

CONVEGNO AIDB

01-02 dicembre 2016, Treviso

**Patent information for industry
and market application**

How to leverage
patent information
to get meaningful
insight on market
trends.

Audrey Dayon

Questel quick presentation

- General Overview
- Orbit IPBI

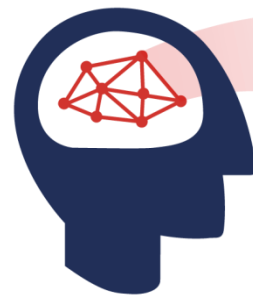
Case study

- Introduction
- Methodology
- Analysis

Conclusion & Questions



Covering
intellectual
property needs
across the
innovation
lifecycle.



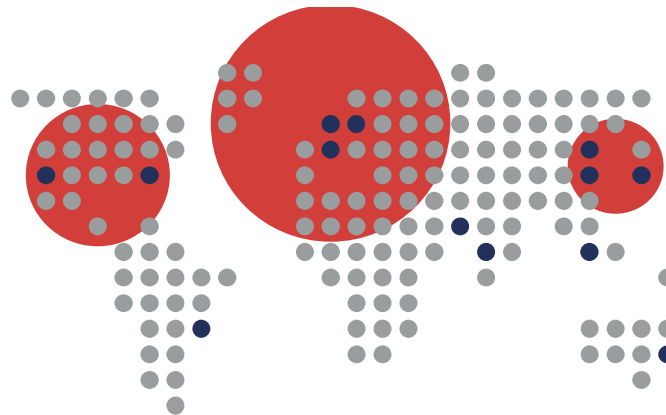
Idea



Protection



Asset



 **Questel**

 **170**

32M€

Since 1970



Software



Consulting



eLearning



Turn insight into action



Software



Consulting



eLearning



Intellectual Property Business Intelligence



Orbit Intelligence

Powerful patent search and analysis



Orbit Express

Easy patent search and collaboration



Orbit Trademark

Search trademark and build reports



Orbit WebMonitor

Alerts from any selected sources



Intellixir

Analyze from any scientific sources

Intellectual Asset Management



Orbit Idea

Collaborative idea generation



Orbit Invention

Collaborative Invention-to-Filing



Orbit Asset

Business focused docketing and financial forecasting

Bring Intellectual property to the board



Software



Consulting



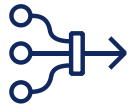
eLearning



Consulting



Competitive Intelligence



IP Strategy



Prior Art

eLearning



Corporate Solutions



Custom Training

IP Business Intelligence

1

Search and monitor

Patents
Designs
Trademarks
Litigation
Licensing deals
Standards
Legal status
Business information

2

Analyze and evaluate

Technology landscape
M&A
Licensing-in
Risk assessment
Competitive landscape
Monetization

3

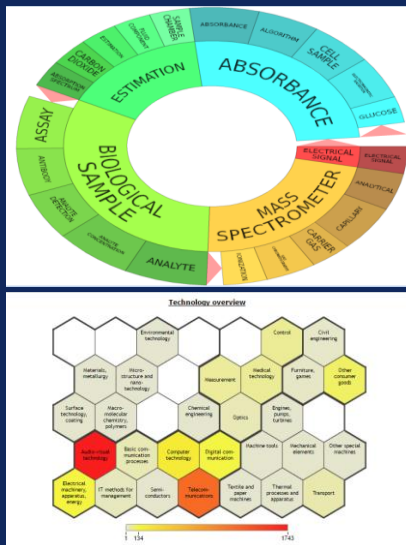
Collaborate & share

Competitive monitoring
Prior art review
Renewal management
Legal Status



2 Analyze & Evaluate

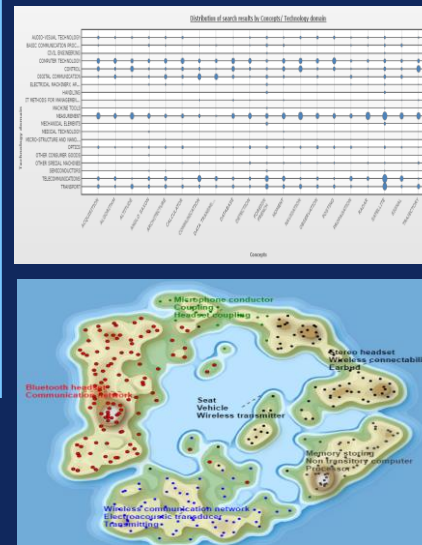
Technology landscape



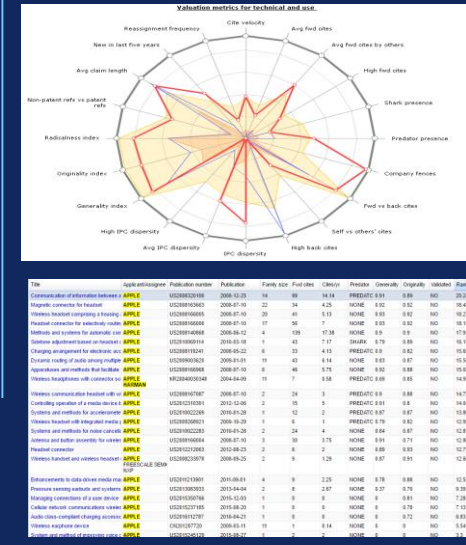
Competitive landscape



White Space analysis



Evaluation and Benchmarking



2 Analyse and Evaluate

Fully personal visualization with Orbit's formatting controls.

Charts fully customizable

2M families at once

Control the fields to analyze

Adjust chart size
Color by

Drill down and highlight into charts

Sub-analyze selected parts of the graphs

Visualize the data behind each charts

Build your own data rules

Group assignee or concepts

Hide assignees or concepts

What's new?

Easy analysis by country



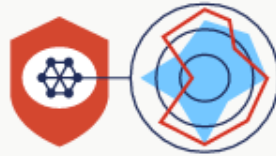
2 Analyse and Evaluate

Answer business questions with evaluation modules



Technology scouting

Find licensable patents & licensing opportunities.



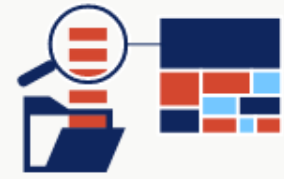
Business case assessment

Evaluate the environment, its players before starting R&D development.



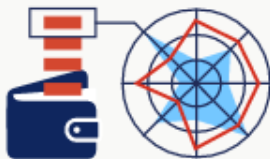
Ability to exclude

Evaluate your position, measure your ability to exclude competitors.



Licensable art

Identify and categorize patents with licensing potential.



Licensing in

Benchmark competitors and portfolios.



Legal risks assessment

Evaluate potential risks before making strategic business decisions.



Portfolio pruning

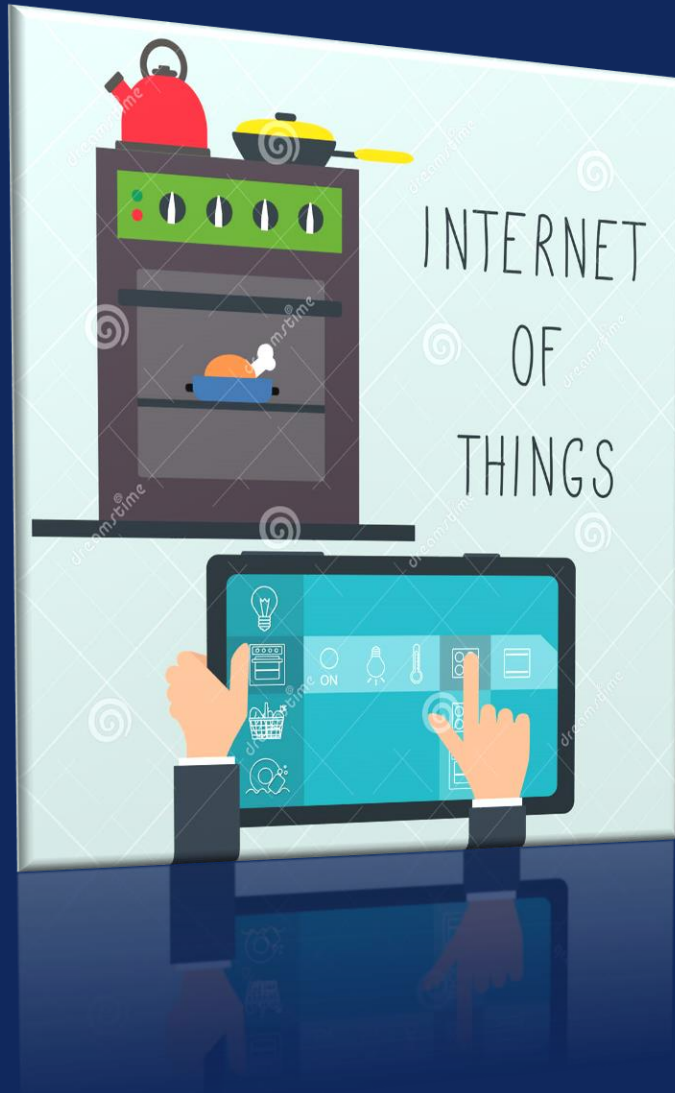
Cut cost by pruning less relevant and non-core patents.



Licensing out

Master your assets' strengths and weaknesses.





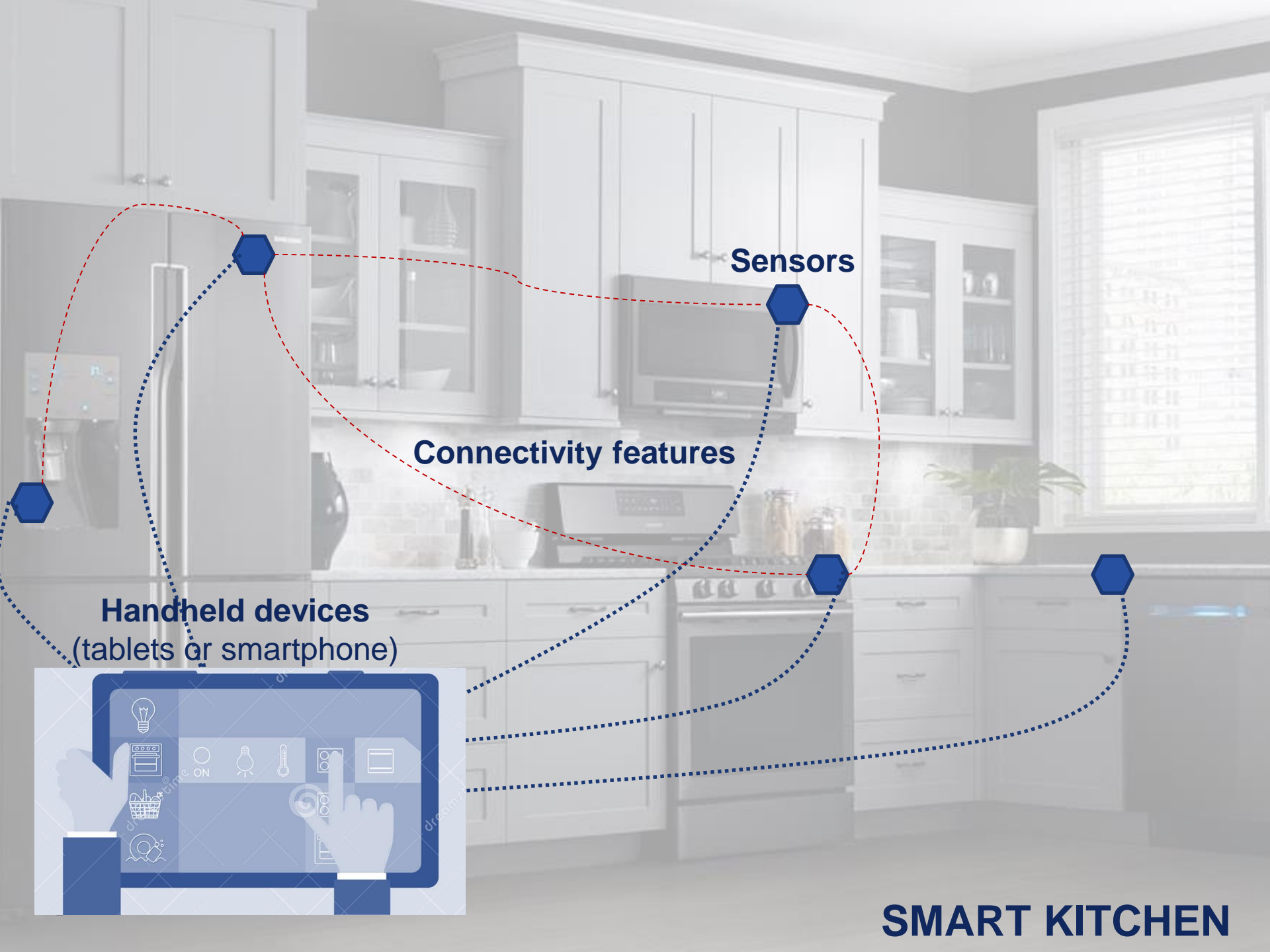
CASE STUDY

Smart kitchen appliances market

Who are the players? In which technologies?
What applications?

