Moody's Analytics

Better Faster Decisions

Orbis - Intellectual Property Module

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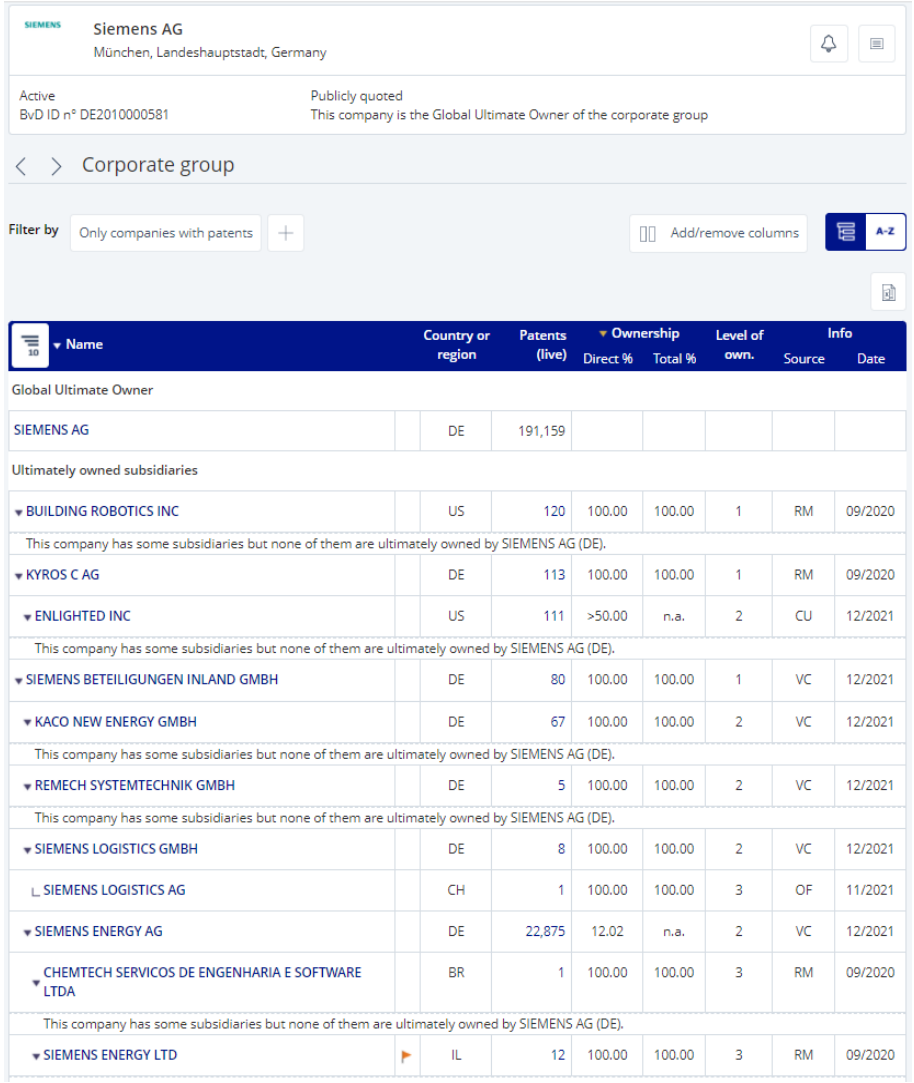
Intellectual Property Sales, Europe

