



Competitive Advantage in the Knowledge Economy

知识经济中的竞争优势

***Innovation – Intellectual Property –
Business Strategy***

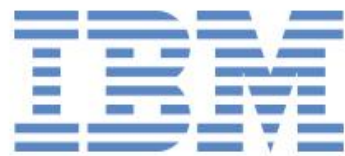
创新、知识产权、商业战略

Ian Harvey

February 24th, 2016

2004: Lenovo buys IBM's PC business

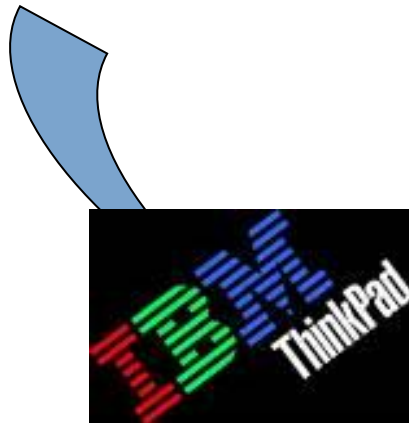
联想于2004年收购IBM的个人电脑业务



\$1.25b

**Bought the world's
best PC IP portfolio**

当时在个人电脑领域最大的
知识产权交易





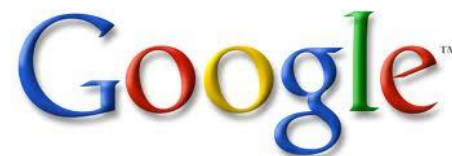
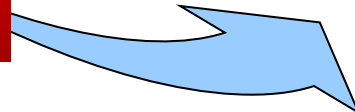
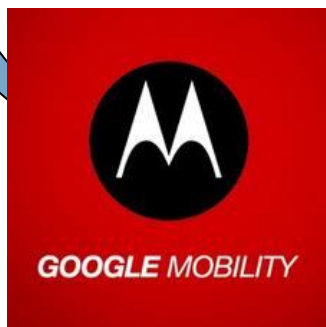
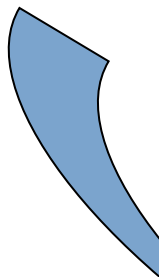
2011: Google buys Motorola's *Motorola Mobility* smartphone business

谷歌于2011年收购了摩托罗拉公司的移动智能手机业务



MOTOROLA

\$12.5b



17,000 patents
17000个专利
7,500 pending
7500个待审批专利
Trademarks 商标

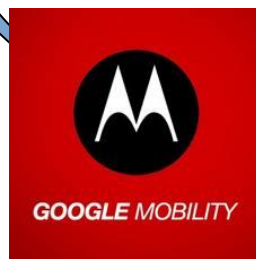
2014: Lenovo acquires rights to Motorola portfolio

联想于2014年取得了对摩托罗拉的控股



**Lenovo becomes world's
#3 smartphone maker**

联想成为世界第三大智能手机制造商



Buys: 2,000 patents 购买2000个专利

Trademarks 商标

Licenses: 15,000+ patents

许可: 15000多专利

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

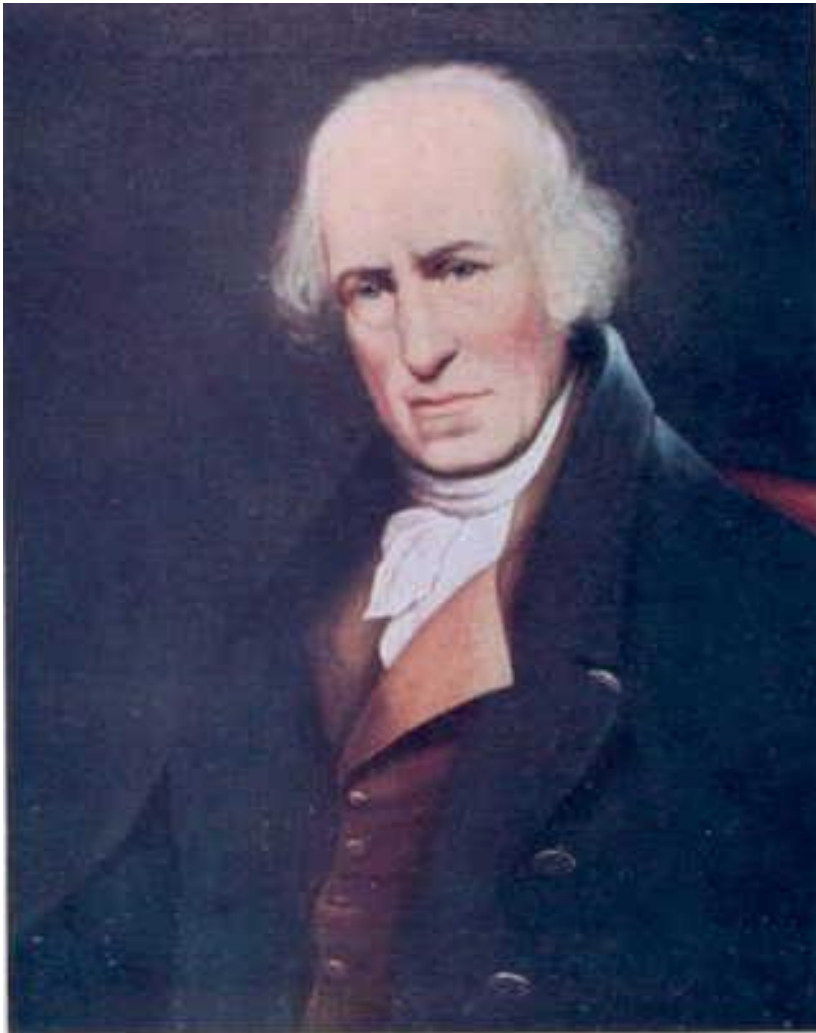
这些巨额的知识产权交易显示了在当
下的商业活动中知识产权的重要性

Today's lecture 今天课程的主题

- **History: 历史**
 - **The Industrial (Steam) Revolution (1760 – 1800)** 工业革命
 - **The Electrical Revolution (1880 – 1900)** 电力革命
 - **The Software Revolution (1990 – 2010)** 软件革命
- **Introduction to the Basics of IP** 知识产权的基础简介
- **Success stories** 成功案例
- **Disaster stories** 失败案例
- **IP and business strategy** 知识产权和商业战略
- **Course overview** 课程综述