Focus on Indesit's position in smart fridge applications





Sensors

Connectivity features

Handheld devices
(tablets or smartphone)

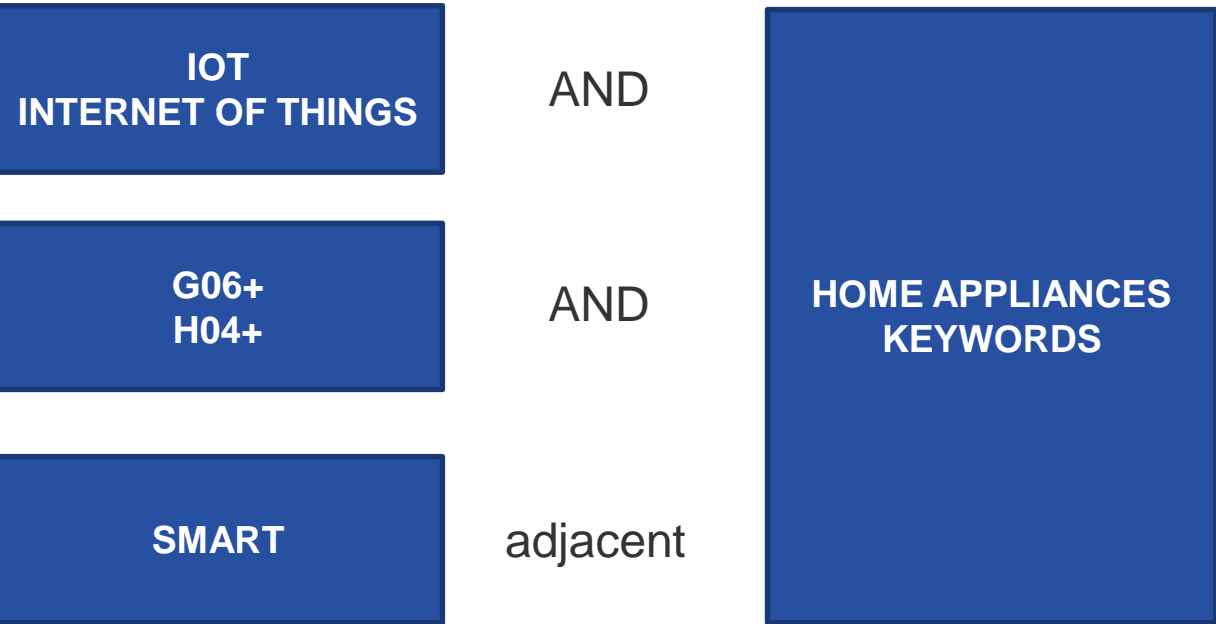


SMART KITCHEN

Methodology

1. Create the data set – smart home appliances

**HUGE VOLUME
OF PATENTS →
a need to focus**



**~50 000
Patent families**

((((COFFEE 2D (MACHINE? OR MAKERS)) OR OVEN? OR FRIDGE? OR FREEZER? OR REFRIGERATOR? OR DISH_WASHER? OR KETTLE? OR COOKWARE? OR COOKTOP? OR COOKER? OR AIR_CONDITION+ OR HVAC OR VENTILATION OR WASHER? OR DRYER? OR THERMOSTAT+ OR (VACUUM D CLEANER?) OR (WATER D HEATER?) OR HOME APPLIANCE?)/TI/AB/IW/CLMS/OBJ AND ((G06+ OR H04+)/IPC/CPC OR (IOT OR INTERNET OF THING?)/BI/OBJ/CLMS)) OR ((SMART 0W ((COFFEE 2D (MACHINE? OR MAKERS)) OR OVEN? OR FRIDGE? OR FREEZER? OR REFRIGERATOR? OR DISH_WASHER? OR KETTLE? OR COOKWARE? OR COOKTOP? OR COOKER? OR AIR_CONDITION+ OR HVAC OR VENTILATION OR WASHER? OR DRYER? OR THERMOSTAT+ OR (VACUUM D CLEANER?) OR (WATER D HEATER?) OR HOME APPLIANCE?)/TI/AB/IW/CLMS/OBJ))

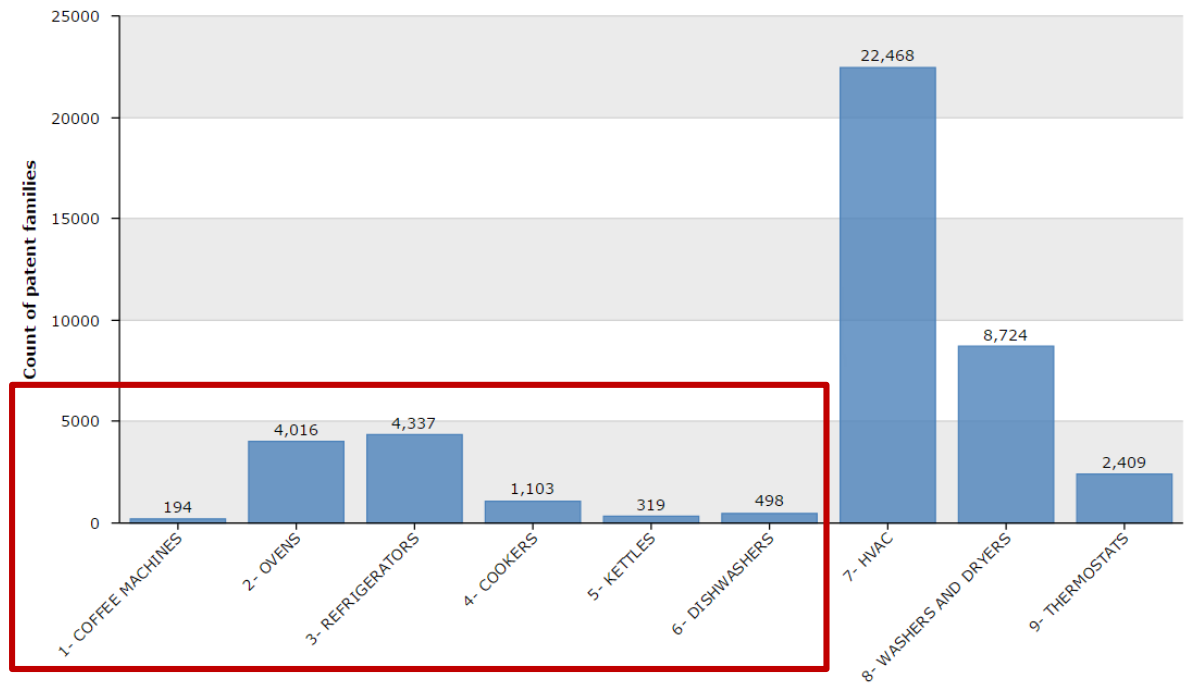


- Graphical analysis as a tool to reduce the scope

Custom by boolean queries function

My templates: HOME APPLIANCES

Boolean query	(COFFEE 2D (MACHINE? (1- COFFEE MACHINES	X
Boolean query	(OVEN?)/BI/OBJ/CLMS	2- OVENS	X
Boolean query	(FRIDGE? OR FREEZER? C	3- REFRIGERATORS	X

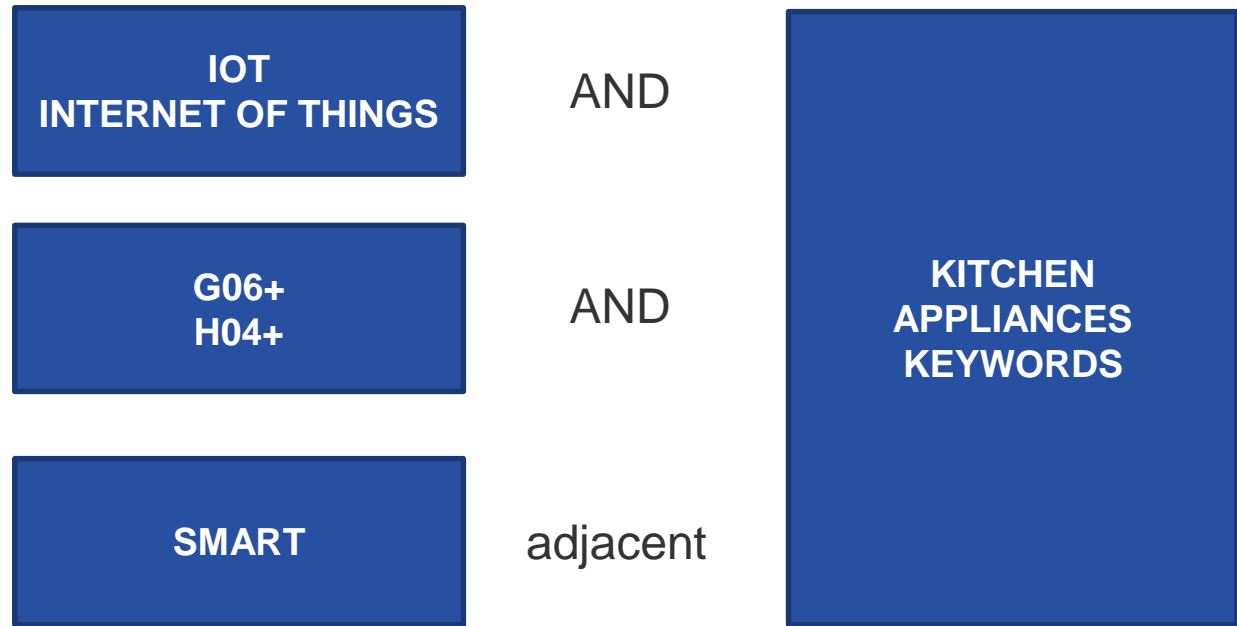


SMART KITCHEN APPLIANCES



Methodology

1. Create the data set – focus on smart kitchen appliances



~9 300
Patent families

5 300 ALIVE

((((COFFEE 2D (MACHINE? OR MAKERS)) OR OVEN? OR FRIDGE? OR FREEZER? OR REFRIGERATOR? OR DISH_WASHER? OR KETTLE? OR COOKWARE? OR COOKTOP? OR COOKER?)/TI/AB/IW/CLMS/OBJ AND ((G06+ OR H04+)/IPC/CPC OR (IOT OR INTERNET OF THING?)/BI/OBJ/CLMS)) OR ((SMART 0W ((COFFEE 2D (MACHINE? OR MAKERS)) OR OVEN? OR FRIDGE? OR FREEZER? OR REFRIGERATOR? OR DISH_WASHER? OR KETTLE? OR COOKWARE? OR COOKTOP? OR COOKER?))/TI/AB/IW/CLMS/OBJ)



2. Technology and industry landscape

Analysis of the art related to smart kitchen appliances

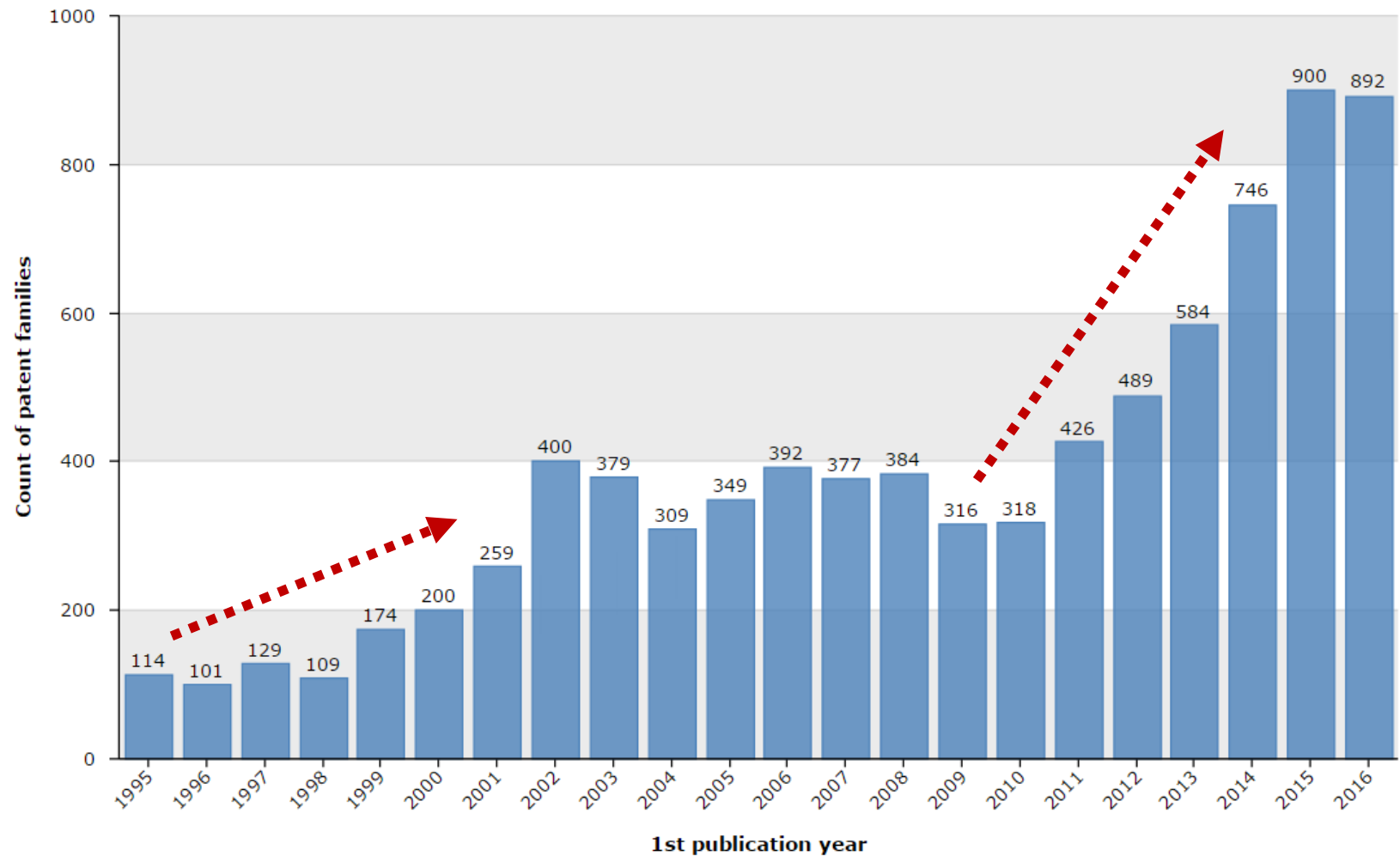
- Global trends
- R&D and market location
- Key players
- Key inventions
- Technologies & Applications
- Key inventors & Key academics
- Key entities

