

# Patent Map (PM)

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- 1. Patent Analysis**
- 2. Patent Map**
- 3. The process of patent map**
- 4. What advantages can be taken from Patent Map?**
- 5. The Kinds of Patent Map Results**
- 6. Examples**
- 7. Patent map tool : PM-manager**
- 8. Exercise**

# Analyzing Patent Information

## 1. Quantitative Analysis

*The method understanding and analyzing patent through numerical statistic of patent information. Most usable data comes from bibliographical information including the number of patent applications, assignees, inventors, or patent classification codes, etc*

- 1) *Quantity-based Analysis*
- 2) *Time-Based Analysis*
- 3) *Ranking Analysis, etc.*

## 2. Qualitative Analysis

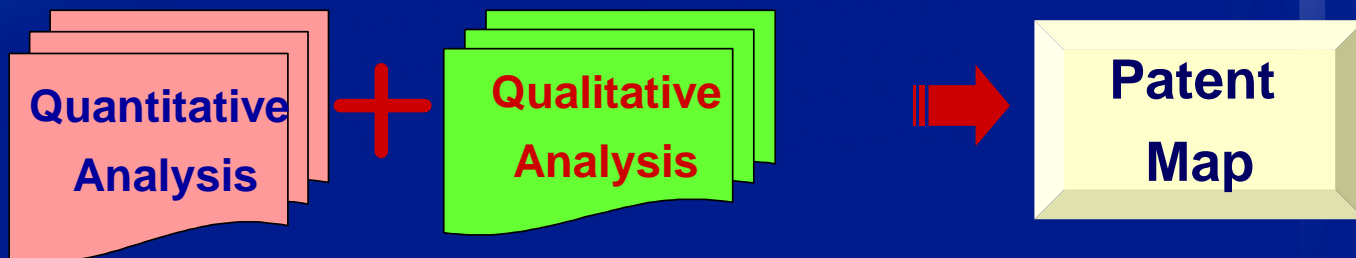
*The method understanding and analyzing the content of patent. Generally, this analysis method is performed by the inter-relationship of technology content or patent classification code, assignee, application date, etc*

- 1) *Selection of core patent*
- 2) *Technology development map, etc.*

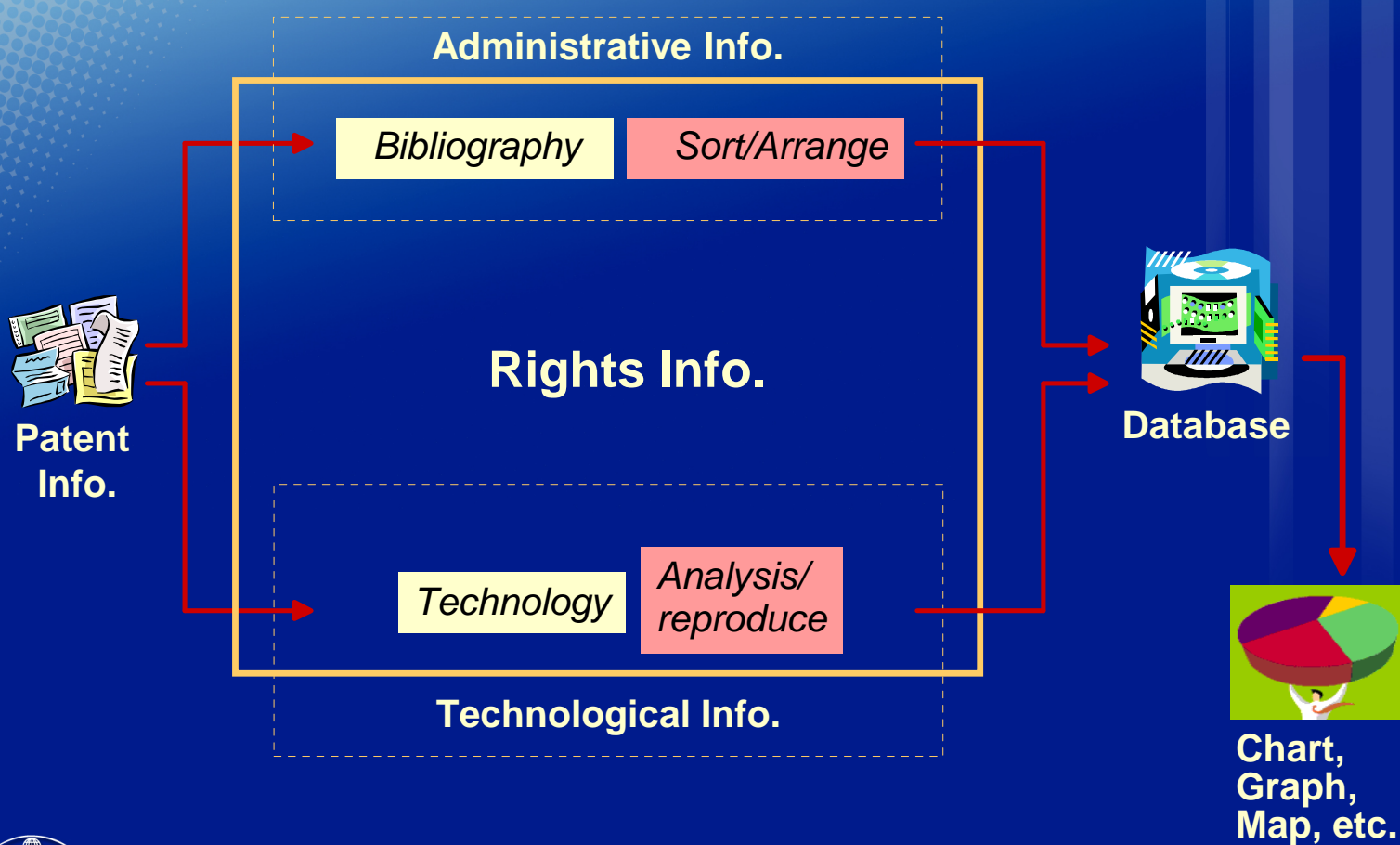
## Patent Map (Technology Road Map)