The Industrial (Steam) Revolution

工业（蒸汽）革命



James Watt

詹姆斯·瓦特



清华 x-lab

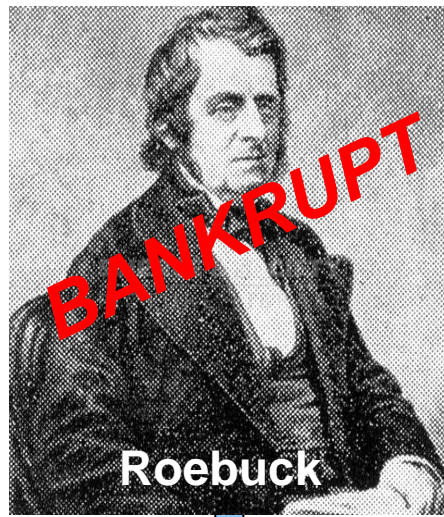
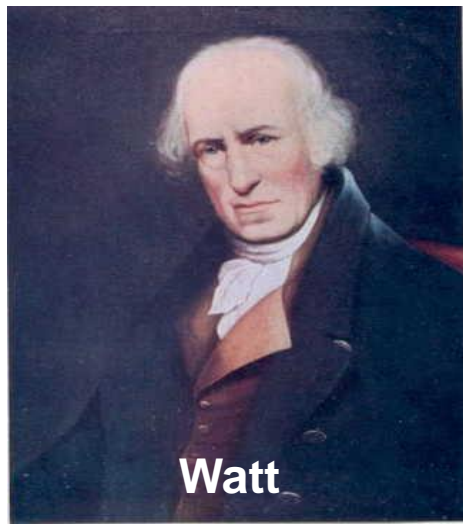


**Matthew
Boulton**

马修·博尔顿



**John
Roebuck**



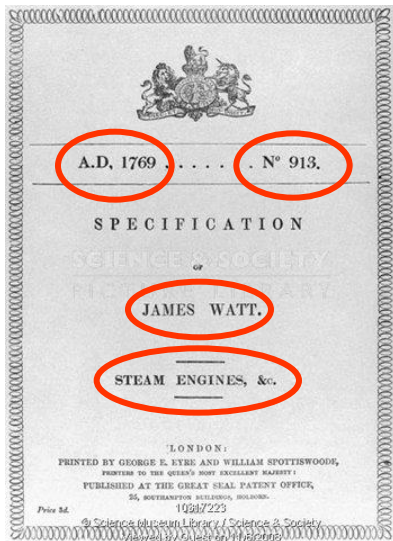
1761-65



Assigned

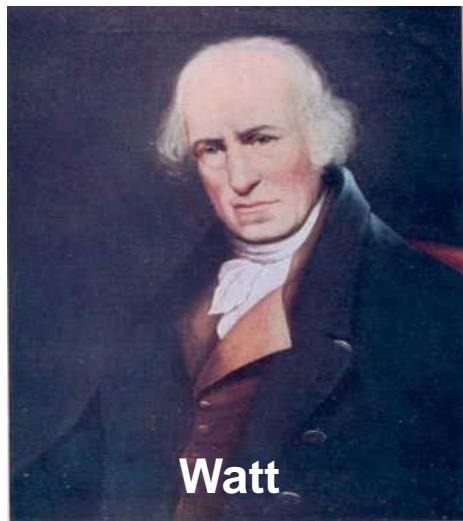
£...£

1773
FAILURE

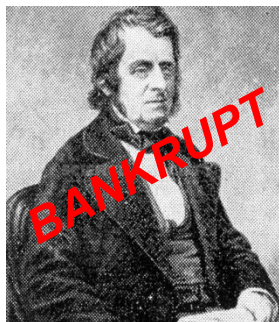




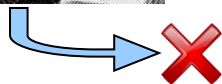
清华 x-lab



Watt



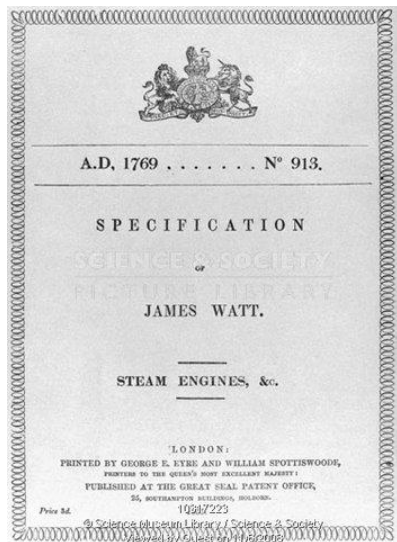
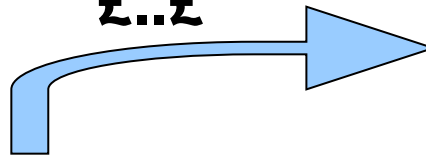
BANKRUPT



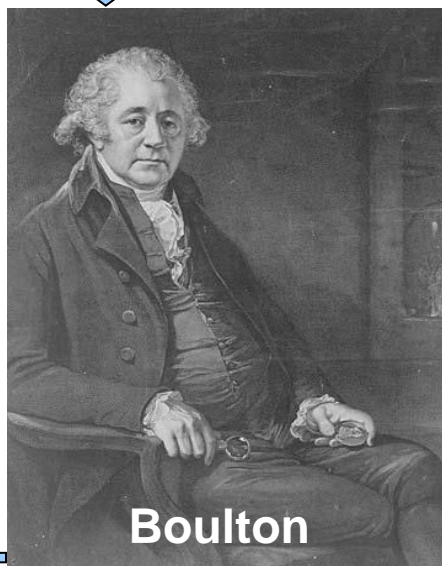
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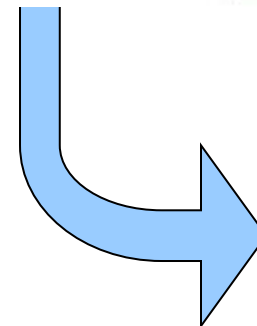
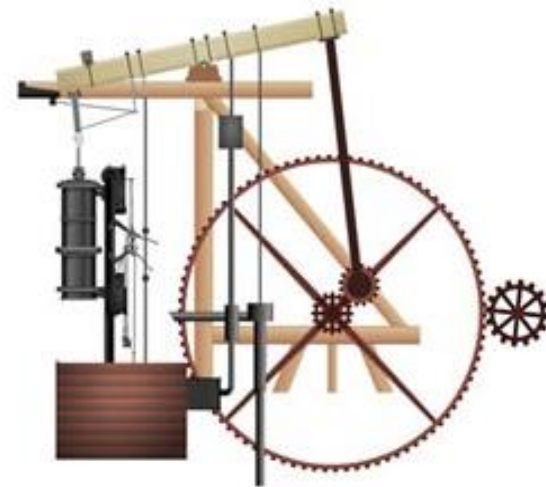
£..£