3. Portfolio evaluation

- To enter a new market
- To evaluate a licensing-in opportunity



Global Trends: 1995 - 2016



➤ 3 periods of filing : recent wave, the strongest

470 million

37\$B

2020 SMART HOME APPLIANCES

3\$B

SMART KITCHEN

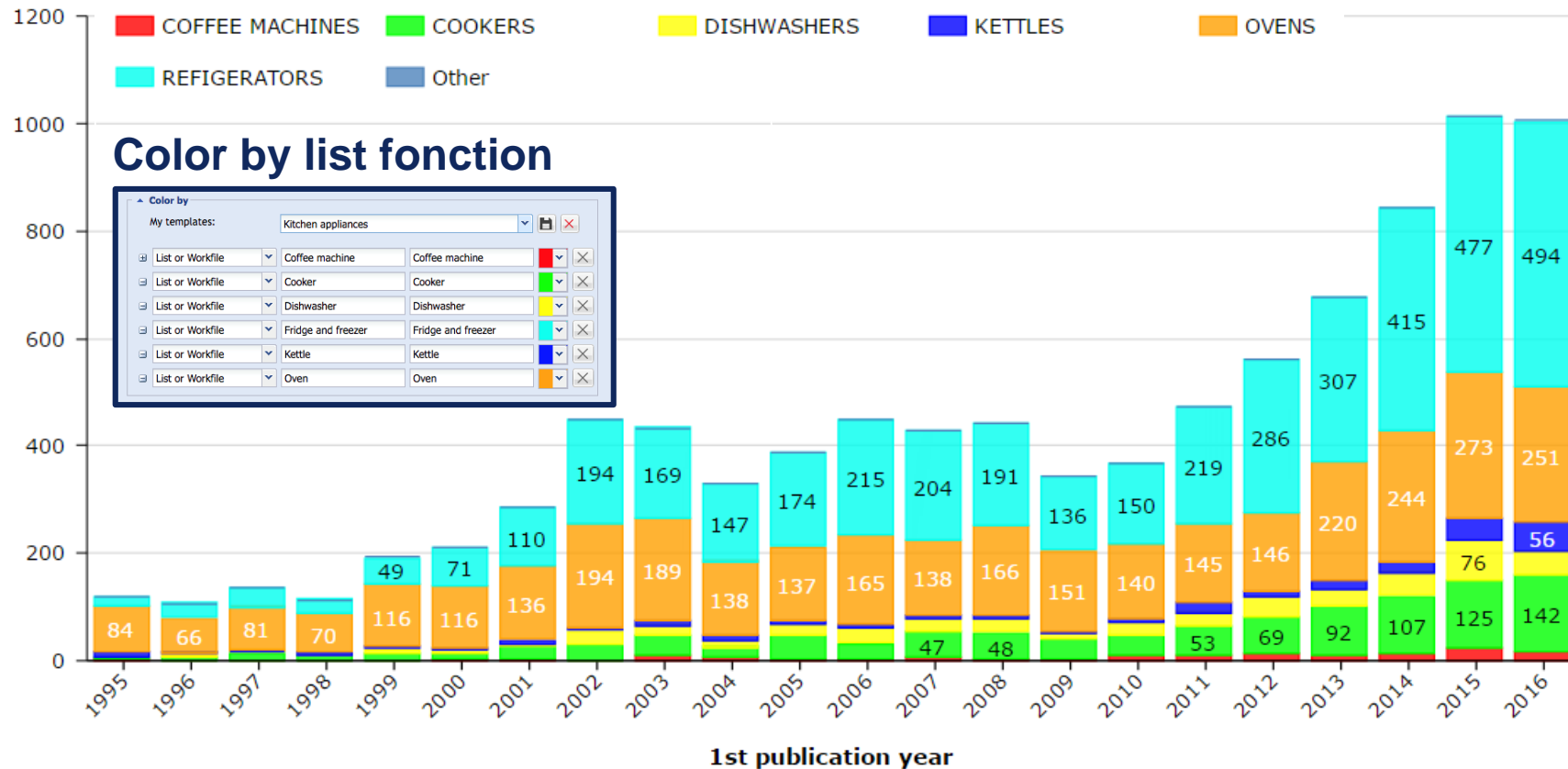


Smart refrigerators

The largest share of revenue

Global Trends: 1995 - 2016

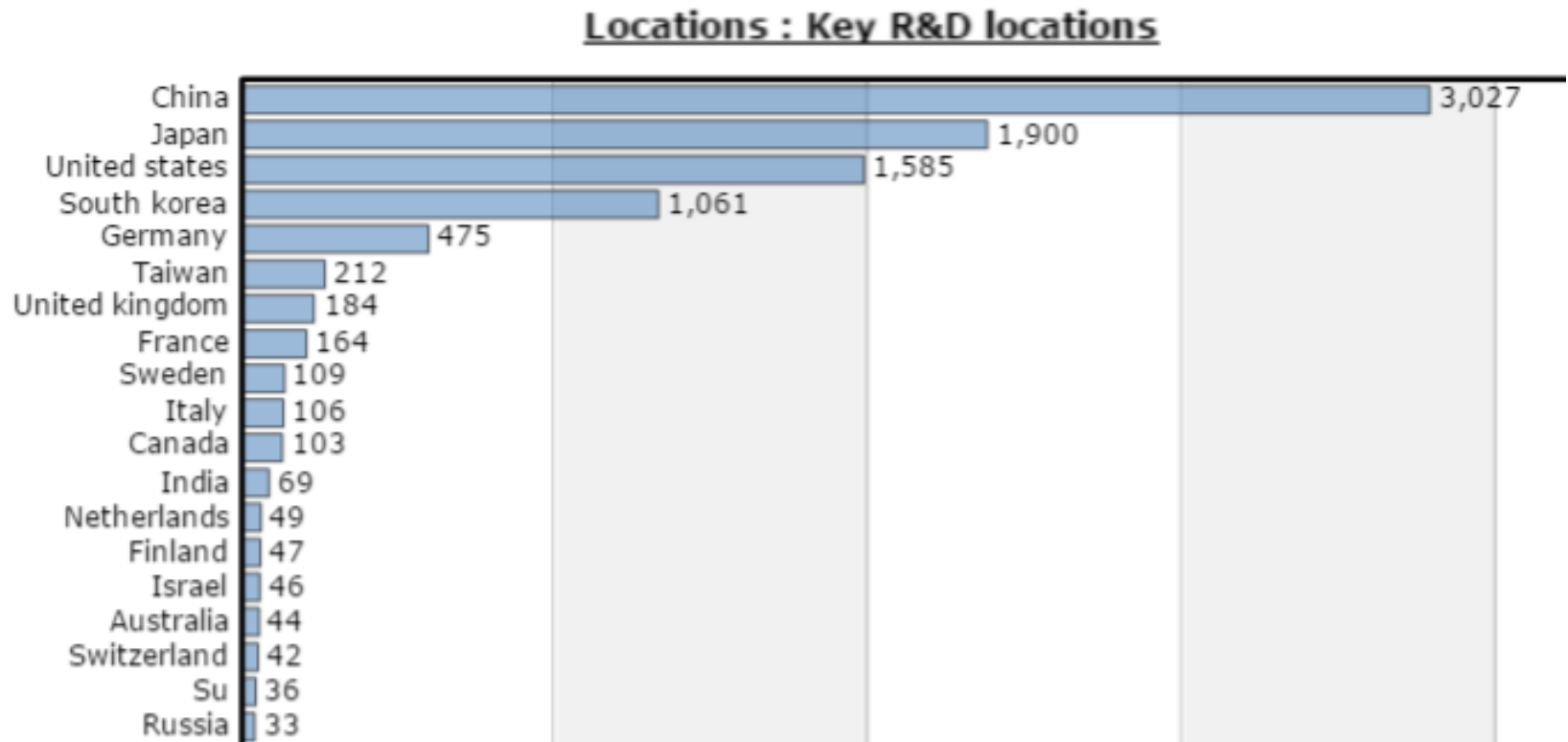
Segmentation by type of kitchen appliance



- Refrigerator: the largest segment and still growing
- Coffee machines: emerging segment
- Cookers segment seems to grow quickly



Identify the R&D location based on the inventors' addresses and priority countries

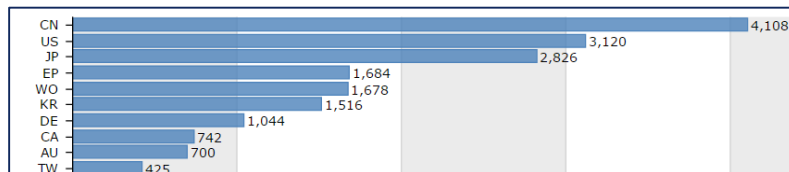
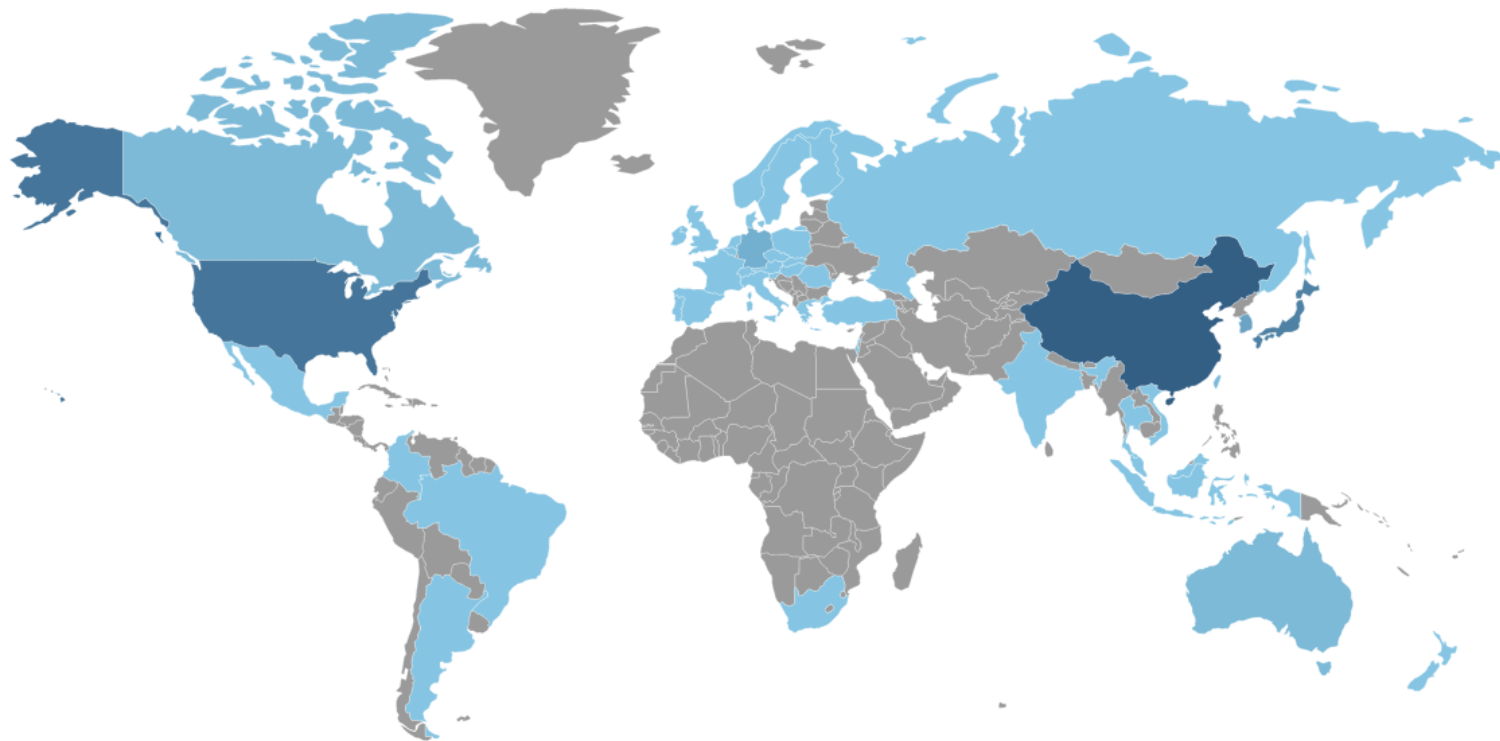


- China, Japan and United States lead the R&D
- Italy 10th position with 106 inventions