Patents Connected with Ownership



Siemens AG
München, Landeshauptstadt, Germany

Active
BvD ID n° DE2010000581

Publicly quoted
This company is the Global Ultimate Owner of the corporate group

Corporate group

Filter by: Only companies with patents | Add/remove columns

Name	Country or region	Patents (live)	Ownership Direct %	Ownership Total %	Level of own.	Info Source	Info Date
Global Ultimate Owner							
SIEMENS AG	DE	191,159					
Ultimately owned subsidiaries							
BUILDING ROBOTICS INC	US	120	100.00	100.00	1	RM	09/2020
This company has some subsidiaries but none of them are ultimately owned by SIEMENS AG (DE).							
KYROS C AG	DE	113	100.00	100.00	1	RM	09/2020
ENLIGHTED INC	US	111	>50.00	n.a.	2	CU	12/2021
This company has some subsidiaries but none of them are ultimately owned by SIEMENS AG (DE).							
SIEMENS BETEILIGUNGEN INLAND GMBH	DE	80	100.00	100.00	1	VC	12/2021
KACO NEW ENERGY GMBH	DE	67	100.00	100.00	2	VC	12/2021
This company has some subsidiaries but none of them are ultimately owned by SIEMENS AG (DE).							
REMECH SYSTEMTECHNIK GMBH	DE	5	100.00	100.00	2	VC	12/2021
This company has some subsidiaries but none of them are ultimately owned by SIEMENS AG (DE).							
SIEMENS LOGISTICS GMBH	DE	8	100.00	100.00	2	VC	12/2021
SIEMENS LOGISTICS AG	CH	1	100.00	100.00	3	OF	11/2021
SIEMENS ENERGY AG	DE	22,875	12.02	n.a.	2	VC	12/2021
CHEMTECH SERVICOS DE ENGENHARIA E SOFTWARE LTDA	BR	1	100.00	100.00	3	RM	09/2020
This company has some subsidiaries but none of them are ultimately owned by SIEMENS AG (DE).							
SIEMENS ENERGY LTD	IL	12	100.00	100.00	3	RM	09/2020

Siemens AG **directly and indirectly own 191,159 live patents**.

The images shows Siemens AG's corporate structure expanded to **10 levels of ownership,** detailing ultimately owned subsidiaries *(≥50.1% ownership),* the location of the subsidiaries, and how many live patents each subsidiary owns.

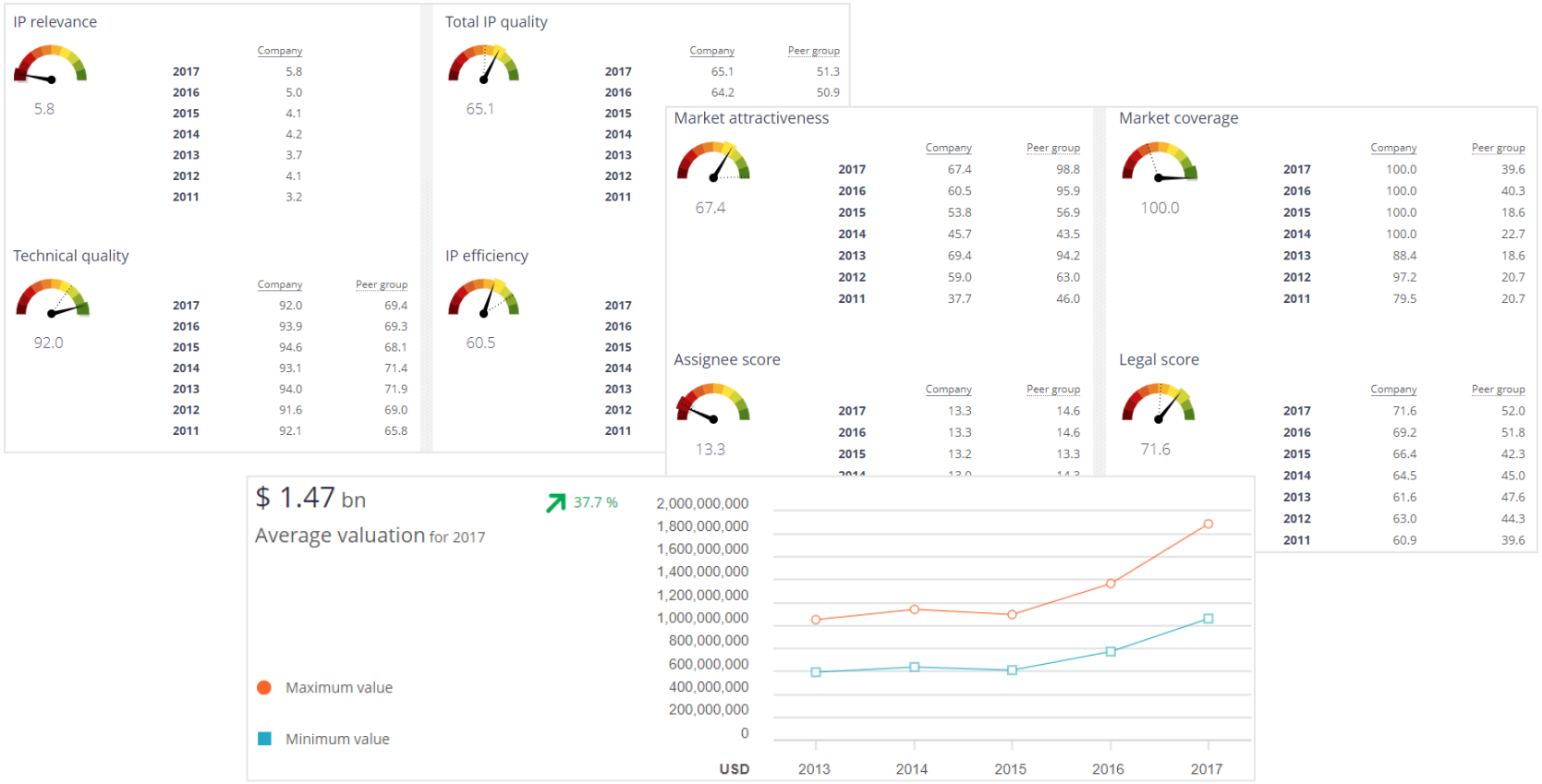
There are **1,980 entities** in Siemens AG's corporate structure across **104 jurisdictions.**

