

# Intellectual Property Finance

What attracts investors and financial institutions to invest in IP assets?



# ABOUT ME

1994: Master in Chemical Engineering, Univ. Stuttgart

1994-2000: Fraunhofer Gesellschaft, Innovation management

2000-now: Co-Founder of Intracom GmbH, Bonn – **development of automated patent valuation method**

2006-now: Guest professor patent management in Cluj-Napoca

2013: Co-Founder of IP Business Information in NL, generation of patent value data

2017: Advisor to IPR Strategies in IRL, generation of financial products based on patent value data

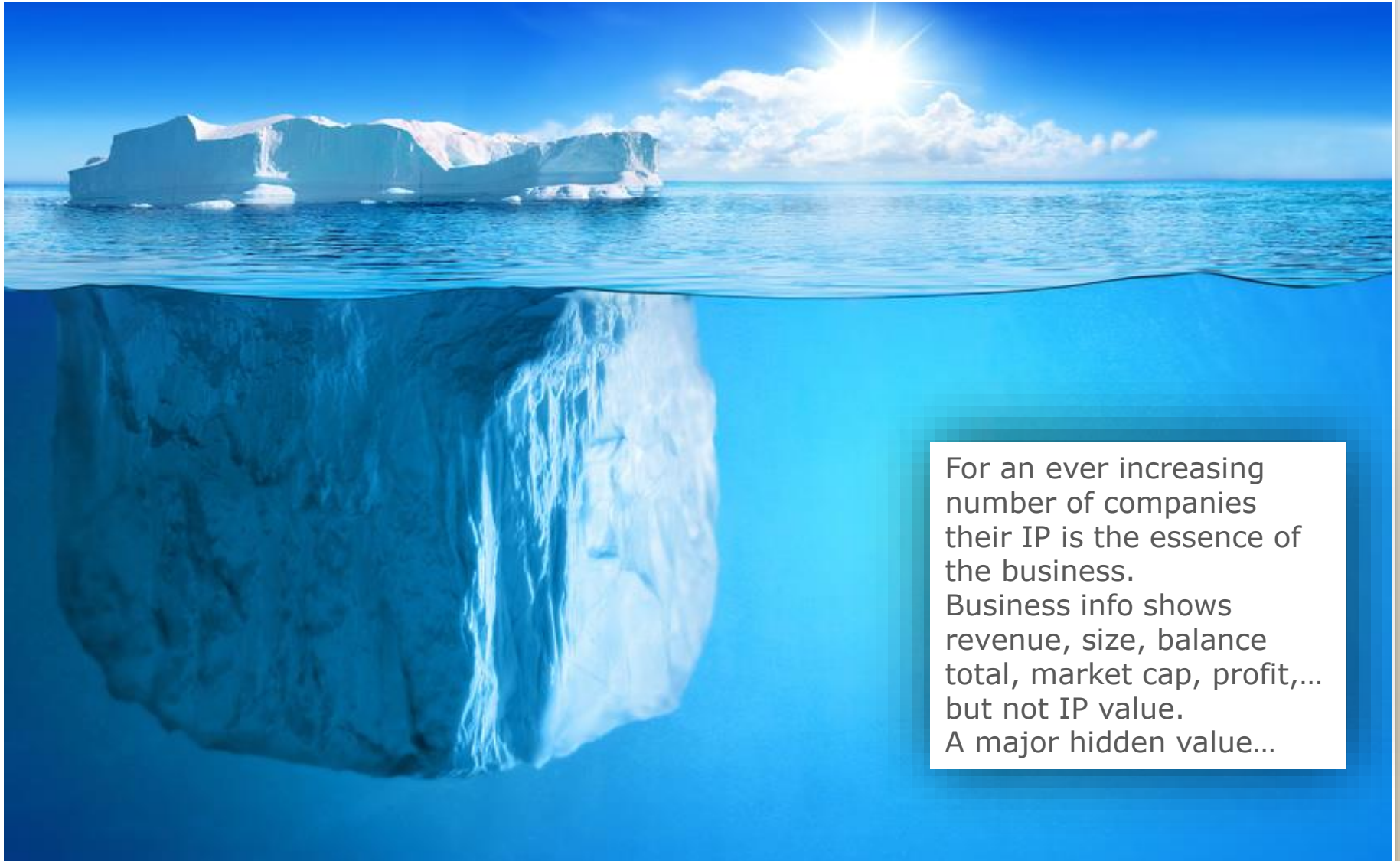
2022: Member of LES patent valuation team, composing the “SDG IP index”

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## CONTENT

- Introduction
- Expectations of the different financial institutions:
  - Venture Capital: due diligence
  - Banks: corporate lending
  - Asset management: fundamental & quantitative
- Summary
- Q&A

# How many company assets are visible?



For an ever increasing number of companies their IP is the essence of the business. Business info shows revenue, size, balance total, market cap, profit,... but not IP value. A major hidden value...



# Invisible assets may lead to major problems

Example:

Nortel's  
5 year average  
Book Value before  
insolvency:

**1,2 b\$**

It's later sold  
patent Portfolio  
Value:

**4,5 b\$**

They were never  
gone bankrupt if  
this value was  
known before.

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.

