



BUREAU VAN DIJK

A Moody's Analytics Company

Patent valuations

Methodology, applications and use cases

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Management Partner IP Business Information B.V.

Empowered by Orbis Intellectual Property

Welcome to the business of certainty

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About IP Business
Information B.V.

About IP Business Information B.V.



- IPBI is an innovative software firm, specializing in Intellectual Property valuation
- IPBI was founded in 2015 as a Joint Venture from Lighthouse IP group (NL) and InTraCoM Group (DE).
- Headquartered in Amsterdam with offices in Bonn and Athens.



IP Business
Information
HQ Amsterdam



Referencies IP-BI – Project clients

SANDOZ A Novartis Division

EIDON[®] Lab

BÖLLHOFF

API Heat Transfer

Danfoss

LTS
TRANSDERMAL MARKETLEADER

regeneron

ABB

Fraunhofer

elmos[®]



BOSCH

HANNING

Roche

vodafone

swisscom

ZEISS

OSRAM

curamik[®]

Johnson & Johnson

L'ORÉAL

LEONARDO

**SGL GROUP
THE CARBON COMPANY**

BOMBARDIER
the evolution of mobility

Bankhaus Lampe

CONVOTHERM
A Welbit Brand

Allomet Corporation

KHS

TBB
Internationales
Bankhaus Bodensee AG

ZF

BMW

ASL Castings

brose

EMAG

DYNATECH

coelux

**DIEBOLD
NIXDORF**

QinetiQ

FRANCE BREVETS

EDAG

DORMA

faurecia

ivoclar vivadent[®]

FESTO

united inbox

DÜRR

FRITZ
PATENTS & RECHTSANWÄLTE
PARTNERSCHAFTLICHES
PATENT ATTORNEYS & ATTORNEYS AT LAW

dSPACE

BENTELER

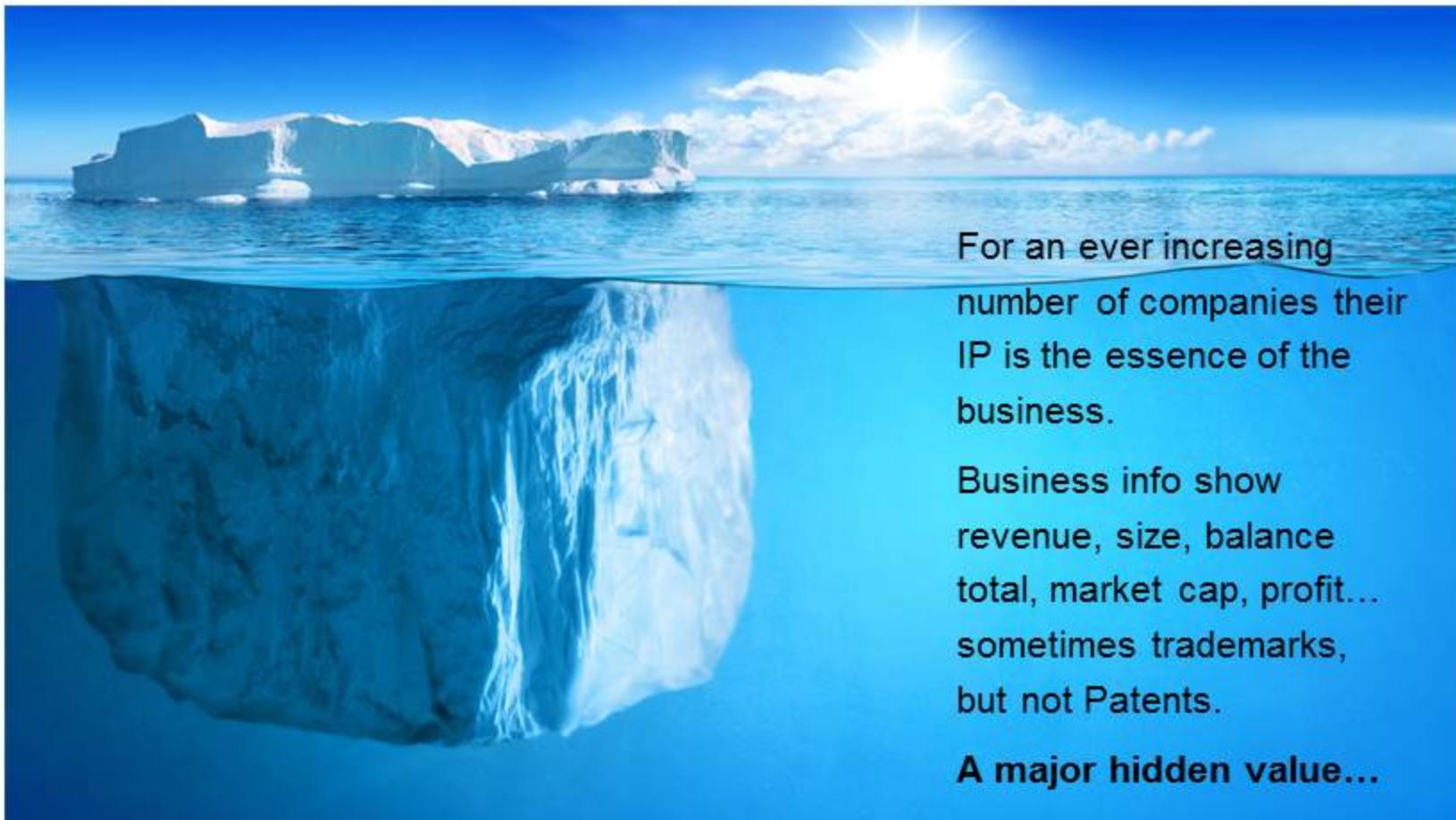
**HOMAG
GROUP**



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The patent valuation
methodology

A known picture...or unknown picture...