*Patent Map is the visualized expression of total patent analysis results to understand complex and various patent information easily and effectively.*

*The patent map is produced by gathering related patent information of a target technology field, processing, and analyzing it.*



# The Process of Patent Map



## What advantages can be taken from Patent Map?

### *Administrating / Planning*

- Development Trend
- Market Research
- Relation of Companies

### Patent Map

### *Researching/ Technology Promoting*

- Technology Trend
- Technology GAP
- Technology Portion
- Technology Relation

### *Technology Management*

- Possible Infringement
- Analyze Claims
- Set up new patent application direction

## The Kinds of Patent Map Results

**Quantitative Analysis Map**  
(Statistical Analysis Map)



- Rate Map
- Number Map
- Trend Map
- Relation Map
- Radar Map
- Portion Map, etc.

**Qualitative Analysis Map**

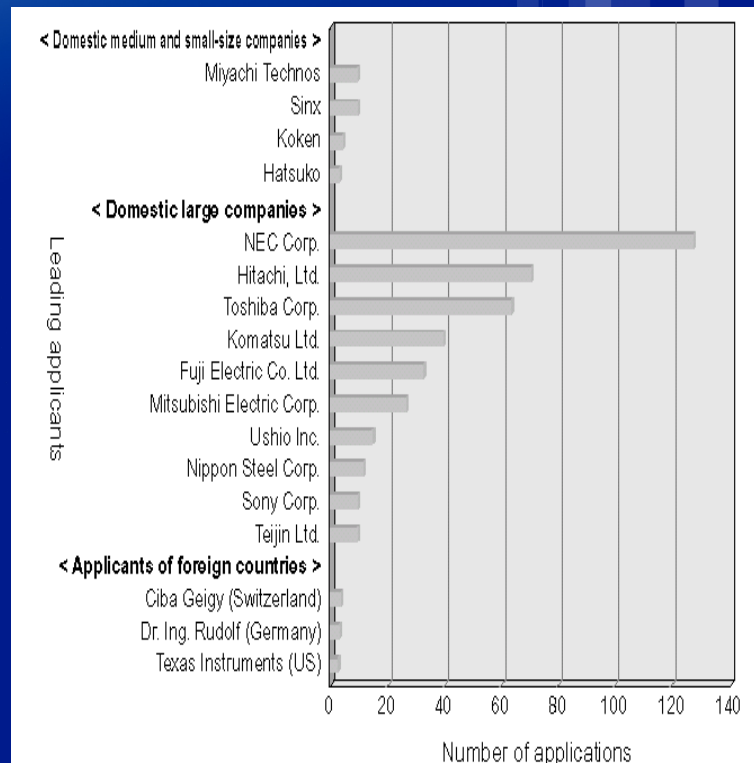
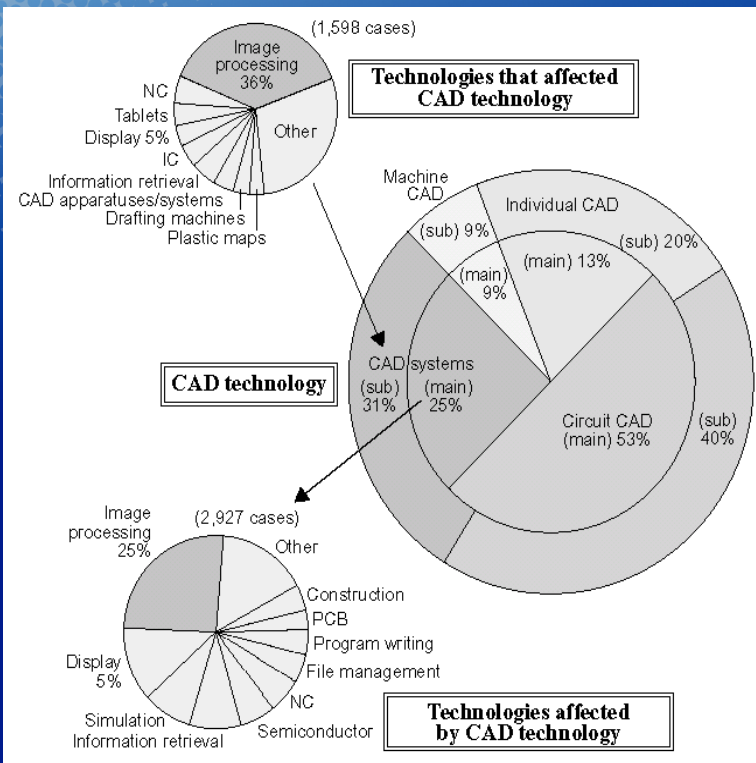


- List Map
- Matrix Map
- TEMSET Map
- Development Map
- Problems Vs. Solutions Map, etc.