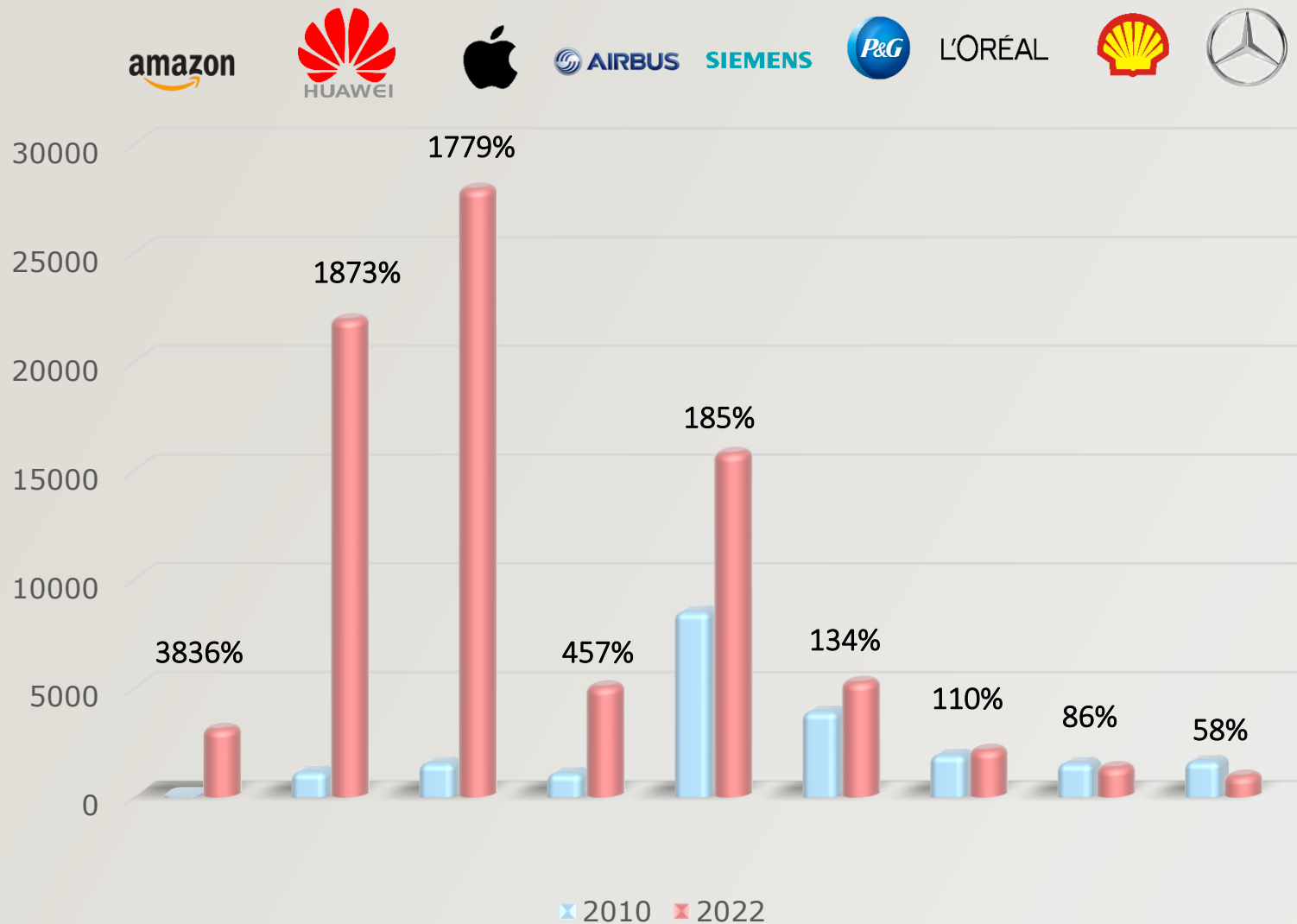
Nortel, which filed for bankruptcy in 2009, [said in a statement](#) late Thursday that it had sold its last remaining patents, covering businesses including wireless and networking technology and semiconductors, in an auction that it called "very robust."



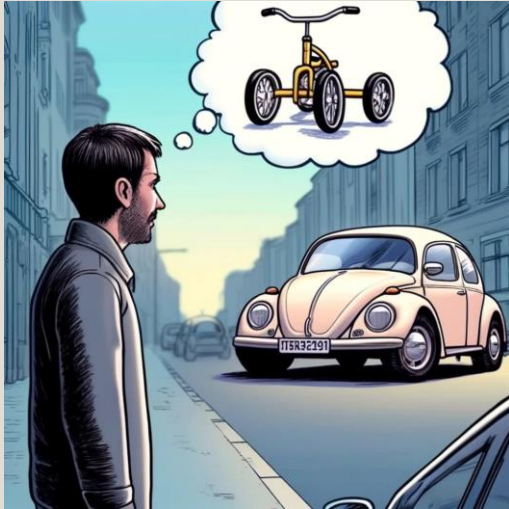
Blair Gable/Reuters

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

# Example: patent value changes 2010 vs. 2022 in m€



# Investors view on IP



20%



10%



70%

# Venture Capital: IP in due diligence

In principal 2 types of investors:

## Growth investor:

- Do not really care about IP, but look at growth KPIs like number of user, subscriptions, revenues etc.
- Are more interested in brands, trade secrets and intellectual capital



# Venture Capital: IP in due diligence

## Value investor:

- Interested in all types of IP, namely patents and brands
- Problem: IP in balance sheet are costs and not “value”

# Venture Capital: IP in due diligence

## Example from a balance sheet: BASF SE

31.12.2022	31.12.2021	31.12.2020	31.12.2019	31.12.2018	31.12.2017	31.12.2016	31.12.2015
th EUR	th EUR	th EUR	th EUR	th EUR	th EUR	th EUR	th EUR
12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months
Unqualified	Unqualified	Unqualified	Unqualified	Unqualified	Audit n.a.	Unqualified	Unqualified
IFRS	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
AR	AR	AR	AR	AR	AR	AR	AR