For an ever increasing number of companies their IP is the essence of the business.

Business info show revenue, size, balance total, market cap, profit... sometimes trademarks, but not Patents.

A major hidden value...



The impact of intangible assets



...has no cars



...has no hotels



...has no printing machines



The impact of intangible assets – Nikkei300

Total Intangible assets Enterprise value		Total Intangible assets Total assets	
FUJITSU LIMITED	250%	TDK CORPORATION	162%
NEC CORPORATION	225%	BROTHER INDUSTRIES LTD	138%
TDK CORPORATION	202%	CANON INC.	121%
BROTHER INDUSTRIES LTD	151%	FUJITSU LIMITED	104%
PANASONIC CORPORATION	143%	OLYMPUS CORP.	94%
NIKON CORPORATION	128%	PANASONIC CORPORATION	94%
FUJIFILM HOLDINGS CORP.	127%	TOKYO ELECTRON LIMITED	78%
HITACHI, LTD.	122%	NEC CORPORATION	76%
RICOH CO LTD	121%	TOKYO OHKA KOGYO CO LTD	68%
CANON INC.	115%	FUJIFILM HOLDINGS CORP.	68%

Total Intangible assets Market capitalisation		Total Intangible assets Tangible fixed assets	
NIPPON SHEET GLASS CO LTD	264%	M3, INC.	3272%
TDK CORPORATION	236%	JAPAN EXCHANGE GROUP INC.	1951%
PANASONIC CORPORATION	235%	DENA CO LTD	1412%
NEC CORPORATION	199%	RECRUIT HOLDINGS CO.,LTD.	948%
RICOH CO LTD	195%	BROTHER INDUSTRIES LTD	810%
FUJITSU LIMITED	192%	RAKUTEN INC	798%
BROTHER INDUSTRIES LTD	165%	SONY CORPORATION	773%
KOBE STEEL LIMITED	154%	TOKYO ELECTRON LIMITED	751%
CANON INC.	134%	RICOH CO LTD	712%
HITACHI, LTD.	132%	TREND MICRO INCORPORATED	659%



The impact of patents

Example:

Nortels

5 year average

Book Value:

1,2 b\$

It's patent portfolio value:

4,5 b\$

Were they also bankrupt if this value was known before?

Most probably not.

MERGERS & ACQUISITIONS | JULY 1, 2011, 4:58 AM | 15 Comments

Apple and Microsoft Beat Google for Nortel Patents

BY CHRIS V. NICHOLSON

8:31 p.m. | Updated

Nortel Networks, the defunct Canadian telecommunications equipment maker, says it has agreed to sell more than 6,000 patent assets to an alliance made up of Apple, Microsoft and other technology giants for \$4.5 billion in cash.

The group of companies, which also includes Research in Motion, Sony, Ericsson and EMC, beat out Google and Intel for the patents and patent applications that Nortel had accumulated when it was still one of the largest telecommunications equipment makers in North America.

Nortel, which filed for bankruptcy in 2009, said in a statement late Thursday that it had sold its last remaining patents, covering businesses including wireless and networking technology and semiconductors, in an auction that it called "very robust."



Blair Gable/Reuters
George Riedel, chief strategy officer of Nortel, after testifying to a House of Commons committee in August 2009.



And now something completely new...

IPBI has valued all patents worldwide with a unique approach* and stored them in a database.

The development of the methodology and data production required more than 50 person years of development since 2008 in over 250 patent valuation projects.

RESULT: up to 27 different value indicators and patent family values were generated offering **unique additional** information to different target groups of customers.

* patent pending on the valuation method (EP2923296A1, US20160004998A1)

