United Nations - Sustainable Development Goals (SDGs)
July 1st, 2021

Presented by

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Introduction

United Nations Sustainable Development Goals: How SDGs can be mapped to patents?

The global drivers of sustainable technological development

Who is investing in green technology (SDG 13)

The most important investors making our planet a better place (SDG 13)

Key Takeaways
LexisNexis PatentSight brings clarity to innovation for more than 10 years!

- University spin-off from WHU Business School
- Introduction of the Patent Asset Index™ methodology
- BASF and Dow Chemical start using Patent Asset Index™ in investor communication
- Broad use in industry
- Global blue-chip clients across all industries (e.g. 12 DAX companies)
- EU Commission applies PatentSight for merger analysis of Dow/DuPont and Bayer/Monsanto

1996-2008

- Academic research and selected consulting projects

2008/09

- Launch of PatentSight Analytics Platform

2012

- Launch of PatentSight Analytics Platform 2.0
- PatentsSight joins RELX Group (LexisNexis IP)

2015

- Best Data Provider Award for dataset with highest alpha potential at Alternative Data Conference in New York City
- SIIA CODiE Award Winner “Best Big Data Reporting & Analytics Solution”

2018

- SIIA CODiE Award Winner “Best Big Data Reporting & Analytics Solution”

2018/19
Redefining patent analytics by overcoming fundamental data problems

<table>
<thead>
<tr>
<th>Legacy patent software problems:</th>
<th>PatentSight’s solutions:</th>
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<tbody>
<tr>
<td>Incomplete ownership information</td>
<td>Mapping all worldwide patents to their ultimate owner</td>
</tr>
<tr>
<td>Ambiguous legal status information, not readily available for analytics</td>
<td>Providing industry leading legal status information</td>
</tr>
<tr>
<td>No accurate trend analysis possible</td>
<td>Point in time historic data, enabling true trend analyses</td>
</tr>
<tr>
<td>Legacy indicators with limited applicability, often put in black boxes</td>
<td>Scientifically proven and industry-wide accepted indicators around the Patent Asset Index™</td>
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The Patent Asset Index™ is the only scientifically developed, peer-reviewed and industry wide adopted patent indicator

Technology Relevance™
Worldwide citations received from later patents, adjusted for age, patent office practices and technology field
Average value: 1

Competitive Impact™
(Individual patent strength)
The relative business value of a patent family

Market Coverage™
Market size protected by active patents and pending patent applications on a certain invention
Value of granted US patent: 1

Innovative strength of a company or portfolio (ability to achieve competitive advantage)!

Scientific & customer valuation studies show ~80% accuracy of the Patent Asset Index™ methodology

The average Competitive Impact of opposed patents is significantly higher than that of abandoned patents.

Validation Studies
Patents with a high Competitive Impact are more frequently:

- Considered a key patent
- Attacked and defended
- Enforced in court
- Maintained longer
- Commercialized
- Standard-relevant

Our data and indicators are used by blue chip customers around the globe

**Governmental Bodies**
Antitrust, Court, Consulting

- The European Commission analyses the technology share using the Patent Asset Index™ to examine the Dow-DuPont and Bayer-Monsanto mergers and assess dominance in M&A cases.
- In front of the U.S. Tax Court, the Patent Asset Index™ is used to measure the relative value of certain patents over time for expert reports in depositions and testimony at trial (U.S. Treasury against Amazon).
- The Swiss Patent Office has improved its patent landscaping for macroeconomic analysis as well as evaluation of technology fields and companies for their own search and consulting businesses with PatentSight.

**Investor Communication**
Annual Reports

- "The method is valuable not only to demonstrate the importance of our patent portfolio to investors, but also to internally evaluate our patent strategy over time.”
  Dr. Andreas Kleinmeyer, Member of the Board of Executive Directors

- "The Patent Asset Index™ from PatentSight® evaluates global coverage and Competitive Impact. According to the results, Symrise’s IP portfolio has the most competitive impact in the entire industry.”
  Symrise Annual Report 2015

- "This method provides an accurate, overall view of the impact and efficiency of an enterprise’s investment in innovation.”
  Dr. William F. Banholzer, Executive Vice President and CTO

**Use Cases & ROI**
Example

- Philips does regular benchmarking against competitors. By using PatentSight, these analyses are now more accurate, faster to conduct and to adjust upon requests and cheaper to create (saved more than one man-year).

- Siemens significantly improved patent analysis efficiency with PatentSight.

- Shell has found that trend analysis with PatentSight helps them to identify disruptive technologies early on.
How PatentSight data is used

Governmental Bodies
Antitrust, Court, Consulting

Innovation has become "so important" for future competition "because the viability of the product line depends on your ability to keep on innovating."