### Assets

Total current assets	37,422,000	35,051,000	29,868,000	30,990,000	43,221,000	31,145,000	25,946,000	24,566,000
└ Intangible assets	13,273,000	13,499,000	13,145,000	14,525,000	16,554,000	13,594,000	15,162,000	12,537,000
└ Goodwill	7,696,000	7,520,000	6,959,000	8,105,000	9,211,000	9,353,000	10,073,000	8,363,000
└ Other intangible assets	5,577,000	5,979,000	6,186,000	6,420,000	7,343,000	4,241,000	5,089,000	4,174,000

Data provided by Moodys, Orbis company information

# Venture Capital: IP in due diligence

## Apple Inc.

	24/09/2022 th EUR	25/09/2021 th EUR	26/09/2020 th EUR	28/09/2019 th EUR	29/09/2018 th EUR		
Exchange rate: USD/EUR	12 months Unqualified US GAAP 10-K 1.02585	12 months Unqualified US GAAP 10-K 0.86363	12 months Unqualified US GAAP 10-K 0.86363	12 months Unqualified US GAAP 10-K 0.86363	12 months Unqualified US GAAP 10-K 0.86363		
<b>Balance sheet</b>							
<b>ASSETS</b>							
Non-current assets	222,968,721	183,914,663	183,914,663	183,914,663	183,914,663	183,914,663	183,914,663
L Intangible assets	0	0	0	0	0	0	0
L Tangible fixed assets	53,892,058	42,700,000	42,700,000	42,700,000	42,700,000	42,700,000	42,700,000
L Other non-current assets	169,076,663	143,914,663	143,914,663	143,914,663	143,914,663	143,914,663	143,914,663
Current assets	138,905,358	116,448,600	116,448,600	116,448,600	116,448,600	116,448,600	116,448,600
L Stock	5,073,859	5,682,690	5,682,690	5,682,690	5,682,690	5,682,690	5,682,690
L Debtors	28,912,585	22,694,522	22,694,522	21,054,276	20,029,366	15,139,760	14,115,223
L Other current assets	104,918,914	88,071,465	88,071,465	105,510,754	124,701,078	90,011,208	79,726,730
L Of which cash and cash equivalent	49,552,708	54,097,046	54,097,046	77,675,942	92,347,326	57,274,519	60,169,342
<b>Total assets</b>	<b>361,874,079</b>	<b>303,136,563</b>	<b>276,638,175</b>	<b>310,878,877</b>	<b>315,933,751</b>	<b>317,905,322</b>	<b>288,223,289</b>

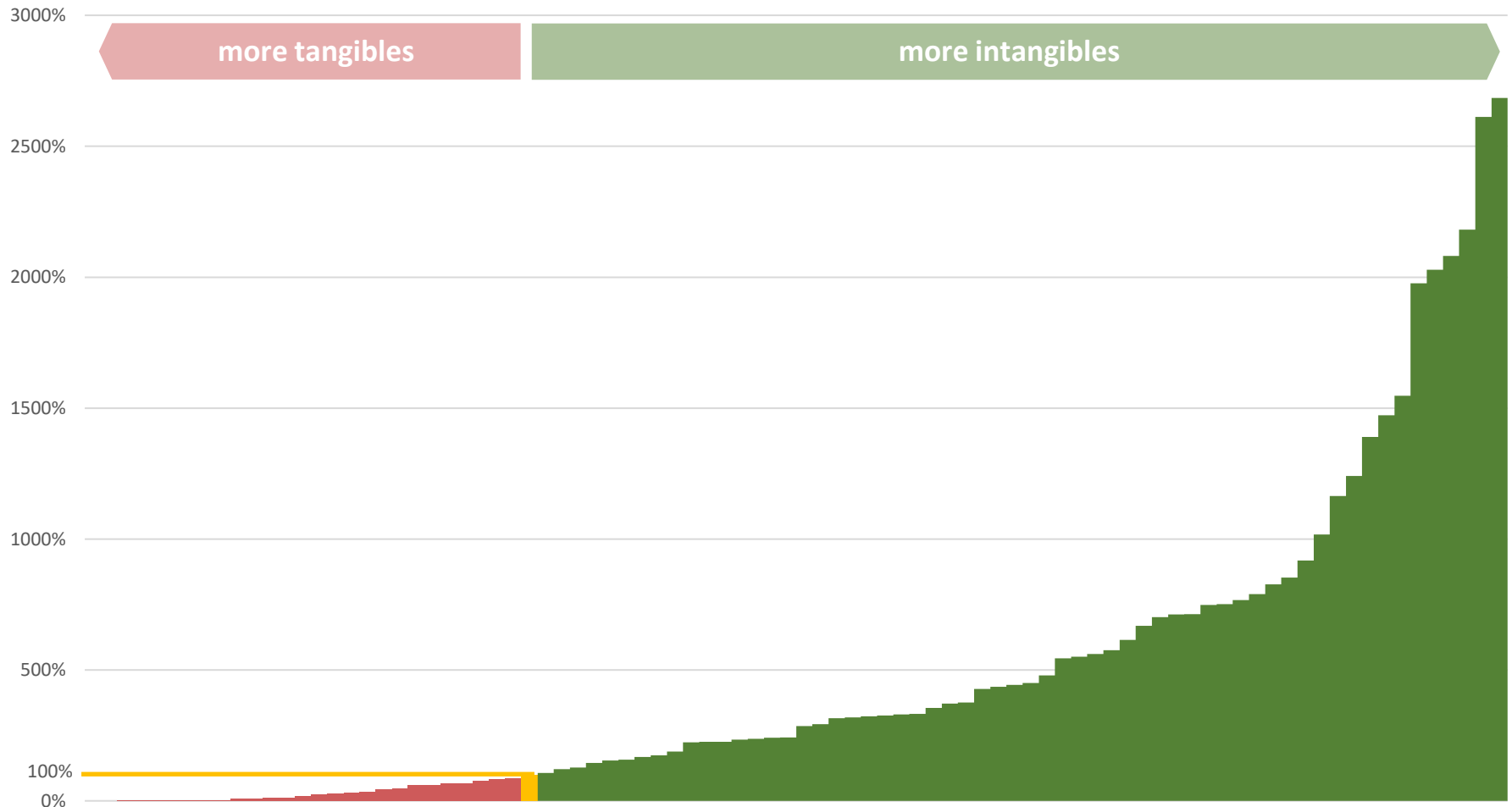
11,682 companies with total assets > 1 < 10Bn€ have intangible assets zero