# The Examples of Quantitative Analysis (1)

## 1. Portion rate Map

## 2. Ranking Map

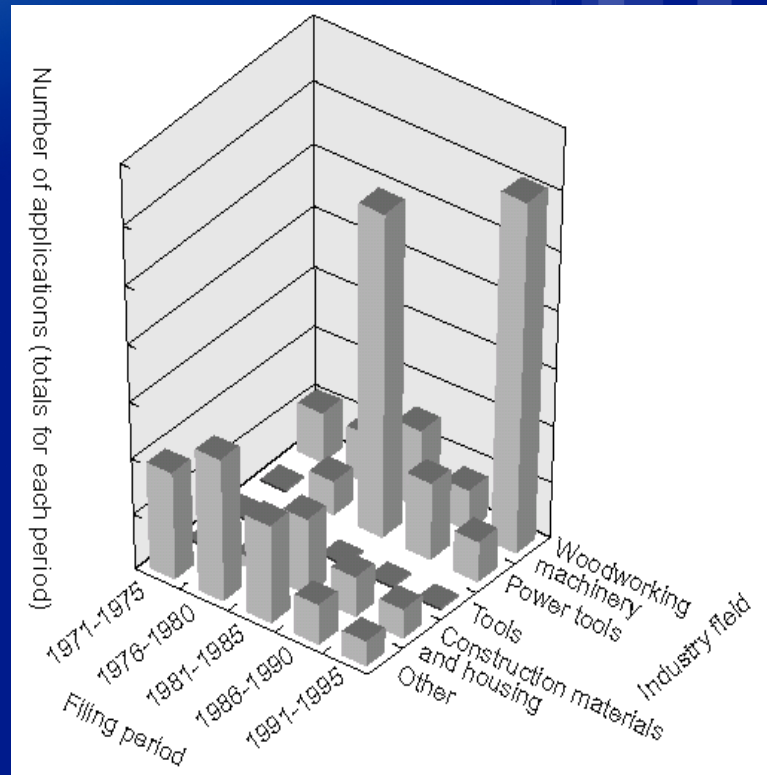
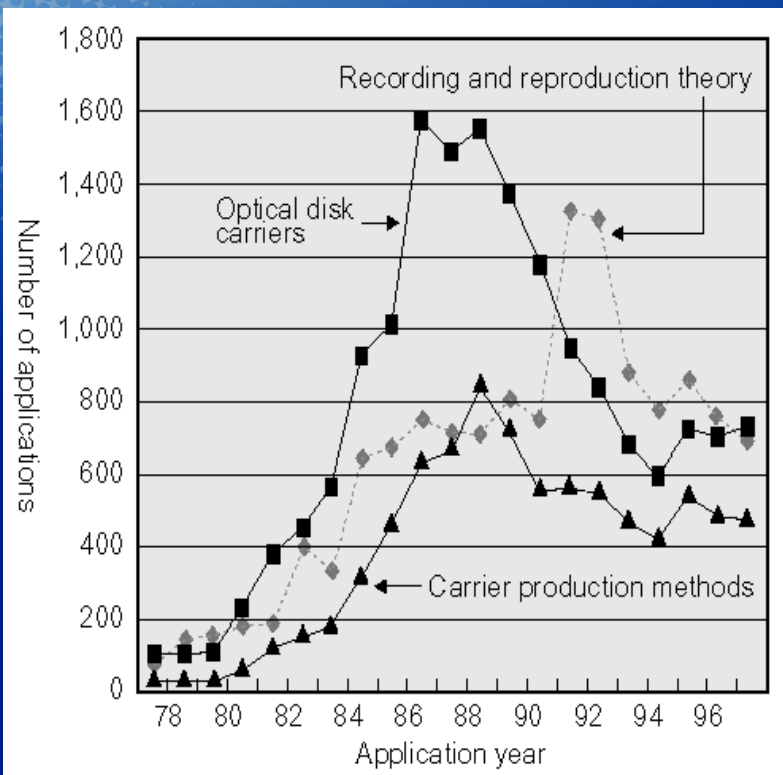




# The Examples of Quantitative Analysis (2)

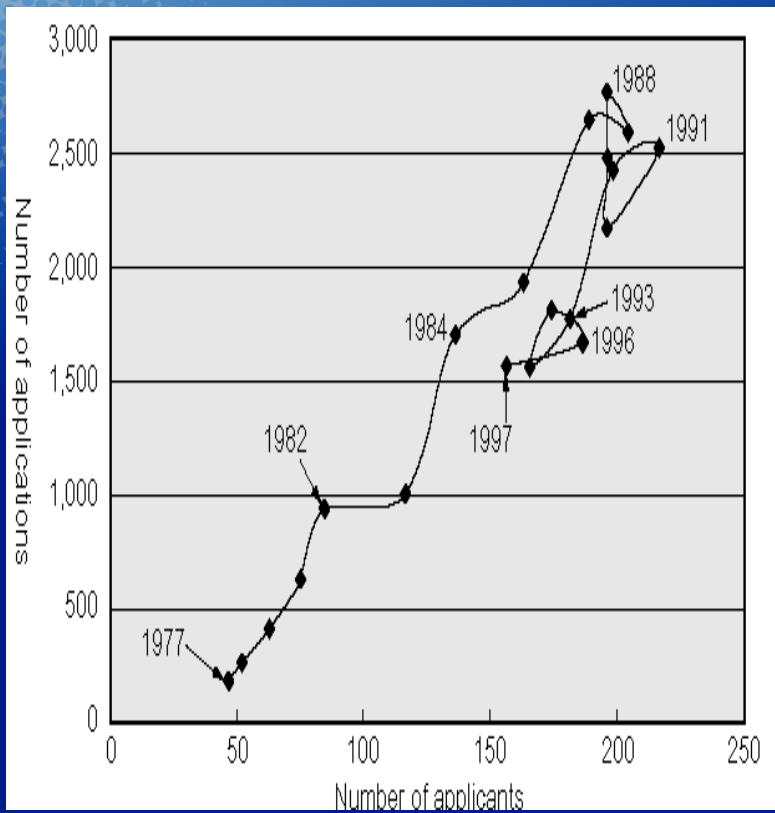
## 3. Trend Map (2D)

