Relecura

LARGE-SCALE PORTFOLIO ANALYSIS WITH TAXONOMIES

Top executives and strategic managers need answers about the company's patent portfolio. They require information on the market and product coverage. They also require IP-based updates on the competitive scenario and assessments for their technology licensing and M&A initiatives. Providing the above answers with a quick turnaround time is a challenge for IP teams.

Relecura's Auto Taxonomy solution helps in quickly mapping and analysing large patent portfolios, to provide the necessary answers with a greatly reduced time-to-insight. Here are a few illustrative business use-cases for which we employ a taxonomy created for patents addressing the "Internet of Things" (IoT) in Healthcare.
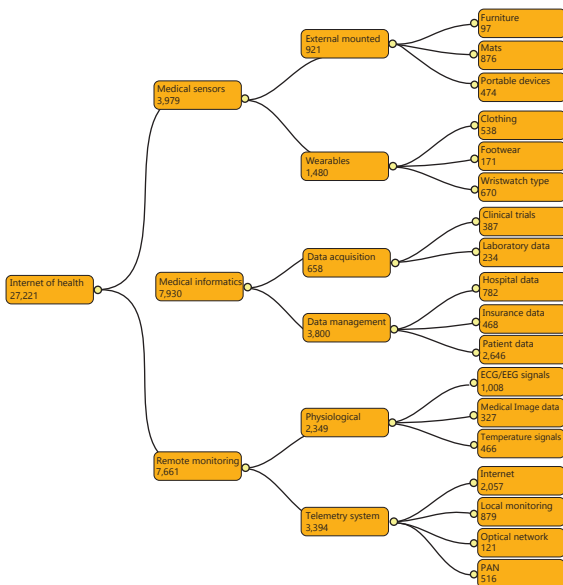
Technology Trends

Patents published in individual years are simultaneously mapped to a taxonomy for IoT Healthcare. A Plotted trend-line is given against the annual numbers for each node, making it easy to survey the entire portfolio and get a sense of the growing and declining technologies.

				2011	2012	2013	2014	2015	2016	Trend Line
Medical Sensors	Body surface mounted sensors	Body contact	Adhesive patches	55	69	80	101	126	154	
			Clamps & clips	22	25	27	26	35	36	
			Straps, bands or harnesses	37	43	56	77	119	136	
		Body mounted	Arm/wrist	36	41	56	58	106	111	
			Ear	19	22	24	28	29	46	
			Eye	7	9	6	25	38	39	
			Foot/ankle	21	15	31	28	41	54	
			Hand/Finger	28	39	40	61	73	78	
			Mouth	5	7	9	16	22	27	
			Trunk	18	29	42	60	92	111	
		Wearables	Clothing	66	76	95	113	181	196	
			Footwear	23	23	39	41	61	74	
			Head-worn	12	23	31	63	95	120	
			Wristwatch type devices	52	50	79	103	203	262	

Competitive Intelligence

Patenting activity of key competitors can be tracked and compared in various technology areas by exporting the analytics generated by the taxonomy.

		Medtronic	Philips	GE	Siemens	Toshiba	Samsung
Remote patient monitoring	Implanted circuitry	192	9	1	6	2	2
	Physiological signal — ECG/EEG signals	59	34	35	4	5	21
	Medical image data	2	15	1	15	12	7
	Temperature signals	10	15	7	1	1	11
	Telemetry system — Global network/internet	35	56	18	6	13	48
	Local monitoring	25	41	28	5	4	17
	Optical network	7	4	1	8	0	1
	Personal area network	10	27	10	0	6	15
	Transmission Medium	11	14	1	0	0	3

Mergers & Acquisitions (M&A) and Licensing

Due diligence for M&A involves understanding how the target's patent portfolio complements that of the acquirer. Portfolio licensing and patent sales are driven by a need to fill gaps in a company's portfolio for better technology and market coverage. Conversely companies may look to generate leads for out-licensing or patent sales by targeting companies that have a requirement for additional coverage provided by the patents they hold.

Let us compare the portfolios of Qualcomm with significant patent holdings in IoT Healthcare and ToSense Inc. a smaller company that has a neck-worn sensor for at-home monitoring of patients with chronic diseases such as Congestive Heart Failure. In specific sub-technologies, ToSense's patent position is stronger than Qualcomm's, making it a potential lead for Qualcomm to license or acquire patents from.

|			ToSense	Qualcomm
Physiological data measurement	Blood flow measurement	Using optical means	0	1
	Cardiovasular conditions measurement	Using plethysmography	4	0
	Haemodynamic parameters measurement		45	8
	Pressure measurement		21	0
		Analysing pulse wave characteristics	14	3
		Applying pressure to close blood vessels	13	2
	Pulse/Heart rate measurement	Inserting measurement means	0	0
		Heart rate variability measurement	9	1
		Using electrical signals	27	6
		Using photoplethysmograph signals	17	4
Remote patient monitoring	Implanted circuitry	Using portable devices	16	5
	Physiological signal		1	0
		ECG/EEG signals	12	6
		Medical image data	0	0
	Telemetry system	Temperature signals	10	4
		Global network/internet	22	12
		Local monitoring	11	5
		Optical network	0	0
	Transmission Medium	Personal area network	0	10

TECHNOLOGY AND COMPETITIVE INTELLIGENCE USING RELECURA

Strategic decision-making by business leaders and product managers consider the likely directions in which the product, the industry, the technology, and the competitors will be moving - to position and time their product launches for the best chance of success.