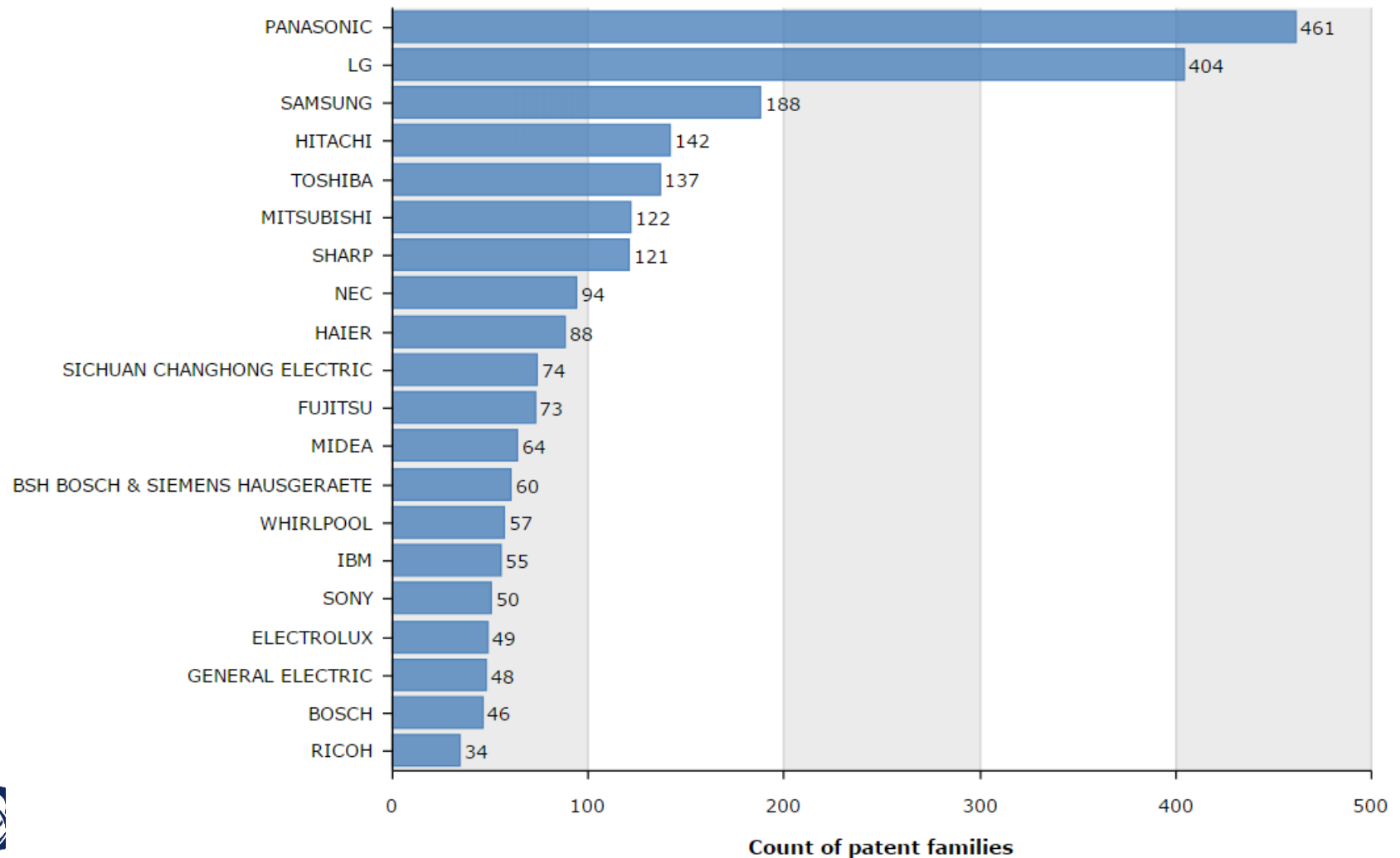
R&D and market location

Identify the main markets through the location of extensions



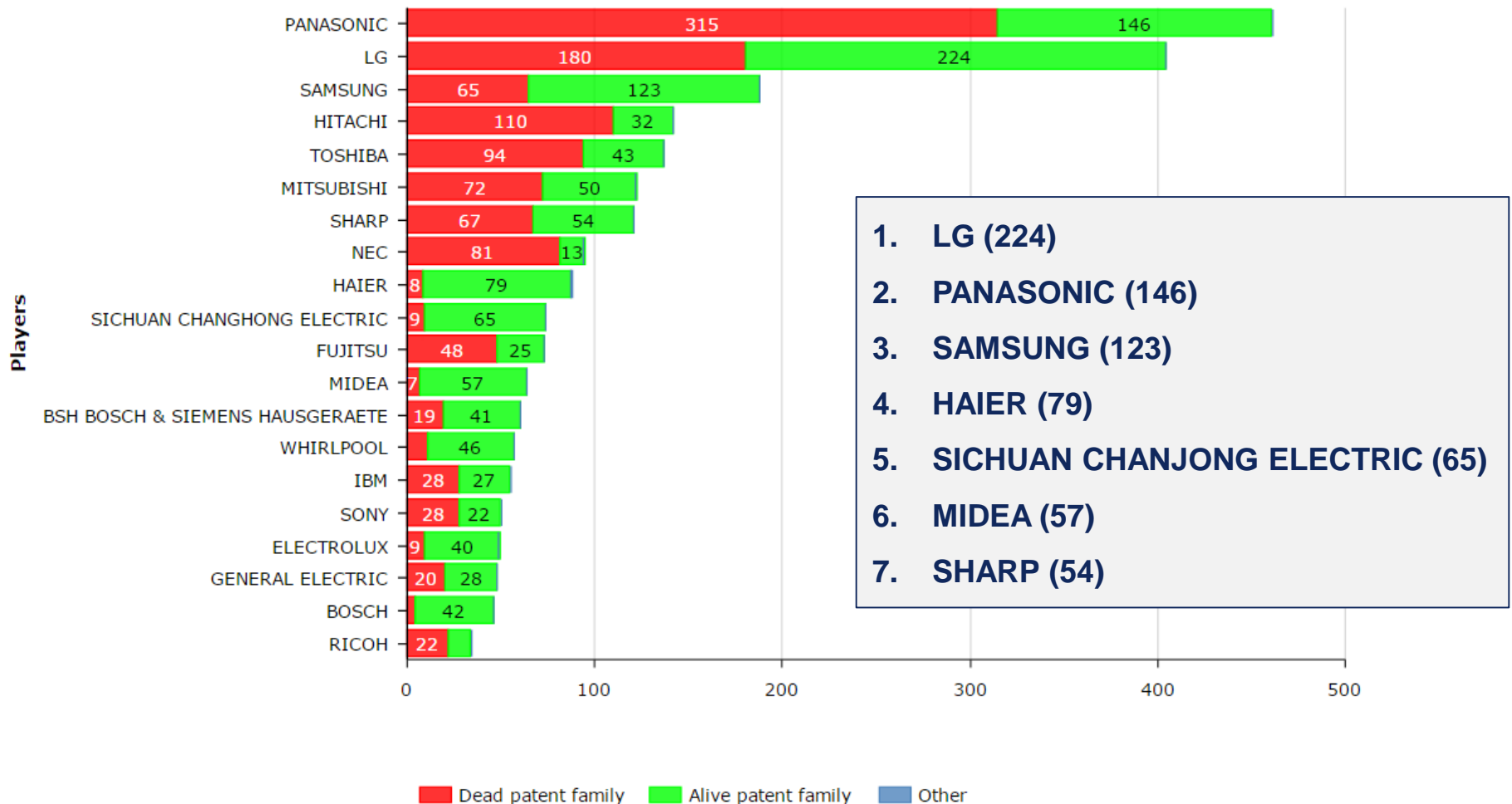
➤ China, USA and Japan lead the game

Top applicants massively stemming from Asia



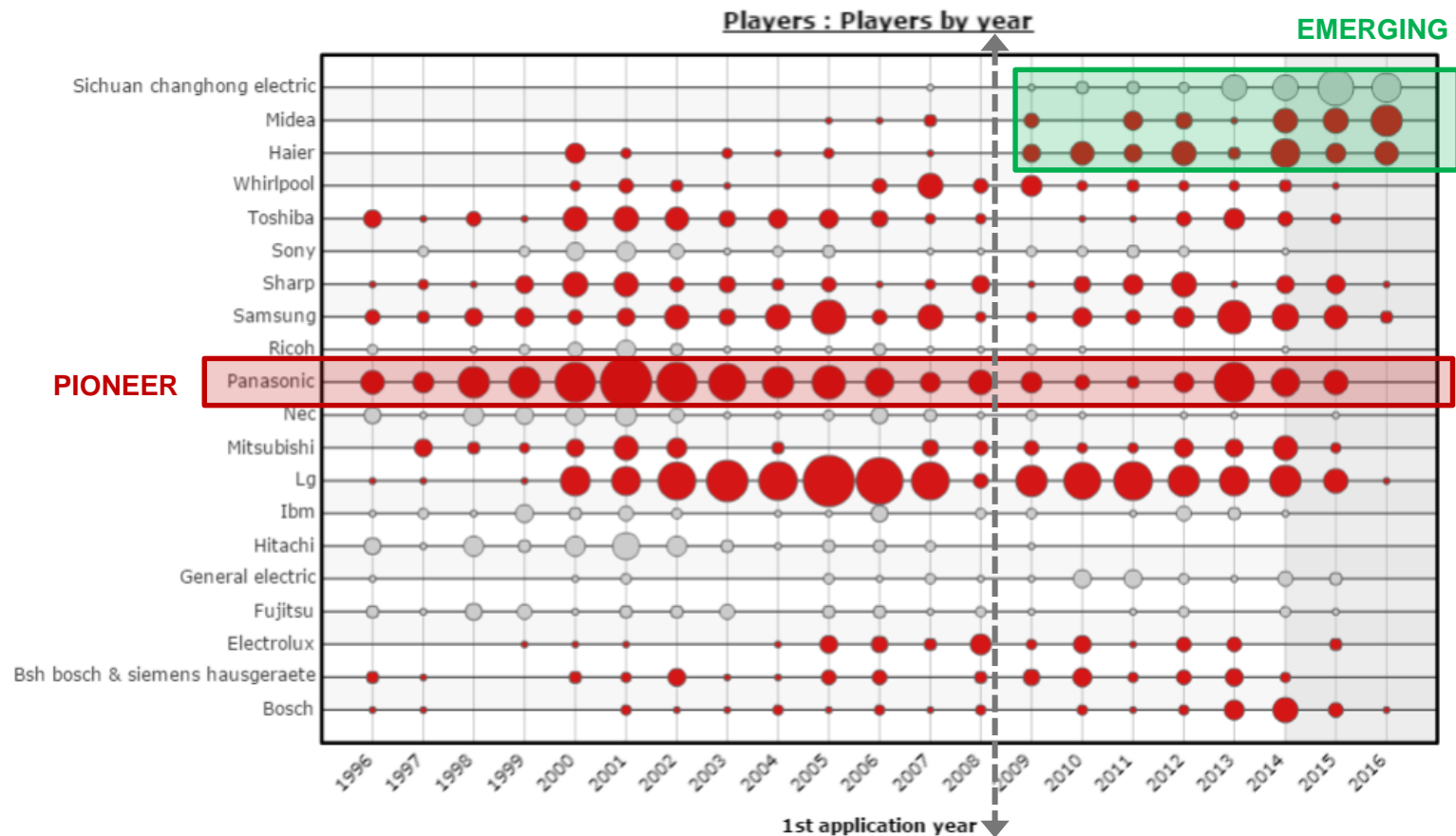
Looking at dead/alive patents families change the ranking

Top technology players



Key players

Applicant over time: pioneer, emerging, leaving players



Patent aggregators
Competitors

Suppliers
Customers

Academics or government
Small players

Others
Own company

Manage tags

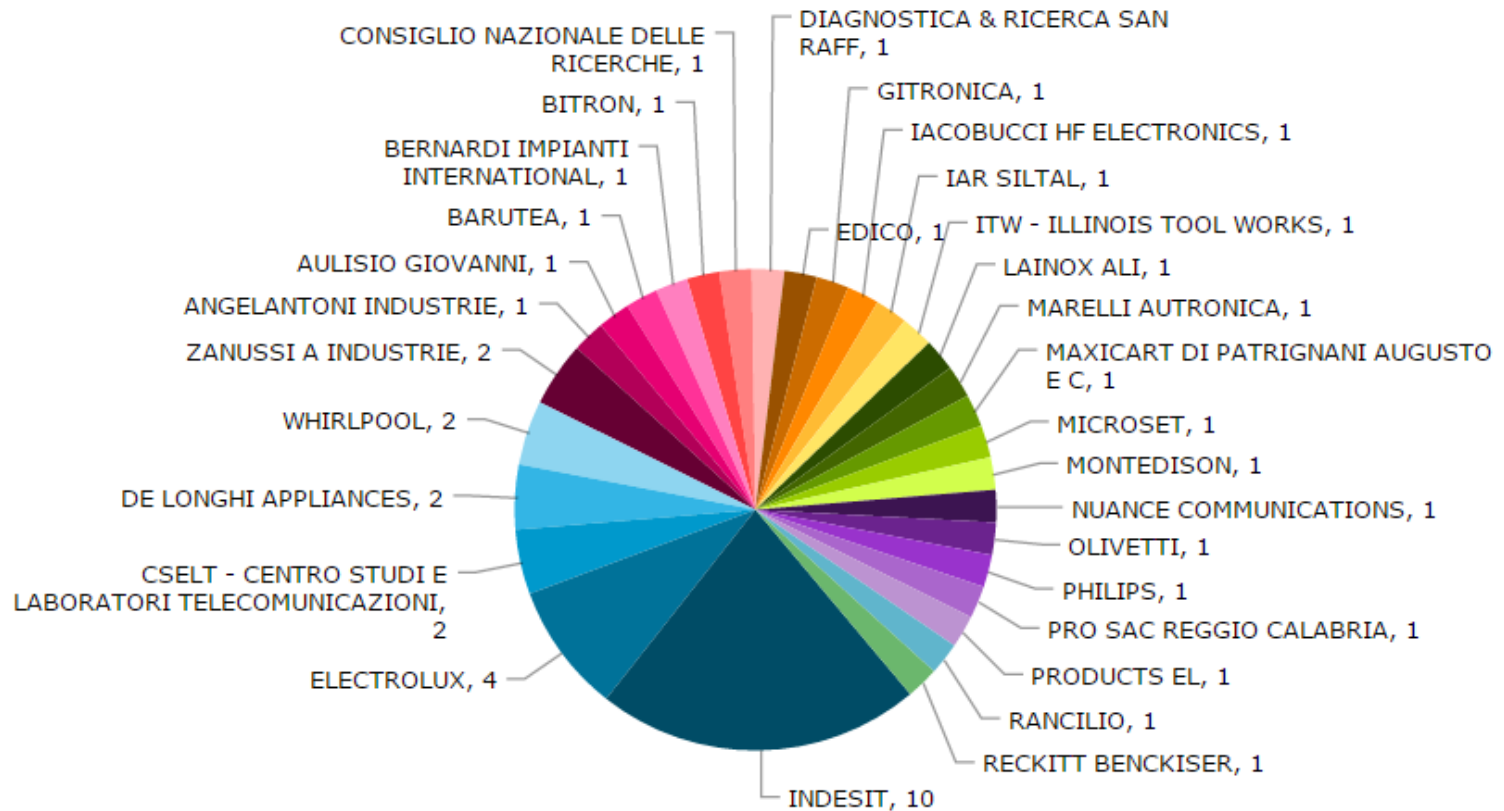
Indesit and Electrolux, main owners in Italy