1,193 companies with total assets > 10 Bn€ have intangible assets zero

Data provided by Moodys, Orbis company information

# Approx. 70% of the equities in Nasdaq100 have higher intangible than tangible assets

equities and their tangibles/intangibles ratio inside NASDAQ100



# Venture Capital: IP in due diligence

Index	$\frac{\text{Total Intangible assets}}{\text{Enterprise value}}$	$\frac{\text{Total Intangible assets}}{\text{Total assets}}$	$\frac{\text{Total Intangible assets}}{\text{Market capitalisation}}$	$\frac{\text{Total Intangible assets}}{\text{Tangible fixed assets}}$
STOXX600	35%	29%	43%	400%



# Venture Capital: IP in due diligence

Shares of the brand value related to enterprise value:

Company	Total intangible value	Intangible value /enterprise value
Apple	\$2.15 trillion	94%
Amazon	\$1.69 trillion	96%
Saudi Aramco	\$1.65 trillion	84%

\*based on analysis from Brand Finance, 2020

# Venture Capital: IP in due diligence

## Value investor – reasons for IP:

**Investment&Exit:** Patents are seen as intangible assets that can increase a company's valuation and improve its financial stability. Very valuable at the exit stage!

**Collateral for Financing:** Companies can use patents as collateral to secure loans, providing them with additional liquidity to fund operations, research, and development.

**Licensing Revenue:** Companies can generate significant revenue by licensing their patents to other firms. Licensing agreements often involve upfront payments and ongoing royalties, directly contributing to cash flow.

**Brand Value and Reputation:** Companies with strong patent portfolios are often viewed as innovative and forward-thinking, enhancing their brand value and attracting customers, investors, and business partners.

# Venture Capital: IP in due diligence

Value investor – reasons for IP:

**Market Expansion:** Patents can enable companies to enter new markets or create entirely new markets, providing new revenue streams.

**Joint Ventures and Alliances:** Companies with valuable patents can form strategic alliances or joint ventures, sharing the technology in exchange for capital, expertise, or access to new markets, which can enhance cash flow.

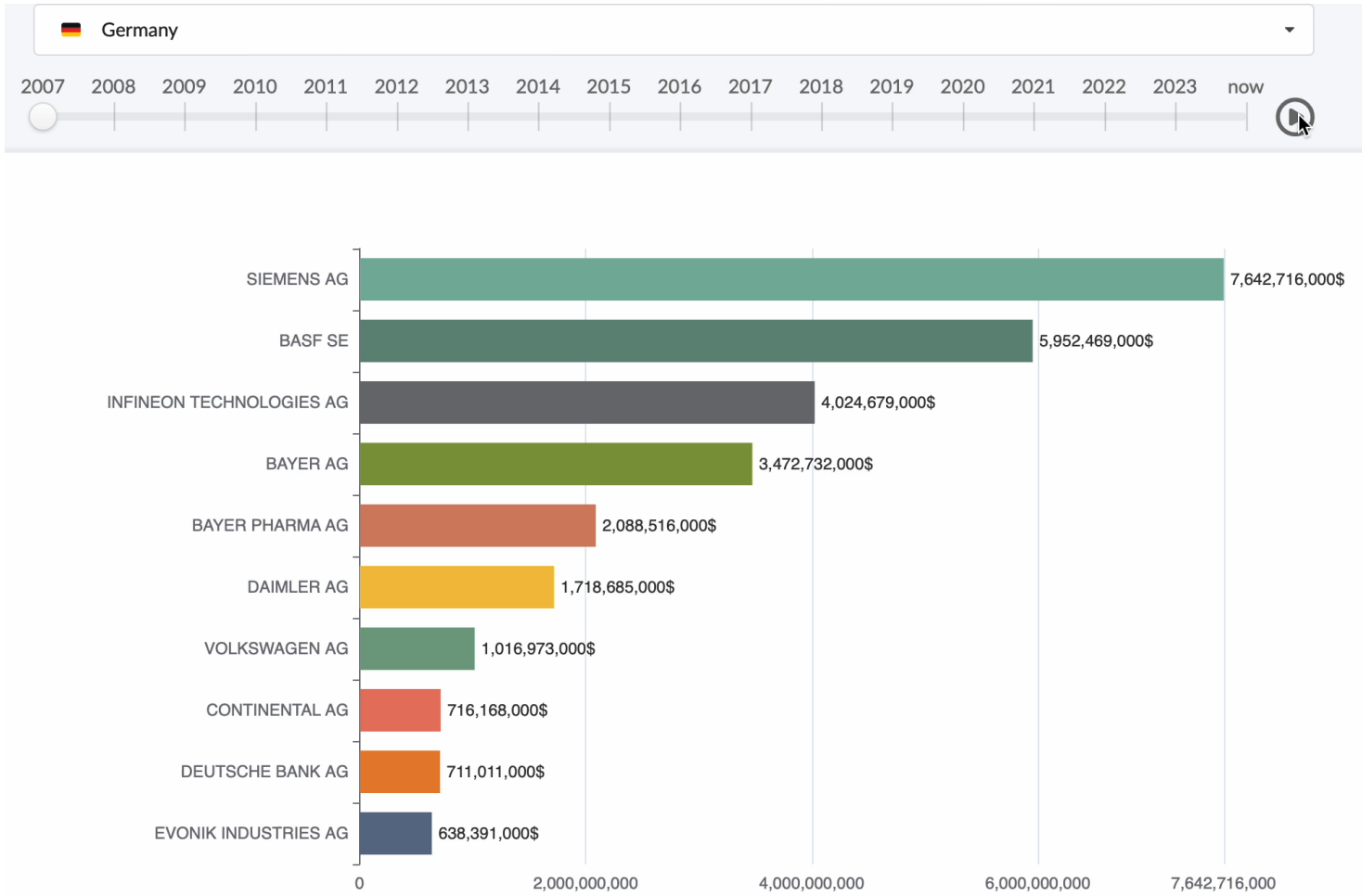
**Mergers and Acquisitions:** Patents can make a company an attractive target for acquisition, often leading to significant financial inflows from the sale or merger.