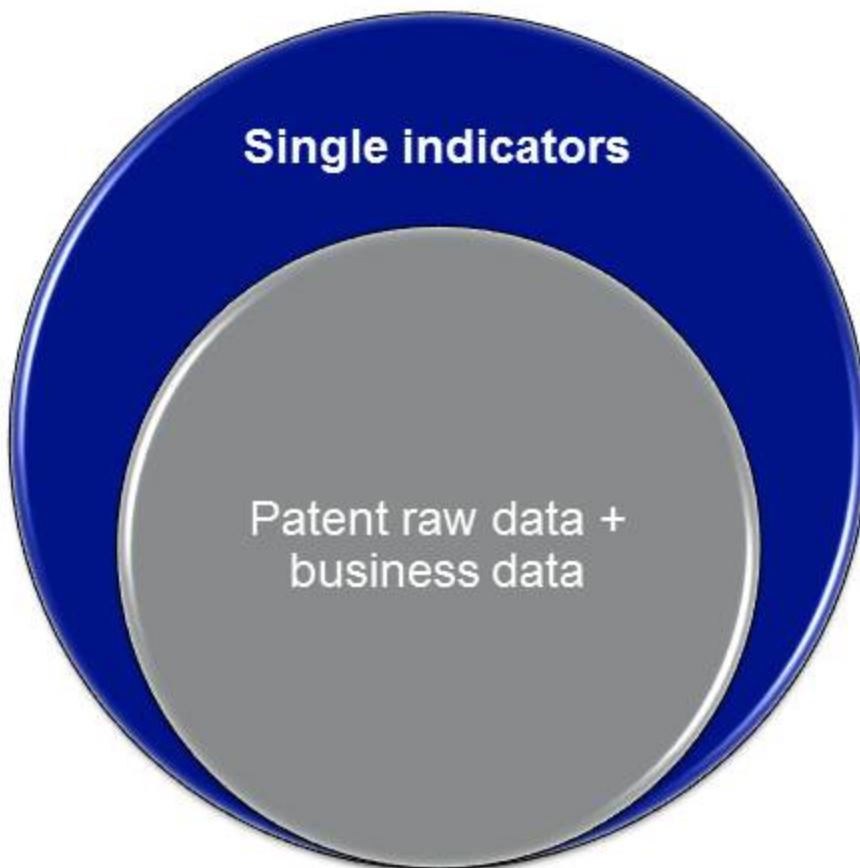


USP of Orbis IP

- Combination of patent data with business data
- Usage of business data for building relevant indicators
- Usage of filter criteria from business data for large scale big data analysis



Methodology of automated patent valuation

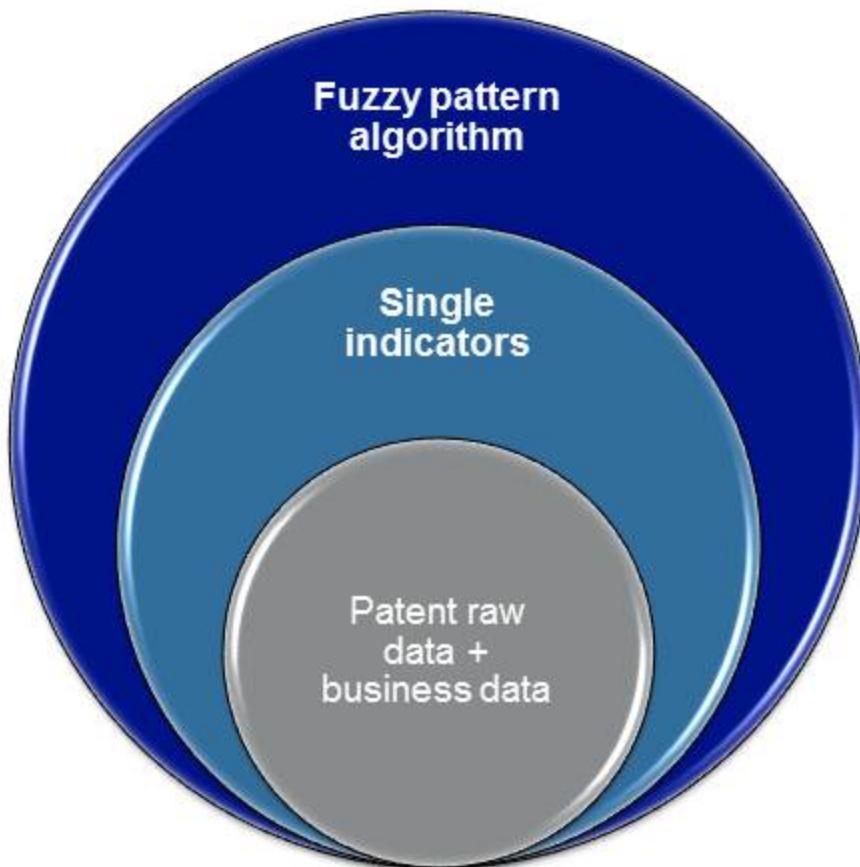


Indicator patent valuation model

Assignee	Market Factors	Technology Quality	Legal Events
<ul style="list-style-type: none">• Revenue size of the assignee• Number of alive patent families per employee	<ul style="list-style-type: none">• Market attractiveness (No. patents in IPC class)• Filing jurisdictions covered• GDP per family member of a country	<ul style="list-style-type: none">• Number of forward citations• Number of independent claims• Transferability to different industries	<ul style="list-style-type: none">• Patent maturity• Global vs local filing• Validity in certain countries• Procedural state• Grant lag