Filter on fonction

Filter

Filter on

Clear



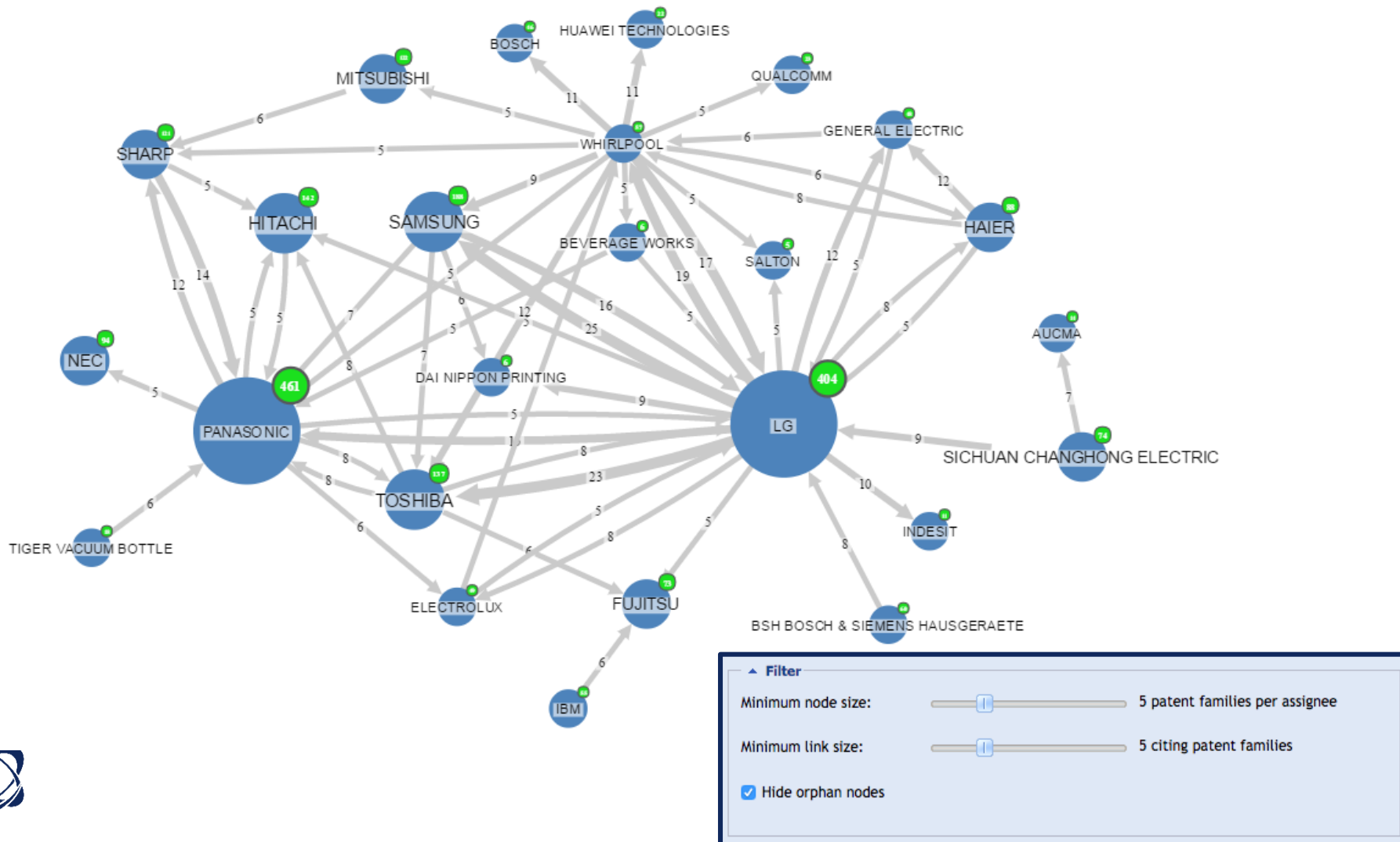
FullPat analysis: Read the applicants' coverage at a glance

BSH BOSCH & SIEMENS HAUSGERAETE	32	13		2	2		7	3	1		2	3	14	45	71	21	4		3	9
DISCOVERY COMMUNICATIONS	7	1	6		5			11		10			11	16	13	19	19	7	11	17
ELECTROLUX HOME PRODUCTS	29	28			6	1	7	4						38	2	22	10	7	22	2
ERICSSON	38	41	10	22	3	3	17	7	5	5	1	1	8	36	14	30	21	17	35	5
EXXONMOBIL UPSTREAM RESEARCH	6	5	4	7	6	1	6		11		8		5	6	8	8	6	6	9	5
GENERAL ELECTRIC	18	44	3		1	2	6	15	4		4	4	1	17	8	11	47	5	18	2
HITACHI	4	30	4				11	87						12	6	12	1		1	
IBM	3	67	5				10	35	2		7		1	21	11	10	10	3	1	4
INTERDIGITAL TECHNOLOGY	9	22	38			6	40	19	1	6			6	13	8	21	7	1	6	6
LG ELECTRONICS	91	219	10		13	15	336	41	15	2	9	2	4	96	27	136	10	8	25	6
MITSUBISHI ELECTRIC	11	34	3			2	8	124	3	2	1	1	4	37	26	39	4	2	6	3
NOKIA	16	19	1				7	7	5	1	2		12	21	15	15	6	3	13	13
PANASONIC	96	139	13		2	4	35	402	9	6	11	2	9	85	34	87	16	2	16	2
PHILIPS	20	32	3	1	4	1	11	25	8	2	2	6	5	26	17	21	5	5	10	4
QUALCOMM	17	37	8		7	2	21	38	15	17			16	36	14	30	9	7	6	14
SAMSUNG ELECTRONICS	16	120		2	5		137	64	7	2	6	1		54	19	58	4	3	6	
SHARP	14	33	3				12	131		9	5			20	7	23	5		4	
SONY	7	44	2	1		1	10	51	3	1	5	3	2	22	4	13	3	1	3	
TOSHIBA	14	33	18				25	151			8	1		20	6	24	4			
WHIRLPOOL	23	123				5			4				3	47	5	9	14	31		1
	WO	US	TW	SE	RU	MX	KR	JP	IN	HK	GB	FR	ES	EP	DE	CN	CA	BR	AU	AT

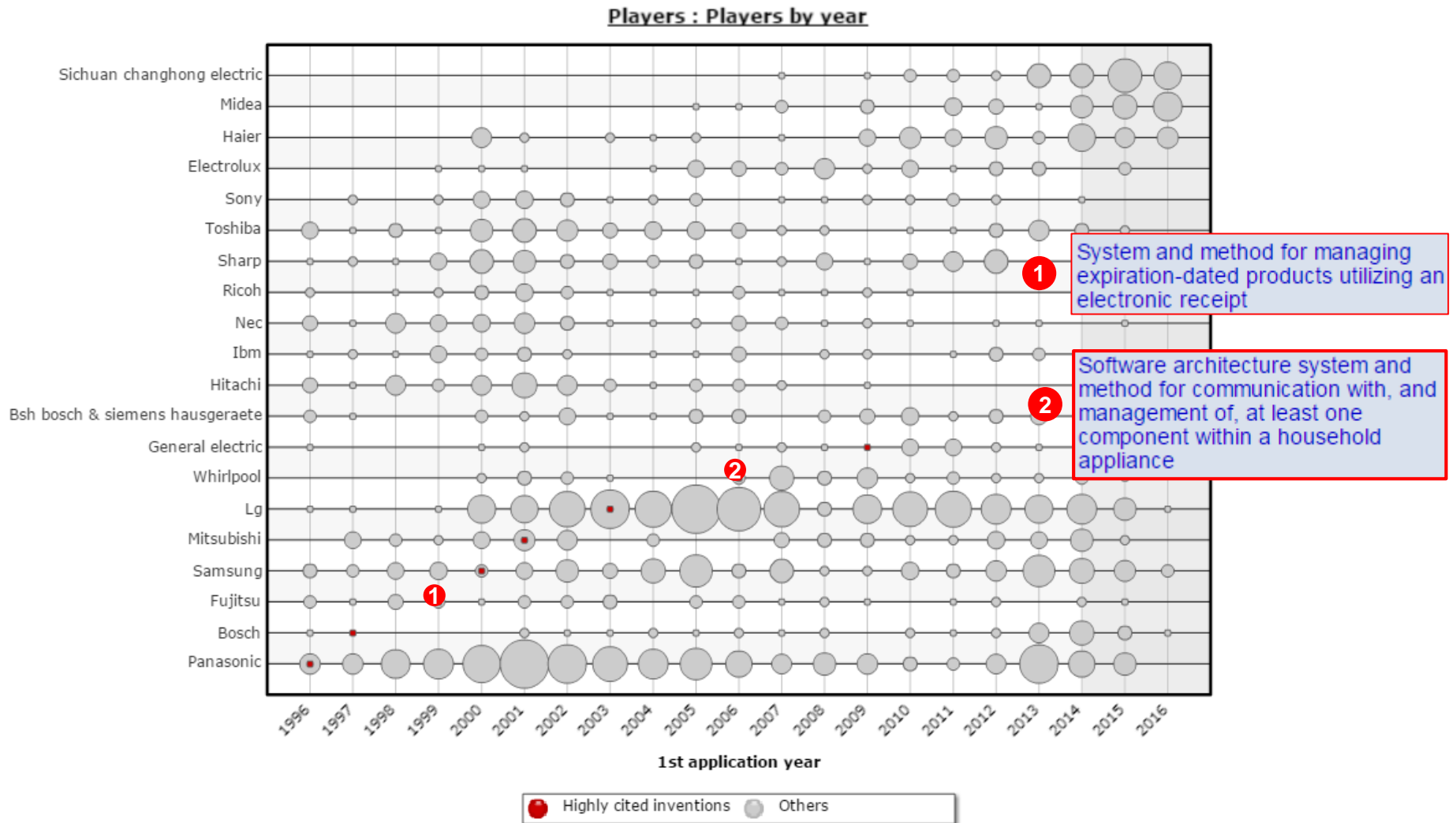
Publication country

Players dependency

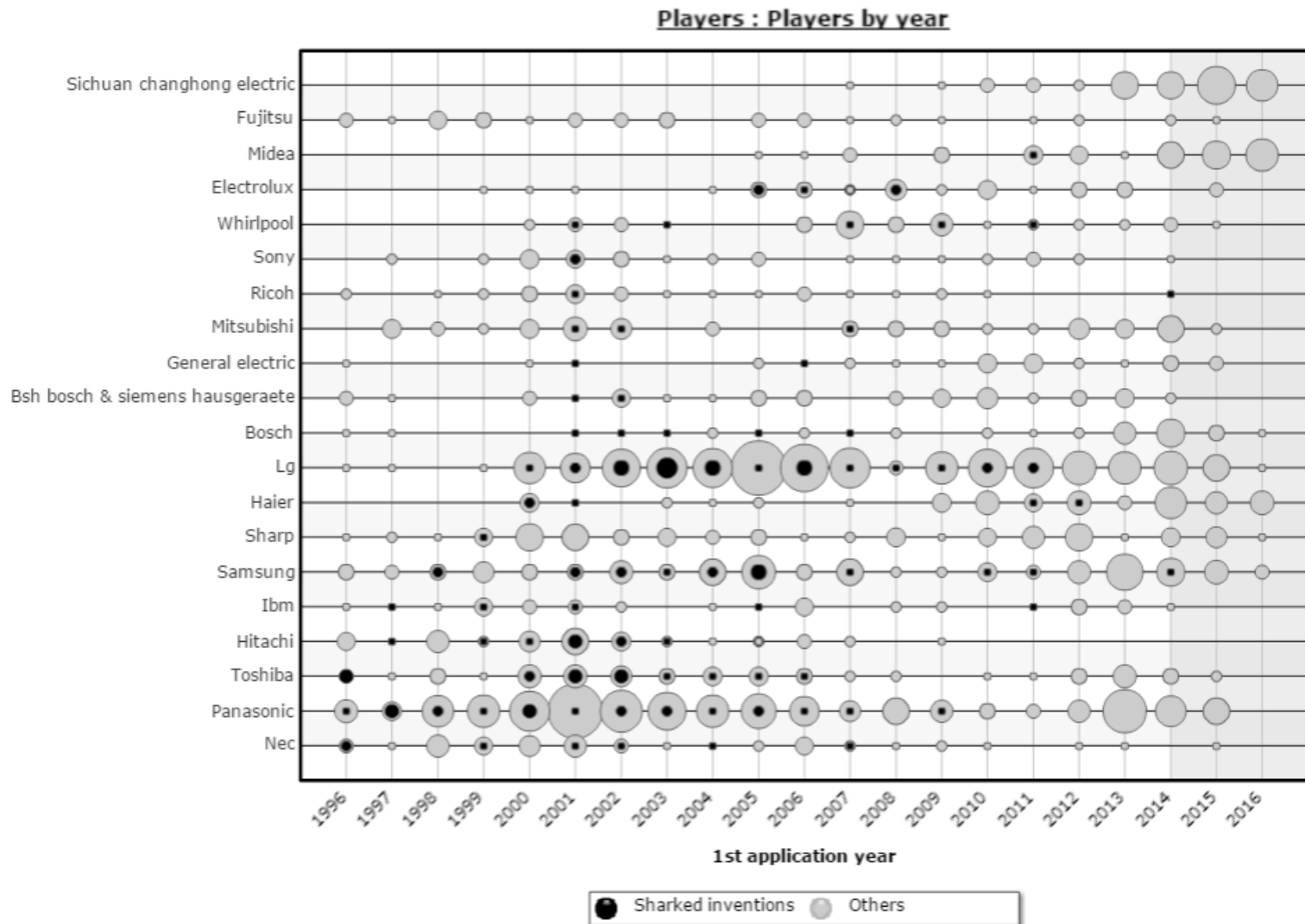
LG is focusing interest from main appliance providers



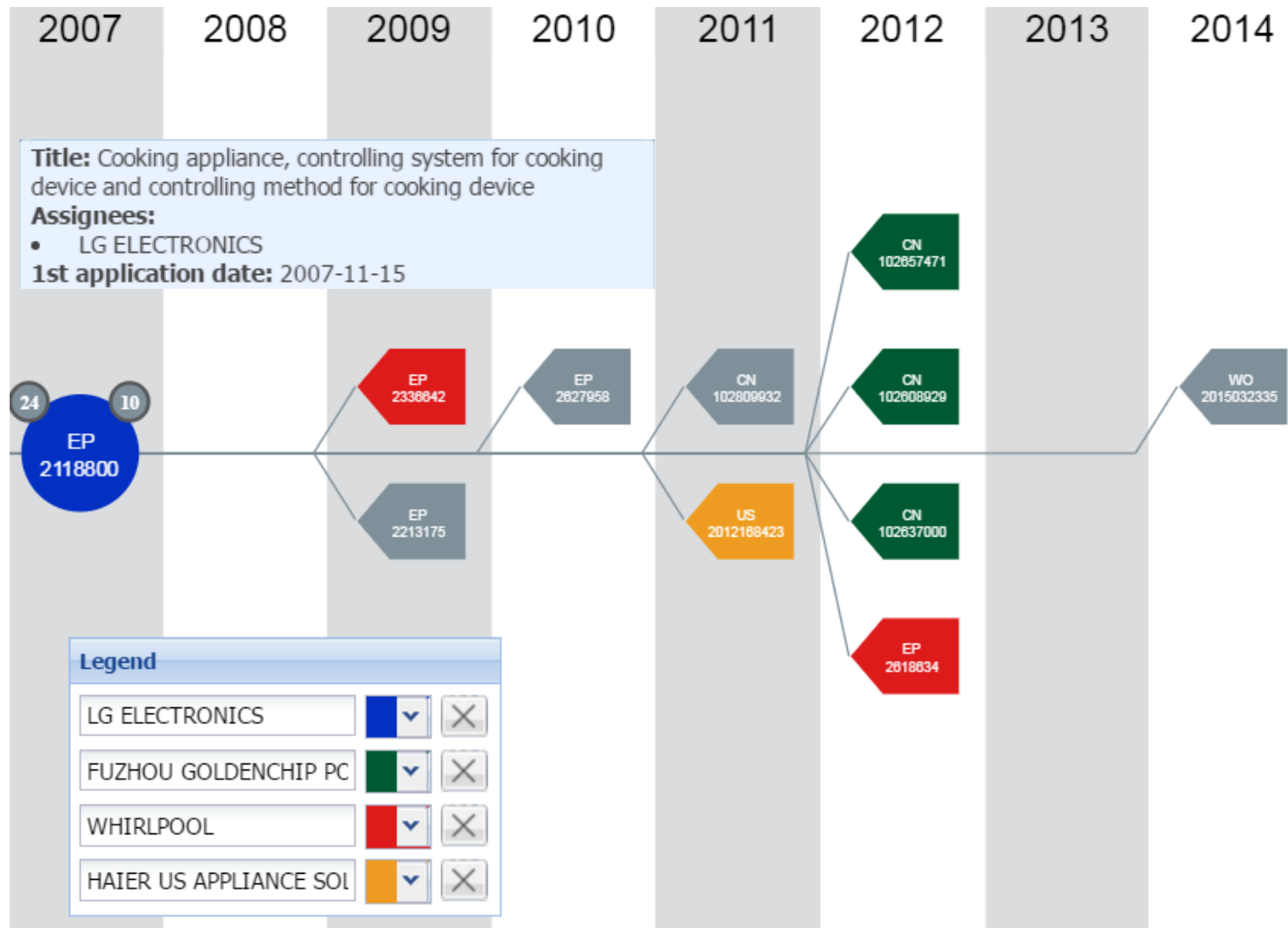
Key patents identification: highly cited patents