## 4. Trend Map (3D)

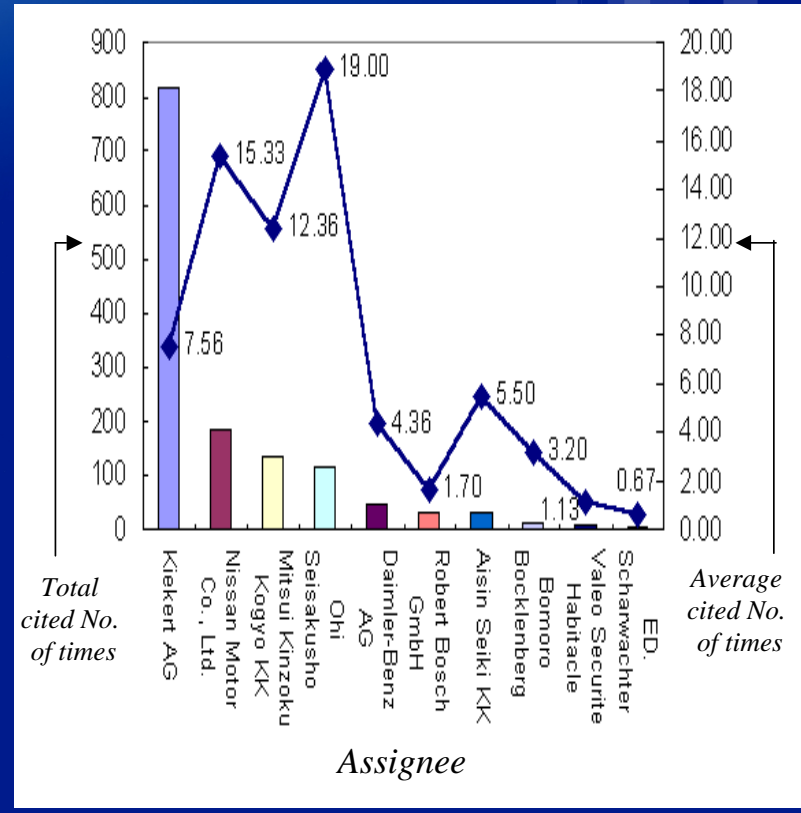


# The Examples of Quantitative Analysis (3)

## 5. Portfolio Map



## 6. Citation Statistical Analysis



# The Examples of Qualitative Analysis (1)

## 1. Matrix Map

Matrix map shows the correlation between technical elements (such as purpose and technical item) obtained from patent information in the form of matrix.

It helps to find important problems affecting the development of a technology field. Moreover, with the addition of a time axis, trends in problems affecting technological development can also be observed.

Purpose \ Technical item	Dioxin decomposition only					Cost reduction					Improved maintenance					Accommodation to fluctuations of refuse type and volume					Heat recovery and others					
	84-86	87-89	90-92	93-95	96-98	84-86	87-89	90-92	93-95	96-98	84-86	87-89	90-92	93-95	96-98	84-86	87-89	90-92	93-95	96-98	84-86	87-89	90-92	93-95	96-98	
Fluid bed combustion characteristics		●	●	●						●			●			●			●	●					●	●
Secondary combustion temperature control		●	●	●	●			●										●	●						●	
Secondary combustion mixing control		●	●	●				●					●						●							
Secondary combustion retention time		●	●	●																						

● represents one patent.

## The Examples of Qualitative Analysis (2)

### 2. TEMPST Map (1)

TEMPST Map shows the technology analysis or classification based on different points of analysis views.

(Treatment, Effect, Materials, Process, Products, and Structure)

The point of Analysis view		Examples
<b>T</b>	<b>Treatment</b>	Temperature, Velocity, Time, Frequency, Pressure, etc
<b>E</b>	<b>Effect</b>	Purpose, performance, Efficiency, etc
<b>M</b>	<b>Material</b>	Material, Component, Compound, Addition, etc.
<b>P</b>	<b>Process</b>	Manufacturing Methods, System, Procedure, etc.
<b>P</b>	<b>Product</b>	Product, Parts, Results, Outputs, etc.
<b>S</b>	<b>Structure</b>	Structure, Form, Device, Component, Circuit, etc.

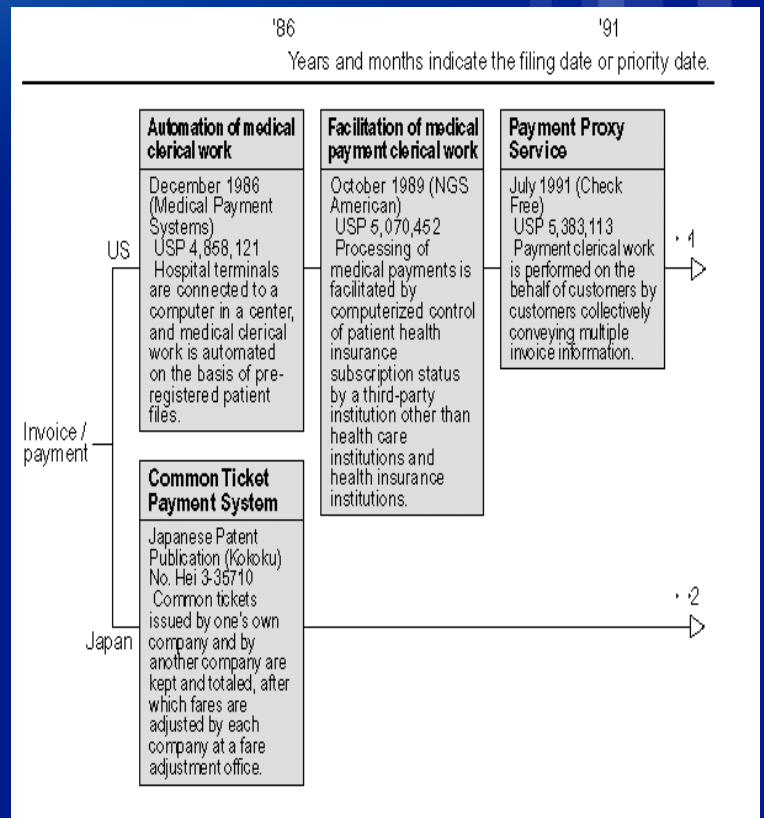
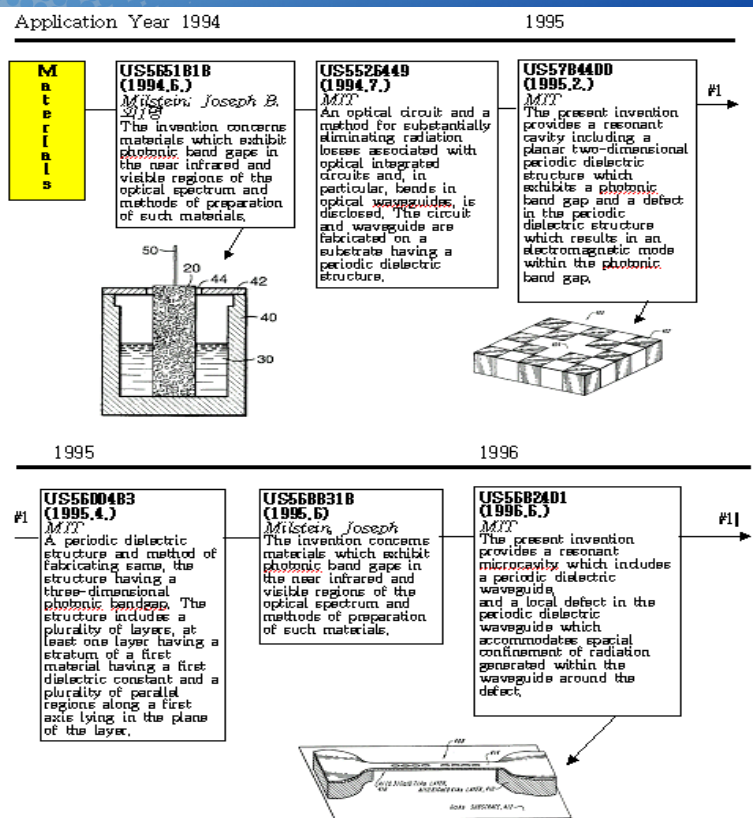
## The Examples of Qualitative Analysis (3)