Extended from 14 to 30 Years



Boulton

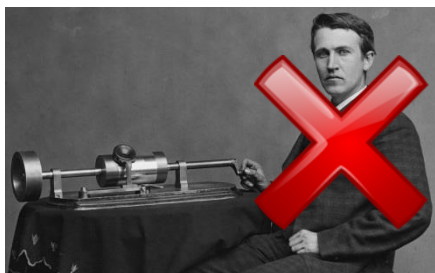




The Electrical Revolution – AC vs DC

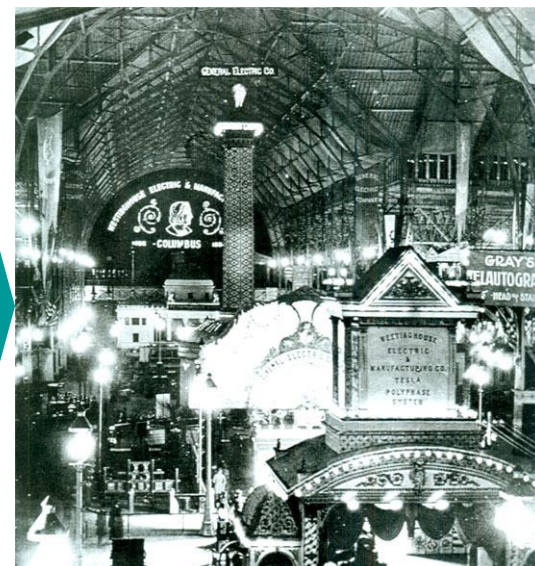
电力革命——交流电 vs 直流电

Direct Current 直流电



Thomas Edison 爱迪生

Chicago World's Fair 1893 芝加哥世博会



Westinghouse Tesla
Polyphase System
(AC)

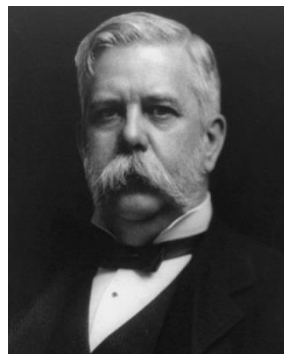
Alternating Current 交流电



Nikola Tesla
特斯拉

电

+



George
Westinghouse

Patents 专利

Open
Innovation

开放式创新

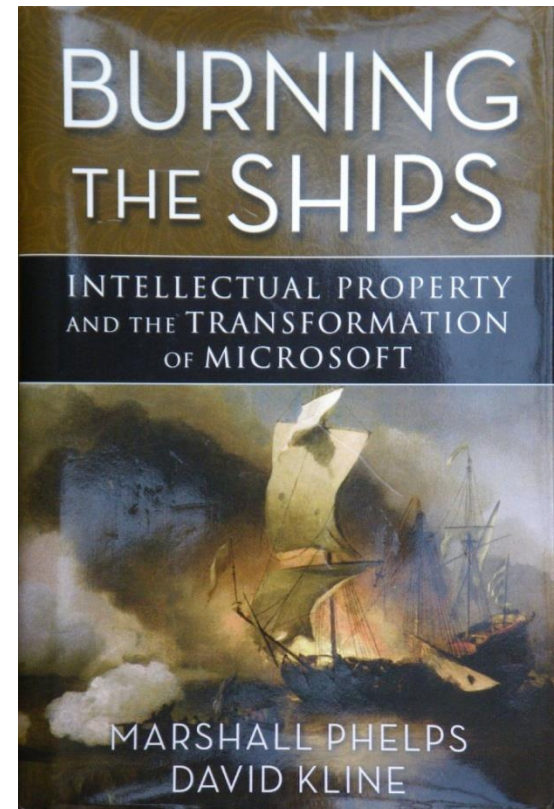
Investment 投资

Litigation 诉讼

The Software Revolution – Microsoft

软件革命——微软

- **Bill Gates understood IP** 比尔盖茨理解知识产权
- **Microsoft built on copyright** 微软利用版权
- **Then software patents** 以及软件专利
- ***IP enables collaboration:*** 知识产权促进合作
 - **Microsoft collaborations:** 微软的合作项目
 - 2003 = 0
 - 2009 = 500
 - **Partnering with Open Source** 与开源软件合作

