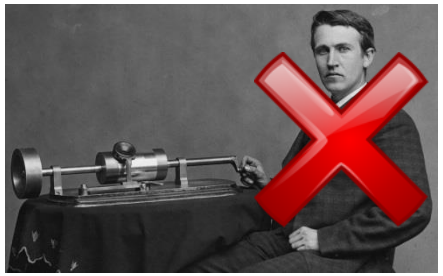
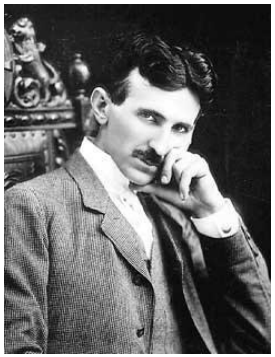
The Electrical Revolution – *AC* vs *DC*

Direct Current



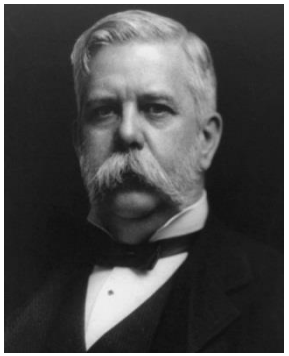
Thomas Edison

Alternating Current



Nikola Tesla

+



George Westinghouse

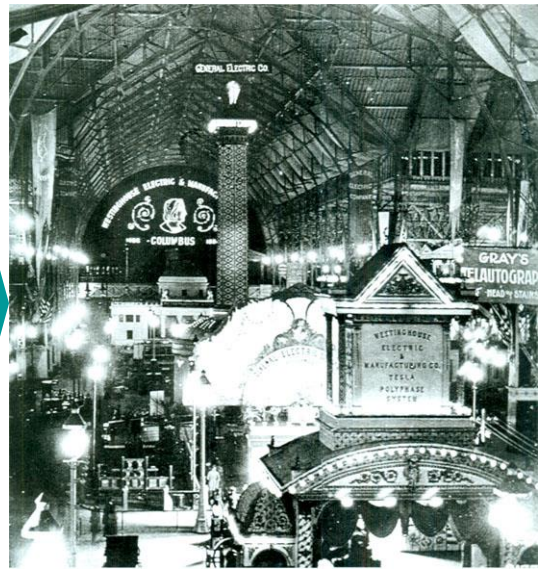
Patents

Open Innovation

Investment

Litigation

Chicago World's Fair 1893



Westinghouse Tesla Polyphase System (AC)

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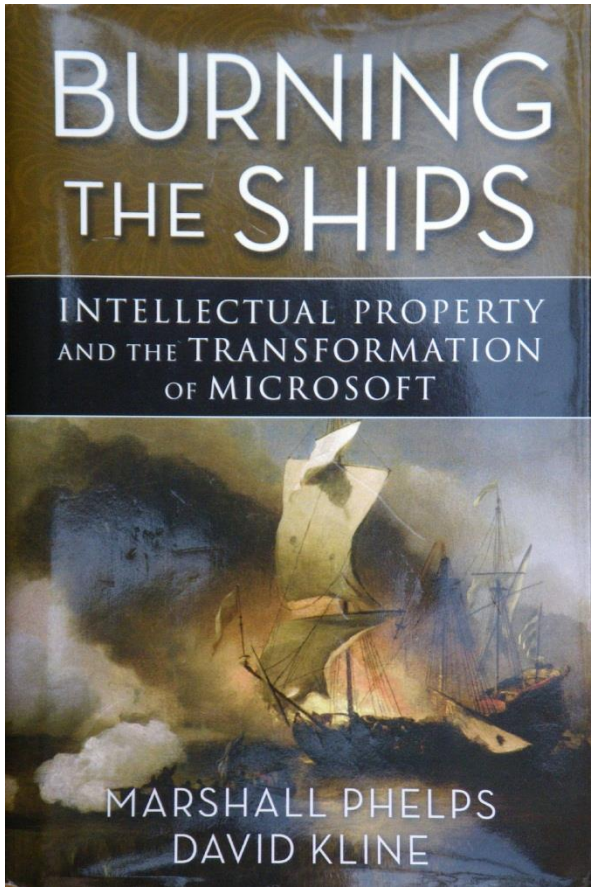
The Software Revolution - Microsoft