### 3. TEMPST Map (2)

Patent No.	TEMPST						Technology
	T	E	M	P1	P2	S	
55-10855				O			METHOD OF MANUFACTURING COMPOSITE ROTOR
58-153775		O		O			PREPARATION OF THIN FILM
60-89530				O			PRODUCTION OF COMPOSITE SUPERCONDUCTIVE COMPOUND WIRE ROD
60-210531	O			O			PRODUCTION OF THIN FILM OF SCHEVREL PHASE COMPOUND BY REACTION METHOD ON SUBSTRATE
60-216592						O	LEAD-OUT DEVICE FOR SUPERCONDUCTIVE COIL

# The Examples of Qualitative Analysis (4)

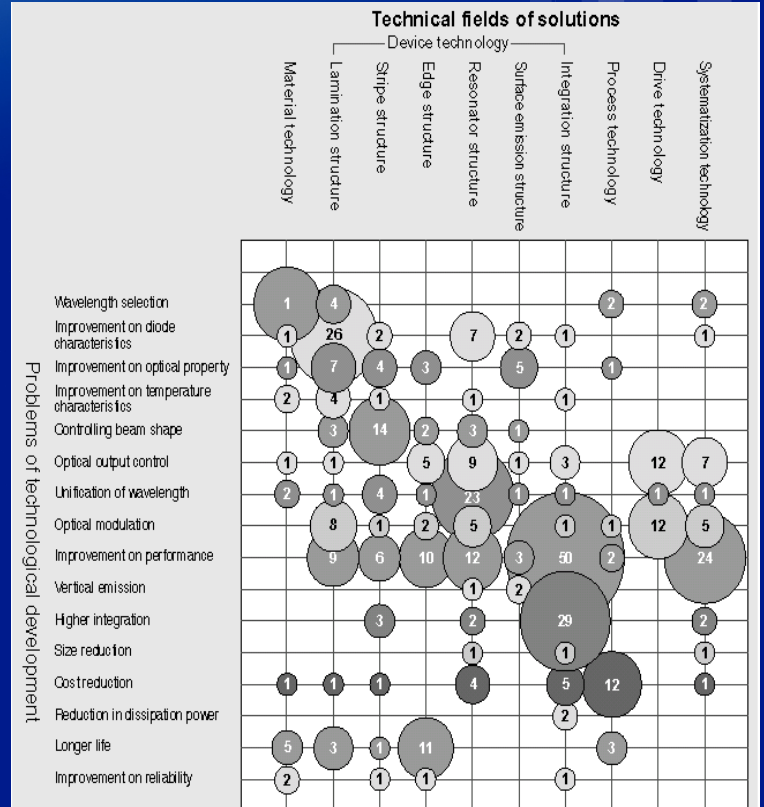
## 4. Technology Development Map



# The Examples of Qualitative Analysis (5)

## 5. Problems vs. Solutions Map

Problem	Problem of invention		Solutions	Patents
	Problem	Specific problem		
Recording	High-density recording	To improve high-density recording by a multiplex recording system	Plural wavelengths are used for storing address information by using an optical disk medium whose optical property changes according to the wavelength of a laser beam.	Jap. Pat. Publ. (Kokoku) No. Hei 7-82645
			In wavelength-multiplex recording, signals are prerecorded on a part of an optical disk medium with lights of individual wavelengths to be used, and at the time of signal recording or reproducing, the signals are read from the part and the wavelength of a light source is tuned to the individual wavelengths.	Patent No. 2505790
			A recording medium having plural recording films and a reflection film is used, and one of the recording films is selected by utilizing the phenomenon such that as a laser beam is supplied from the recording film side, it interferes with reflected light from the reflection film to thereby produce a light intensity distribution, and utilizing the phenomenon that the intensity distribution differs according to the wavelength of the laser beam.	Patent No. 2810186
	High-density recording	To improve high-density recording by a multi-value recording system	Writing of a 3-value reflectance according to the amorphous state, the crystal state and the Au deposited state becomes possible by irradiating laser beams of two intensities on an optical disk medium which has a thin alloy film of Au and Si.	Patent No. 2532068
			With phosphorus used for a recording material, heat application turns white phosphorus to red phosphorus. Changing the degree of the heat causes a continuous or stepwise change in thickness, thus improving the recording density.	Patent No. 2601266
			Stable multi-value reproduction levels by comparing a preset pattern signal with its reproduced signal level, controlling a modulation circuit according to the comparison result to thereby control the laser emission condition, such as the recording power or the recording pulse width, and setting the optimal recording	Patent No. 2634827
			Multiplex recording is ensured by forming multiple status-varying portions with different crystallinities and sizes in a phase change recording medium in accordance with the energy of a laser beam.	Patent No. 2642422
			A single recording marker is allowed to contain multiple pieces of information by reducing reflected light at the time of reproduction by narrowing the edge portions of first and second recording markers and the width of the second recording marker.	Jap. Pat. Publ. (Kokoku) No. Hei 8-7882



