

## How to Effectively Analyze a Patent Portfolio

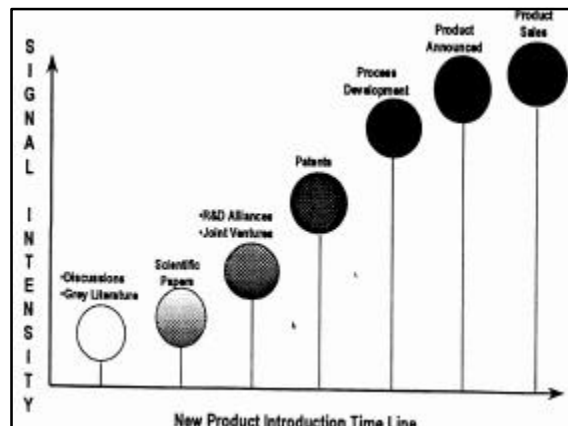
By Ron Simmer  
Patscan  
University of British Columbia



Established in 1986 to assist Tech Transfer Process by providing access to patents  
Serves all university and research institutions in BC as well as fee based practice for private sector  
One Librarian and one researcher (Mechanical Engineer) perform over 1000 searches a year  
Host Seminars and courses on Intellectual Property Management  
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## Why Search Patents

- ID Licensees, competitors, new hires
- Avoid reinventing wheels
- Infringement/litigation/risk info.
- Research & problem solving
- Model technology/business trends

## Best Free Sites for Patent Searching

- CIPO site on Strategis
- IBM Intellectual Property Network
- USPTO Site - full text and images
- Espacenet thru the UK gateway - Full copies in PDF
- WIPO database of PCT apps. - from 1997
- Japanese sites - JPO has drawings
- IPC and US Class. Sites - you must have the tools
- Lexis Nexis best full text system

## Patent Classification - The Classical Tools

- |                                     |                                 |
|-------------------------------------|---------------------------------|
| International Patent Classification | US Patent Office Classification |
| • Current ed. 1994                  | • Updated Continuously          |
| • Updated on 5 year cycle           | • Function Orientated           |
| • Application Orientated            | • Finer Detail than IPC         |
| • Wide International Use            |                                 |

## How a Company Competes

- Technology - Indicated by Patents
- Products
- Organization
- Financials
- Strategic Alliances
- Manufacturing
- Marketing
- Image/Reputation

## IP Data is Special 3 Functions in a Corporation

1. Corporate asset protecting price & market.
2. Insurance against legal action.
3. Poker chips in strategic alliance game.

United States Patent [19] US005277042A  
 Tobias [45] Patent Number: 5,277,042  
 [45] Date of Patent: Jan. 11, 1994

[54] AUTOMOTIVE, STEERING WHEEL ANTI-THEFT DEVICE  
 [75] Inventor: Mare W. Tobias, Sioux Falls, S. Dak.  
 [73] Assignee: Winner International Corporation, Sharon, Pa.  
 [21] Appl. No.: 996,738  
 [22] Filed: Dec. 23, 1992  
 [51] Int. Cl.: B60R 25/02  
 [52] U.S. Cl.: 70/209; 70/226; 70/419  
 [58] Field of Search: 70/209, 226, D102, 9

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 4,925,047 6/1990 Wu 70/209  
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 5,046,388 8/1991 Chen 70/209  
 5,113,073 9/1992 Shen 70/209  
 5,119,621 6/1992 Yang 70/226 X  
 5,131,245 7/1992 Chen 70/209  
 5,142,489 9/1992 Liu 70/209

Primary Examiner—Lloyd A. Gall  
 Attorney, Agent, or Firm—Body, Vickers & Daniels

[57] ABSTRACT  
 A mechanical anti-theft device of the type applied to the steering wheel of an automotive vehicle which automatically ratchets to it's applied position without necessity of key lock actuation is provided with several security enhancing features which cumulatively prevent or make the device exceedingly difficult to unlock using conventional burglary tools or lock picking techniques. The features include configuring the ratchet teeth of the telescoping rod member in a way which minimizes any attempt to deactivate the lock unless the key is used. In combination with the ratchet teeth configuration, the lock pawl mechanism is configured to include an accurate, transversely extending apex edge line or surface which cooperates with or is sized to be coincident with the rod members circumference to prevent a wedge, shim or pick from being readily easily inserted between pawl and ratchet tooth to force a retraction of the pawl.

16 Claims, 4 Drawing Sheets

## Patent Data Issues

- Quality**  
 USPTO abstracts variable  
 Better retrieval with Derwent
- Reliability**  
 Error checking by Vendor?  
 Missing data?  
 Classification revisions?
- Currency**  
 How Frequent and thorough are updates?