Most important reason for VC is:

Board is dedicated to innovation and committed to produce “real values”.

# Banks: IP in corporate lending

Companies with highest patent value in Germany:



## Banks: IP in corporate lending

Primary reasons for IP collateralization:

- Loan securitization
- Blocking shareholders/owners to restart a new company after bankruptcy or asset transfer

But:

Banks normally **do not** increase the lending volume based on IP assets, because they are not able to assess the monetary value of IP and to monetize in case of default



# Banks: IP in corporate lending

Example:



Business Development Bank of Canada

<https://www.bdc.ca>

\$160M financing envelope to support IP development in Canada

Main theory:

*“Companies with relative high patent value have much less default”*

### Analysis of 10-year survival rate of corporate bonds

Backtest history: year 2012 – Sept 2022

62,893 listed equities in this period

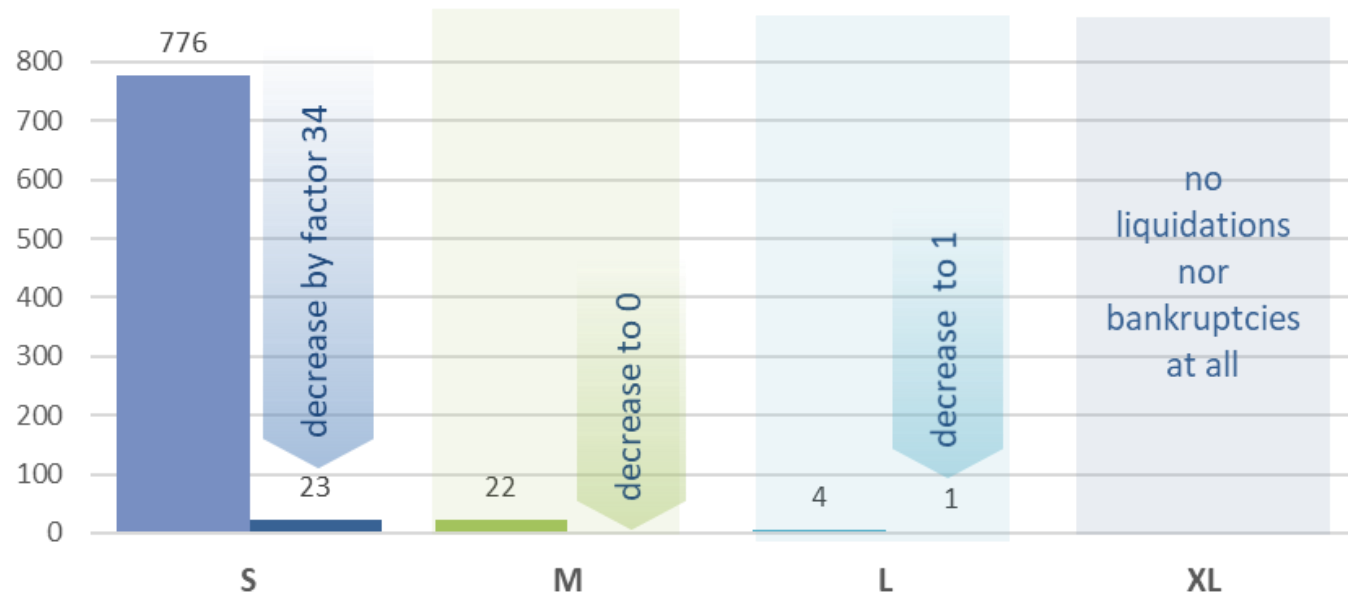
Grouping into 4 revenue-size categories: Small (S), medium (M), large (L) and very large (XL) companies

Research how many equities went into bankruptcy/were liquidated within the time period per respective group

Research how many equities had a patent value >10mUSD of patent value in the time period

# Banks: IP in corporate lending

liquidations + bankruptcies in comparison: all companies vs. companies with valuable patents (>10 mUSD)



For small sized companies (S) , the default risk was **reduced by factor 34**.

For large medium sized (M) companies with valuable patent portfolios the **default rate went down to 0**.