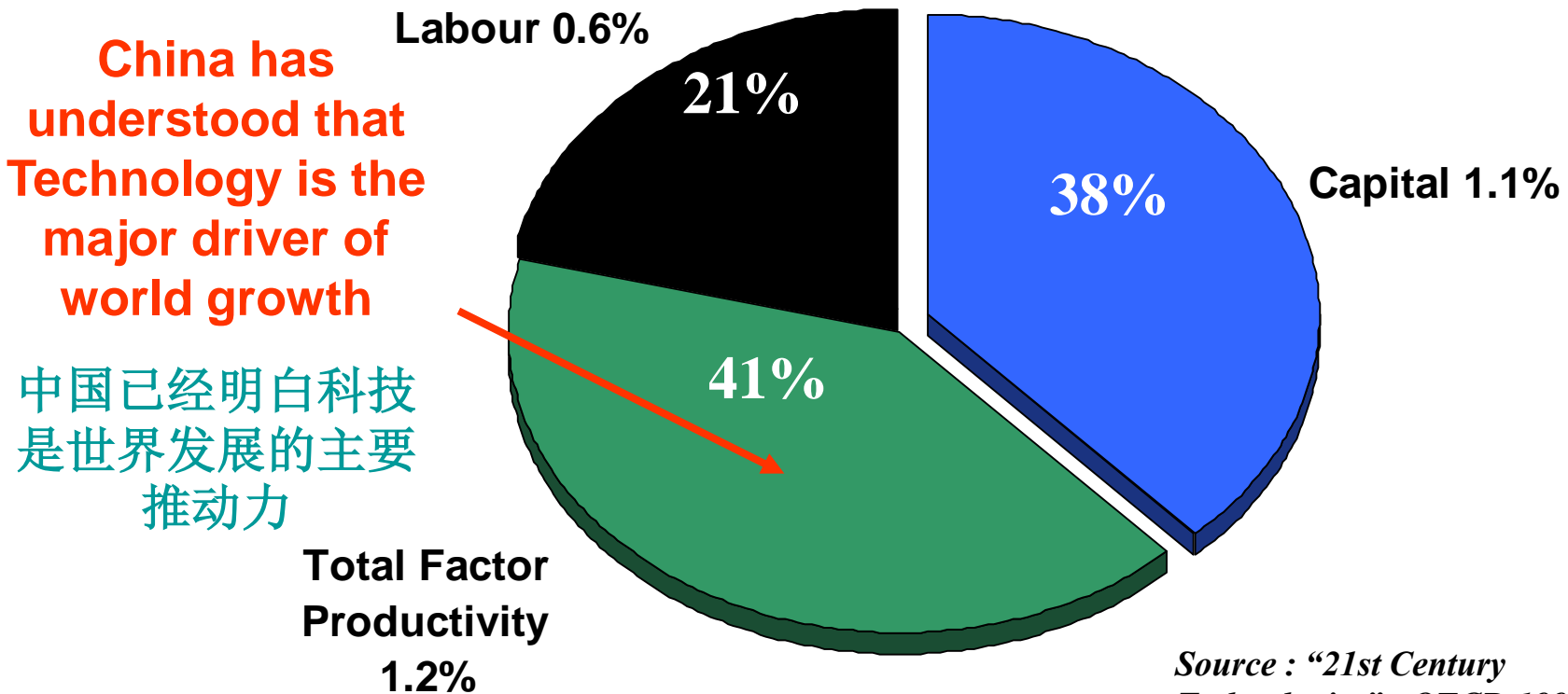


Lessons from 250 years 250年来的收获

- The heads of these successful companies (Watt, Boulton, Westinghouse, Gates) understood IP very well 那些成功公司的领导都善于运用知识产权
- IP was essential to raising finance for developing their ideas 知识产权对于融资来发展创意是至关重要的
- The heads of most companies today do not understand IP well – they delegate to their (often non-commercial) IP specialists 当下大部分企业的领导不是特别理解知识产权，而是委托给专业（非商业）人士
- **You are much more likely to succeed if you understand IP:** 如果你了解知识产权，你将更有可能成功
 - **IP is a commercial issue more than a legal one** 知识产权不仅仅是一个法律事务，更是一个商业事务
 - **Its risks and opportunities are key for “C” suite executives to understand** 领导层对知识产权风险和机会的理解是关键

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

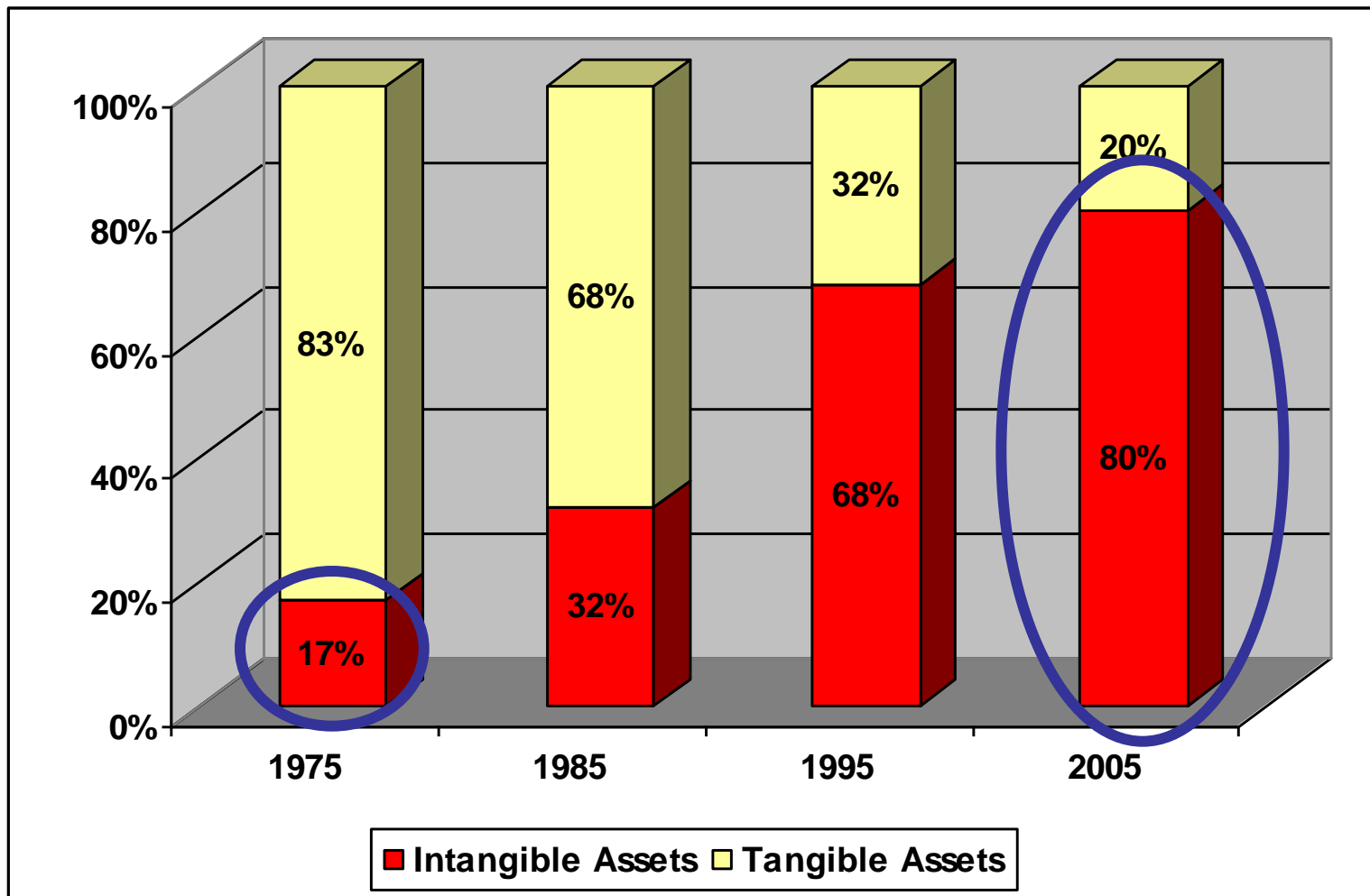
从1970到1990年间，科技对GDP增长的贡献达到年均2.9%





US Corporate Valuations: S&P500®

美国商业公司评估



无形资产

有形资产

IP creates: 知识产权能创造:

- **The incentive to innovate and invest in risky new ideas** 针对有风险的创意进行创新和投资的动机
- **The legal clarity and certainty to work with others:** 与人合作时的法律上的清晰度与确定性
 - **Licensing** 授权
 - **Technology/patent pools** 技术 / 专利池
 - **Collaboration** 合作
 - **Open innovation** 开放式创新
- **The choice to IP owners how their IP will be used** 知识产权拥有者对他们的权利拥有选择的自由

IP is a key strategic tool 知识产权是一个重要的策略工具

- **Enforceable in the courts** 在法庭上可以强制执行
- **Long lifetime but differing complexity and cost:** 权利保护期长但复杂性和成本不同
 - **Copyright – lifetime 70/95 years – simple & free**
著作权——保护期为作者身后70/95年——简单且免费
 - **Trademarks – live for ever – quite simple and cheap**
商标——可永远存在——非常简单和便宜
 - **Patents – life 20 years. Can be complex and quite expensive**
专利——20年——可能复杂而且非常昂贵

Copyright 著作权

- **Life 70/95 years – simple & free**
保护期为作者身后70/95年——自动获得，简单且免费
- **international right, simple, zero cost, certain, use is simple**
国际性权利，简单，零成本，确定，使用简便
- ***managing artistic works, databases, software***
包括艺术品，数据库，软件

Trademarks & Geographic Origin

商标&地理来源标志

- **Can last for ever – quite simple and cheap**
可以永久持有，非常简单和便宜
- **Country specific, relatively simple and certain, cheap**
地域性，相对简单、确定和便宜
- **Trademarks are essential for brands**
对于品牌来说，商标是必须的
- ***promise of quality: create and manage consumer loyalty***
质量承诺：能创造和经营消费者的忠诚度

Lenovo buys IBM's PC business

联想收购IBM 的个人电脑业务

Lenovo®+IBM®+ThinkPad® = a new Brand

三个注册商标加在一起打造一个全新品牌



Patents are different 专利是不同的



- Patents: 专利:
 - Last for 20 years: 保护期为20年
 - The basics are simple, but 原理是简单的, 但是
 - The details can be complex and expensive 细节是复杂和昂贵的
 - Not an absolute right: conditionality - must be “new” and “not obvious”
不是一个绝对的权利: 必须具备“新颖性”和“创造性”
 - Country specific but conditionality is global
仅在一国内有效, 但是受到的限制是全球性的
 - They can be exceptionally valuable, but they are complex and expensive to acquire and defend
可能价值极高, 但是获得和保护它却是复杂和昂贵的
 - *investing in innovative technology and products*
在创新的技术和产品上投资

A patent is a potentially valuable but uncertain and expensive right

专利具有巨大的潜在价值，但是也是不确定和昂贵的



- **Uncertainty: 不确定性:**
 - a patent is not an absolute right: 专利权不是绝对的权利
 - **Novelty: at any time new “prior art” from anywhere may invalidate patents everywhere**
新颖性: 在任何时间、来自任何地方的已有的工艺都可以使专利无效
 - **Obviousness: courts may decide it was “obvious”**
显而易见性: 法庭可以决定发明是显而易见的
- **Expensive if international: 如果申请国际专利则更昂贵**
 - \$250k lifetime for international patents 国际专利\$250000
 - Enforcement: Germany \$100k, UK \$500k, US \$5m, 2 – 7 years, China \$20-120K & 2-14 months
实施: 德国\$100,000,英国\$500,000, 美国\$5,000,000,2-7年, 中国\$20,000-120,000,2-14个月



What does a patent do for you? 专利可以做什么

- It gives you the right to **stop other people** from making, selling or using your invention commercially
它赋予你阻止其他人制造、销售、商业性使用发明的权利。
- A patent does **not** give you the right to use your own invention!
专利权没有赋予你使用自己发明的权利！

Strong patents 强专利



Nespresso
(Nestlé)

The best espresso needs: 最好的espresso需要:

- 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

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



Multiple flavours/blends/roasts

多种口味 / 混合 / 烤制



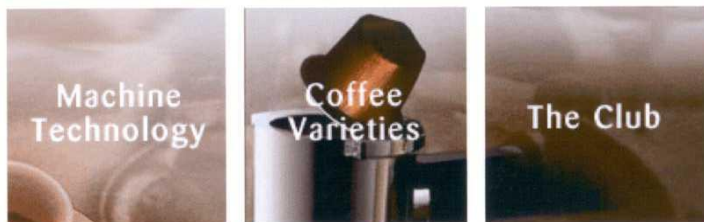
The Nespresso World

The Concept | The Machines | Club & Services | Coffee Universe | About us

- Contact Us
- Where to buy



The Concept



[Site Map](#) | [Terms of Use](#) | [FAQ](#)

High quality technology
 高质量技术

Creates consumer demand
 创造消费者需求

Channels of distribution
 分销渠道



Strong patent protection
 强的专利保护



Strong brand
 著名商标

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% EP 0 512 468 B1

Detaill aus einem sauerstoffundurchlässigen, biegsamen

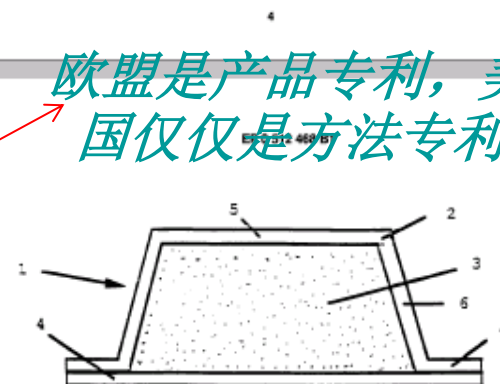


FIGURE 1

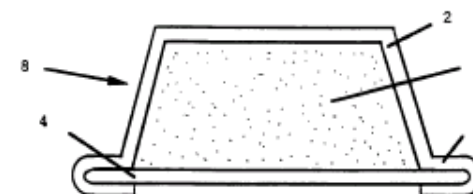


FIGURE 2

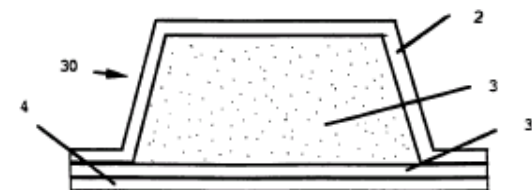


FIGURE 3

欧盟是产品专利，美国仅仅是方法专利



-Forced Unilever to quit the coffee business

**-P&G/Folgers could not compete in this segment
“patents unbreakable”**

强的专利能限制其他生产者的竞争



2010:

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

促使自身发展壮大

Nestlé's fastest growing “Billionaire” business
Strength: patents + trademark/brand

快速增长的商业优势：专利+商标

BUT – Patents expiring , competition emerging!

专利期满，竞争产生

HBS: Nespresso Case History

哈佛商学院: Nespresso 案例史



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!

24页，根本没提及知识产权

Weaker patents 弱专利

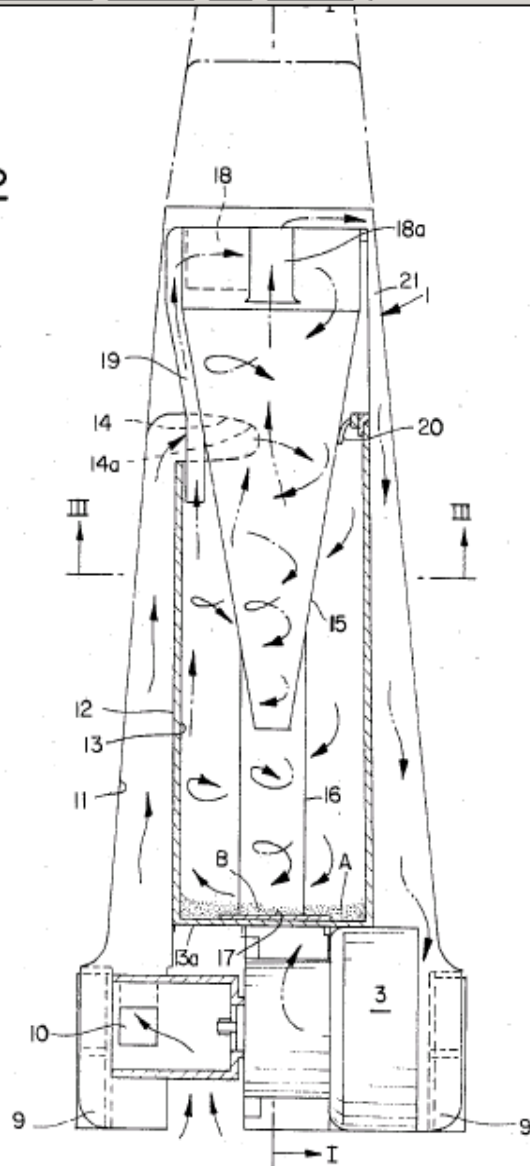


dyson[®]