There are **271 subsidiaries** in Siemens AG's corporate structure who are patent owners across **39 jurisdictions.**

(This screen shot was captured in February 2022).

Innovation Strength Indicators

Using a complex data mining and indicator-based valuation methodology, our partner company **IPBI** measures the intellectual property (IP) value qualitatively and quantitatively (monetarily), focusing on patents and utility models.

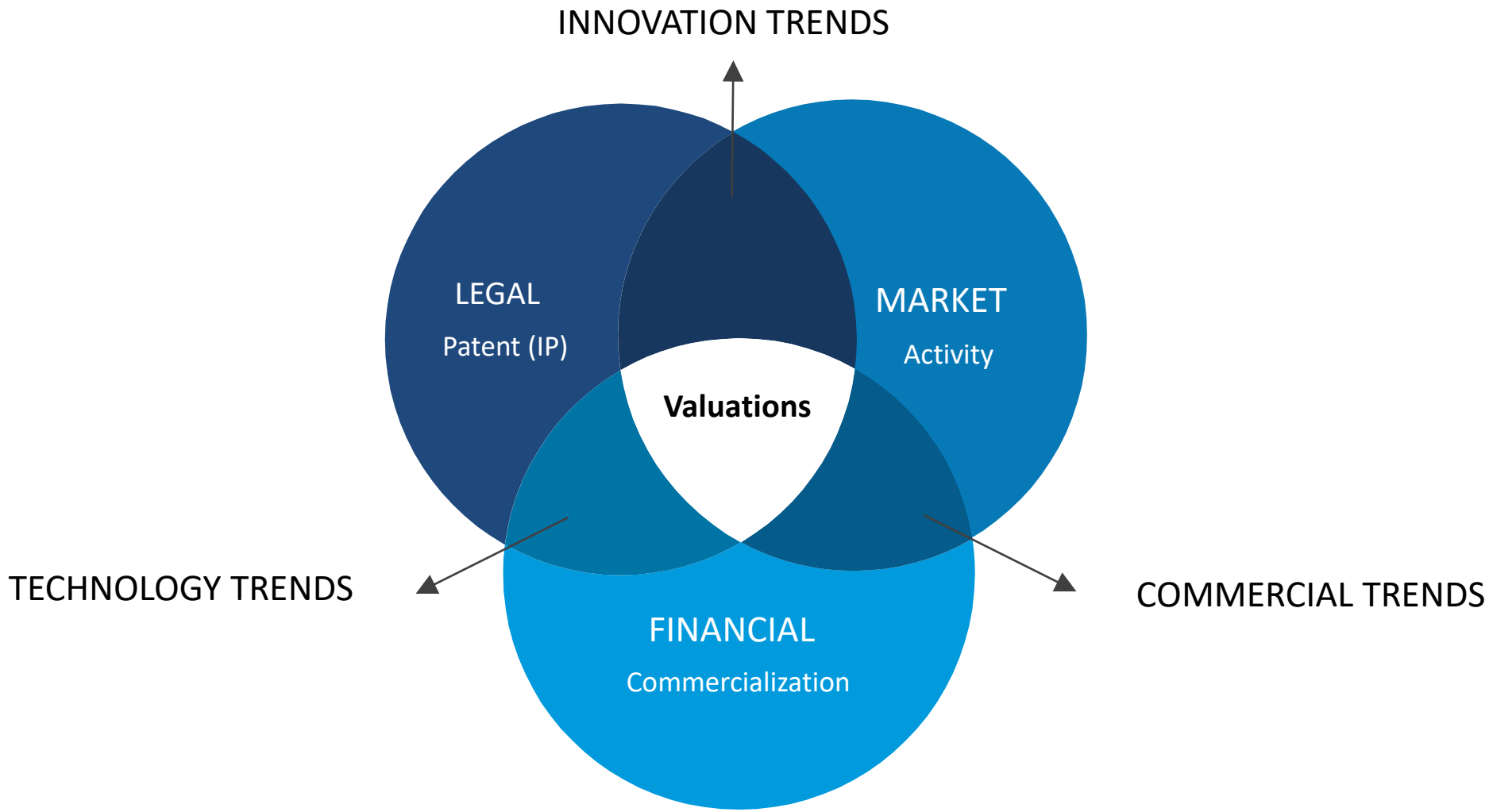


How are the scores calculated?

The methodology uses 25 indicators (such as forward and backward citations, family sizes, covered countries, patent age and legal status, etc.), which are referred to a database of patents traded in the past.

- **Community application:** takes the am account. By experience multiple assignee more difficult and also the claims covera partner is interested to have enough spa further own inventions. If a community p multiple partners with multiple interests
- **R&D strength of the invention:** This i inventors mentioned in the patent/applic single inventor often indicates a random often documented with a certain set of ir invention. But this is not a linear effect. indicate
- **R&D a** accoun amount also tal The hig
- **Techn** technol IPC (in is highe
- **Sustainability of techn** trend compares different typical global economic r account and to see if a te the trend is sustainable. technology/industry.
- **Total size of activity:** t that were made within a total activity per time pe
- **Family size**: a family in relate to the same invent patents. This finally means, how many economies are cove protection. For the indicator not only the amount of family also the size of the covered economies are taken into acco
- **Transferability to different industries:** Is a patent a ba invention or a more or less proprietary solution for one sin This can be found out by the amount of different IPC secto mentioned within the patent, this indicates i.e. the usabilit branches the invention can be applied to, i.e. in consumer in handling machines.
- **Heterogeneity of potential applications:** within a certain technology field the question may be similar: are different technology fields thinkable within a given sector? For this question to answer, a different IPC analysis algorithm is applied.
- **Exploitation in different technologies (within a c** this is a general indicator using a third different algori classes mentioned. It is to find out how different addr may be. The three IPC indicators taking different dept general industry independency, a technology indepen application independency.
- **Total amount of exploitation** measure the heterogeneity but t technologies, applications.
