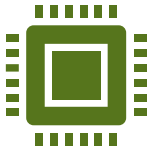




Patent Data for Thematic Investing

Thematic Investing in technologies can lead to great returns.



AI Infrastructure
iShares AIFS
+28.8% (2025)



Aerospace & Defence
iShares 5J50
+37.6% (2025)



Quantum Computing
VanEck QUTM
+25.7% (2025,H2)



Hydrogen
Amundi AMEE
+37.1% (2025)

But:



How to make sure
not to invest **too early**
or **too late**?



How do you **quantify company**
exposure for basket / index
construction?

Patent Data for Thematic Investing



Identify the sweet spot
to invest in emerging technologies

- Patent filings represent company decisions to invest in technology areas
- Early indicator for expected market size and market readiness of technologies by market participants
- Technology cluster growth as indicator for timing purposes



Quantify the company exposure
to any technology theme

- Patent portfolios represent the technology mix of companies that lead to the revenue distribution of the future
- Quantify exposure (absolute or relative) through patent footprint of company
- Technology clusters from objective data with all possible levels of granularity from «Artificial Intelligence» to «Metal powder for 3D printing»

Patent Data: **the best source for innovation intelligence**

Objective data points representing expectations of market participants at any given time

Standardized technology tree enabling exposure measurements at any level of granularity

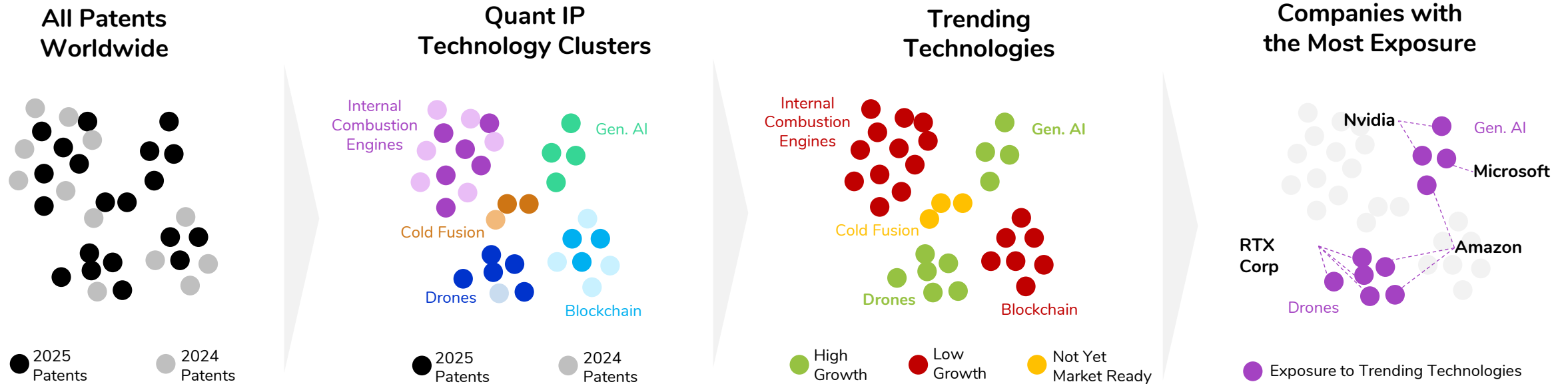
Global coverage of all companies (private and public) and technology fields

Transparent and validated information due to strict processes and validation of patent offices

Quant IP Thematic Clusters

Identifying Investment Themes Through Machine Learning

Quant IP Thematic Clusters



Use smart algorithms and patent data to **cluster similar patents into technology fields**

Identify **fastest emerging technology fields** as high-potential investment themes

Invest in **companies with the most exposure** to trending technologies

Thematic Clustering Backtest I

Sector-Neutral Backtest, Jan 2026

Methodology (Construction / Universe)

- **Universe:** US Market Equities, Market Cap >1B USD
- **Indicators:** Quant IP TrendTech Score
- **Approach:**
 - GICS Sector Ranking, 4 portfolios (3 tertiles + “None” for no patent activity) per sector
 - Market cap weighted positions within GICS Sectors
 - Market Cap weighted GICS Sectors
 - Yearly Rebalancing
 - No transaction costs
- **Currency:** USD