- **Bill Gates understood IP**
- **Microsoft built on copyright**
- **Then software patents**
- ***IP enables collaboration*:**
  - **Microsoft collaborations:**
    - **2003 = 0**
    - **2009 = 500**
  - **Partnering with Open Source**



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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**
- **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 understand IP:***
  - ***IP is a commercial issue more than a legal one***
  - ***Its risks and opportunities are key for "C" suite executives to understand***

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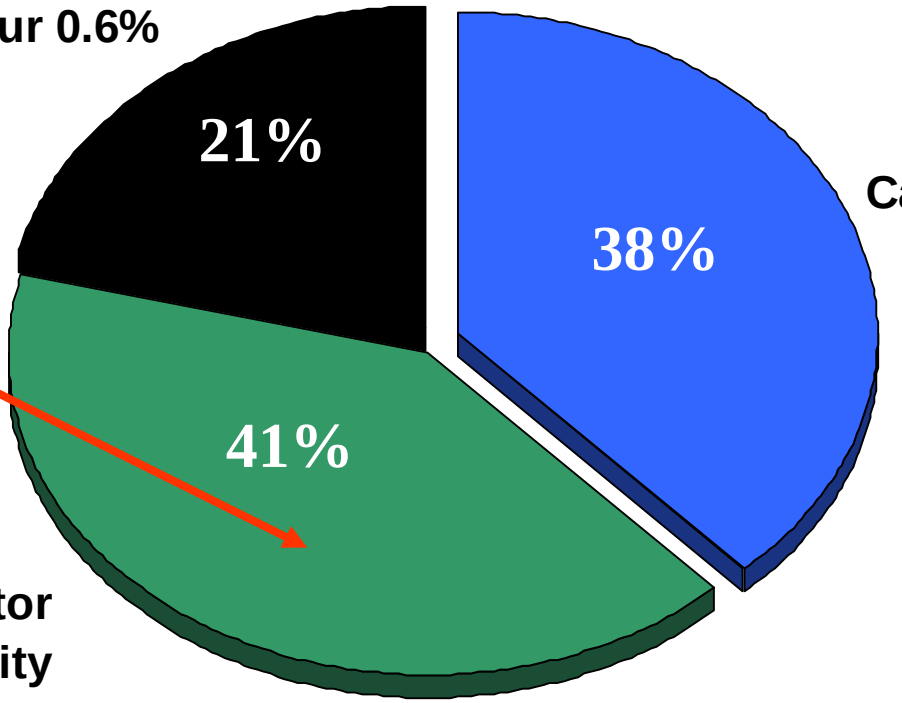
Impact of Technology on GDP Growth
1970-1990 Average 2.9%