For large (L) companies with valuable patent portfolios the **default rate went down to 1**.

For the very large companies (XL) there was no default at all

# Asset management: IP in investment strategies

## Asset management:

- Wealth management
- Hedge Funds
- Fundamental asset management
- Quantitative asset management
- Quantamental asset management
- Fixed income
- Other (e.g. high frequency, FX etc.)



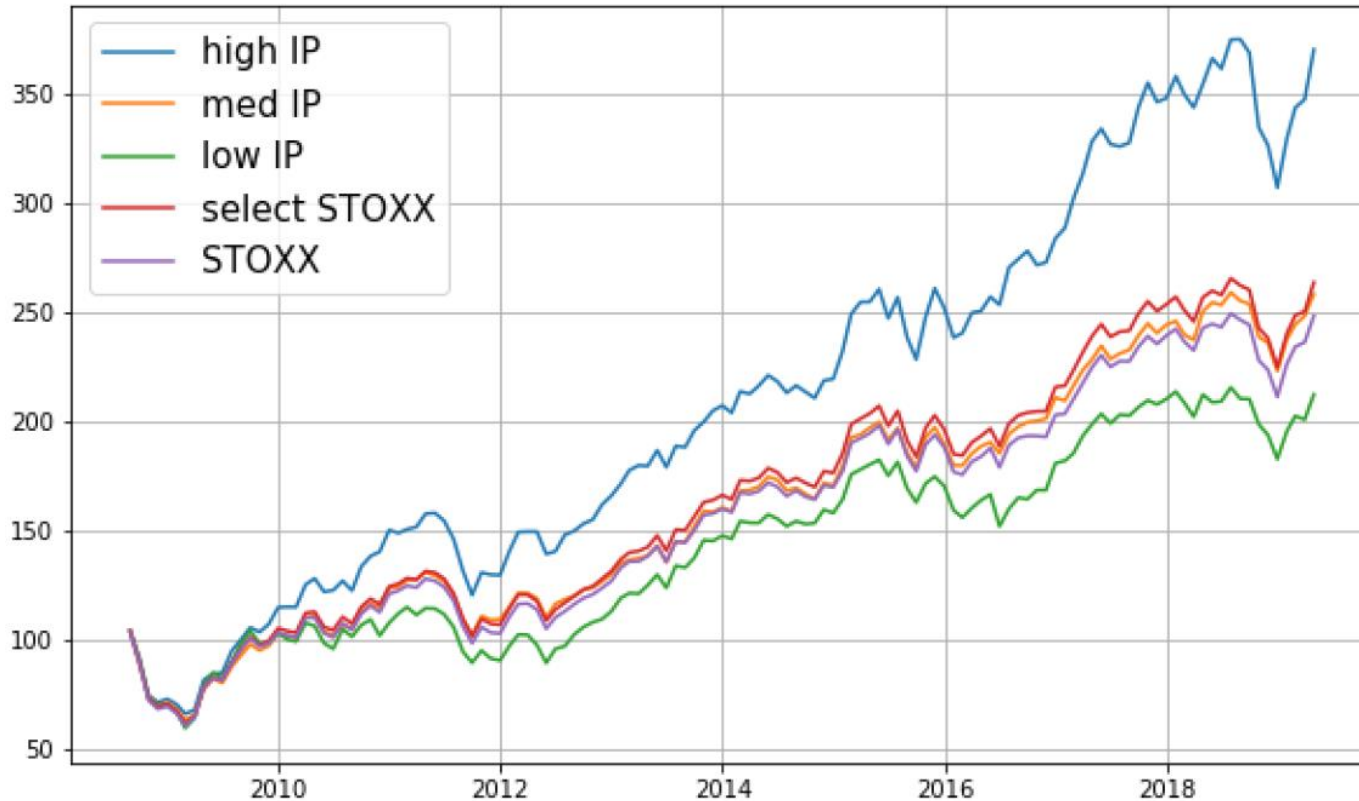
Main theory:

*“Equities with relative high patent value have much better performance than those without”*

