



Trade Secret Misappropriated

- The value of a trade secret comes from itself being a secret. Appropriate measures must be taken to safeguard such secrets.
- Misappropriation includes acquiring, revealing, using such secrets
- Contract is often used
- Data submitted to a government regulator must be declared a secret to afford legal protection

Security: Physical, Electronic



16. Superdiligent Employee

- A beautiful MD became an intern in the R&D department of a major cosmetics company.
- She befriended with R&D personnel.
- She was totally devoted to her work, sometimes staying late at work or even overnight.
- It was found out later that she gained access to steel filing cabinets where lab reports were kept. She even tried conducting a few experiments based on the recipes she found.



17. Friendly Face from the Lab Nextdoors

- A special method to separate silica from rice husk was invented at a CU lab with research grant from MTEC, NSTDA
- A student from a nearby lab visited friends frequently -> learned the invention -> set up a company -> file a patent
- NSTDA filed an objection with the Patent Office but cited a wrong article.



18. Mahidol's Mosquito-Killing Bacteria

- Happened 15 years ago when IP management was unheard of at Mahidol
- A student of Dr. Sakol Panyim took a new strain of BT to Belgium to be identified and got robbed by a private company who filed a US patent application.
- Mahidol University took no action both before and after the incident.

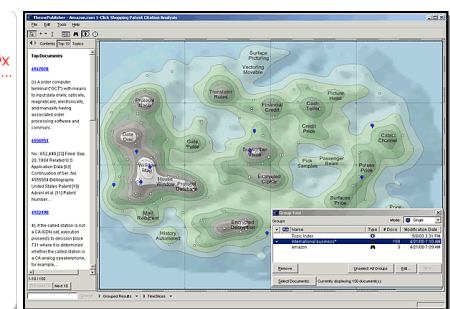
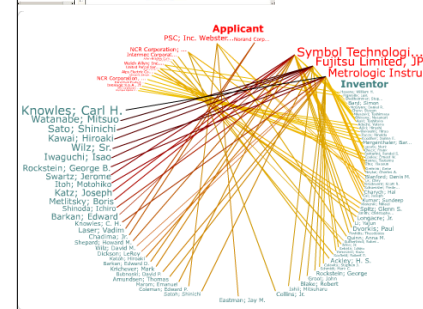
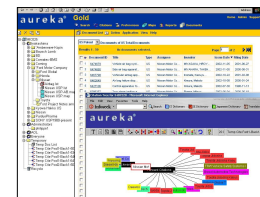
19. Trade Secret Leaks

- Micro-organisms can be recovered from factory air samples
- A returning letter (back to sender) or a rejection letter could be contaminated by micro-organisms

Business Intelligence Needed for Strategy Formulation

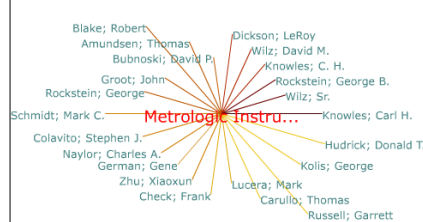
- Use of business intelligence specialists (sometimes offered with other services)
- Data-mining software packages
- Avoid illegal means

Data Mining Softwares



Mapping (above) and Relationship (below) Thematic Mapping

Business Intelligence Example: R&D Team of a Company



- Patent documents (or patent publications in case of Thailand) can be used to build the profile of the R&D team of a competitor

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20. Innovative Collection of Business Intelligence

- E. I. duPont deNemours & Co. v Rolfe Christopher et al. US Court of Appeals for the 5th Circuit (431 F.2d 1012) 20/7/1970
- March 19, 1969: The Christophers were hired by an unknown 3rd party to take 16 aerial photographs of a new construction of the Beaumont methanol plant. Because the plant was under construction, parts of duPont's secret process were exposed to view from directly above the construction area
- The Christophers argued that they committed no "actionable wrong" in photographing the DuPont facility and passing these photographs on to their client because they conducted all of their activities in public airspace, violated no government aviation standard, did not breach any confidential relation, and did not engage in any fraudulent or illegal conduct.