Margerthe Vestager, EU antitrust chief

The European Commission analyses the technology share using the Patent Asset Index™ to examine the Dow-DuPont and Bayer-Monsanto mergers and assess dominance in M&A cases.
Recap: bringing innovation insights into the investment community

"Alternative data draws from non-traditional data sources so that when you apply analytics to the data, they yield additional insights that complement the information you receive from traditional sources." - Krishna Nathan, CIO of S&P

**Hypothesis:** Innovation is the key to success, so innovation and patent data combined with PatentSight’s analytics metrics must contribute to the big picture and help investors to take the right decisions on their investments.

**Networking & exploration:**
Learning about the concept of Alternative Data for financial vertical. Creation of datasets and implementation of appropriate measures

**Evaluation process:**
Implementing findings and re-thinking dataset structure. Mapping finance relevant information e.g., tickers to existing data. Map major indices and historic owner information to dataset

**Finding collaboration partners:** In 2018, we started working on and exploring opportunities in the investment community

**Best Data Provider Award 2018**
for dataset with highest alpha potential at EagleAlpha Data Conference in New York City

**Light bulb moment:**
Uncovering the tremendous need for ESG/SDG related information for the finance industry. Massive shift from a $22.8 trillion AUM Business to a $30.6 trillion AUM Business in 2018
We’re also seeing an increasing interest from law firms in SDG and ESG

**LATHAM & WATKINS LLP**

**ENVIRONMENTAL, SOCIAL & GOVERNANCE**

Latham leverages deep cross-border expertise to help clients navigate the multidimensional environmental, social, and governance landscape.

**DLA PIPER**

DLA Piper is committed to making businesses better by helping clients and communities transition to and thrive in a more sustainable future. We understand the unique challenges and needs of each sector and deliver seamless global solutions that help our clients around the world.

**Hogan Lovells**

...we actively seek to contribute to the achievement of the SDGs and we support our clients to do the same.

**KIRKLAND & ELLIS LLP**

‘Going Green’ is more than a catchphrase at Kirkland – it’s a guiding principle of our Firm. We are committed to enhancing the global environment through sustainability efforts, and we implement these initiatives as individuals, as a Firm and on behalf of clients. – Kirkland Green Teams
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Key Takeaways
“We cannot solve our problems with the same thinking, we used when we created them.”

Albert Einstein
Short history on sustainability

- UN Conference on the Human Environment (UNCHE) in Stockholm
- First UN conference on the environment. Considered the beginning of international (global) environmental policy
- UN Conference on Environment and Development (UNCED) in Rio de Janeiro
- Results in the Framework United Nations Framework Convention on Climate Change (UNFCCC)
- Paris Agreement
- UN SDGs (framework to succeed the Millennium Development Goals which ended in 2015)

18th Century

1972
- The concept of “sustainable” silviculture was introduced in 1713 by the Saxonian chief mining official Hans Carl von Carlowitz

1987
- Brundtland Report - work of the Brundtland Commission still recognized internationally of groundbreaking concept that facilitated broad agreement worldwide

1992
- Kyoto Protocol
  - extended the 1992 United Nations Framework Convention on Climate Change

1997

2015

2015
United Nation SDGs - an innovation driver?

The UN Sustainable Development Goals (SDGs) framework serves as the world’s roadmap to global sustainability.

Investors work with broader stakeholders to globally accomplish all SDGs.

Wealth of data available on country-level SDGs performance (e.g., World Bank, OECD, EPO).

Measure the sustainability and ethical impact. How SDGs affect portfolios is relevant to all investors.

SDG related R&D is on average more valuable than others and its value is increasing.
How can patent data be used to predict the future?

Definition
In 1987, the United Nations Brundtland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”


Implementation and success will rely on countries’ own sustainable development policies, plans and programs, and will be led by countries. The Sustainable Development Goals (SDGs) will be a compass for aligning countries’ plans with their global commitments.

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.

13/17
13 out of 17 can be mapped with related technologies.
How patents can be an indicator

Patents

Patents are territorial rights granted for inventions in science and technology as per the law in each country where the patent has been applied for.

Across most nations, patents are granted for inventions that are:

- Novel
- Inventive and/or non-obvious and
- Capable of industrial application.

The searches and search topics are not generic, but are based on the targets, indicators and the metadata of each UN SDG. Therefore, more are covered than only those found in the Green Inventory of e.g., the WIPO. For a better understanding of the patents to SDG mapping fact sheets with direct linkage are created for each SDG and their respective sub targets.

UN SDG Targets

The United Nations Sustainable Development Goals (SDGs) are targets for global development adopted in September 2015, set to be achieved by 2030. All countries of the world have agreed to work towards achieving these goals. The 17 Sustainable Development Goals are defined in a list of 169 SDG Targets. Progress towards these Targets is agreed to be tracked by 232 unique Indicators.