- **Evidence of use**: an important be detected. The more difficult i itself. For process patents this is to prove.
- **Relevance for other technolo** indicator is how many other pat patent, taking the patent age int available (done by foreign assign technology/application/formulati coverage of a patent, the more refer to the patent in order to di
- **Differentiation t** revolution is a key bypass and have a is essential. Here differentiation of s
- **Differentiation fr** are done by differe direct relevance fo that a technology i competitor.
- **Interfering with** that there may be licensing: This cert of general relevan
- **Validity level:** sh office examiners – is far from the stat
- **Patent maturity:** this indicator takes the remaining time for exploiting the given patent into account. A young application may have a maximum remaining term of utilisation but it may be not granted in that form (see state of the art). The value maximum according to this starts after opposition phase and decreases afterwards. Within the final half a year before a patent ceases, it is practically not tradeable anymore according to the remaining term of utilisation, the value decreases drastically in its final stage of lifetime.
- **Claim width and coverage**: The amount of claims is a cost issue in terms of fees that are to pay. Secondly it documents how many different applications and forms an invention may have. The claims are essential for the legal coverage of a patent. Even more important than the total amount of claims are the independent claims. They directly document the coverage and potential blocking effect of a patent. Often patents with different independent claims like i.e. combined procedural and product patents are split into several patents (divisional patents).
- **Validity in certain countries:** For i.e. European countries only it counts the amount and economies of the currently covered contracting states, where the patent fees are maintained. For single countries the economical size of the country the patent is filed in is taken into account. Whenever a patent protection is not kept it indicates that a technology has lost importance in a certain market. So either the market shrinks or the general relevance of a technology decreases. Both has a negative impact on a patent value.
- **Intended worldwide protection:** If the family contains a PCT filing it documents that a worldwide protection is planned and the market for the invention is global.
- **Procedural State:** There are in general 3 different stages of a patent in terms of it procedural status, all patents are going through: Application, Grant or Expired Patent. Expired patents (by age, by non-payment of fees, rejection or other legal issues) have no value and so there is no value