China has understood that Technology is the major driver of world growth

Source : "21st Century Technologies" - OECD 1998

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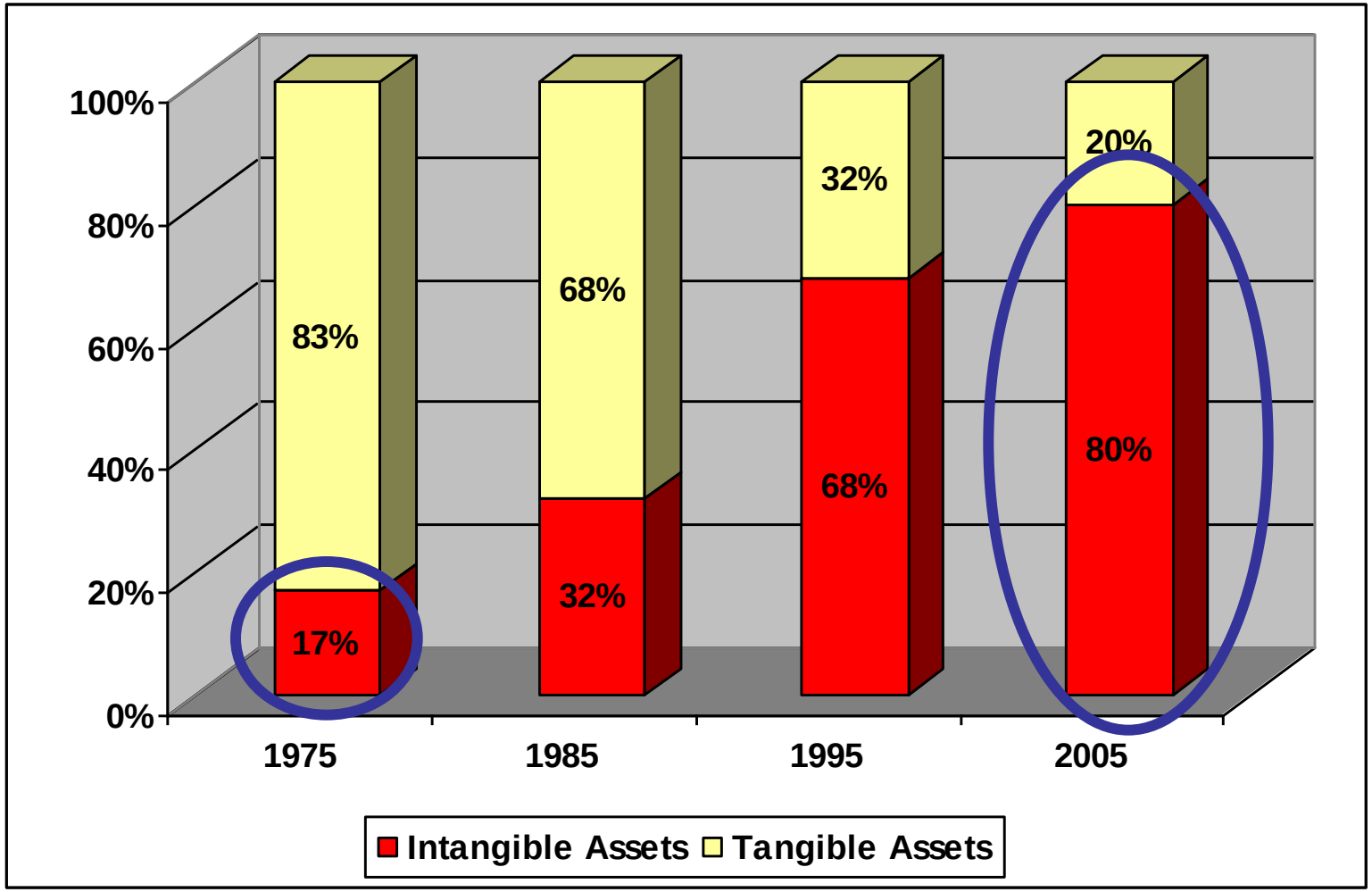
US Corporate Valuations: S&P500®



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IP creates:

- 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 IP owners how their IP will be used

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IP is a key strategic tool

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

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Copyright

- **Life 70/95 years – simple & free**
- **international right, simple, zero cost, certain, use is simple**
- ***managing artistic works, databases, software***

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Trademarks & Geographic Origin

- **Can last for ever – quite simple and cheap**
- **Country specific, relatively simple and certain, cheap**
- **Trademarks are essential for brands**
- ***promise of quality: create and manage consumer loyalty***

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Lenovo buys IBM's PC business

Lenovo®+IBM®+ThinkPad® = a new Brand

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Patents are different ……

- **Patents:**
  - **Last for 20 years:**
    - **The basics are simple, but**
    - **The details can be complex and expensive**
  - **Not an absolute right: conditionality - must be "new" and "not obvious"**
  - **Country specific but conditionality is global**
  - **They can be exceptionally valuable, but they are complex and expensive to acquire and defend**
  - ***investing in innovative technology and products***

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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**

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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!**

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Strong patents

Nespresso

(Nestlé)

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The best espresso needs:

- **High quality coffee**
- **Uniform grinding size**
- **Coffee ground packing to allow water volume to flow through in 10-12 seconds**
- **Water:**
  - **High pressure (15 bar) with a reliable pump**
  - **Accurate temperature control 82°C - 84°C**
  - **Fast heat-up from switch-on**

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Nespresso does this:

- ☑ High quality coffee
- ☑ Uniform grinding size
- ☑ Coffee ground packing to allow water volume to flow through in 8 - 12 seconds

Water:

- ☑ High pressure (15 bar) with a reliable pump
- ☑ Accurate temperature control 82°C - 84°C
- ☑ Fast heat-up from switch-on

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Multiple flavours/blends/roasts

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High quality technology

Creates consumer demand

Channels of distribution

Strong patent protection

Strong brand

Aureka WorkBench

File Edit Document Image Annotation Window Help

EP 0 512 468 B1

Document ID: EP 0 512 468 B1

Title: CLOSED CARTRIDGE FOR MAKING A BEVERAGE

Assignee: Societe des Produits Nestle S.A.