## Statistical Analysis Using Patent Data

- Manipulate any patent data fields to extract trends:
- Rank assignees or inventors to identify trends
  - Compare trends in patent filings over time
  - Map density/activity of filing for competitors
  - Chart a patent portfolio by classification
  - View industry technological trends internationally
  - Examine history of technology by citation analysis

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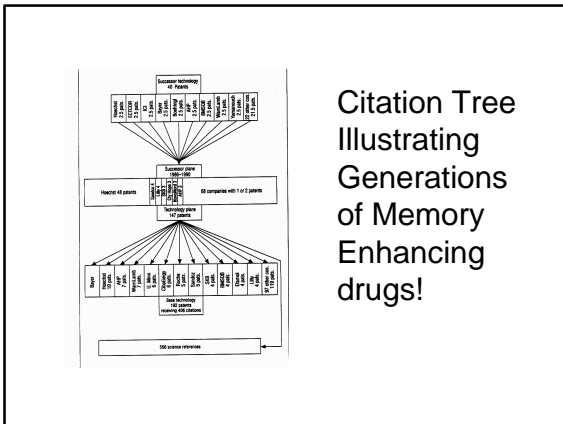
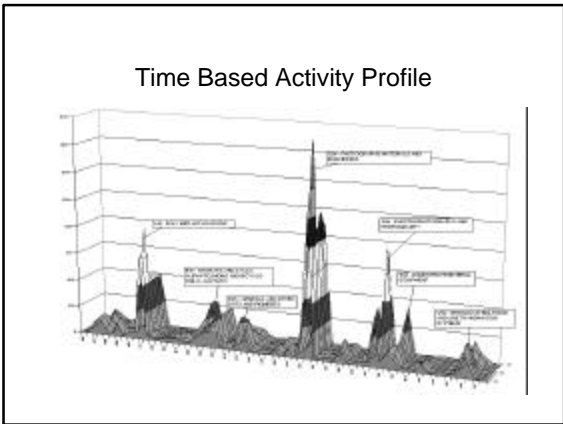
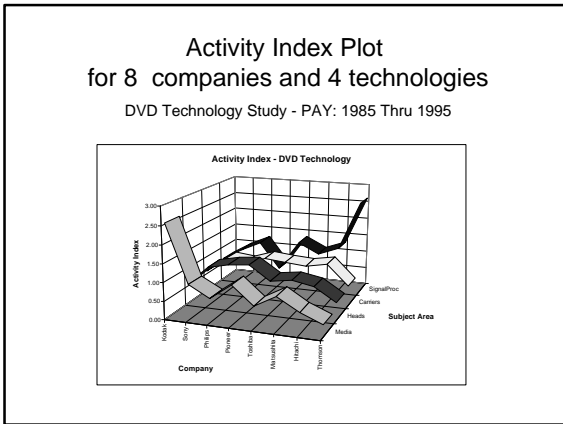
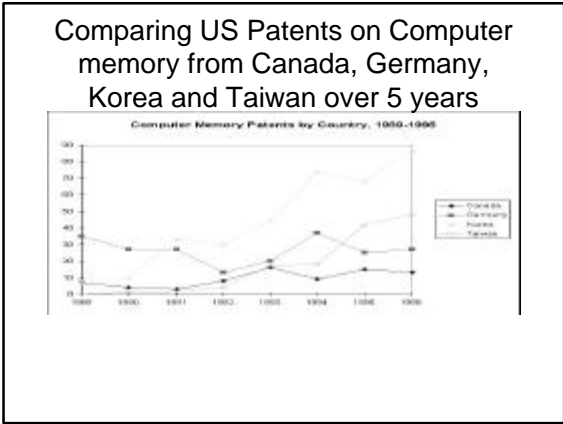
g@% and @%@%:

*BRANCHING...
OCCURS TERM
7638 DIGITAL
20504 DIGITAL
9485 CAMERA:
53 2 RESULT (414):