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- In the instant case the Christophers deliberately flew over the DuPont plant to get pictures of a process which DuPont had attempted to keep secret. The Christophers delivered their pictures to a third party who was certainly aware of the means by which they had been acquired and who may be planning to use the information contained therein to manufacture methanol by the DuPont process.
- In the instant case DuPont was in the midst of constructing a plant. Although after construction the finished plant would have protected much of the process from view, during the period of construction the trade secret was exposed to view from the air. To require duPont to put a roof over the unfinished plant to guard its secret would impose an enormous expense to prevent nothing more than a school boy's trick.
- Having concluded that aerial photography, from whatever altitude, is an improper method of discovering the trade secrets exposed during construction of the DuPont plant, we need not worry about whether the flight pattern chosen by the Christophers violated any federal aviation regulations. Regardless of whether the flight was legal or illegal in that sense, the espionage was an improper means of discovering DuPont's trade secret.

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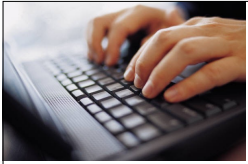


Weak Employment Contracts

- With regard to copyright, patent, and trade secret. Specify that all tangible properties and intellectual properties developed, created or invented during the course of employment belongs to the company.
- With regard to moral right
- With regard to conflict of interest, especially after termination of employment
- With regard to infringement of others intellectual properties by our employee
- Comply to local laws and regulations.

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21. Software Engineer Holds Former Employer at Ransom

- Employment contract contains a copyright clause but not moral rights
- Company cannot remove the name of a former employee from its software
- Certain modifications are also prohibited

22. IP Disclosure in Universities

- Disclosure requirements in many foreign universities.
- No disclosure requirement at Chulalongkorn University due to university culture.
- CU IP Office often knows about an invention when the inventor runs into unsolvable problems and needs help.
- Strict contract term for private companies.

Weak Business Model Weak Commercialization Strategy

- framework of how you intend to make money
- Innovation in the model itself?
- Use of proven model or strategy
- Critical success factor
- Fallback strategy



23. Morse vs Bell

- Samuel Morse invented telegraphy in 1837, got a US patent, and formed his own company. He was continually raising capitals for investment in telegraph expansion.
- Alexander Graham Bell invented telephony in 1875, got a US patent, and set up a franchise operation in cities. He controls the standards of the telephone equipment.

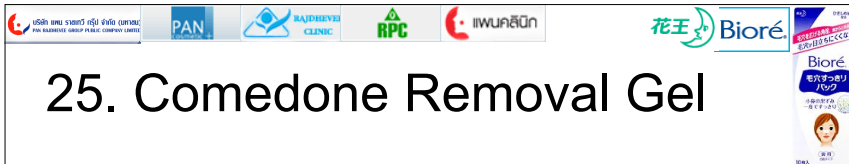
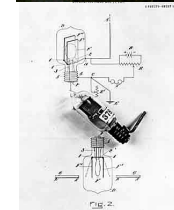


Telephone Loading Coil

- Most science and engineering professors are not good at running business so the licensing model may seem appropriate.
- Pupin was granted a US patent on telephone loading coil in 1900. He licensed it to AT&T in 1901 for an overall sum of about US\$500,000. He became wealthy and famous for the rest of his life.
- Nevertheless, if incubation of the new technology is needed, a new company may need to be formed, with the professor as Technical Director or equivalence.

24. The Rise and Fall of AT&T

- 1875 Bell invented telephony
- Problem with line loss, esp. at high freq.
- 1900 Michael Pupin invented telephone loading coil that he licensed to AT&T, making long-distance telephony possible
- 1906 Lee deForest invented vacuum tube amplifier that he licensed to AT&T, making coast-to-coast long-distance telephony possible
- AT&T used its profit to buy local phone companies
- 1918 WW1 is over. Radar engineers started to work on microwave repeaters
- Long-distance competitions failed because AT&T controlled local offices
- AT&T grew until the 70s when it was broken up