Inventor: FOND, OLIVIER

US Class:

Int'l Class: [6] B65D 81/34 A

Issue Date: 01/29/1997

Filing Date: 05/04/1992

Abstract: (From EP 512468 A) The invention relates to a closed cartridge provided in order to be extracted under pressure, containing a substance (3) for preparing a beverage, comprising a dish (2) with an upper face and lateral wall having a substantially frustoconical shape and a lower face (4) 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.

EU is a product patent – US is a process patent only

EP 0 512 468 B1 (Page 5 of 5)

42%

Deckel aus einem sauerstoffundurchlässigen, bieg-

4

EP 0 512 468 B1

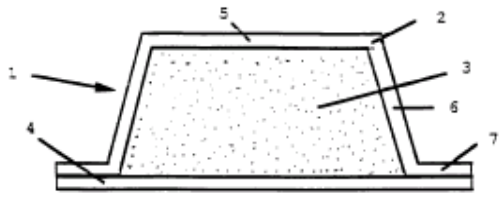

FIGURE 1

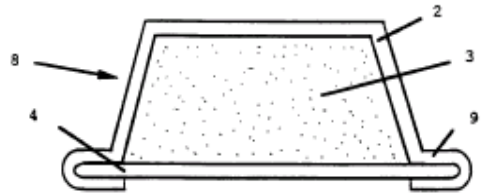

FIGURE 2

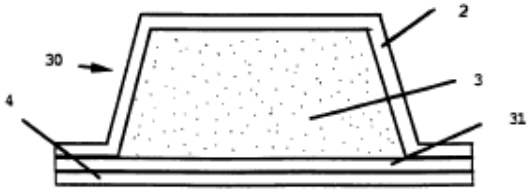

FIGURE 3

1 document , 1 document selected

-Forced Unilever to quit the coffee business
-P&G/Folgers could not compete in this segment
"patents unbreakable"

2010:
- 10m Nespresso Club members
- ~6 billion capsules pa
- $3b revenues
- 22% pa growth

Nestlé's fastest growing "Billionaire" business ***Strength: patents + trademark/brand***

BUT – *Patents expiring* , competition emerging!

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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

24 Pages – no mention of IP!

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Weaker patents

dyson®

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Aureka WorkBench

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Aureka Foundation Server - aureka:8080 - bingh

	Assignee	Inven
12	Shell Electric Mfg. (Holdings) Co.,	Yung, Bill
13	Royal Appliance Mfg. Co.	[6] Wright
14	Fantom Technologies Inc.	[2] Conrac
15	Notetry Limited	[3] Dyson
16	Black & Decker Inc.	[3] O'Bani
17	G.B.D. Corp.	[3] Conrac
18	Aktiebolaget Electrolux	[4] Tuvin, I
19	G.B.D. Corp.	[2] Conrac
20	G.B.D. Corp.	[3] Conrac
21	U.S. Philips Corporation	[2] Douma
22	Royal Appliance Mfg. Co.	[4] Bair, K
23	Royal Appliance Mfg. Co.	[5] Wright
24	Royal Appliance Mfg. Co.	[4] Wright
25	Notetry Limited	Dyson, Ja
26	Notetry Limited	Dyson, Ja
27	Notetry Limited	[3] Dyson
28	Racine Industries, Inc.	[3] Rench
29	[2] Amway Corporation	[2] Steinb
30	Racine Industries, Inc.	[3] Rench
31	Racine Industries, Inc.	[3] Rench
32	Iona Appliances Inc.	[3] Soler,
33	Notetry Limited	Dyson, Ja
34	Notetry Limited	Dyson, Ja
35	Notetry Limited	Dyson, Ja
36	Notetry Limited	Dyson, Ja
37	Notetry Limited	Dyson, Ja
38	F.H. & H. Limited	[2] Bryant
39	Notetry Limited	Dyson, Ja
40	Prototypes, Ltd.	Dyson, Ja

