Yewno Emerging Technologies

Technology Changes Everything

Emerging technologies are transformative technologies that are likely to disrupt the real-economy. Companies that are likely to benefit from the adoption of emerging technologies can offer unique investment opportunities since IP-based metrics are naturally forward-looking and are derived from trustworthy and curated content sources.

Investing in the Future of Humanity

Yewno’s Emerging Technology data feed provides factor scores across a set of 35 unique technologies. The tracked emerging technologies include computing and artificial intelligence related technologies, new industrial technologies such as 3D printing or satellites, and environmental and energy related technologies like solar power and electric vehicles.

Investing in these emerging technology themes dramatically outperforms the NQGI global benchmark by naturally selecting companies from the index with strong intellectual property assets, leading to superior risk adjusted returns.

Transforming Information Into Knowledge

Yewno identifies key concepts related to each emerging technology, then scans millions of patents, leveraging advanced techniques typically applied within the fields of complex systems, computational linguistics and artificial intelligence.

Content sources:
- 1.9M+ granted patents from the US International Patents Office (USPTO) from 2010-2018
- 1.6M+ granted patents from the World Intellectual Property Organization (WIPO) from 2010-2018

Factors per emerging technology and company:
- **Patents**: Number of granted patents within a 1-year window related to the corresponding technology
- **IP Contribution Ratio**: Ratio of entity IP in the target technology to the total IP produced related to the target technology
- **IP Pure Ratio**: Ratio of entity IP in the target technology to the total entity IP

Specifications:
- Global coverage of 3,000+ unique listed emerging technology companies
- Scores are generated since 2011
- Scores are updated on a weekly basis
Artificial Intelligence Investment Strategy Case Study

The Emerging Technology data feed can be utilized to construct portfolios focused on individual technologies of interest.

For example, we can compare the performance of equally weighted portfolios of companies selected from NQGI based on whether or not they have Artificial Intelligence related patents such as those from the Deep Learning, NLP, Image Recognition, or Speech Recognition and Chatbots categories.

In this example, an investment strategy that focuses on listed companies in NQGI with Deep Learning IP significantly outperforms an investment strategy that focuses on companies with only NLP research, but both strategies significantly outperform the NQGI benchmark.

Intellectual Property Contribution Ratio

The intellectual property contribution ratio factor allows you to break down which companies contribute the most to the research of a given emerging technology.

In this example, IBM, Alphabet, and Microsoft dominate the Deep Learning research space for a 1-year window ending on January 1, 2018.

IBM is also a key player in Natural Language processing, and has many patents related to its famous Watson system. Canon leads the Image Recognition space, however, and Dolby Laboratories generated the highest amount of Speech Recognition and Chatbot related intellectual property over the same window.

The IP Contribution Ratio factor can be used for screening or even as a weighting factor for portfolio construction.
Electric Vehicles and Lithium Batteries
Investment Strategy Case Study

As another example, we can build portfolios for a new theme from the Emerging Tech data feed by combining sub-themes of interest. For example, if you wanted to track both Electric Vehicles and Lithium Battery intellectual property producing companies, you could use both columns of the data feed to build a selection screen.

In this example, the Electric Vehicles and Lithium Batteries portfolio is constructed by allocating a 50% weight to the constituents of each portfolio. Companies which appear in both indexes are overweighted.

Mobile Payments and Digital Currencies
Investment Strategy Case Study

If you wanted to track companies which are investing in mobile transaction technologies, you could build a portfolio based on the Digital Currency and Mobile Payments intellectual property factors.

In this example, the Mobile Payments and Digital Currencies portfolio is constructed by allocating a 50% weight to the constituents of each portfolio. Once again, companies which appear in both indexes are overweighted.

Capture Multiple Market Segments

By combining the Electric Vehicle and Lithium Battery categories, you can naturally diversify a portfolio that tracks technologies useful for electric cars in general.

In addition to traditional automotive manufacturers such as Toyota, a combined portfolio constructed this way will also have heavy weights in battery manufacturers and IT companies like LG Chemical, Sony, and NEC Corporation.
Capture Shifts in IP Focus Over Time
IP Portfolio Case Study

The emerging technology data feed can be used to analyze a given company’s patent portfolio evolution over time.

For example, Amazon was mainly focused on Big Data in early 2013, but quickly diversified its patent portfolio to include a heavier focus in Virtual Assistant related technologies, with the obvious manifestation of this research being the launch of the Echo smart speaker and the accompanying Alexa virtual assistant in June 2015.

Adjust for Acquisitions
IP Portfolio Case Study

The Emerging Tech data feed is adjusted for acquisitions, name changes, and spinoffs over time.

For example, when Tesla Motors acquired SolarCity on November 1, 2016, it signalled a shift in the company’s core business from an automotive and battery manufacturer to something more broad, expanding with products like the Power Wall and Solar Roofs. The acquisition of SolarCity includes a large number of Solar Power related patents and intellectual property, which is reflected in the data feed.
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