# PM-Manager (1)- Data Download

The screenshot shows the WIPS Patent Search interface. The search results table is as follows:

No	Img	Country	Pat.No.	Kind	Title
1		US	6516615	B1	Hydrogen e...
2		US	5431012		System for
3		US	5404980		Electromag
4		US	5369989		Misfire dete
5		US	5295812		Electromag
6		US	5250189		Apparatus
7		US	5125284		Powertrain
8		US	5071172		Fluid direct
9		US	4670020		Carbon igniti
10		US	4655037		Carbon igniti
11		US	4393696		Method for gene

The download dialog box is open, showing the following fields:

- Country: U.S.
- Select Field: Abstract, Exemplary Claim, IPC (IPC All), Applicant Code, Applicant Country, Inventor, Inventor Country, Priority Country, Priority Number, Priority Date, Designated Country, Publication Number, Publication Date, Firm Number.
- Specify Field: Country Code, Kind Code, Application Number, Application Filing Date, Title, IPC (IPC Main), Applicant.
- Download:  Selected records,  Range,  All.
- File type dropdown: .txt, .xls, .mdb, .pmd.

A pink callout box points to the .pmd file type with the text: **File format for PM-manager**.



# PM-Manager (2) – Data Uploading & Deleting

The screenshot shows the PM Manager interface with a data table and an 'Open' dialog box. The table contains patent data with columns for Firm Date, Granted No., and Priority No. The 'Open' dialog box is open to the 'JSI' folder, showing a file named 'pmd'. Two orange arrows point to specific rows in the table: one from the 'DEL' button to a row with '12/12/1996' and '0848537', and another from the 'Open' dialog box to a row with '11/14/1996' and '0883866'.

Firm Date	Granted No.	Granted	Priority No.	Priority Country	Priority
			1986-914123	US   US	1986-10-
			1988-265183	US	1988-10-
			1990-589467	US	1990-09-
			19910002104	GB	1991-01-
			19920015706	GB	1992-07-
	10/22/1997		19925135	FI   FI	1992-11-
	10/30/2002		1993-111531	US	1993-08-
			199403507	AU	1994-01-
			19945075	FI	1994-10-
			1994-177548	US	1994-01-
			9406300	ZA	1994-08-
			1994-310441	US	1994-09-
			1994-224572	US	1994-04-
			1994-291036	US   US	1994-08-
			19945075	FI	1994-10-
			19951001387	NL   W/O	1995-10-
		0848537			
			1995-460079	US	1995-06-
			1995-591186	US	1995-12-
			19950685	FI	1995-02-
			19959503662	GB	1995-02-
			RM1995A000521	IT	1995-07-
		0840973			
			1995-529405	US	1995-09-
		11/28/2001			
		0883866			
			19951001863	NL	1995-12-
			1995-558091	US	1995-11-
			1996-305047	JP	1996-11-
			1996001815	FR	1996-02-
			1996-246498	JP	1996-09-
			9600261	MX	1996-07-
			RM1996A000041	IT	1996-03-
			1996-634818	US   US	1996-04-
			19962553	FI   FI   FI	1996-05-

# PM-Manager (3) – Normalizing Assignee Name

1. Original assignee Name list

3. Selected assignees

4. Normalized assignee name list

is an applicant name, which is not normalized. In order to create a new applicant name and existing normalized name or input new name, please click [OK]

Not Normalized Applicant Name	Applicant Name List	Normalized Applicant Name List
(no data)	AT&T Corp.	AT&T
ACCENTURE PROPERTIES BV	AT&T Corp.	Citybank
ACCESS SECURITY SWEDEN	AT&T Corporation	Detemobile
AIR PAY LIMITED		Gemplus
ALAN CORPORATION		GTE Mobile
ALCATEL N.V.		Harex
ANDERSSON, S&ouml;ren		HITACHI
ARNOLD, J&#246;rg		Matsushita
AT&T Corp		Miyake
ATAE, Sadayuki		NCR
Attention System Co., Ltd.		Nokia
ATTIEH, Mark, Russell		Nortel
Au-System		On point
AUTOMATED BUSINESS COM		Schlumberger
Avaya Technology Corp.		Siemens
Bailey, Ken		Sonera
Banana Cellular, Inc.		Sun Microsystem
Banco Bilbao Vizcaya Argentar		Swisscom
BANQUE LAURENTIENNE DU C		TAIT
BARON, Ehud		
BASQUIN, Bruno		
BEAUJARD, Olivier		
Bell Atlantic Mobile		
RFI SOUTH INTELLECTUAL P		