# Back tests on IP value – generating a

STOXX Europe 600 in Three Baskets

Period: from 2008-07-31 to 2019-04-30



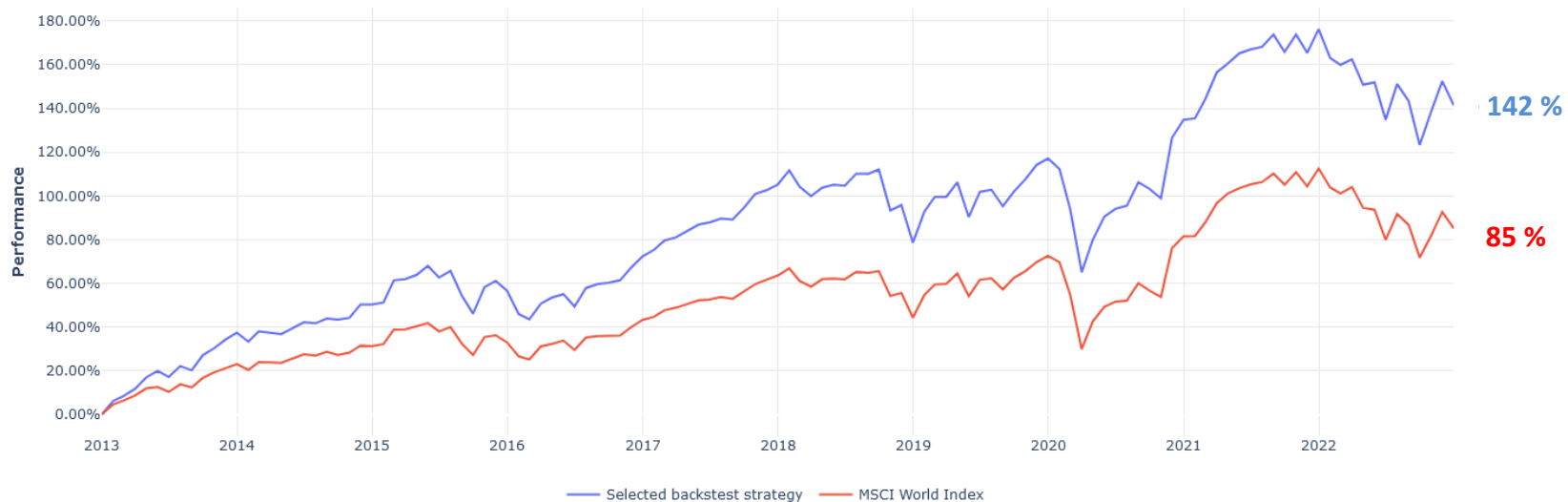
*Source: Nasdaq Survey, 2019*

Portfolio construction : An equal weighted DJ Stox Europe 600 Portfolio is separated in Patent shares (red line “select Stox”). These Patent shares are ranked by the primary key figure PatentLEVERAGE putting them in several groups. The Patent stocks were split into three portfolios according to the Patent leverage ranking: the top 30% as the high IP, the bottom 30% as the low IP, and the remaining 40% as the med IP. The chart clearly demonstrates that higher (lower) PatentLEVERAGE portfolios yield relatively higher (lower) returns

# Patent value threshold – outperformance with sector bias

## Portfolio construction :

An equal weighted MSCI World Portfolio is separated in Patent shares with a patent value equal or greater EUR 10m. “Selected backtested strategy”: Performance 12/2012-12/2022: 142 % (blue line). Degree of investment = 100%; no risk management; no fees; ex dividend; all stock prices are calculated in EUR ; half yearly adjustment per 06/30.



➔ significant outperformance vs. MSCI World Index also stems from the overweight of technology-strong sectors (Industrials, Technology, Automobiles, Internet) or the underweight of technology-weak sectors (banks, financials, utilities)

# Asset management: IP in investment strategies

- SMEs that have made use of intellectual property rights have +21% chance of growth in subsequent years compared to SMEs that have not invested in intellectual property rights, and +10% chance of high growth in subsequent years<sup>1</sup>
- Companies with qualitative patents and a strong IP activity tend to outperform those with relatively smaller patent activity<sup>2</sup>
- The higher the patent portfolio value, the better the free cash flow generation<sup>3</sup>

<sup>1</sup> High-growth firms and intellectual property rights. IPR profile of high-potential SMEs in Europe, May 2019 , European Patent Office

<sup>2</sup> Hall, Bronwyn H.; Thoma, Grid; Torrisi, Salvatore: The market value of patents and R&D; National bureau of economic research; Cambridge, Sept. 2007

<sup>3</sup> A.Gorius, A.Zagos, Building an IP Economy: the role of Patent Value, 2024

# Financial products based on IP signals



## Innovators Completion Cap Index - „NCX“

### Invesco NASDAQ Future Gen 200 ETF (QQQS)

1D 5D 1M **6M** YTD 1Y 5Y MAX



# Financial products based on IP signals

## Select Disruptors - „DRUP“

### GraniteShares Nasdaq Select Disruptors ETF (DRUP)

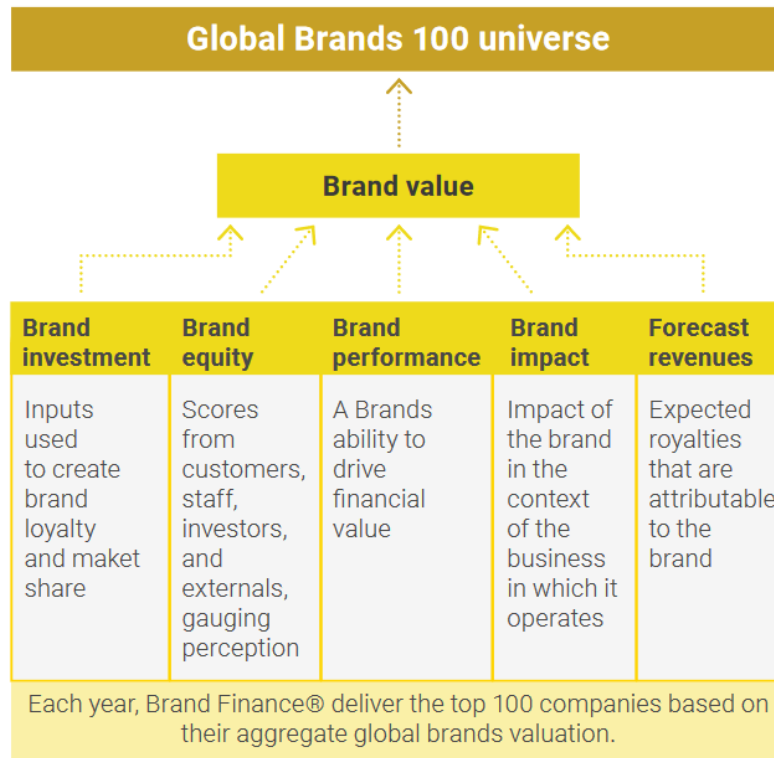
1D 5D 1M **6M** YTD 1Y 5Y MAX



# Financial products based on IP signals

## L&G Global Brands UCITS ETF

Investment strategy that offers exposure to companies with best-in-class brands



<https://lgim.com>

# Enhancing ESG/SDG ratings with IP

ESG: Environment Social Governance

SDG: Sustainable development goals



Major problems:

- Contrary ESG ratings of companies
- Ratings on company input not output
- Performance of ESG products



# Major problem: Self-reporting in ESG Ratings



**Third party sources** are required for an objective view on the sustainability ability - tamper-proof



**Patents can help identifying the active sustainability contribution:**

„innovation ability in sustainability“, e.g.