53 37
g@% 1444 (4) 500 15

*PROCESSING...
THERE ARE 100 UNIQUE VALUES.
OCCURRENCES PERCENT TERM
64 13.36% CANON KK
28 6.25% RICOH TA CAMERA KK
24 5.76% RICOH KK
21 5.41% SANYO ELECTRIC CO LTD
18 4.32% FUJI PHOTO FILM CO LTD
16 3.84% ASahi OPTICAL CO LTD
15 3.60% EASTMAN KODAK CO
13 3.24% KONICA CORP
14 3.36% ASAHI KOGAKU KKGYO KK
12 2.88% CASIO COMPUTER CO LTD
11 2.64% NIKON CORP
8 1.92% SONY CORP
8 1.92% VEB PENTACON DRESDEN KAMERA
7 1.85% HYSONA CORP
6 1.44% HEWLETT LTD

```



- ### Analyzing Patent Quality at a Glance
1. Reputable corporate or institutional source?
  2. Several Inventors?
  3. Prosecuted by solid law firm?
  4. How much prior art cited?  
Any literature cited?
  5. Patent Co-operation Treaty Filing?

## Patent Quality Deeper Analysis Using Patent Databases

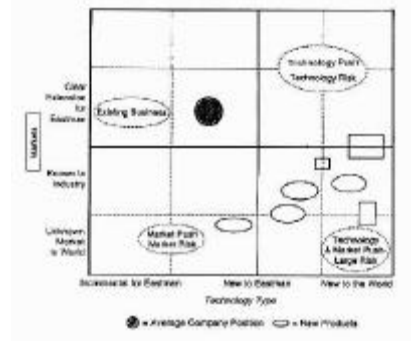
1. How many recent patents cite patents in question?
2. How many foreign equivalents/counterparts?
3. Speedy prosecution?
4. Claims valid, supported and broad?
5. Infringement suits, Re-examinations?

## Comparison of patent claims

- “Picture claims” (purely descriptive)
- “vs. well drafted claims covering broad functionality.
- See [BUSTPATENTS.COM](http://BUSTPATENTS.COM) for
- many examples of invalid patents
  - (Greg Aharonian)

## The Powerful Patent Portfolio: A Mature Company

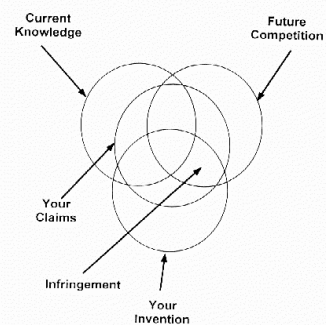
- Example: Eastman Chemical
  - Business and IP strategy integrated
  - IP builds on core technologies
  - Active licensing/acquisition program
  - IP intelligence program maps competing patent activity.
  - Strong R&D IP focus
  - Conservative, low risk attitude



## The Aggressive Patent Portfolio: A Junior Company

- Example: Inex Pharmaceuticals
  - Objective is to build a critical mass of IP as quickly as possible thru licenses, alliances
  - Patenting around (bracketing) competitors.
  - extensive use of provisional filings
  - leveraging portfolio with new spin on old drugs for fast tracking FDA approval
  - prophetic patents on breakthrough genomic technologies

## Infringement vs. Validity



### Portfolio Benchmarking

- A given company's portfolio best
- compared to those in same technology
- Example: CAE Newnes Machinery
  - World Class Competitor in revolutionising "old" tech with 21 inventions patented.

### Two Most Important Variables in Patent Scenarios

1. Amount of Prior Art
2. Rate of Change in Field

### Industry Scenarios for the IP Environment

- **Sparse Art**
  - **Slow Change**
    - Old Industry
    - Competition not based on IP
- Example - Machinery manufactured for logging/mining/agriculture

### Industry Scenarios for the IP Environment

- **Crowded Art**
  - **Slow Change**
    - Little freedom to operate
    - Mature industry
    - Stable Technology
- Example - Pharmaceutical Sector  
High Investment Big Payoffs

### Industry Scenarios for the IP Environment

- **Crowded Art**
  - **Fast Change**
    - Improvement Valued
    - Niche Inventions
    - Pressure to License
    - Volatile technology
- Example - Computer Applications

### Industry Scenarios for the IP Environment

- **Sparse Art**
  - **Fast Change**
    - Broad Patents
    - File on all aspects of technology early and often
    - Profitable licensing
- Example - Genetic Engineering

## Analyzing a Technology Environment

Hot themes? breakthrough technologies?

Maturity of field - Decadent?  
Volatile?

Niches & opportunities developing?

Example: CREO & printing industry

## Analyzing the Strength of an IP Portfolio

1. Geographic coverage indicates market strategies
2. Review size & assess trends - age, filing frequency, product life cycles
3. Kinds of Patents and degree of protection for core technologies