40 documents , 1 document selected

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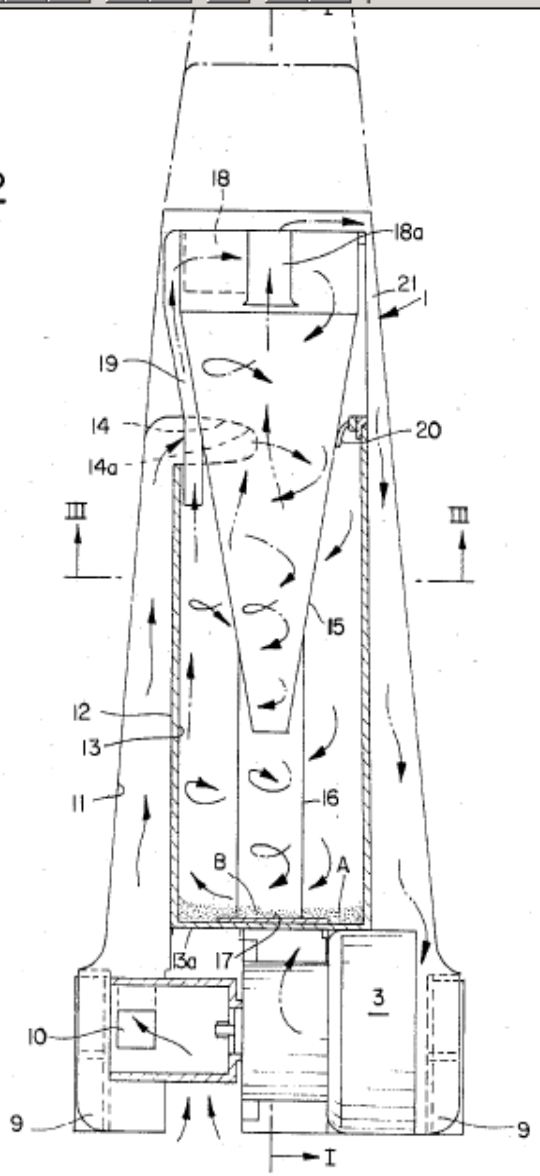
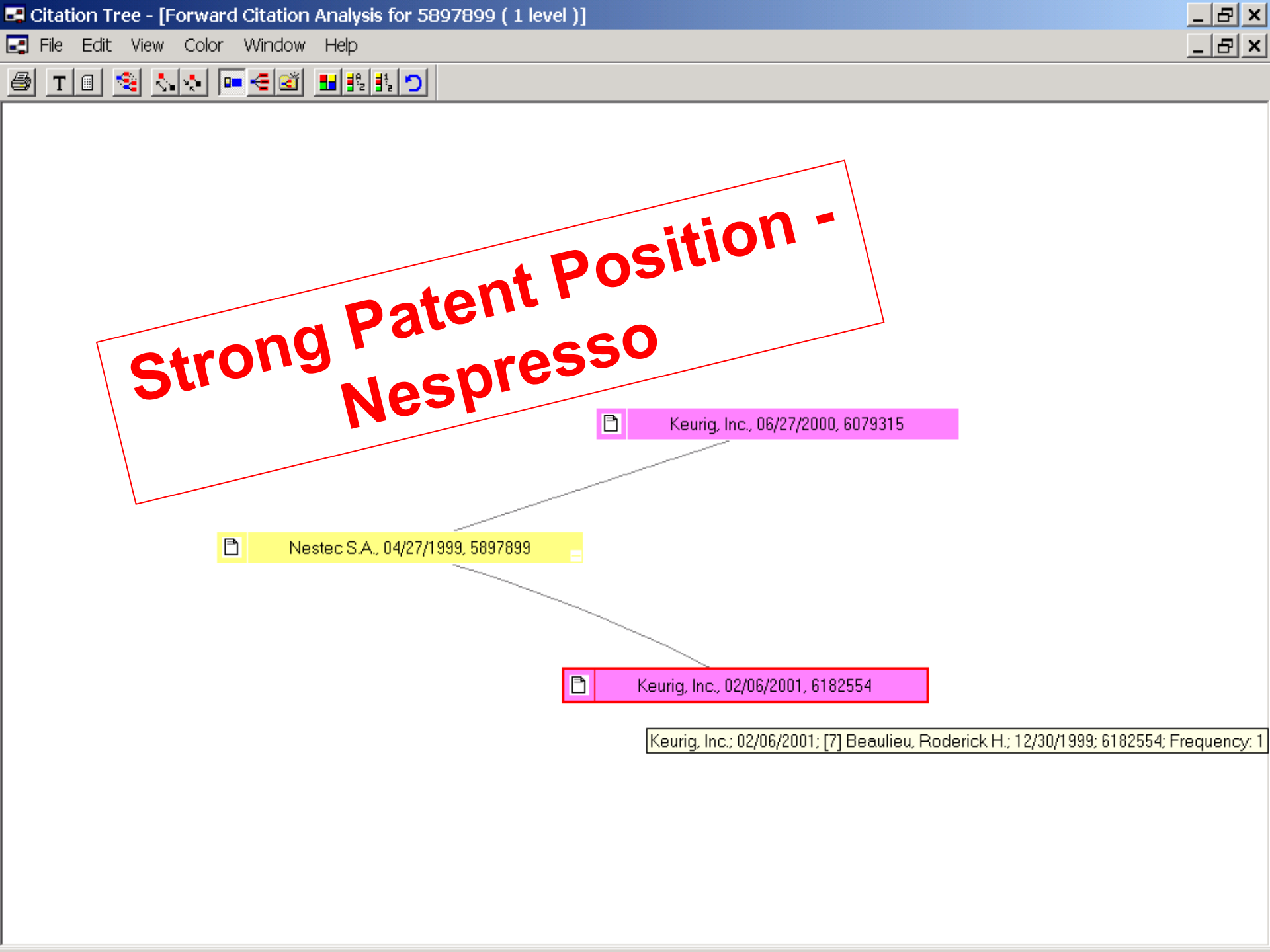
FIG.2