Applicant over time: sharked inventions

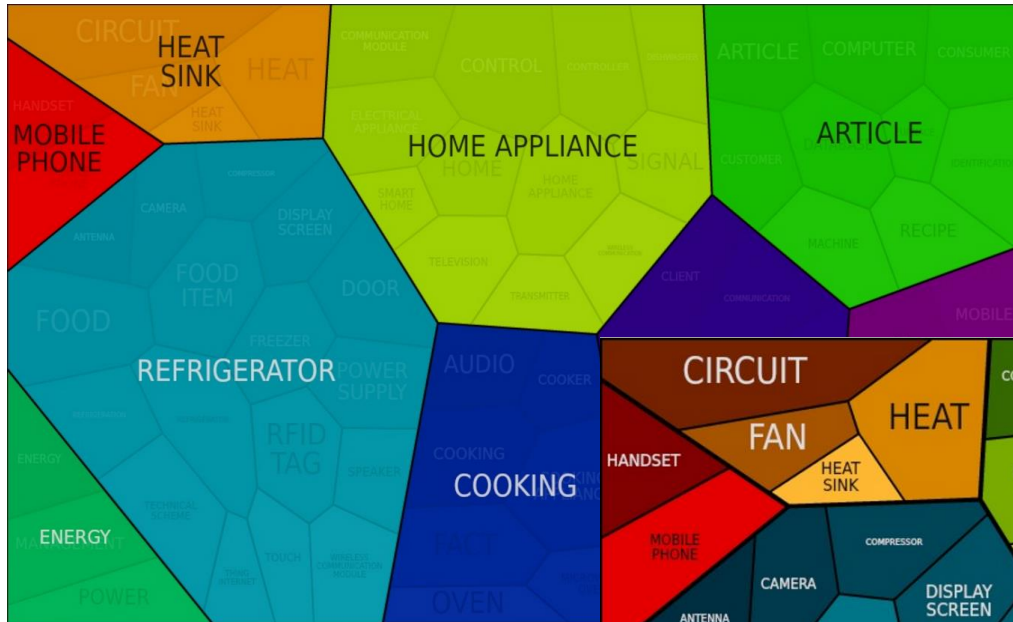


LG cooking appliance patent generates interest from competition

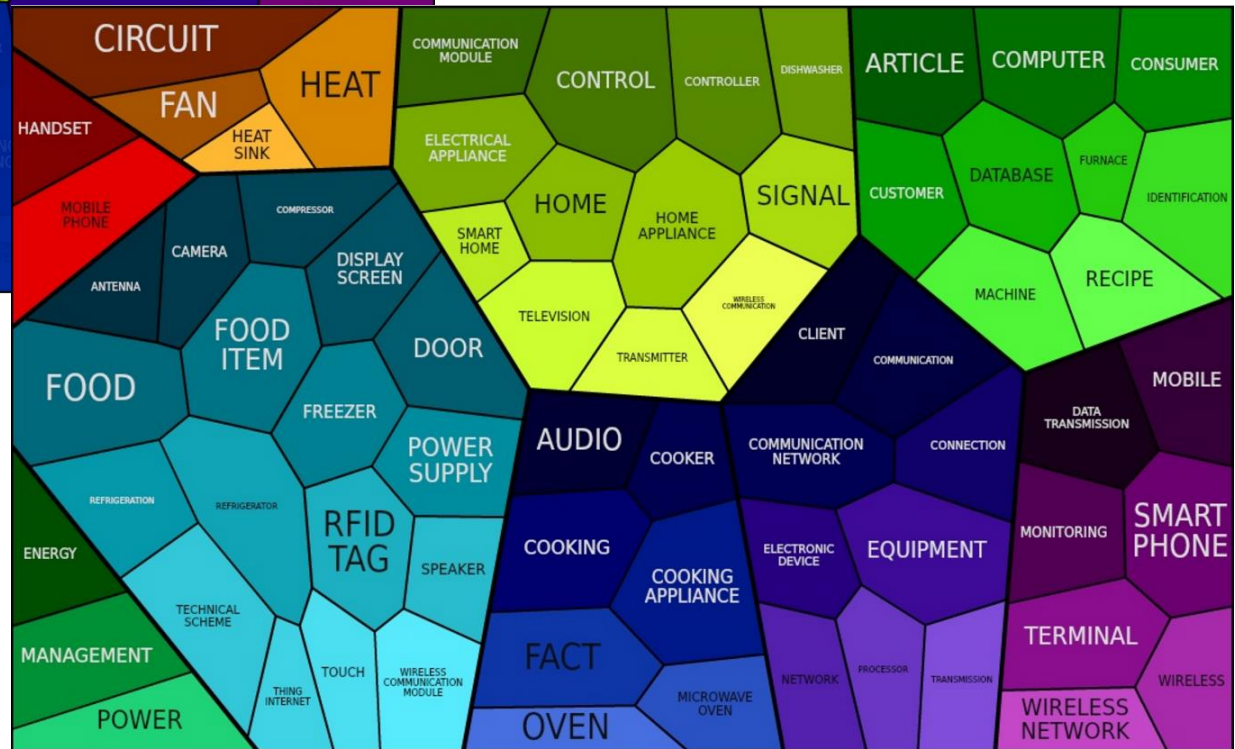


Technologies & Applications

Automatic categorization through concepts extraction



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Technologies & Applications

Identify the position of each player (1/2)

Custom fonction

Vertical note

Axis name: Custom

Axis field: Custom

My templates: KITCHEN APPLIANCES

List or Workfile	COFFEE MACHINES	COFFEE MACHINES	X
List or Workfile	COOKERS	COOKERS	X
List or Workfile	DISHWASHERS	DISHWASHERS	X
List or Workfile	KETTLES	KETTLES	X
List or Workfile	OVENS	OVENS	X
List or Workfile	REFRIGERATORS	REFRIGERATORS	X

Save in 'My Charts' as: Apply Restore

KITCHEN APPLIANCES

COFFEE MACHINES											1		1							
COOKERS	8	19	1	3	39	14		97	4	22	17	28		10	10	7	2	10	20	11
DISHWASHERS	16			5		6		12			2	19	3		20	16		18	16	11
KETTLES		2				2		11	1	1	2	1		1		1				1
OVENS	21	67	28	5	60	85	29	183	63	46	14	73	40	65	24	20	39	27	20	15
REFRIGERATORS	40	73	22	65	35	99	6	201	27	60	39	323	15	70	67	20	32	24	25	16
	WHIRLPOOL	TOSHIBA	SONY	SICHUAN CHANGHONG ELEC...	SHARP	SAMSUNG	RICOH	PANASONIC	NEC	MITSUBISHI	MIDEA	LG	IBM	HITACHI	HAIER	GENERAL ELECTRIC	FUJITSU	ELECTROLUX	BSH BOSCH & SIEMENS HA...	BOSCH



Technologies & Applications

Identify the position of each player (2/2)

TYPE OF SENSORS

BARCODES	6	2	1	5	3	12	1	12	3		9	18	2	3	5		4	3	4	
BLUETOOTH		2	1	6	2	7			1		6	13			3	1			5	3
CAMERAS	10	11	2	13	5	20	4	24	4	7	13	46	1	9	10	4	1	8	5	16
CHEMICAL SENSORS	1				1	1				1	2	1							1	
NFC						8			1			5			2					2
RFID	6	1	1	11	1	22		7	2	2	17	39	7	2	15	4	5	2	1	2
WIFI	1		1	10		4				1	10	6			9	3		1	1	
ZIGBEE				2		5					1	10			3	2				
	WHIRLPOOL	TOSHIBA	SONY	SICHUAN CHANGHONG ELEC...	SHARP	SAMSUNG	RICOH	PANASONIC	NEC	MITSUBISHI	MIDEA	LG	IBM	HITACHI	HAIER	GENERAL ELECTRIC	FUJITSU	ELECTROLUX	BSH BOSCH & SIEMENS HA...	BOSCH

Assignee



Technologies & Applications

Identify potential white spaces

KITCHEN APPLIANCES

COFFEE MACHINES	3	6	18	8	2	16	13	15
COOKERS	29	75	65	26	10	108	65	51
DISHWASHERS	16	26	40	10	5	66	33	18
KETTLES	5	8	6	4	1	21	14	12
OVENS	45	111	241	37	24	390	128	126
REFRIGERATORS	118	265	514	72	32	519	230	298
	ZIGBEE	WIFI	RFID	NFC	CHEMICAL SENSORS	CAMERAS	BLUETOOTH	BARCODES

TYPE OF SENSORS

Technologies & Applications

Oppositions over time, a good indicator of the aggressivity of the field

Hitlist Graphs



Investment : Opposed inventions by year

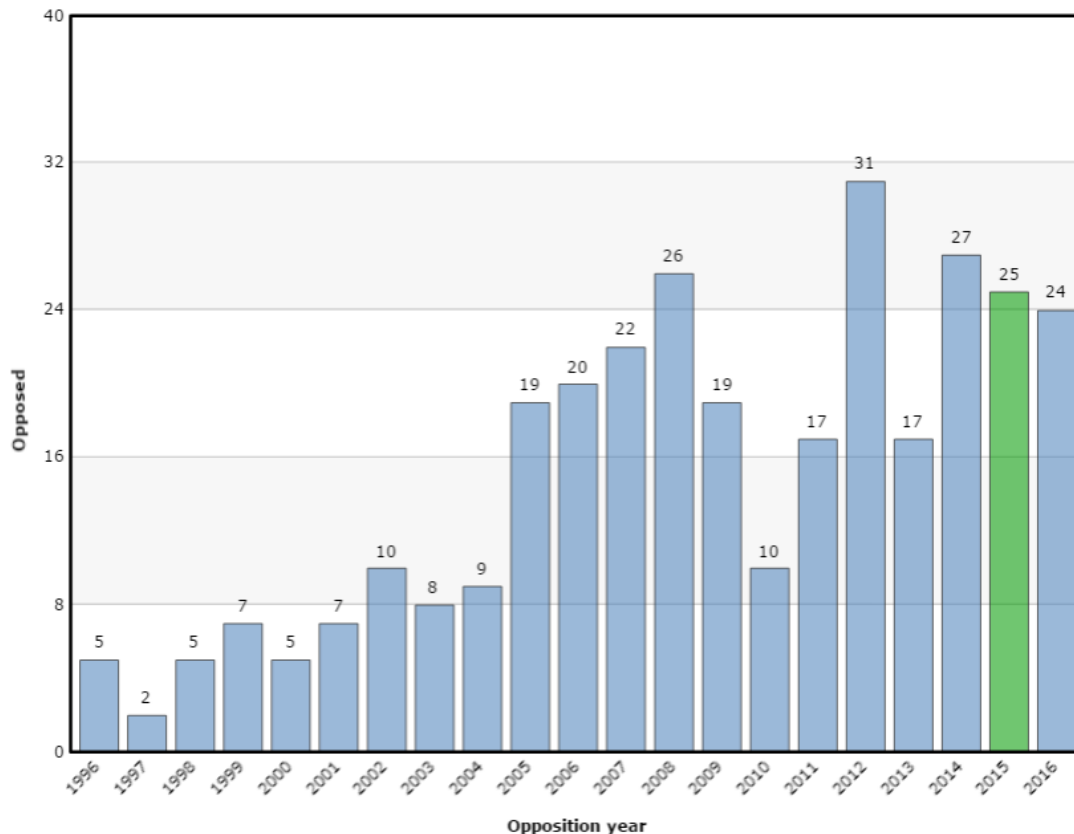


Chart control

25 results for Selection

Drill down

Display



Browse selection

Title	Applicant/Assignee	Publication number
Mobile energy management system	ALLURE ENER...	US2011046800
Apparatus and method for servicing personalized food menu and foods purchase able to feedback	*	KR20140070234
Information management system for home appliance	LG	EP2562967
End face clamping tool for workpiece	LINIX MOTOR	WO2013181779
Kitchen furniture cost estimation system using tablet computer	HANSSEM	KR20130120664
Method for operating a household appliance and system with such an appliance	MIELE	EP2573634
Network system	LG	EP2587727
Network system	LG	EP2587445
Method and apparatus for sharing map data associated with automated industrial vehicles	CROWN EQUI...	EP2721374
Appliance monitoring and control systems	ALERTME COM	EP2573576
Beverage machine in a network	NESTEC	EP2475291
Method and control and tracking system of the charge of material transported by a continuous supply conveyor of a metallurgical furnace, particularly an electric furnace for the production of steel	TENOVA	EP2606305
Mixed solvent process for preparing structured organic films	XEROX	EP2403858
Measuring system for wireless position-independent measuring of the temperature of an object to be measured	VECTRON INT...	EP2287584
Household appliance with an interface for communicating with a remote programming device	INDESIT	EP2476030