AT&T Add

Import Normalized Name

2. Normalized name creation window

# PM-Manager (4) – Classification

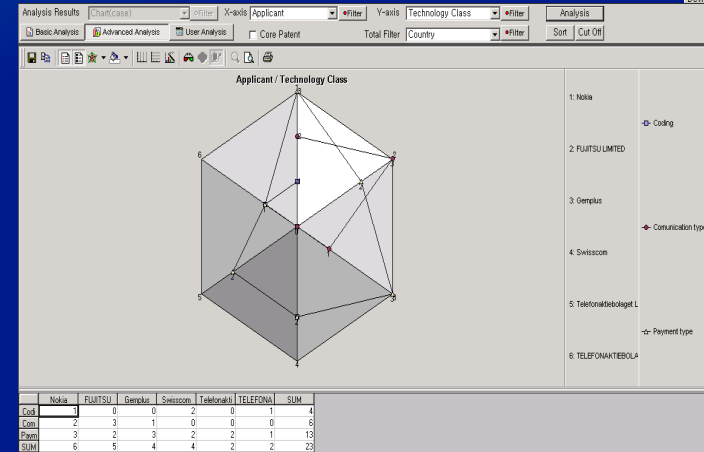
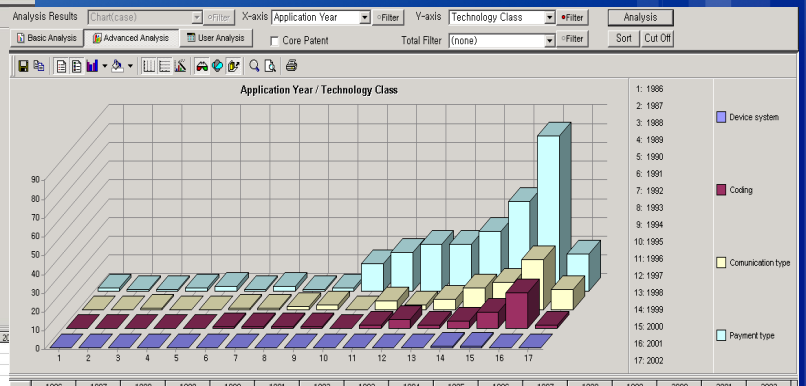
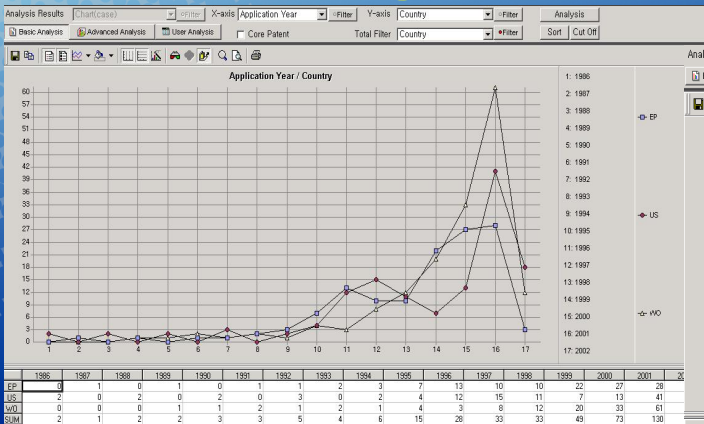
The screenshot displays the PM-Manager software interface. The main window shows patent details for a document with Country: EP and Title: A cellular mobile radio credit card system. The abstract and claim 1 are visible. On the right side, there are checkboxes for 'Check Designate As Core Patent' and 'Displays Core Patent Only', with 'Importance' set to 'Unclassified'. Below this is a 'Patent Family' section and a 'Memo' field. At the bottom, there are two classification panels. The left panel, 'Technology Classification', has 'Unclassified' selected and shows 'Upper Class: Payment type', 'Middle Class: SAW type(Cardless type)', and 'Lower class: Phonebill'. The right panel, 'User Class', has 'Unclassified' selected and shows 'Possibility of Infringe' with 'Yes' selected. A taskbar at the bottom shows the Start button and several open applications including Internet Explorer, Windows Messenger, FileShopper, PM Manager, JSI, Microsoft PowerPoint, and WIPSIM.