4. Technology licensed or assigned in/out
5. Aggressive filing - provisionals

## Japanese Pharmaceutical Patent Portfolio International vs. Domestic Filings

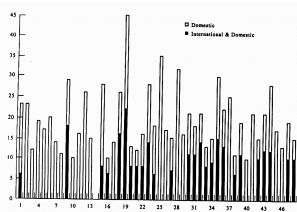


Fig. 4. Japanese pharmaceutical company patents between January 1993 and August 1997.

## Value of a Portfolio Depends Completely on Management

- Example from BC - High Voltage Power Instrumentation.
- Carmanah Eng. Owned 2 patents.
  - Short term instrument market \$15 Mil.
  - Long term metering market \$600 Mil.
  - Merger of Carmanah and Honeywell sub to form NxtPhase boosts capitalisation 5 times

## Accounting Methods of Patent Portfolio Evaluation

- Cost Approach - Cost to re-create technology
- Market Approach - Price paid in comparable transaction
- Income Approach - Present value of future income streams

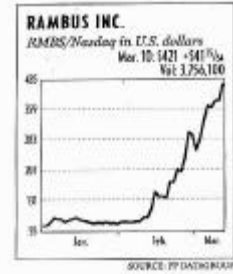
## Value of Portfolio Derived by Sale of Patents or Company

- Marketing and Positioning is Everything
  - Example: UBC force feedback Joystick Patents stagnated until sold to Immersion Co. for equity in company.
  - Now worth \$6 Mil. to UBC.
  - Video game vs Industrial Market

## Patent Litigation Value Bonanza

- Example: STAC develops data compression technology.
- Files patents and buys existing patents to build strong portfolio.
- Microsoft loses infringement case to the tune of \$120 Mil. In 1994
- Wake up call for IT industry

- Rambus once allied with Intel
- Now Rambus suing Hitachi for infringement of DRAM patents
- Huge profits from extorting licenses.



## Assessing the Human Capital Factor in an IP Portfolio

1. Stable R & D team with low turnover?
2. Inventors with high industry reputation
3. University/Gov't research links?
4. International literature cited in patents

### Inventors on Richardson Vicks Patents

88 67  
get in

THERE ARE 125 UNIQUE VALUES.  
OCCURRENCES PERCENT TERM

19	15.32%	DECKNER G/IN
14	11.20%	SHEAR/NDIN
11	8.87%	DHABHAR D/JIN
10	8.06%	SCHMIDT W/JIN
7	5.64%	LANKA D/JIN
7	5.64%	SEKEL C/IN
7	5.64%	SUNSHINE A/JIN
6	4.83%	KELLEHER W/JIN
5	4.03%	DECKNER G/IN

### Patent Assignees on G. E. Deckner's Patents

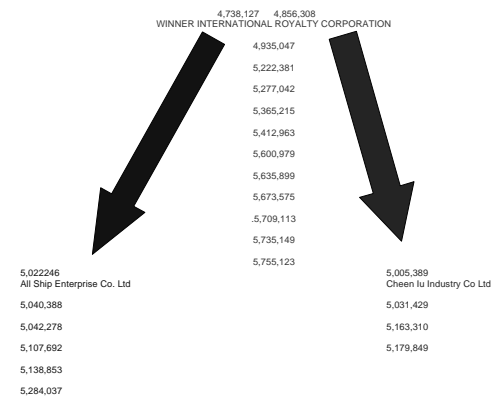
88 67  
Deckner G/IN  
88 5 RESULT (49)  
88 67  
get in

THERE ARE 7 UNIQUE VALUES.  
OCCURRENCES PERCENT TERM

19	47.50%	RICHARDSON VICKS INC
13	32.50%	CHARLES OF THE RITEZ
9	22.50%	PROCTER & GAMBLE CO
3	7.50%	DECKNER G/E
1	2.50%	CHOTTIS L
1	2.50%	TRAMAN L A
1	2.50%	WOODIN F W

## Measuring the Portfolio Against the Competition

- New technologies being substituted?
- Citation searching reveal competitors "Patenting Around"?
- Is IP protection a major factor in the market?
- Does a state of the art search reveal competitors leapfrogging ahead?



**United States Patent** [16] [17] Patent Number: **4,887,443**  
Wang [45] Date of Patent: **Dec. 19, 1989**

[14] **AUTOMOBILE STEERING LOCK** [57] **ABSTRACT:**  
[16] Inventor: **Ching-Ming Wang, No. 27, A-207**  
**Taipei, C/O. Wanchuan Road,**  
**Taipei City, Taiwan**  
[21] Appl. No. **888,214**  
[22] Filed: **Apr. 14, 1989**  
[23] Int. Cl. **B60D 25/02**  
[24] U.S. Cl. **70/207, 209, 211, 212,**  
**70/224, 226, 24**  
[54] **Reference Cited**  
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4,728,127 4/1983 **Jensen** 70/209

*Foreign Examiner—Richard L. Wolfe*  
*Attorney, Agent, or Firm—Deacon & Thomas*

**1 Claim, 3 Drawing Sheets**

- ## Strategies When Blocked by Competitors Patents
1. Buy the patent or the company (Microsoft vs Stac)
  2. License or swap the IP (cross license)
  3. Create better technology & patent around
  4. Sue for infringement or invalidate patent by legal action
  5. Oppose pending applications