Technologies & Applications

FullPat: Identify granted protection by country and by appliance

Filter on fonction

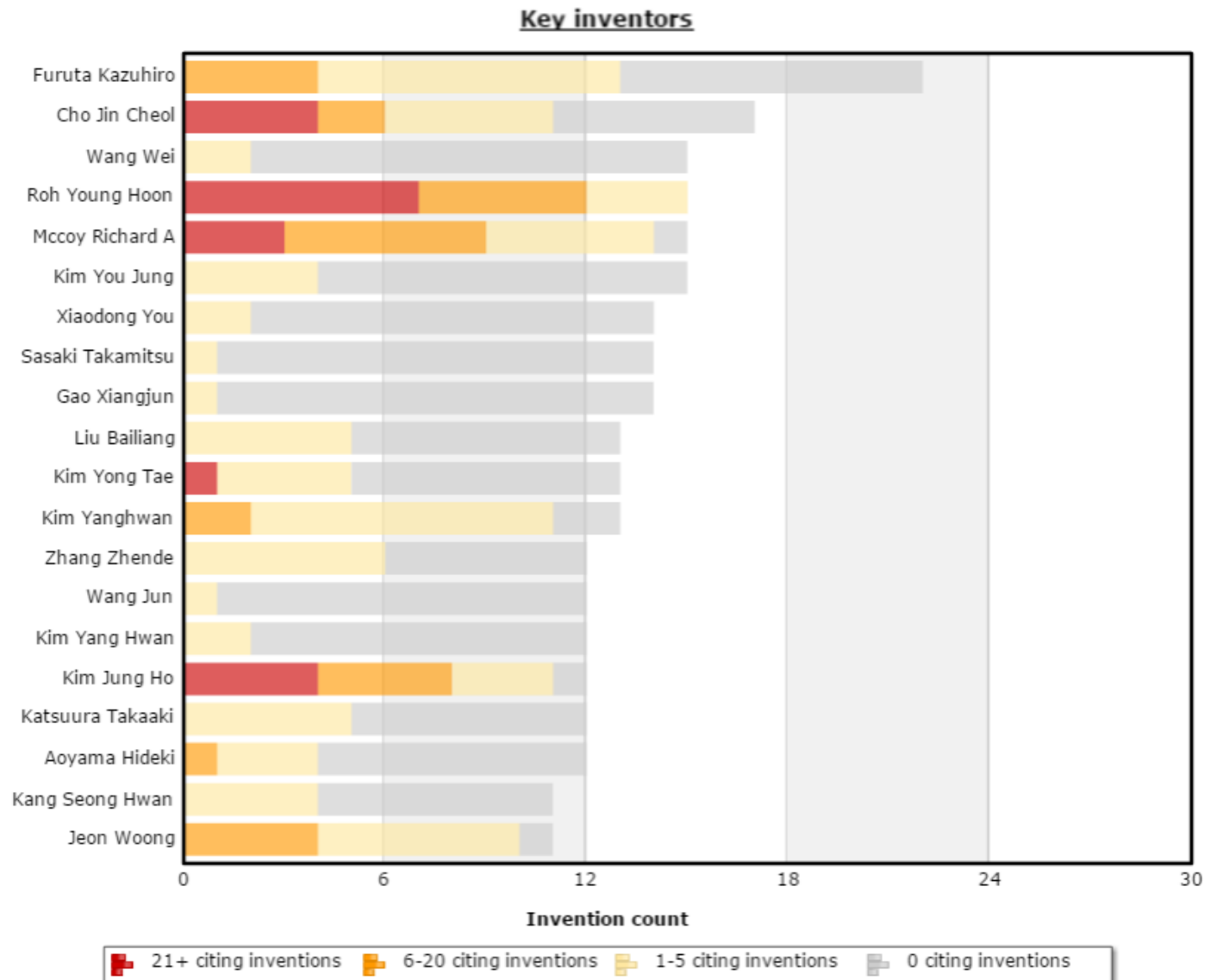
Filter

Filter on status/act=granted

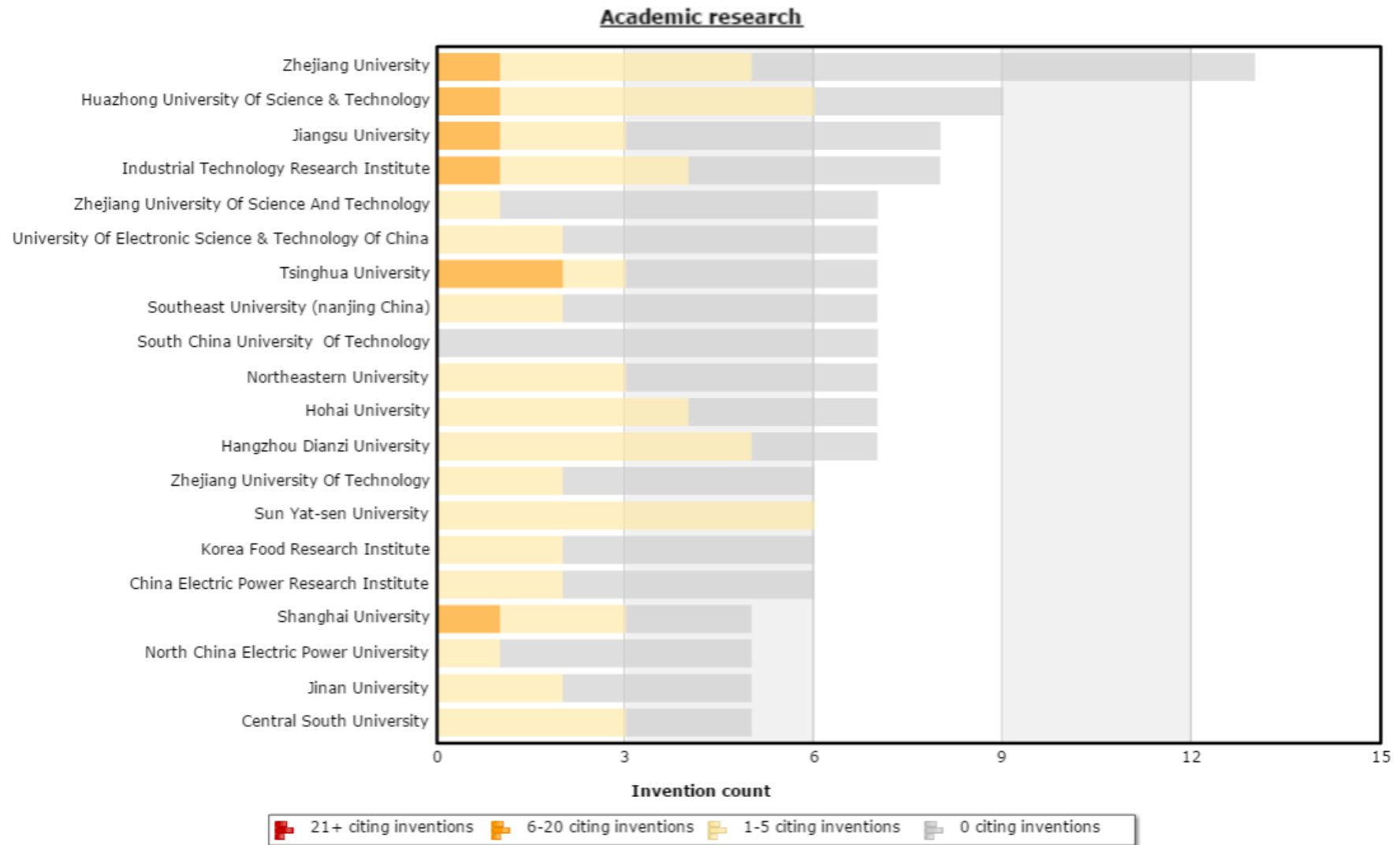
COFFEE MACHINES	3	22	43	4	37		3	14	11	43		53								
	35	74	208	9		4	3	59	111	2		6		18	67	3	17	178	9	15
	4	90	295	11	3	4	9	27	28	20	2	8	2	16	62	3	26	110	25	36
	8	29	44	5	13	10	3	12	21		2	12	6	14	30	2	19	78	7	4
	31	447	1488	118	46			259	450	61	2		6	90	356	6	149	655	130	126
		341	1322	49		25	57	259	262		22	50	28	67	232	18	113	742		115
COOKERS																				
DISHWASHERS																				
KETTLES																				
OVENS																				
REFRIGERATORS																				
	ZA	WO	US	TW	RU	NZ	MX	KR	JP	IN	IL	HK	GB	ES	EP	DK	DE	CN	CA	AU
Publication country																				



Key inventors to watch / hire



Key academics to work with

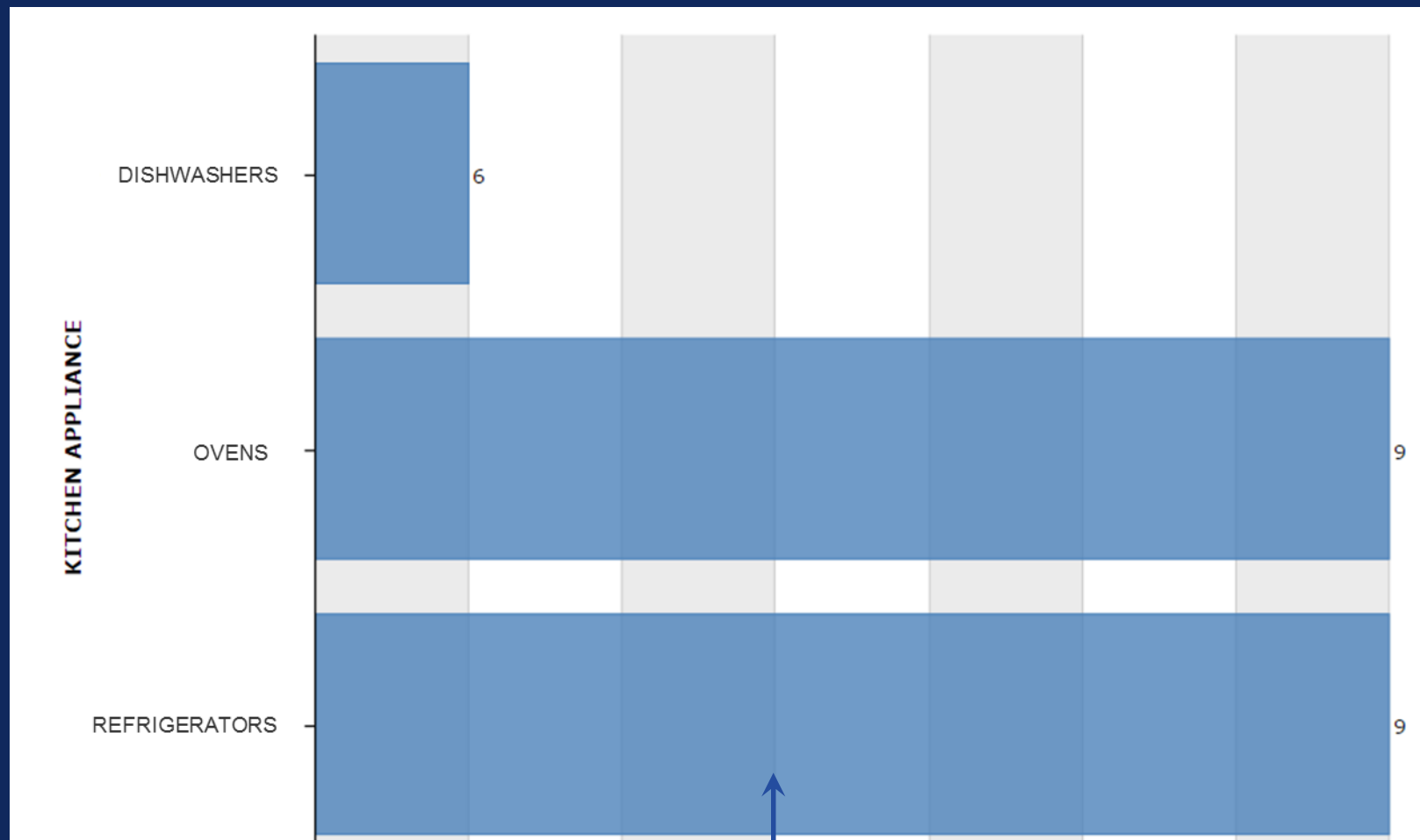


Key entities to watch

Rank	Type	Assignees	INVESTMENT				IMPACT		
			Inventions	Acquired inventions	Invention velocity	Presence as a shark	US litigated inventions	Opposed inventions	Non-self forward citations
0.9		Whirlpool	57	4	2.2	34	1	3	944
0.9		Samsung	188	7	11.8	11	2	6	1568
0.9		Bosch	46	14	5.6	3	1	3	1357
0.8		Qualcomm	23	8	1.2	12	3	4	1006
0.8		Nokia	15	7	0.4	4	1	2	462
0.8		Huawei Technologies	22	2	2.2	2	1	1	362
0.8		Apple	11	3	0.4	15	1	1	1629
0.7		Toshiba	131	1	4	7	0	2	833
0.7		Sharp	122	1	6.8	9	0	2	817
0.7		Philips	30	6	0.8	0	1	4	786
0.7		Panasonic	461	15	13.6	20	0	3	2978
0.7		Mitsubishi	122	3	5.6	8	0	3	899
0.7		LG	404	6	19	36	0	22	1433
0.6		Siemens	26	3	0.4	1	0	2	204
0.6		Intel	22	3	1	3	0	1	276
0.6		Haier	86	35	8.8	4	0	0	462
0.6		Fujitsu	52	2	1.2	5	0	1	710
0.6		Ericsson	26	3	0.6	1	0	1	690
0.6		Arxium	6	6	0	1	0	0	211



Focus on Indesit



Is Indesit enough protected if they want to enter smart fridge market? (1/3)

Competitors	Technical prowess					
	Invention count	Inventions with patent fences	Highly cited inventions	Acquired inventions	Avg claim length (words)	Generality index
INDESIT	6	0	0	2	74	0.89
BOSCH	15	0	0	2	41	0.86
BSH BOSCH & SI...	16	0	0	0	51	0.82
LG	191	20	0	4	47	0.8
ELECTROLUX	19	0	0	0	52	0.82
HAIER	60	2	0	22	53	0.79
WHIRLPOOL	34	11	0	2	53	0.88
PANASONIC	67	0	0	4	59	0.82
SHARP	11	0	0	0	55	0
SAMSUNG	72	1	0	1	38	0.72
FUJITSU	17	0	0	0	47	0.7