	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


FIG. 2







Strong Patent Position - Nespresso

强专利的位置

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

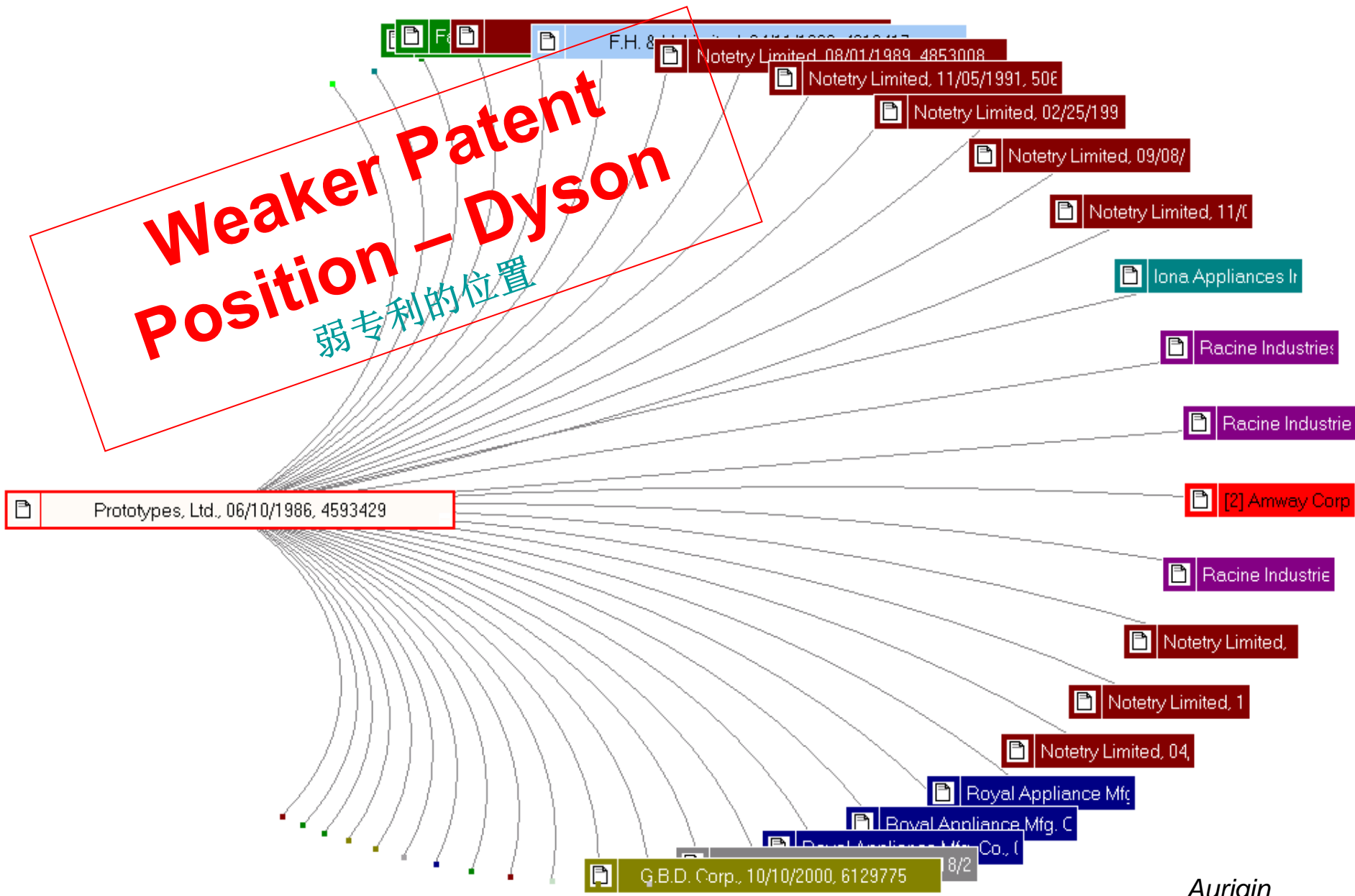
 Keurig, Inc., 06/27/2000, 6079315

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

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



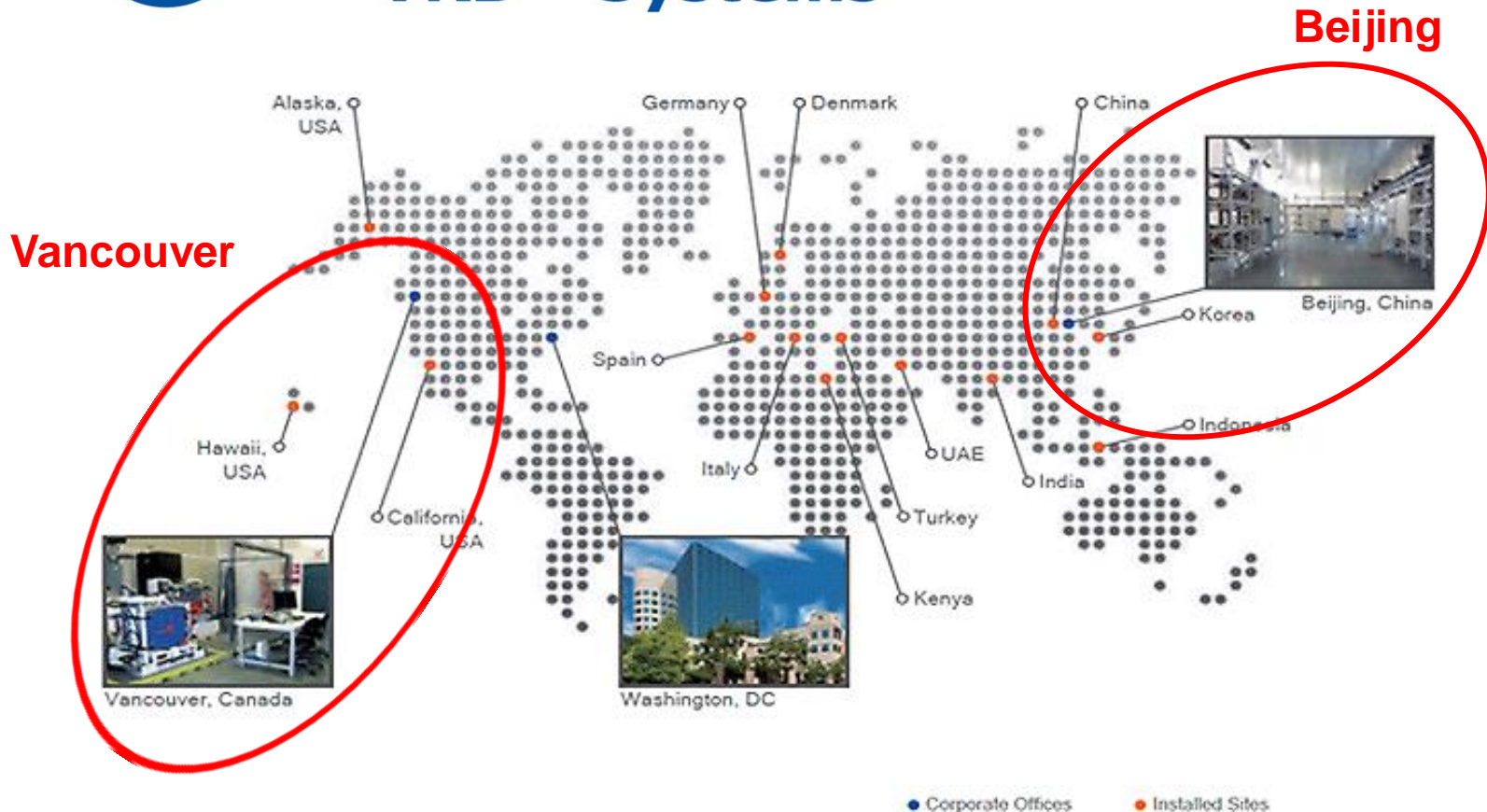
Weaker Patent Position – Dyson
弱专利的位置



Success → (almost) disaster → success
成功 → 几乎失败 → 成功



Prudent Energy VRB™ Systems





And the many failures.....更多的失败案例

- HIV - Pharma Industry did not understand:
HIV—Pharma公司并没有理解:
 - Medicines for South Africa was not a patent issue
在南非的药品市场，专利不是关键问题
 - **But they made into one – damaged image of industry**
但是该公司陷入专利问题，这损害了工业形象
- Bristol-Myers-Squibb: CEO+General Counsel **fired (9/06)**
公司高层领导被炒鱿鱼
- RIM (Blackberry) vs. NTP **\$612.5 million settlement – why?Blackberry**诉NTP，以\$612,500,000和解，为什么？
- Electronics company 某电力公司
 - ~\$5 billion invested in patents - Neither sued nor licensed 专利方面投资达50亿美元，但既不诉讼也不授权
 - **Are their shareholders getting value for money?**
股东所投的钱得到了应得的价值了么？

IPRs provide: 知识产权提供:

- **The incentive to innovate and invest in risky new ideas** 针对有风险的创意进行创新和投资的动机
- **The legal clarity and certainty to work with others:** 与人合作时的法律上的清晰度与确定性
 - **Licensing** 授权
 - **Technology/patent pools** 技术 / 专利池
 - **Collaboration** 合作
 - **Open innovation** 开放式创新
- **The choice to IP owners how their IPRs will be used** 知识产权拥有者对他们的权利拥有选择的自由