Methodology (Signal)

Step 1: Identifying Trending Technologies

Minimum Size Limit

Only consider technologies of a certain maturity to reduce noise signals and ensure investability



Absolute Growth

Capturing total recent innovative activity within the technology field



Relative Growth

Timing investments at a sweet spot where market participants' expectations for market size change the most



Quant IP TrendTech Score

One score ranking technology-based investment themes according to risk/reward alongside their position in the technology cycle

Step 2: Identify Companies Most Exposed to Trending Technologies

Total Exposure

How many inventions does this company have in trending technology fields?



TrendTech Score

Weighting each invention by how fast the relevant technology is growing



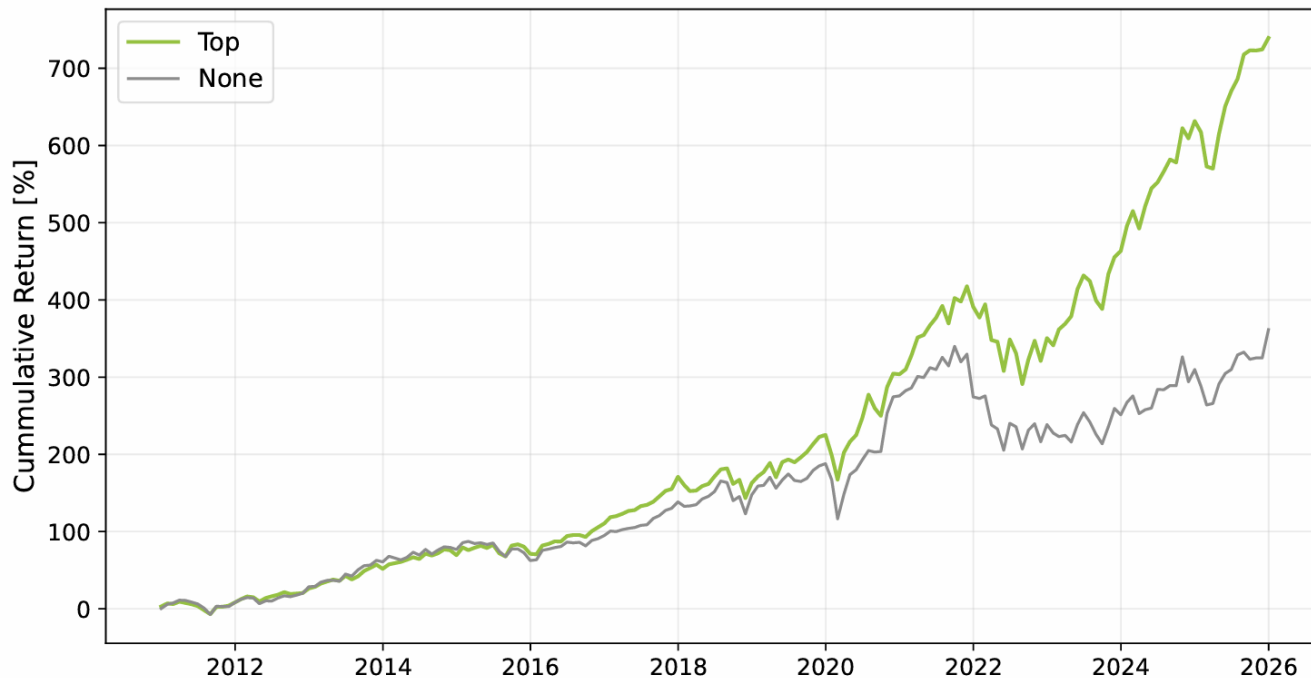
Quant IP Trending Themes Portfolio

Growth-driven portfolio investing in companies innovating within the fastest growing technologies

Results

Companies with the most exposure to trending technology themes outperform companies with no exposure by a wide margin without increasing the risk on a portfolio level. The signal works across sectors in this sector-neutral backtest.