Methodology of automated patent valuation



Fuzzy pattern algorithm

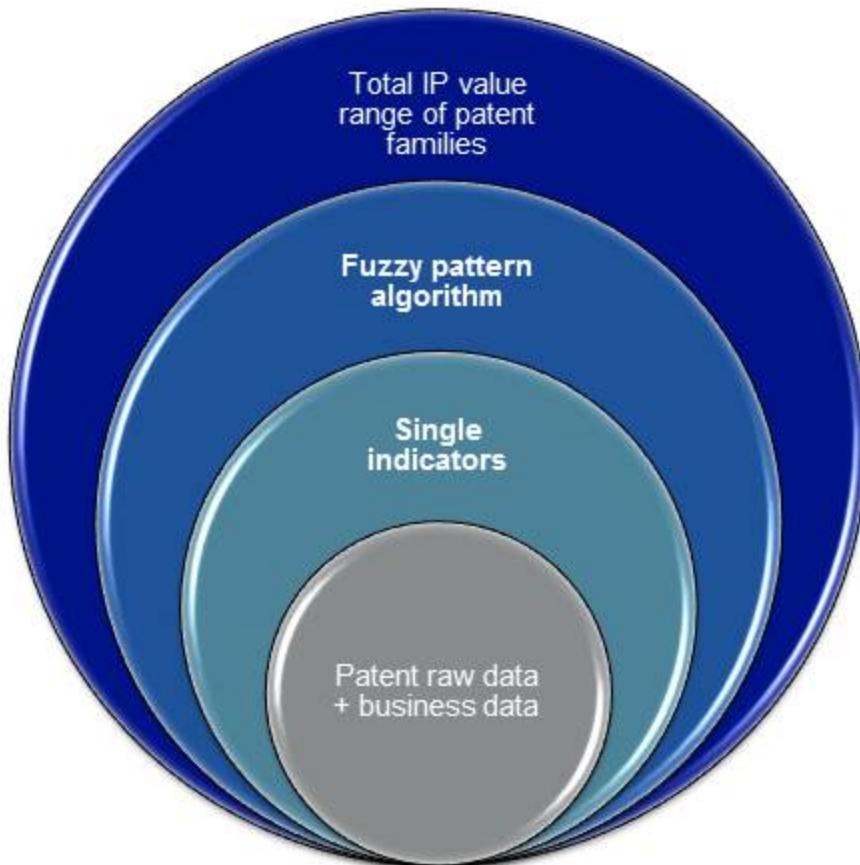
Over 2,000 single patent transactions

- between 3rd parties
- without tax implications
- in different technology areas
- with different price

are used to train the algorithm.



Methodology of automated patent valuation



The indicator based approach for automated patent valuation

Assigning the fair value of a patent is based on multiple parameters, much like the fair price of a house is dependent on location, the condition of the house etc. A realistic, endogenous valuation therefore can give insights into the added value of a patent.



Patent big data meets business big data

Data production

- total valuation process time: approx, 12 days for one valuation step on a high performance server
- Total duration for valuation of the complete database: approx. 3 months
- Valuation performed twice per year (working on monthly updates))



Data coverage

- Patent data from 161 countries worldwide
- Patent data linked to 774,218 active companies from Orbis database
- Approx. 57.6 mio. of alive patent families linked to assignees
- Company tree in Orbis delivers USP for the solution



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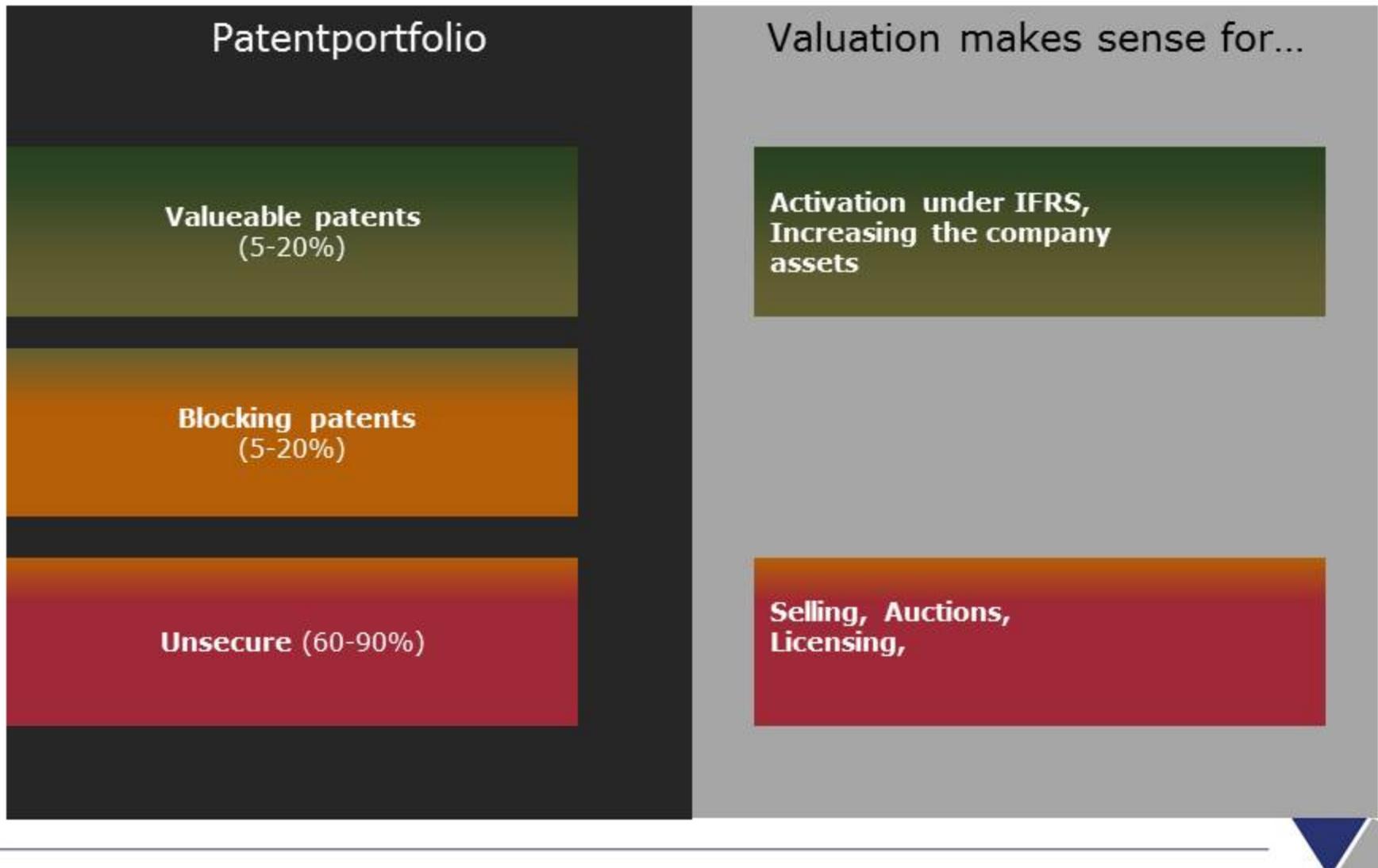
USECASES