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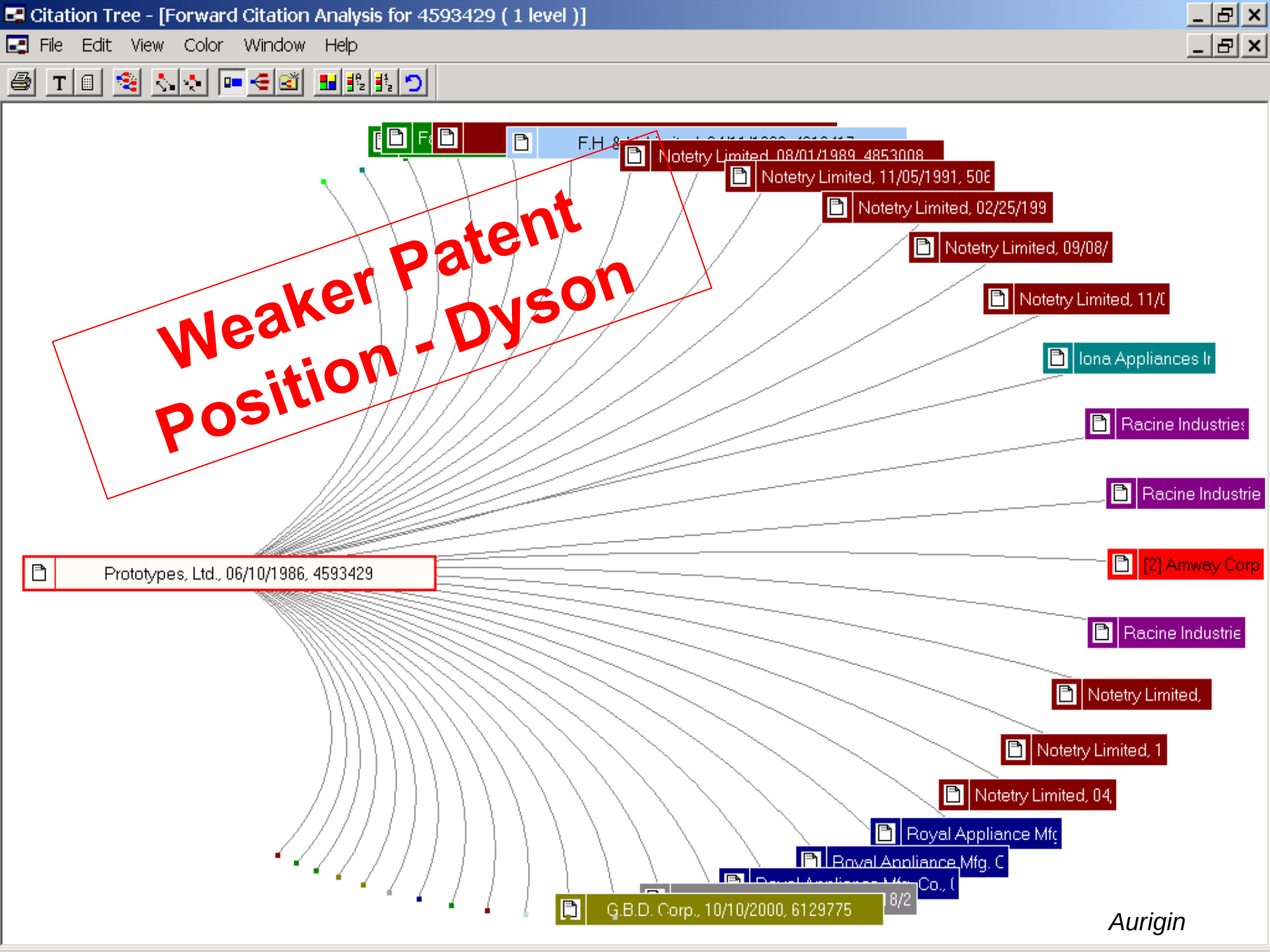
Strong Patent Position - Nespresso
Keurig, Inc., 06/27/2000, 6079315
Nestec S.A., 04/27/1999, 5897899
Keurig, Inc., 02/06/2001, 6182554
Keurig, Inc.; 02/06/2001; [7] Beaulieu, Roderick H.; 12/30/1999; 6182554; Frequency: 1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Notetry Limited, 11/(
Iona Appliances Ir
Racine Industries
Racine Industrie
[2] Amway Corp
Racine Industrie
Notetry Limited,
Notetry Limited, 1
Notetry Limited, 04
Royal Appliance Mfc
Prototypes, Ltd., 06/10/1986, 4593429
G.B.D. Corp., 10/10/2000, 6129775
Aurigin