The insight gathering is complicated by the fact that multiple factors affect the way technology evolves, and correspondingly how different companies react. We have used Wireless Charging to illustrate how Relecura can deliver insights to help make better decisions for new product development.
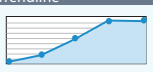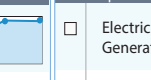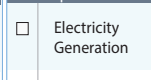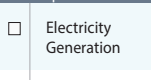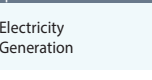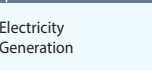
Company Portfolio Comparison Over Time

A Comparative Topic Map displays the patent holdings of the top companies in wireless charging over a five year period. The companies belong to diverse sectors such as chip manufacturing, hardware, consumer electronics, and automobiles, as well as academic institutions.
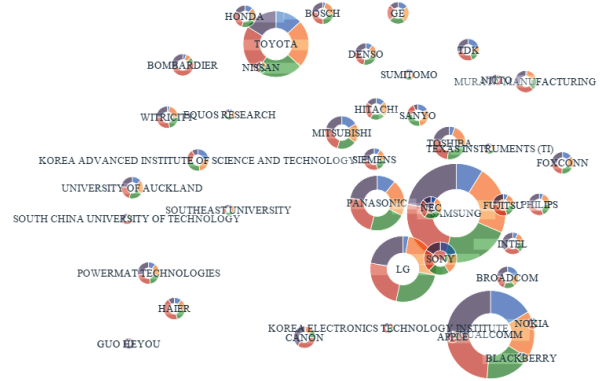

Key Growing and Declining Areas within a Technology

Growth Graphs display the trajectories for the different sub-categories within wireless charging. Technology areas represented by concepts such as smartphone, inductive charging and wireless power are the top-growing areas. Wireless transmission of power using inductive and radio waves is an area of active development. In contrast, wireless charging technologies around "hybrid electric vehicles" is declining.

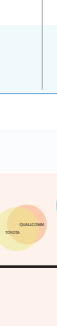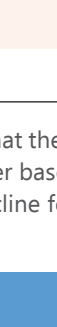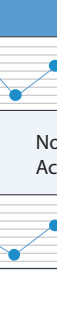| Growth					Decline			
Topic	#Docs	Score	Trendline		Topic	#Docs	Score	Trendline
☐ Smartphone	1628	0.227			☐ Electricity Generation	1260	-0.118	
☐ Inductive Chargine	4521	0.191			☐ Electric Current	2812	-0.066	
☐ Wireless Power	8084	0.181			☐ Electricity	6015	-0.057	

Four Quadrant Analysis

Four quadrant graphs help us to quickly compare and assess the relative potential of companies in terms of their overall vision and ability to execute, as well as sub-technologies within wireless charging for their maturity and disruptive potential.

FOUR QUADRANT ANALYSIS
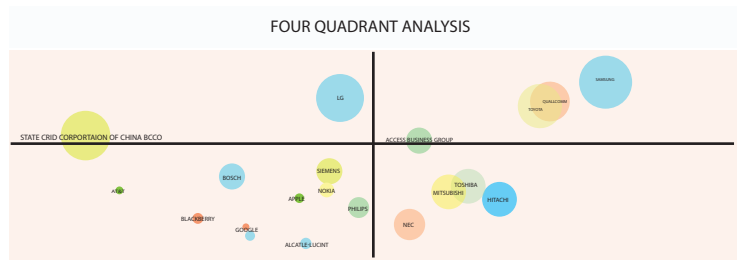
Technology Trend Forecasting

From the predictive trends over two 6-month periods (forward-looking), i.e. a year, from the forecast date, we can see that the technologies related to capacitance, inductance and magnetic resonance based wireless charging are expected to grow whereas laser based charging is predicted to decline. Breaking out the predictions company-wise suggests that R&D activity in the same areas will decline for Toyota and LG.

Wireless Power Trends	Samsung	Panasonic	Qualcomm	Toyota	LG
Wireless Charging - Capacitance					
Wireless Charging - Laser	No Patenting Activity	No Patenting Activity		No Patenting Activity	No Patenting Activity
Wireless Charging - Inductance					