High precision in patent valuation - Examples

patent	calculated value range	paid price *	source, year
US6618593B1	1,283,000 – 2,281,000 €	1,958,000 €	patent auction (2008)
US8245536B2	1,642,000 – 2,920,000 €	5,000,000 €	portugal startups (2015)
US6681252B1	223,000 – 397,000 €	275,000 €	patent auction (2008)
109 patents	20,937,000 - 37,220,000 €	19,580,000 €	Nokia patent transaction
Yahoo patent portfolio	555,682,000 - 987,879,000 €	880,000,000 € (expected)	Biz Journals (2016)
Motorola patent portfolio	4,127,044,000 - 5,984,715,000 €	4.478.390.000 € (expected)	Golem

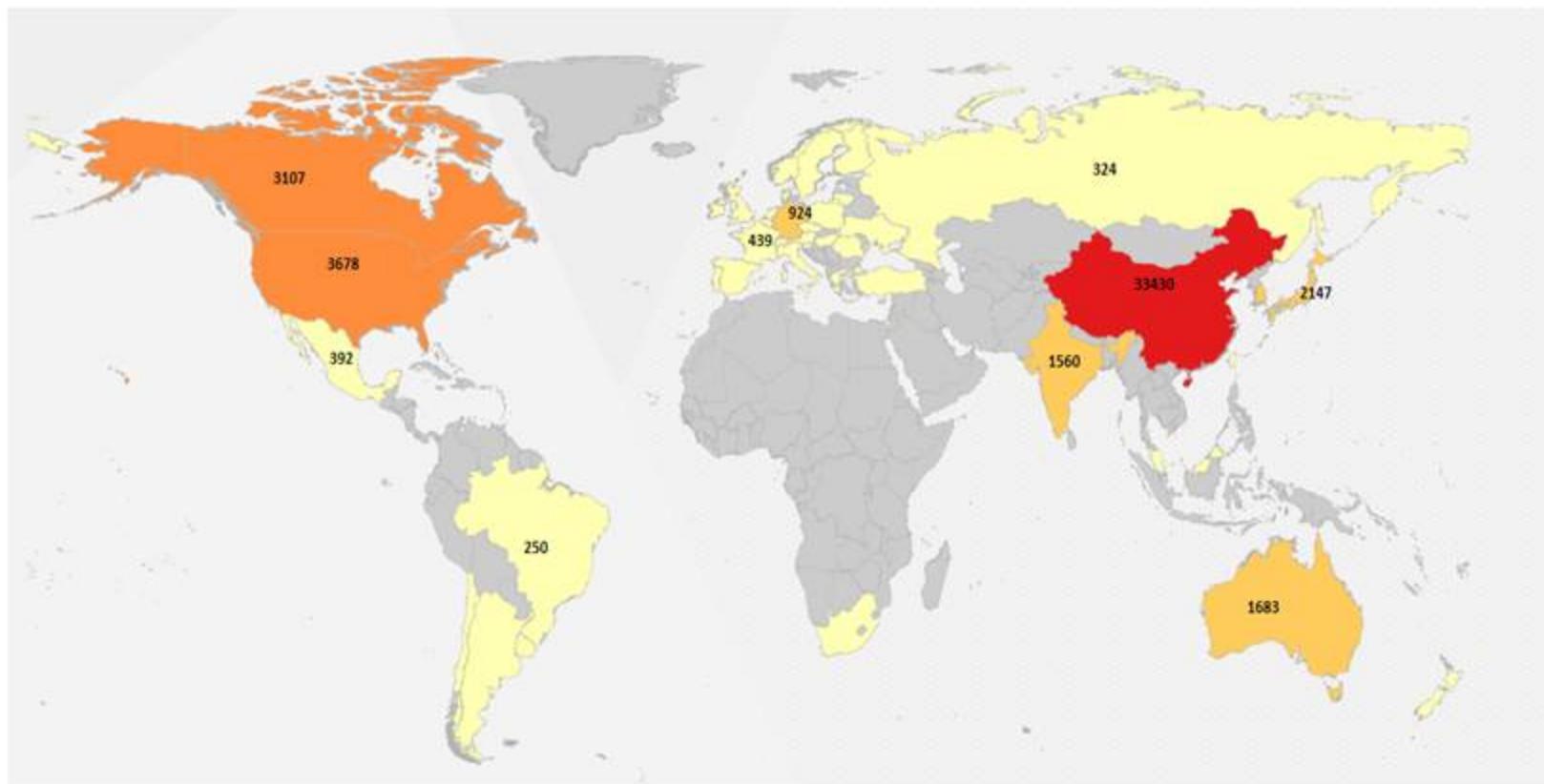


Optimization of patent portfolio for monetization



Global comparison of companies in artificial intelligence [AI]