25. Comedone Removal Gel

- A couple of years before Bioré pad was marketed
- The R&D Division of a leading Thai cosmetics company investigated the Thai traditional knowledge of comedone removal (to replace medical-grade cyanoacrylate)
- A fast-drying egg-white gel with little or no egg smell for comedone removal was invented
 - Pat No. 15050: Process for Eliminating the Smell of Egg White
 - Pat No. 19002: Comidone Removing Adhesive Pad
- Marketing Division saw no business prospect of the gel

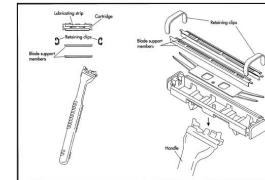
Commercialization Takes Time, Effort, Capital

- An innovation may need development and engineering in order to actually manufacture the product.
- The expertise needed may not be what the innovator has
- Time and money will be needed
- Regulated products will need special expedition



Financiers May Be Needed

- Thomas Edison's Menlo Park Lab in New Jersey is not far from New York
- Publicity and investment money from wall street
- In-house patent attorney & drafter
- Well-documented notebooks
- >1,000 patents



26. \$300M Gillette Sensor Razor

- Sales declined from competition by BIC
- 1977 Gillette researcher had an idea of spring-loaded thin blade that follows the contour of the human face.
- Exceedingly high technical demand to design and make floating blades
 - Tube with compressible fluid
 - Skin guard stretches the skin
 - Material: styrene spring vs Noryl spring
- 1983 testing the prototype on 500 men
- How to mass manufacturing - laser spot welding
- 1986 develop manufacturing equipment
- Competition from Europe & Takeover attempt
- 1990-1991 production
- Pricing leads to acceptance

Almost
15 yrs



27. Murphy's Law

- Un-do Doumar Products
- Removing oil based adhesives. Years to get first order
- 1997 - \$400,000 loss from relocation, expansion of plant cap. & office, evaporation of product
- Competitor: Magic American Corp. Big and specializing in cleaner fluids - GooGone solvent, Sticker Lifter: slower, destroy adhesive, stain, +lifting tool
 - Consumer Product Safety investigation into un-do ingredients
 - price cut rumor

Securing Needed Permits

- Certain products come under state or federal regulations (due to public health concerns)
- Such permit could be a stumbling block, especially if the permit system is not uniform throughout the country (or of the world) -> need to secure permits at many places



28. Segway Personal Transporter

- Truly innovative product
- Inventive technology - patented
- Initially aimed at mailman
- Becoming a novelty item - a cult
- Permits from many state and local governments needed
- Pricing may be a key factor



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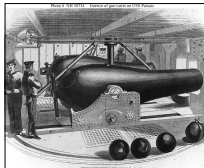


Consumer Acceptance

- Consumer behavior as a subject of study
- Negative association and connotation
- Status symbol $\Leftrightarrow$ price $\Leftrightarrow$ innovativeness?
- Apple Computer: Design and ease of use
- Advertisement and Promotional Campaign
- Pioneer pays heavy - need a good strategy for a heavy return

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<http://www.history.navy.mil/photos/images/h58000/h58734.jpg>

29. Continuous Aiming of Ship Gun

- Invented by Percy Scott in 1898, introduced to the US Navy in 1902
- Compensate the roll of the ship by a gear mechanism
- Allow rapid firing of ship guns
- Great resistance to change from the Navy
- President Theodore Roosevelt had to intervene.

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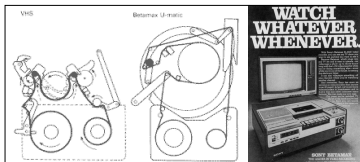


30. ATM

- Invented by Luther George Simjian in 1939, too far ahead of its time
- 20 US patent granted to Simjian on ATM
- Persuaded what is now Citicorp to conduct a trial. After 6 months they reported "It seems the only people using the machines were a small number of prostitutes and gamblers who didn't want to deal with tellers face to face,"

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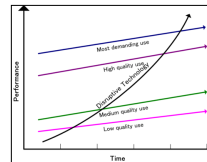
31. Sony's Betamax VCR

<http://www.transdiffusion.org/emc/techmark/images/300mthreading.gif> <http://www.scotusblog.com/discussion/archives/betamax.jpg>