What data/ indicators are used?



Market Attractiveness

Shows from an IP point of view how many competitors are active with innovations made in the technical fields of the company.

The indicator provides insight on what technologies are attractive in the market based on the recent trends relating to:

- Acquisitions
- Litigations
- Licensing and Royalty Rates

Market attractiveness

67.4

	Company	Peer group
2017	67.4	98.8
2016	60.5	95.9
2015	53.8	56.9
2014	45.7	43.5
2013	69.4	94.2
2012	59.0	63.0
2011	37.7	46.0

*Calculated on a scale of 0 (worst value) to 100 (best value). These scales are always branch-specific.

Market Coverage

Shows the size of the market covered by the IP, and in how many countries the IP guarantees protection.

The derived indicator here focuses on the technologies and the markets that are essentially important to be covered for the given technology through:

- Global trends on the revenue for the technology
- Enforceability of the technology in the given jurisdiction

Market coverage

100.0

*Calculated on a scale of 0 (worst value) to 100 (best value). These scales are always branch-specific.

	Company	Peer group
2017	100.0	39.6
2016	100.0	40.3
2015	100.0	18.6
2014	100.0	22.7
2013	88.4	18.6
2012	97.2	20.7
2011	79.5	20.7

Technical Quality

Shows the degree of innovation that can be derived from a company's IP.

The given score provides a cumulative measure the technological quality covered through the portfolio of patents and some indicators such as:

- Citations
- Claims – Independent claims and word count
- Family members

Technical quality

92.0

	Company	Peer group
2017	92.0	69.4
2016	93.9	69.3
2015	94.6	68.1
2014	93.1	71.4
2013	94.0	71.9
2012	91.6	69.0
2011	92.1	65.8

*Calculated on a scale of 0 (worst value) to 100 (best value). These scales are always branch-specific.

Assignee Score

Takes into account the company's R&D behaviour that results in IP.

In the case of assignee score, we consider the entities re-inventiveness behaviour to ring fence the technology so that the competitors do not penetrate into their market. Of many key indicators, some of the indicators used are:

- Self citations
- Continuation Applications

Assignee score

13.3

	Company	Peer group
2017	13.3	14.6
2016	13.3	14.6
2015	13.2	13.3
2014	13.0	14.3
2013	13.5	14.0
2012	28.2	15.0
2011	13.2	13.1

*Calculated on a scale of 0 (worst value) to 100 (best value). These scales are always branch-specific.

Legal Score

Shows the legal strength of IP in terms of its degree of protection.

Any given entities, legal/ attorneys responsiveness is checked through the legal scores. We use the following indicators among many for the calculation of such scores:

- Time taken for office action responses
- Number of rejections
- Claim Scope changes

Legal score

71.6

	Company	Peer group
2017	71.6	52.0
2016	69.2	51.8
2015	66.4	42.3
2014	64.5	45.0
2013	61.6	47.6
2012	63.0	44.3
2011	60.9	39.6

*Calculated on a scale of 0 (worst value) to 100 (best value). These scales are always branch-specific.