IP and Corporate Strategy 知识产权和公司战略

- **What are our business objectives?** 我们的商业目标是什么？
- **How does our IP strategy support our business strategy?**
- **Why do we have IP?** 我们为什么发展知识产权？
 - **Is it to block competitors, protect our products** 阻止对手，保护产品？
 - **Do we have “freedom to operate”?** 我们有经营自由么？
 - **Do we collaborate in the marketplace?** 我们在市场中合作么？
- **Where will the new IP come from?** 新的知识产权从哪里来？
 - **In-house R&D, licensing in, acquiring IP or companies, collaboration, open innovation?**
公司内部的研发，获得许可，收购知识产权或公司，合作开发，开放式公开创新？

IP is key: 知识产权是关键:

To universities & researchers: 对高校和科研机构来说:

- **Protect so that companies will invest to develop the invention**
保护发明, 吸引公司投资
- **When you work with others it is clear who owns what**
和他人合作时, 所有权明晰

Early stage start-ups 对早期创业者来说:

- **So that you can get funding** 你可以获得资金
- **So that it is harder for the competition to take your ideas**
对竞争者来说, 更难复制你的创意

Think IP strategy: 思考知识产权战略

- **Which IP is most important to your business: patents? copyright? trademarks? designs? trade secrets?** 哪一个知识产权对你最重要? 专利? 著作权? 商标? 设计专利? 商业秘密?
- **Protect thoughtfully and selectively** 经过深思熟虑和选择后保护
- **Start today – IP strategy has to be part of decision making from Day 1**
从今天开始——从第一天开始, 知识产权战略就必须成为你决策的一部分

That's what the course will teach you!

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**



Competitive Advantage in the Knowledge Economy

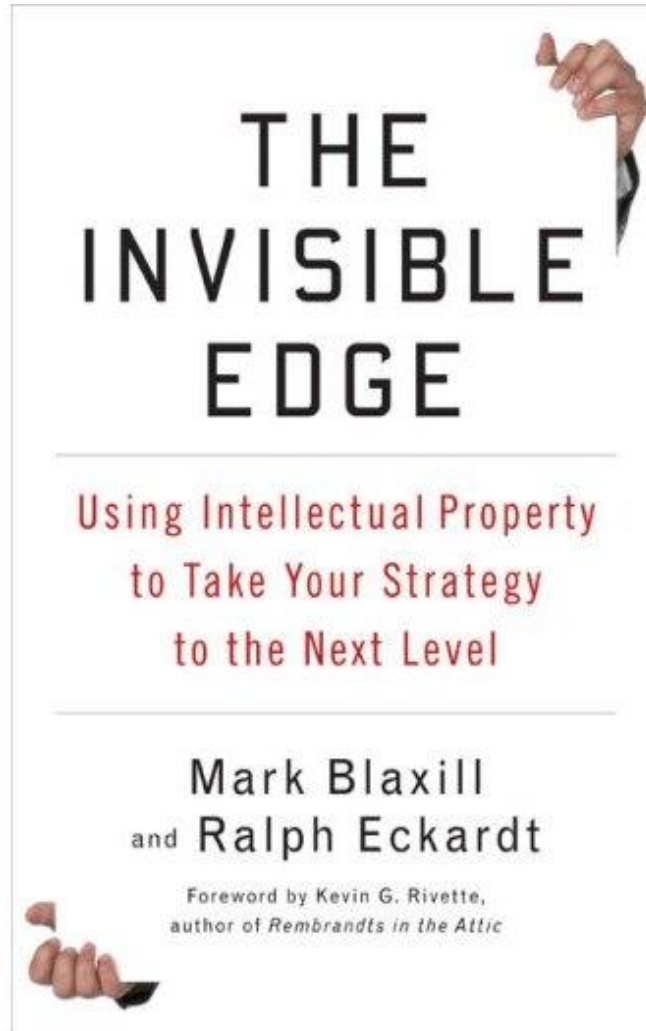
Innovation – Intellectual Property – Business Strategy

Ian Harvey

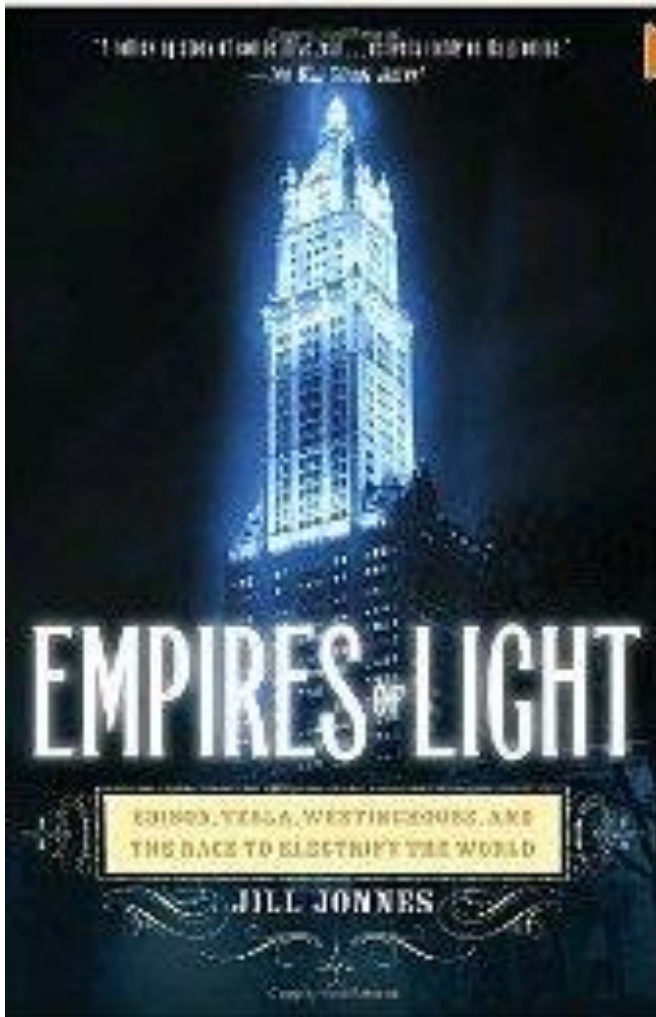
www.ianharvey-ip.com

February 24th, 2016

IP Strategy



The AC/DC Electrical Revolution



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