The total amount on filed and granted patents in AI



Global comparison of companies in artificial intelligence [AI]

WPO	Office of publication													
	European Patent Office	Australia	Brazil	Canada	China	Germany	France	United Kingdom	India	Japan	Korea (South)	Russian Federation	United States of America	All
Number of patents														
Electrical machinery, apparatus, energy	115	44	3	67	1.227	21	13	13	33	34	64	4	32	1.869
Audio-visual technology	139	55	8	73	884	12	15	58	96	78	77	8	81	1.922
Telecommunications	214	42	28	136	888	41	13	38	158	110	127	11	144	2.184
Digital communication	554	131	33	415	2.738	60	35	99	173	181	158	22	188	5.744
Basic communication processes	9	3	0	9	77	5	3	2	3	14	1	1	1	152
Computer technology	1.280	482	63	908	11.281	272	191	175	548	948	954	131	1.953	22.998
IT methods for management	231	285	19	272	1.816	52	15	26	132	74	250	4	346	4.996
Semiconductors	8	2	0	3	112	3	2	1	2	17	24	1	17	245
Optics	28	2	0	4	188	12	8	5	8	14	8	1	8	339
Measurement	224	36	26	235	2.242	69	34	66	89	85	41	18	116	3.888
Analysis of biological materials	21	25	5	43	118	6	8	6	6	14	3	4	19	381
Control	259	105	14	171	3.823	102	32	21	78	116	117	26	271	5.752
Medical technology	187	117	7	223	828	49	17	14	64	102	79	19	139	2.894
Organic fine chemistry	1	9	1	8	20	2	0	0	2	4	4	0	4	190
Biotechnology	45	56	9	109	93	7	4	4	17	39	5	0	16	747
Pharmaceuticals	4	15	3	11	27	1	0	0	5	4	1	1	3	139
Macromolecular chemistry, polymers	0	0	0	1	87	0	0	0	1	0	4	0	1	105
Food chemistry	6	3	1	7	60	0	1	0	3	3	21	0	1	116
Basic materials chemistry	2	4	0	5	81	1	0	0	3	3	0	0	0	102
Materials, metallurgy	1	1	0	0	164	0	0	0	4	5	2	0	0	219
Surface technology, coating	5	4	0	6	106	0	8	3	2	7	2	0	6	153
Micro-structural and nano-technology	0	0	0	1	8	0	0	0	1	0	0	0	0	8
Chemical engineering	13	8	1	14	225	2	3	2	6	1	8	0	3	318
Environmental technology	11	6	4	13	188	8	5	1	7	11	20	2	3	307
Handling	36	8	2	21	2.440	22	16	4	15	43	40	6	19	2.819
Machine tools	21	2	0	23	407	13	0	3	4	15	14	5	4	549
Engines, pumps, turbines	36	8	1	24	172	20	2	7	12	12	11	4	15	388
Textile and paper machines	10	5	1	15	72	3	0	0	2	9	13	1	0	147
Other special machines	22	23	1	25	638	12	0	2	10	9	29	13	15	815
Thermal processes and apparatus	20	3	3	14	341	10	3	3	2	11	40	1	11	511
Mechanical elements	13	1	3	16	184	11	2	1	4	1	5	0	3	265
Transport	98	38	4	50	842	84	9	24	24	44	60	15	40	1.668
Furniture, games	90	57	1	63	881	16	1	8	17	103	151	9	180	1.902
Other consumer goods	30	6	1	15	207	4	2	4	6	26	46	0	14	410
Civil engineering	27	45	8	79	318	4	9	26	2	11	20	12	14	688

Amount on
patents for the
important
countries/regions



Global comparison of companies in artificial intelligence [AI]

Average value per patent the ranking of the technical classifications – Top 20

WIPO classification	Number of patents	Patent value (th EUR)	Average value per patent in €
Digital communication	5.744	1.629.214	283.638
Telecommunications	2.184	464.355	212.617
Medical technology	2.694	395.470	146.797
Biotechnology	747	99.224	132.830
Pharmaceuticals	139	17.580	126.475
Textile and paper machines	147	18.060	122.857
Analysis of biological materials	381	46.467	121.961
Semiconductors	245	27.550	112.449
Furniture, games	1.902	212.688	111.823
Computer technology	22.936	2.555.526	111.420
Audio-visual technology	1.922	203.797	106.034
Civil engineering	688	70.715	102.783
Optics	339	33.717	99.460
Electrical machinery, apparatus, energy	1.869	177.906	95.188
Measurement	3.888	366.928	94.374
Food chemistry	116	10.760	92.759
Organic fine chemistry	160	14.498	90.613



Global comparison of companies in artificial intelligence [AI]