Indicators

The Global SDG Indicators Database maintained and regularly updated by the Statistics Division makes data on the global SDG indicators available to all users and includes both country-level data and regional and global aggregates. As of July 2019, it includes data for 166 of the 232 indicators and more than 1.2 million data records.

Metadata

An accompanying metadata repository provides the metadata for the indicators that have internationally established methodology and standards. Access to the country-level data and the metadata ensures full transparency with respect to the data and methodologies used for global reporting.
We’ve made 13 of the 17 UN SD Goals trackable through the lens of patents.
How are we helping customers?

**Measurability**
Patent data is an important source to measure a company's contribution to a sustainable world. Innovation has been identified as a key contributor to more sustainability*.

**Transparency**
Including patent data to the SDG evaluation process helps to shed more light to the effort company's put into becoming SDG compliant and avoids "green washing."

**Valuation**
Patent data in combination with the Patent Asset Index™ reveals real champions and allows stakeholders as well as shareholders a better decision-making process.

**Accessibility**
PatentSight has mapped its global patent data base to SDG related fields. This enables non patent experts to easily access their field of interest and gain valuable insights for their analysis.

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Key Takeaways
“There’s a realm of difference between those who are trying to make sustainability part of their core business strategy and those who still see it as an “add-on.”

Mark Malloch-Braun
Chairman of the Business and Sustainable Development Commission
Development of patent portfolios related to the UN SDGs in US & CN

[Graph showing the development of patent portfolios in the US and CN over time, with the number of patents increasing from 2000 to 2020.]
Portfolio Size distribution of the UN SDGs across Top 5 authorities

 Bubble Area: Portfolio Size
Patent Asset Index™ distribution of the UN SDGs across Top 5 authorities

Bubble Area: Patent Asset Index™

[Image of bubble chart representing the distribution of UN SDGs across top 5 authorities with icons and percentages]
Top 10 Companies in SDG related portfolios vs. not related to SDGs – Portfolio Size (left) and Patent Asset Index™ (right)
Top 10 Academia in SDG related portfolios vs. not related to SDGs – Portfolio Size (left) and Patent Asset Index™ (right)
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Key Takeaways
"Every government, company, and shareholder must confront climate change."

Larry Fink
CEO, BlackRock
Development of patents in Climate Action, invented in CN, JP or US and top performing entities in these jurisdictions
### Top 10 entities in CN, JP and US in SDG 13 related technologies by field of invention

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<thead>
<tr>
<th>Entity</th>
<th>Negative electrode</th>
<th>Electrode material</th>
<th>Emission control</th>
<th>Energy storage</th>
<th>Backup power</th>
<th>Power control</th>
<th>Secondary battery</th>
<th>Battery</th>
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**Technology Cluster**

**Bubble Area: Patent Asset Index™**
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Key Takeaways
"Solutions to the climate crisis are within reach, but in order to capture them, we must take urgent action today across every level of society."

Al Gore
Chairman and Founder,
The Climate Reality Project
Patent data reveals the true effort companies put into more sustainability

Share of Patent Asset Index™ in entire company portfolio belonging to Climate-friendly Technologies (Top 10 Companies in SDG 13 related inventions)

- Vestas Wind: 88.7%
- Samsung SDI: 74.5%
- LG Chem: 48.2%
- Merck KGaA: 26.8%
- Toyota Motor: 23.9%
- GE: 19.9%
- GM: 16.4%
- Panasonic: 13.1%
- Bosch: 12.2%
- Samsung: 3.6%
Top 10 portfolios in the field of Climate Action — average quality and fields of application

Bubble Size = Patent Asset Index™

Portfolio Size
Active families

Average Quality
Avg. Competitive Impact

0 5,000 10,000 15,000

Merck KGaA
Vestas Wind Systems
Samsung
GE
Samsung SDI
Panasonic
LG Chem
Toyota Motor
GM
Bosch

Active patent families (580,367) in SDG 13 distributed in Technology Clusters (Level 2-3)
Patents with a high average quality in the field of electric power and wind turbine generator—categorized by PatentSight’s Technology Cluster
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Key Takeaways
Why should lawyers care about the SDGs?

Companies are making the United Nations Sustainable Development Goals strategic to their business, thus aligning their IP strategy with these business objectives.

LexisNexis allows lawyers and patent professionals to quickly familiarize themselves with the patent perspective of the SDGs and understand global, industry and company movements. They will be earlier and better positioned to guide their clients on how to successfully master the adaptation of the SDGs in corporate and IP strategies.
Thank you

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