Success ⇨ (*almost*) disaster ⇨ success

清華 x-lab

Prudent Energy
VRB™ Systems

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And the many 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?***

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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**

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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 IP or companies, collaboration, open innovation?**

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IP is key:

To universities & researchers:

- ***Protect so that companies will invest to develop the invention***
- ***When you work with others it is clear <u>who</u> owns <u>what</u>***

Early stage start-ups

- ***So that you can get funding***
- ***So that it is harder for the competition to take your ideas***

Think IP strategy:

- ***Which IP is most important to your business: patents? copyright? trademarks? designs? trade secrets?***
- ***Protect thoughtfully and selectively***
- ***Start today – IP strategy has to be part of decision making from Day 1***

That's what the course will teach you!

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Course structure

1. Introduction: Ian Harvey, *Tsinghua*
2. Legal basics of IP: Hatty Cui, *Rouse*
3. IP strategy with a focus on Patents (I): Alex Fan Liang, *Geely, Morgan Lewis Bockius.*
4. IP strategy with a focus on Patents (II): Sun Bin, *BOE*
5. Formal IP and trade secrets: Zhang Yan, *IBM*
6. Patents and copyright in high tech: *Qualcomm*
7. Case history discussion and test: Nicholas Zhang, *CTEX*
8. IP and Innovation: Jianguang Du, *Mindray Medical*