Companies with most alive patents - Top 20

	Company name	No of Patents
1	SAMSUNG ELECTRONICS CO.,LTD.	1.932
2	QUALCOMM INC	1.786
3	MICROSOFT CORPORATION	1.602
4	GUO JIA DIAN WANG YOUN XIAN GONG SI	975
5	AVAYA HOLDINGS CORP.	448
6	SONY CORPORATION	438
7	GENERAL ELECTRIC COMPANY	382
8	KONINKLIJKE PHILIPS N.V.	379
9	IBM	344
10	SIEMENS AG	290
11	BAIDU INC.	281
12	SOUTH CHINA UNIVERSITY of TECHNOLOGY	279
13	ZHEJIANG UNIVERSITY	268
14	AT&T INC.	258
15	ROCKWELL AUTOMATION, INC.	250
16	SZ DJI TECHNOLOGY CO., LTD.	224
17	INTEL CORP	220
18	ALPHABET INC.	219
19	BOEING COMPANY (THE)	219
20	APPLE INC.	198

Companies with having the highest **average** patent value - Top 20

	Company name	No of Patents	Aggregated patents value in th EUR	Average value per patent in EUR
1	APPLE INC.	198	155.071	783.187
2	QUALCOMM INC	1.786	1.390.547	778.581
3	GOOGLE LLC	155	92.632	597.623
4	INTEL CORP	220	111.777	508.077
5	ALPHABET INC.	219	101.959	465.566
6	SONY CORPORATION	438	189.111	431.760
7	KONINKLIJKE PHILIPS N.V.	379	150.620	397.414
8	MICROSOFT CORPORATION	1.602	530.881	331.386
9	IBM	344	110.367	320.834
10	AVAYA HOLDINGS CORP.	448	128.745	287.376
11	AT&T INC.	258	70.674	273.928
12	NOKIA OYJ	150	39.039	260.257
13	BOEING COMPANY (THE)	219	55.363	252.797
14	LG ELECTRONICS INC.	104	25.788	247.962
15	GE	382	93.731	245.368
16	XEROX CORP	93	22.313	239.919
17	SZ DJI TECHNOLOGY CO., LTD.	224	52.761	235.538
18	FUJITSU LIMITED	105	24.485	233.186
19	HALLIBURTON CO	126	27.996	222.187
20	TOSHIBA CORPORATION	99	21.853	220.737



Interesting companies in artificial intelligence [AI]

Patent	WO2013046027A1
Rating	★★★★★
Rated Family Members	US2016110149A1 US9146589B2 US9235374B2 US8949722B2 US8903377B2 US8994671B2 US9524027B2 US9003311B2 US9128659B2 US2016054880A1 US2013080957A1 US2013076780A1 US2013083464A1 US8874894B2 US2016041669A1 US2016117139A1 US2018074776A1 US8842057B2 US9013867B2 US9116655B2 US2013076653A1 US9201626B2 US8868135B2 US8884841B2 US2013097532A1 US8910061B2 US9128660B2 US9582235B2 US9182788B2 US9104365B2 US9639320B2 US2016313964A1 US10013226B2 US2016179350A1 US2016291923A1 US2016291920A1 US2018129460A1 US2013076595A1 US9176701B2 US9497697B2 US2013076654A1 US9075558B2 US9141328B2 US8890768B2 US2013100001A1 US2013080936A1 US9811302B2 US2016085384A1 US8856679B2 US9164546B2 US2016291916A1 US2016266759A1 US9185643B2 US9830121B2 US2016196007A1 US9395945B2 US9229675B2 US2013077260A1 US8878794B2 US9195427B2 US8904165B2 US8872727B2 US9645649B2 US2013080937A1 US2013076681A1 US9946505B2 US9086836B2 US9152371B2 US2018181361A1 US2016054869A1 US9904501B2 US2013083469A1 US9218154B2 US8907906B2 US2013086505A1 US9158494B2 US2013076665A1 US2013187831A1 US9069518B2 US2013076682A1 US9645607B2 US9690385B2 US9047038B2 US2017052634A1 US8996073B2 US2016054970A1 US8836842B2 US2013076598A1 US9286024B2 US2013078994A1 US9495012B2 US2013088411A1 US9182935B2 US9152179B2 US2016041704A1 US9213516B2 US2013076683A1 US2016179208A1 US2013082957A1 US9474021B2 US9262117B2 US9213517B2 US9086835B2 US8838095B2 US9122440B2 US2013088446A1 US2013080932A1 US2013076673A1 US2016048165A1 US2013080945A1 US9351237B2 US9594538B2 US2013082958A1 US2016085406A1 US2013076963A1 US9223535B2 US9317243B2 US8812051B2 US9092183B2 US2013088447A1 US9122441B2 US9104366B2 US2016048300A1 US2013080956A1 US9280312B2 US9256390B2 US2018060012A1
Family Value Range	37,067,000 - 65,898,000 € (2018-09-30)
Ceased latest	2031-12-30
Title	REPOSITIONING APPLICATIONS IN A STACK
Abstract	A dual-screen user device and methods for revealing a combination of desktops on single and multiple screens are disclosed. A number of desktops and/or running applications can be selectively displayed on dual screen displays conditioned upon inputs received and the state of the device. Desktop displays and applications can be selectively shifted between the screens by user gestures or moved off of the screens by other user gestures and therefore hidden. The hidden desktops and screens however can be re-displayed by yet another gesture. The user gestures prevent the user from having to open and close the running desktops and applications, or to execute other user commands that otherwise result in a laborious effort by the user to manage the multiple desktops and applications. One user gesture or input enables a user to change an order of the window stack by simply re-launching a selected desktop or application.
Applicant	Z124:SIRPAL, SANJIV;GIMPL, MARTIN →
Inventor	SIRPAL, SANJIV;GIMPL, MARTIN