- 1971. Sony launched U-matic tape for pros
- 1974. RCA cancelled its Selectavision Mag Tape after hearing about Sony's Beta. In a OEM negotiation between RCA and Sony, RCA wanted >3 hr recording. Sony refused to comply, in order to preserve picture quality. RCA met with JVC people and they said no, but their parent (Matsushita) agreed to mfg 4-hour VHS machines
- 1975. Betamax (240 lines) launched by Sony as a proprietary format
- 1976. VHS (240 lines) launched by JVC (& Matsushita) as an open format
- 1983. Betamax is the most popular format
- 1971. Betamax is starting to decline
 - 40 companies utilized VHS format
 - 12 companies utilized Betamax format
- 1974. VHS decidedly won, Sony introduced High Band or SuperBeta (300 lines)
 - JVC introduced Super VHS (425 lines)
 - Sony introduced ED Beta (500 lines) using metal tape
 - JVC introduced Data VHS, which was renamed Digital VHS in the early 2000s (1920x1080 to be compatible with HDTV/ATSC standards)
- 2002. Sony stopped manufacturing Betamax machines

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Bonus: Getting Replaced by Disruptive Innovations

- An aged innovation eventually reaches the end of its life-cycle
- It is replaced by what's called a disruptive innovation (disruptive technology)
 - Low-end Disruptive Innovation, e.g. linux
 - New-market Disruptive Innovation
- Examples:
 - Steam engine replacing horses
 - Desktop publishing replaces traditional publishing
 - Semiconductors replacing vacuum tubes
 - 8-track tape -> cassette tape -> compact disc
 - Workstation -> PCs

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Digital Photography Replacing Film Photography

- Initially, digital CCD and CMOS sensors
 - Less sensitive
 - Lower resolution
 - Camera with small storage
- Advantages
 - Rapid set-up time
 - In-camera review and editing
 - Lower power consumption
- Continue advances have taken over film photography

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a. Polaroid Inc.

<http://www.image.cbsnews.com/images/2003/10/15/image578188x.jpg>

- Polaroid came into digital photography very late in the game - little innovation and little market share
- 11 October 2001: filed for bankruptcy protection
- In 2003 the (new) Polaroid Corporation came out with digital printing kiosks, after Kodak, Fuji, etc. installed ~50,000 units in the US
- Innovation: memory card + credit card -> high quality print every 2 seconds (85% customers don't need enlargement or cropping)

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b. Eastman Kodak Co.

- Kodak tried to move from film to digital photography was not soon enough
- China consumers did not want Kodak's stock of films and chemicals - they went straight to digital
- Severance pay and restructuring costs = about a billion US\$ + 750 million US\$ old debts -> barely break even in 2005/6. A total of 15,000 workers were laid off.
- Dan Carp (who joined EK in 1970 as an analyst) was appointed CEO and Chairman in 2000. Carp picked Antonio Perez from Hewlett-Packard to be EK president in 2003.
- June 2005: Carp stepped down, replaced by Perez
Kodak also stopped manufacturing black-and-white paper in June 2005.
Carp -> Chairman of Delta Airline after it went out of bankruptcy



c. Agfa

- Agfa-Gevaert N.V. = European MNC, an imaging technology company with 3 divisions: health care, graphics, & materials
- In 2004, the consumer imaging division was sold to a company founded via management buyout, AgfaPhoto GmbH, which filed for bankruptcy after just 1 year

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 - Patent Law Foundation
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- Free-lance technology management advisor, specializing in technology transfer strategies and practices, including licensing negotiation and contract drafting
- Former co-drafter of Thailand's copyright, patent, trade secret, and Integrated Circuit Layout Design Protection Laws
- Former Science Policy Advisor to Prime Minister Chatchai Choonhavan and Advisor to 4 Cabinet Ministers
- Former Member of the National Research Council, Committee on Engineering and Industrial Research
- Former Expert Scientist attached to the Standing Committee on Science and Technology, House of Representatives
- Former Associate Judge at the Central Intellectual Property and International Trade Court