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Enabling students to imagine, innovate and implement
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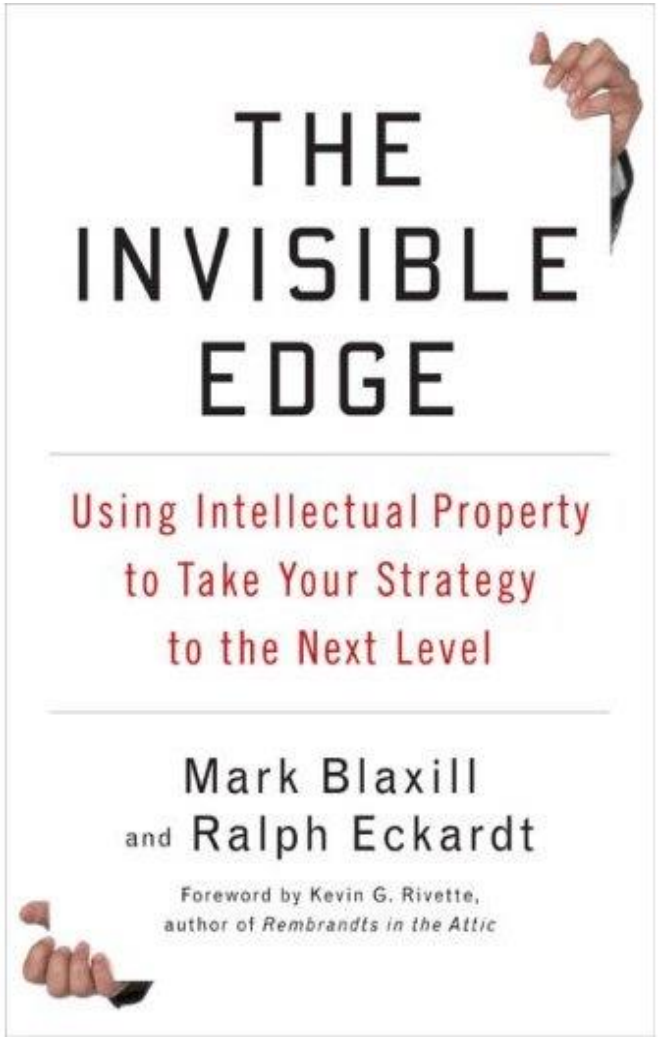
Competitive Advantage in the Knowledge Economy

Innovation – Intellectual Property – Business Strategy

Ian Harvey

February 24th, 2016

IP Strategy



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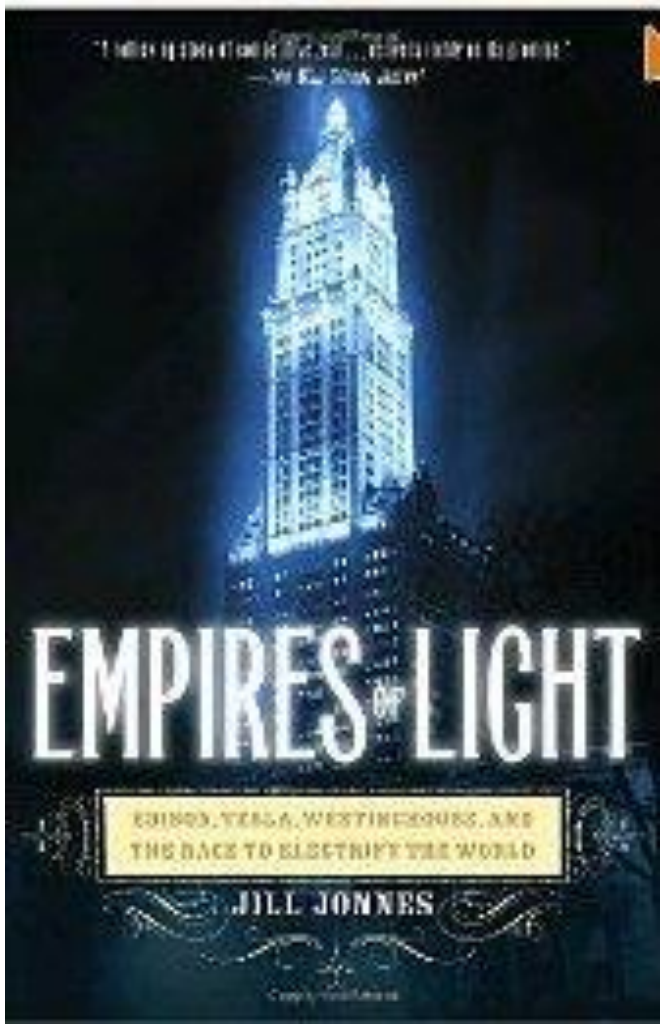
The AC/DC Electrical Revolution



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

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