Cayman subsidiary of Flextronics

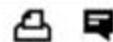


Interesting companies in artificial intelligence [AI]

Patent	CA2698348C
Rating	★★★★★
Rated Family Members	US7715951B2 AU2008296978B2 JP5613749B2 BRPI0816110A2 US8032233B2 MX2010002252A KR101277398B1 JP5358577B2 US8307225B2 US8010812B2 US8315717B2 CA2698348C
Family Value Range	9,139,000 - 16,247,000 € (2018-09-30)
Ceased latest	2027-08-28
Title	SYSTEM AND METHOD FOR ACTIVE POWER LOAD MANAGEMENT
Abstract	A system for managing consumption of power supplied by an electric utility to power consuming devices includes at least one client device and a server. Each client device operates at least partially responsive to control messages

Toshiba buys SA-based Consent Inc.

By [Nolan Hicks](#) Updated 7:59 pm CST, Wednesday, February 6, 2013



Toshiba Corporation said late Wednesday it's purchasing San Antonio-based **Consent** Inc., which signed a deal to sell 140,000 home-energy management systems to CPS Energy in 2011.

The Japanese industrial powerhouse didn't disclose terms of the acquisition agreement. Privately held Consent will be integrated into the Toshiba subsidiary Landis+Gyr, which produces energy management and metering products.



Interesting companies in artificial intelligence [AI]

ATONARP

SAY HELLO TO

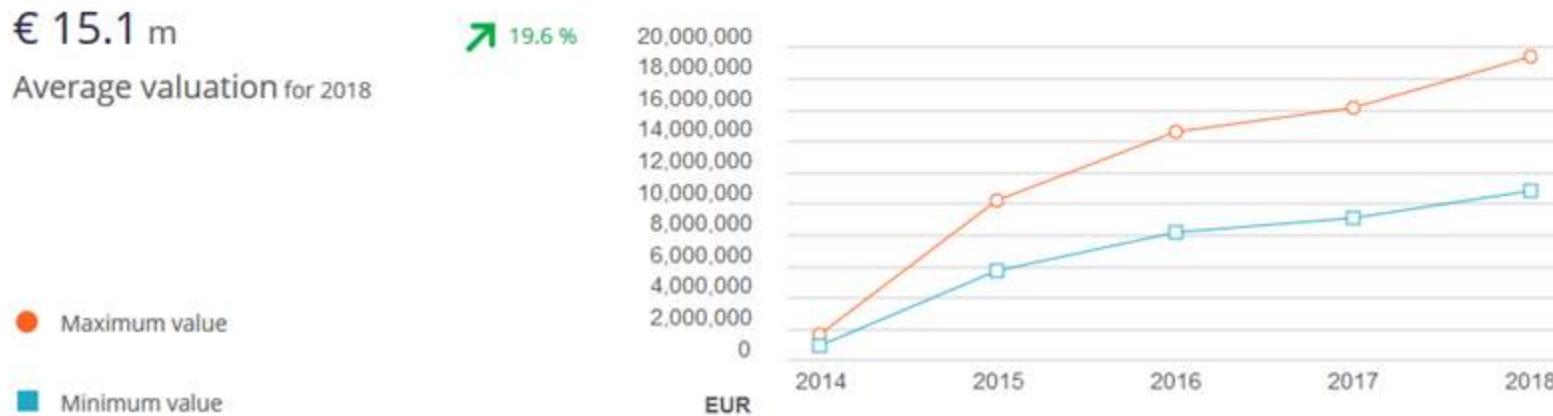


The World's
Smartest
Quantitative Mass
Spectrometer

Shareholder name

- ↗ [JAPAN INVESTMENT CORPORATION](#)
- ↗ [MITKASA SHOJI CO., LTD.](#)
- ↗ [MITSUBISHI UFJ CAPITAL CO., LTD.](#)
- ↗ [PACVEN WALDEN MANAGEMENT CO., LTD.](#)
- ↗ [PE PA RO JI TSU KU HUI SHRINE](#)
- ↗ [RIVERWOOD CAPITAL LLC](#)
- ↗ [VENTURE LABS INVESTMENT K.K.](#)

€ 15.1 m
Average valuation for 2018



● Maximum value

■ Minimum value



Summary: why valuating patents?

Portfolio Management & Monetization

Patent sales/purchases

Annuities decision

Licensing/cross-licensing agreements

In-kind contributions to joint ventures

Technology- and market- benchmarks, IP landscaping

M&A targeting

Financials

M&A purchase price allocation

Portfolio valuations for transfer pricing

Balancing of intangible assets (IFRS) for reducing interest rate



THANK YOU VERY MUCH FOR YOUR ATTENTION!



BUREAU VAN DIJK

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