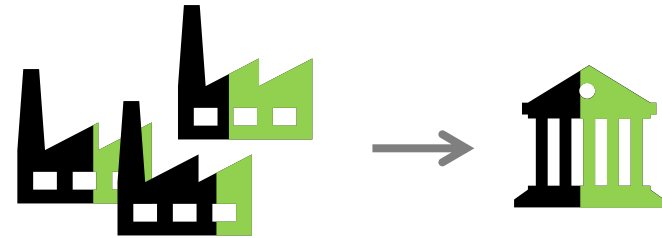
- potential future sustainable products
- sustainable processes
- sustainable applications

# Effect of sustainability inheritance

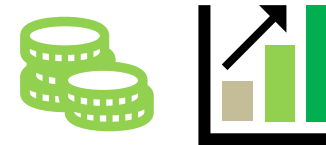
Sustainable company gets loan by bank



Multiple „green“ loans increase sustainable ranking of bank



„Green“ loans can be collected as a green bond financial derivate;  
increasing investment interest  
(„principles of responsible investing“)



# ESG and SDG Rating

## ...Green patents rating of petrochemical companies

Company	Chevron	Saudi Arabian Oil	BP	Shell	Exxon	Total	China Petroleum
Portfolio value in m€	1,324	3,353	303	762	596	3,200	5,300
Green patents value in %	3,2	4,2	4,5	4,9	5,2	6	18

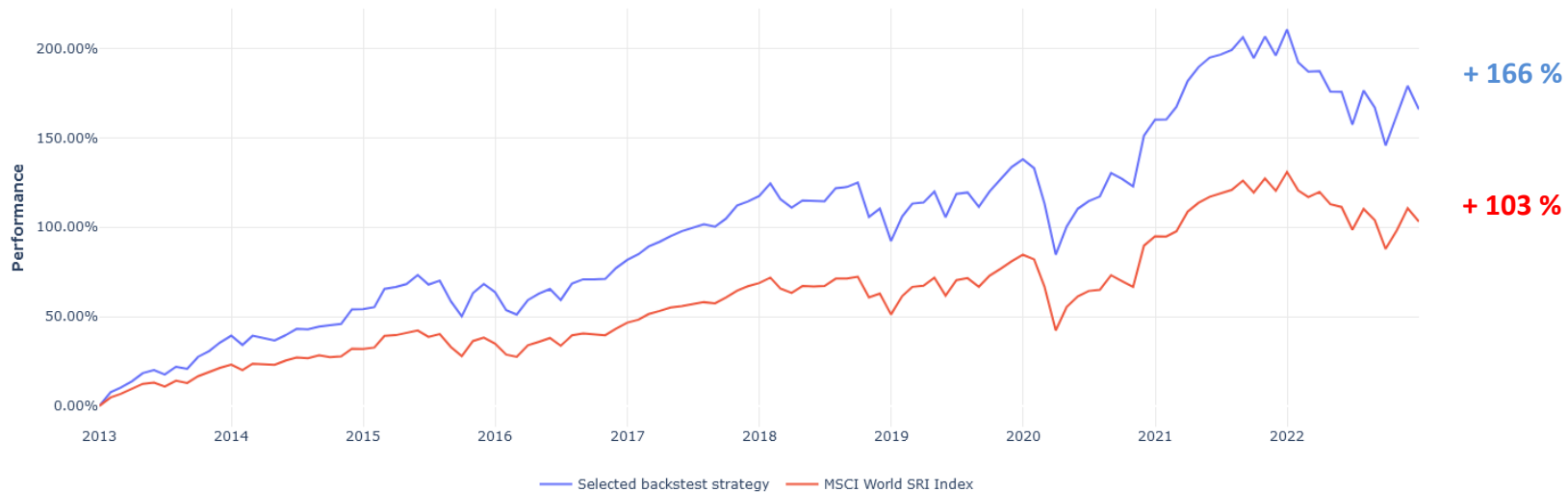


# “Sustainable-oriented” companies with high share on green patents perform better

## Portfolio construction :

The ESG score is the ratio of sustainable ESG patent value to total patent value, i.e. it indicates the proportion of sustainable ESG patent values. All stocks with an ESG score > 0 are considered for the construction of the portfolio (“Selected backtested strategy”):

ESG score = sustainable ESG patent value / total patent value



Degree of investment = 100%; no risk management; no fees; ex dividend; all stock prices are calculated in EUR ; half yearly adjustment per 06/30.

➔ significant outperformance vs. MSCI World SRI Index

Source: IPR-Strategies Ltd

# SUMMARY: Why use IP as an indicator for investing?

## 1. Early indicator:

a patent is filed long before a product is launched. “Forward looking indicator”

## 2. Sustainable business model:

The value of IP is a factor in the sustainability of the business model.

## 3. Hidden value is invisible in the balance sheet:

if at all, companies only state the cost of the IP in their intangible assets, but not their "value". However, IP value may determine innovation strength.

## 4. Proven better performance

Studies show that companies who own high and growing patent portfolios outperform companies who don't.



Q&A