Core Patent,  
Technological  
importance  
check

Technology  
Classification

User  
classification

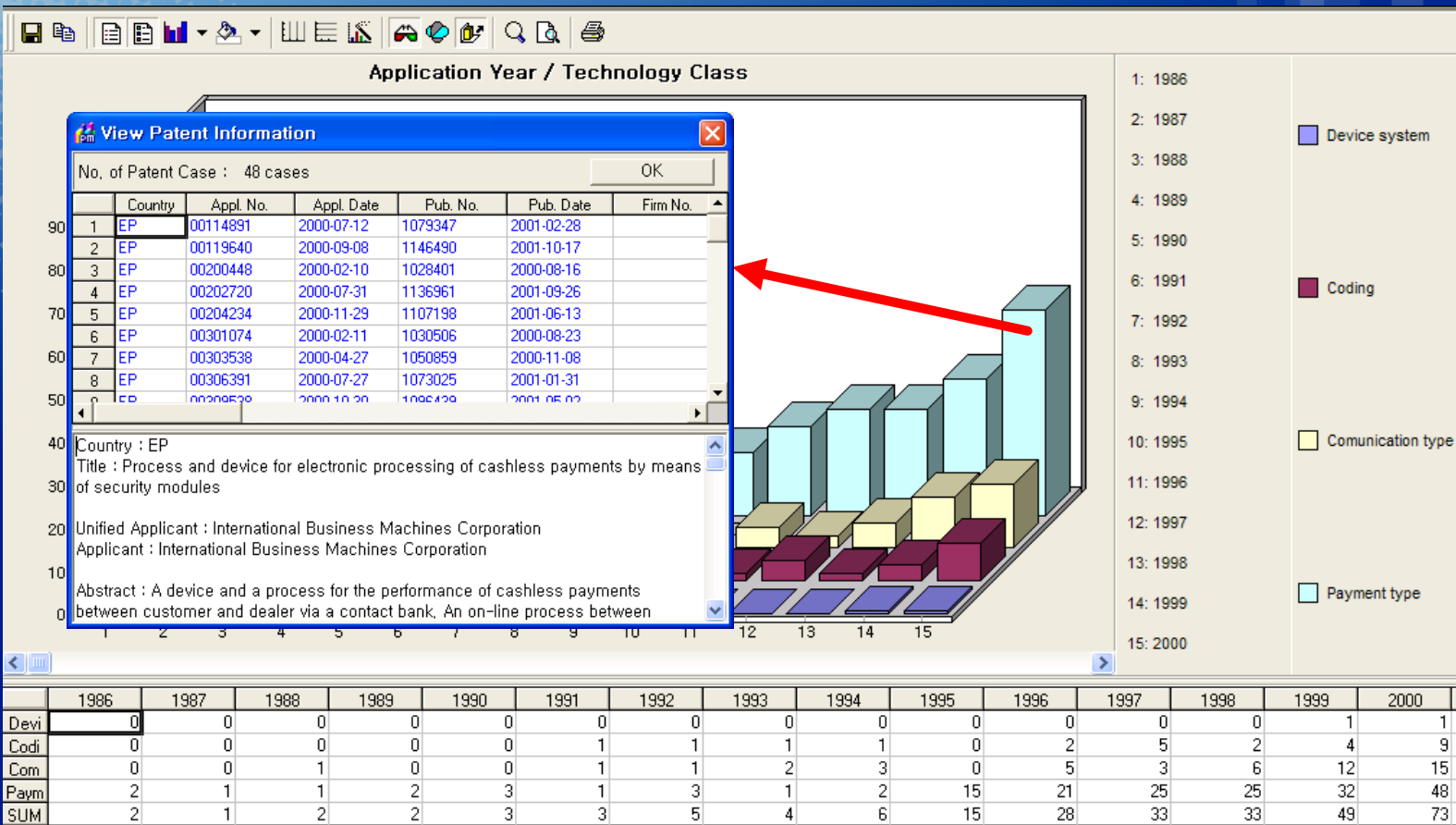
# PM-Manager (5) – Analysis



Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Dev	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Code	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Comm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pay	2	1	1	2	3	1	3	1	2	15	21	25	25	32	48	83	20
SUM	2	1	2	2	3	3	5	4	6	15	28	33	33	49	73	129	33

Applicant	1995	1996	1997	1998	1999	2000	2001	2002
JUITSU LIMITED					Communication type		Payment type	Communication type
Gemplus		Payment type	Payment type	Payment type	Payment type			Payment type
NCR					Payment type		Payment type	
Nokia	Payment type	Payment type	Communication type	Payment type	Payment type	Payment type	Communication type	Communication type
Siemens			Payment type	Payment type			Payment type	Coding
Swisscom		Payment type		Payment type	Payment type	Payment type		
Telefonaktiebolaget L M Ericsson			Payment type	Payment type			Payment type	Payment type
TELEFONAKTIEBOLAGET LM ERICSSON	Payment type	Payment type	Payment type	Payment type	Payment type	Payment type	Payment type	Payment type

# PM-Manager (6) – Direct link to Abstract in Graph



# PM-Manager (7) – Automatic Report Creation for Core Patents

Country : EP  
Title : Wireless point of sale transaction

다른 이름으로 저장

저장 위치(I): PM-manager sample data

Exemplary Drawing

Sample(key list)

파일 이름(N): pm

파일 형식(I): MS Word File (\*.doc)

저장(S)

취소

Problems Of Prior Art (For key information list)

the above prior art method involves the problem that it requires a long time for checking out a given customer. When the customer reaches the check-out counter and it is his turn to pay, the cashier needs to enter a unique ID of the portable customer device, such as a phone number, into the POS system in order to enable the POS to establish the wireless communications link with the customer device.

[ Key Information List ]

[19] Country of Document Issue : EP	[51] Int Cl. : G07F-019/00
[21] Application No. : 01610070 [22] Application Date : 2001-07-05	[11] Registration No. : [45] Registration Date :
[30] Priority Declaration No. : 200100520 200100582 [30] Priority Declaration Country : DK   DK [30] Priority Declaration Date : 2001-03-29   2001-04-09	[71] Applicant : Telefonaktiebolaget L M Ericsson [72] Inventors : Hansen, Thomas Jesper
[54] Title of the Invention : Wireless point of sale transaction	
[57] Purpose and Effects Disclosed is a method of processing a transaction request by a first customer device (T1) and a transaction system (100), the transaction request being approved by transmitting a data signal from the first customer device to the transaction system via a wireless communications link (105); the method comprising the steps of establishing (113) respective wireless communications links (105,106,107) between the transaction system and a number of customer devices (T1,T2,T3) corresponding to respective customers (A,B,D); and identifying (114) the first customer device among the number of customer devices having established respective wireless communications links as being a customer device carried by a selected customer (A).	[57] Claims 1. A method of processing a transaction request by a first customer device (T1) and a transaction system (100), the transaction request being approved by transmitting a first data signal from the first customer device to the transaction system via a wireless communications link (105); the method comprising the steps of establishing (113) respective wireless communications links (105,106,107) between the transaction system and a number of customer devices (T1,T2,T3) corresponding to respective customers (A,B,D); and identifying (114) the first customer device among the number of customer devices having established respective wireless communications links as being a customer device carried by a selected customer (A).
[57] Problems Of Prior Art the above prior art method involves the problem that it requires a long time for checking out a given customer. When the customer reaches the check-out counter and it is his turn to pay, the cashier needs to enter a unique ID of the portable customer device, such as a phone number, into the POS system in order to enable the POS to establish the wireless communications link with the customer device.	

Exemplary Figure

```

    graph TD
      10[Purchase Request] --> 11[Authentication Initiated]
      11 --> 12[Receive Voice Samples]
      12 --> 13[Determine Score]
      13 --> 14[Determine Threshold]
      14 --> 15{Score < TH?}
      15 -- Yes --> 16[Accept]
      15 -- No --> 17[Determine Threshold]
      17 --> 18[Score]
      18 --> 19[To Accept]
      19 --> 16
  
```

*Thank you for your Attention*  
*Continue to Patent Map Exercise*



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*MOST for Chinese Patent Officers*