IP Efficiency

Shows the distribution of values across the IP portfolio. (are there only a few good patents determining the value, or are most patents of high value?)

IP efficiency of a company indicates the adaptivity of a new technology that is identified in the market. The score measures early innovativeness in such new technology areas through inventions within the technological life cycle.

IP efficiency

60.5

	Company	Peer group
2017	60.5	82.3
2016	59.0	82.7
2015	50.6	83.3
2014	59.8	82.0
2013	52.1	82.3
2012	64.5	83.6
2011	68.8	83.0

*Calculated on a scale of 0 (worst value) to 100 (best value). These scales are always branch-specific.

IP Quality

Assumes that the key figures Market attractiveness, Market coverage, Technical quality, Assignee score and Legal score are combined into one figure.

This score is nothing but the aggregation of various scores to provide a overall quality of the IP within the given entity's portfolio.

Total IP quality

65.1

	Company	Peer group
2017	65.1	51.3
2016	64.2	50.9
2015	62.8	40.4
2014	60.9	41.0
2013	62.0	47.5
2012	65.2	42.5
2011	56.2	38.0

*Calculated on a scale of 0 (worst value) to 100 (best value). These scales are always branch-specific.

IP Relevance

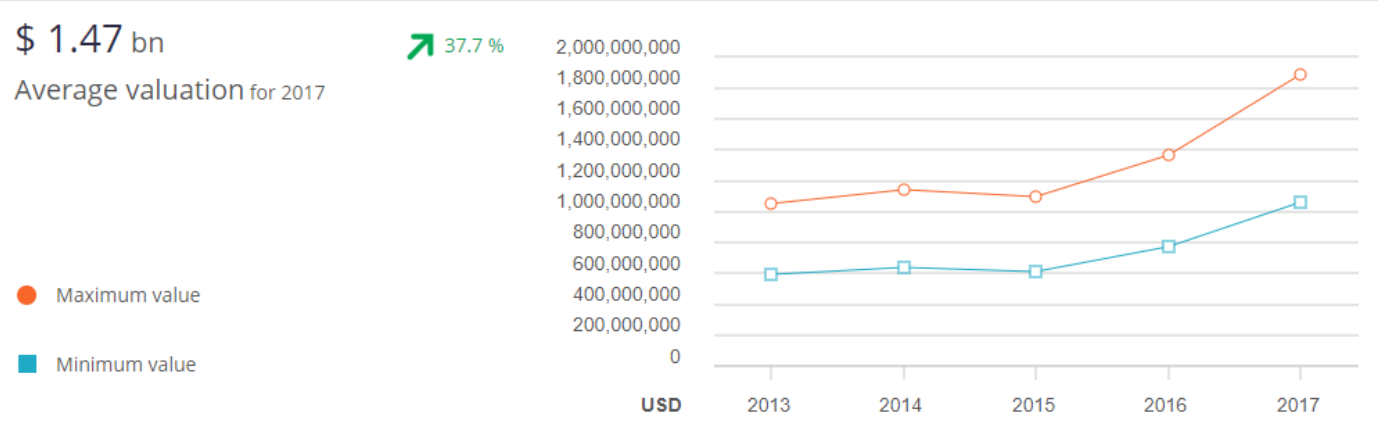
Shows how relevant are the patents and utility models for this company. (the higher the relevance, the more important is the patent quality)

The essential usage of the indicator here is to identify the entities that are running with the IP as backbone, whose relevance scores will be high due to their impact on the financials of the entity.

It shows the ratio of patent value per total assets of the last available year.

Patent Value Trends

Shows the trend of the IP portfolio's value compared to its past value.



The Value Trend indicator make take any of these values:

Value	Definition
↘	The value of the IP portfolio has decreased by more than 5% compared to the year before. Note that on a consolidated level, the IP portfolio value may also vary strongly due to divestments.
=	The value of the IP portfolio has remained constant (within +/- 5%) compared to the year before.
↗	The value of the IP portfolio has increased by more than 5% compared to the year before. Note that on a consolidated level, the IP portfolio value may also vary strongly due to M&A activities.

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