No technical cluster in Indesit's portfolio



Metrics evaluating technical quality of portfolios

Is Indesit enough protected if they want to enter smart fridge market? (2/3)

Competitors	IP prowess		
	Litigation count	Survived opposition count	Number of re-examined or re-issued inventions
<i>INDESIT</i>	0	1	0
<i>BOSCH</i>	1	1	1
<i>BSH BOSCH & SI...</i>	0	0	0
<i>LG</i>	0	14	1
<i>ELECTROLUX</i>	0	1	0
<i>HAIER</i>	0	0	0
<i>WHIRLPOOL</i>	0	0	0
<i>PANASONIC</i>	0	0	0
<i>SHARP</i>	0	0	0
<i>SAMSUNG</i>	1	4	0
<i>FUJITSU</i>	0	0	0

Few attacks in the field, except oppositions faced by LG's portfolio



Overview of attacks on portfolios

Is Indesit enough protected if they want to enter smart fridge market? (3/3)

	Geographic breadth	Ability to counter-attack		
Competitors	Geographic coverage	Invention application/... velocity (per year)	Prosecution time (months)	Invention grant velocity (per year)
<i>INDESIT</i>	1.5	0	52	1
<i>BOSCH</i>	4.33	2	13	0
<i>BSH BOSCH & SI...</i>	1	1	13	0
<i>LG</i>	3.17	16	7	7
<i>ELECTROLUX</i>	3.53	1	38	1
<i>HAIER</i>	1.55	6	18	3
<i>WHIRLPOOL</i>	4.06	2	18	4
<i>PANASONIC</i>	2.66	8	11	3
<i>SHARP</i>	1.27	2	0	1
<i>SAMSUNG</i>	3	9	11	2
<i>FUJITSU</i>	2.94	1	12	1

Weakness in terms of coverage and application velocity



Market coverage

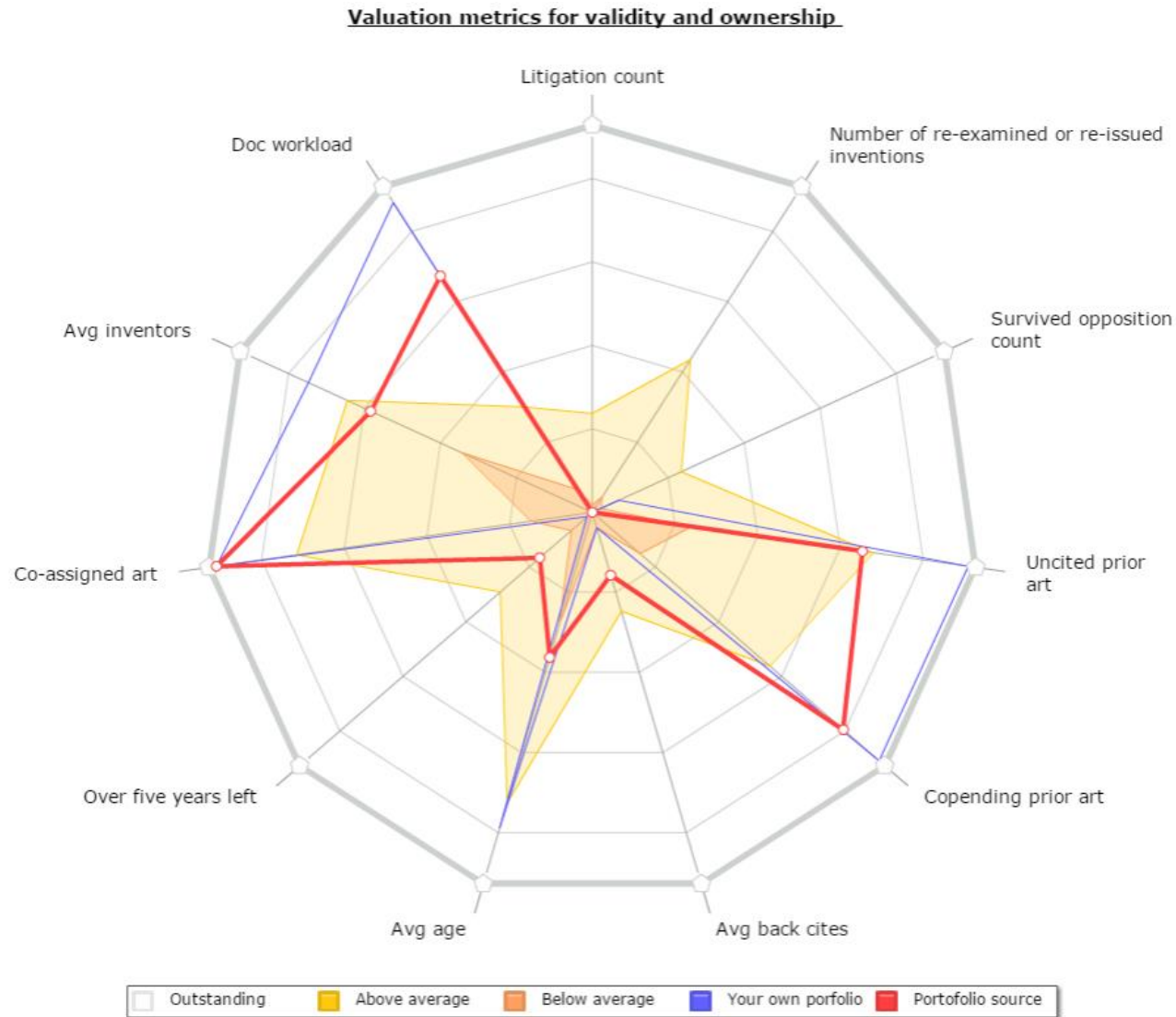
Capacity to quickly renew its portfolio in case new entrants arrival

What if Indesit licenses the portfolio from Whirlpool (its main shareholder) to improve its position?



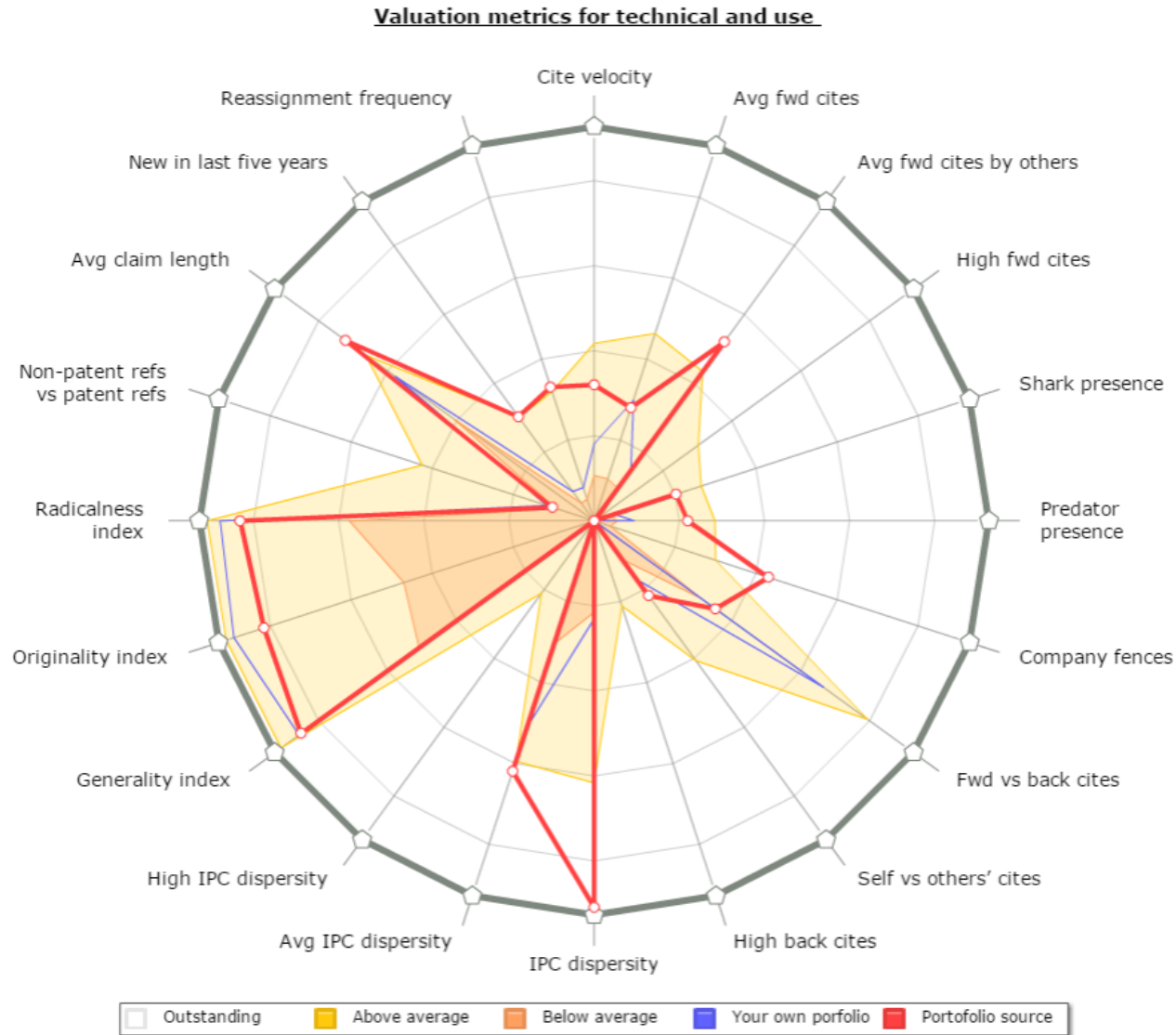
Licensing In evaluation – validity and ownership metrics

Both portfolio are
better than the
other portfolios in
the field



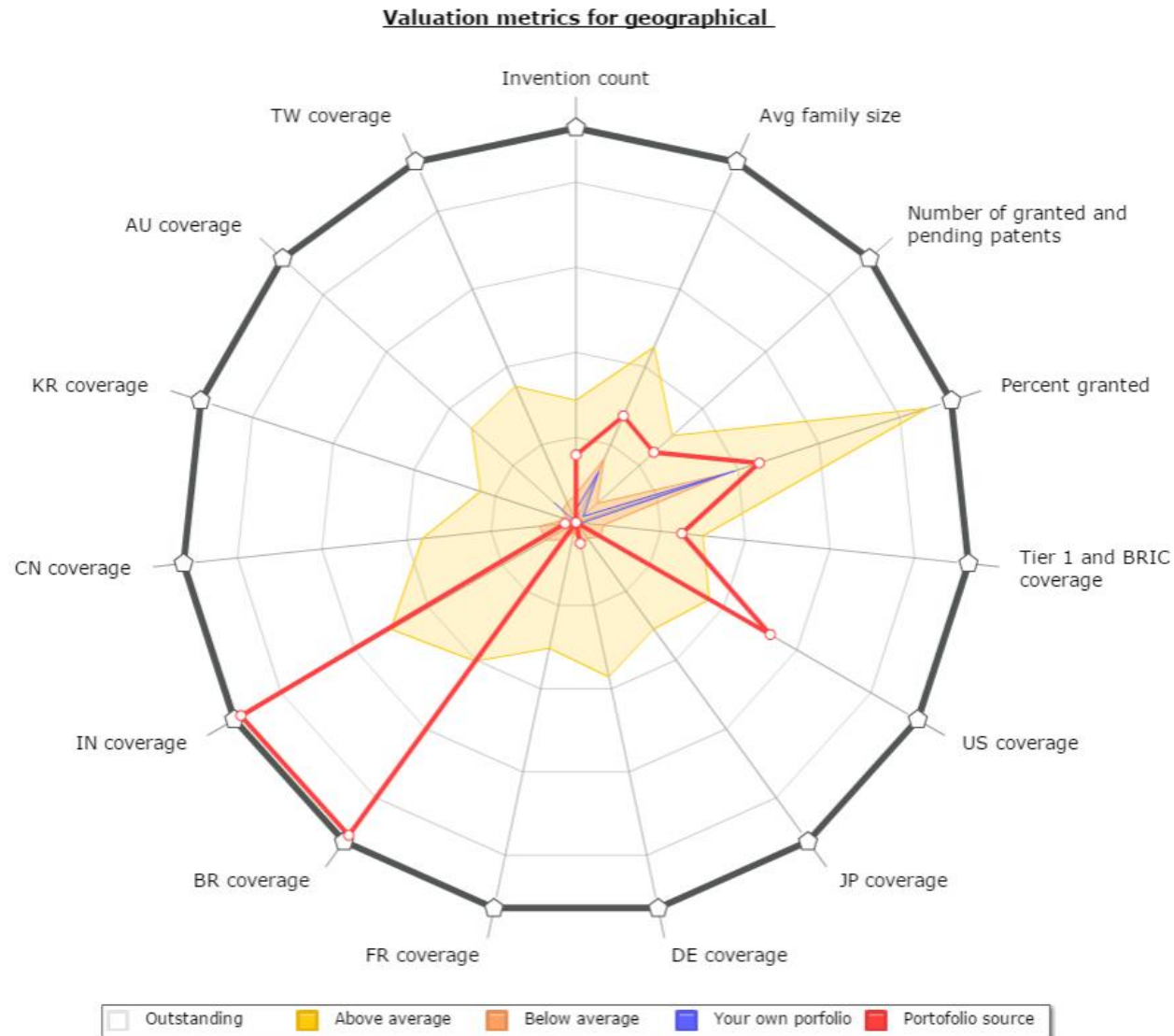
Licensing In evaluation – Technical and use metrics

Whirlpool's
portfolio improves
Indesit's position
in almost all the
metrics



Licensing In evaluation – Geographical metrics

Whirlpool
improves the
geographic
coverage of
Indesit but they
are still weak in
Asia



Conclusion

- A field led by Asian players, on top of them LG, Samsung, Panasonic and emerging Chinese players
- These Asian players are also protecting other geographic areas
- By combining its portfolio with Whirlpool's portfolio, Indesit would improve its position but they are not protected in Asia
- Academic skills in this field are mainly located in China



Grazie !



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