Cumulative Performance Top/None



Metrics Top/None

Metric	Top	None
Return p.a.	15.23%	10.73%
Total return	739.26%	361.52%
Sharpe ratio	0.92	0.55

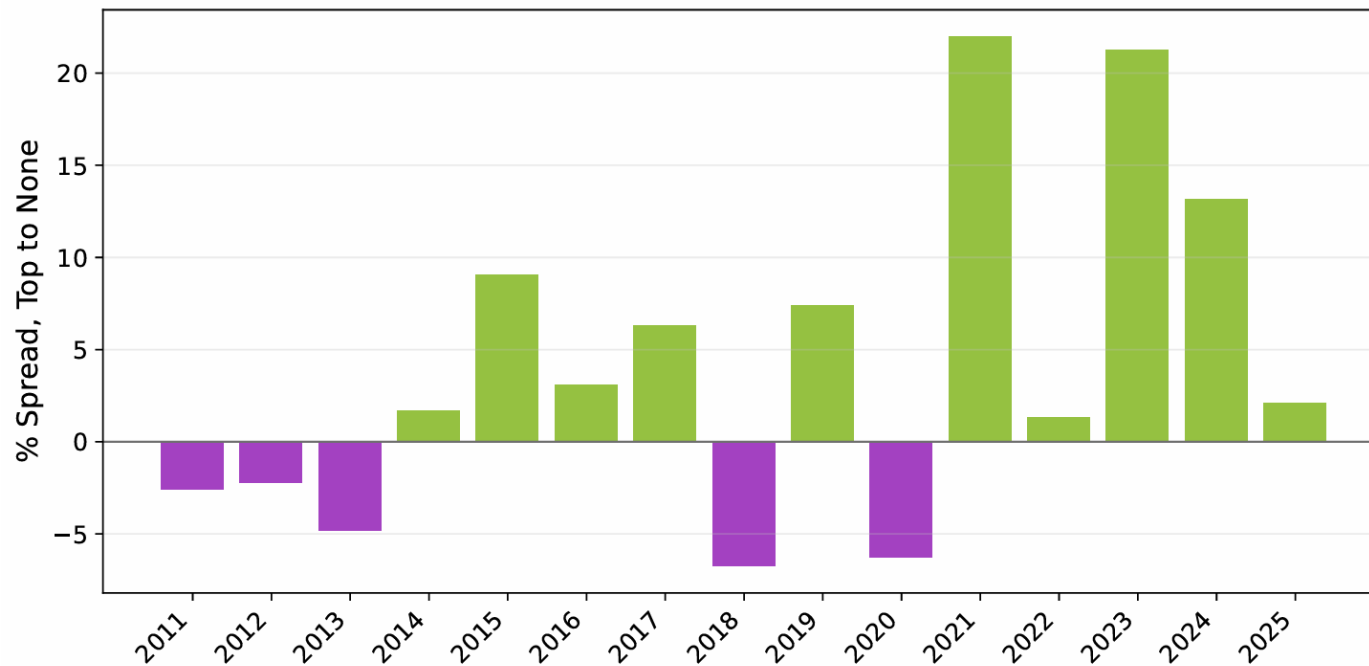
Periods Top Band

Top 5 Periods	Flop 5 Periods
2017, 2019, 2020, 2023, 2024	2011, 2014, 2015, 2018, 2022

Results

Outperformance in 10 out of 15 years and 8 out of 10 last years. No alpha decay, alpha not correlated to absolute market return

Annual Spread Top/None



Max. Drawdowns Top Band

Peak	Trough	Recovery	Max drawdown
2021-11	2022-08	2023-06	-24.47%
2019-12	2020-02	2020-06	-17.83%
2011-03	2011-08	2012-01	-14.84%
2018-08	2018-11	2019-03	-13.64%
2024-12	2025-03	2025-05	-8.42%

Results

Stocks with high exposure to top clusters **outperform over all time periods.**

Window Spread Top/None



Top 5 Technology Clusters by Contribution

Cluster	Share of cluster-attributed perf.
Software Testing	6.51%
Secure Networking	5.30%
Data Management Systems	5.27%
User Interaction Systems	5.03%
Network Management	4.91%
Top 5 Clusters	27.03%

Share computed as absolute cluster contribution divided by the total absolute cluster-attributed portfolio performance.

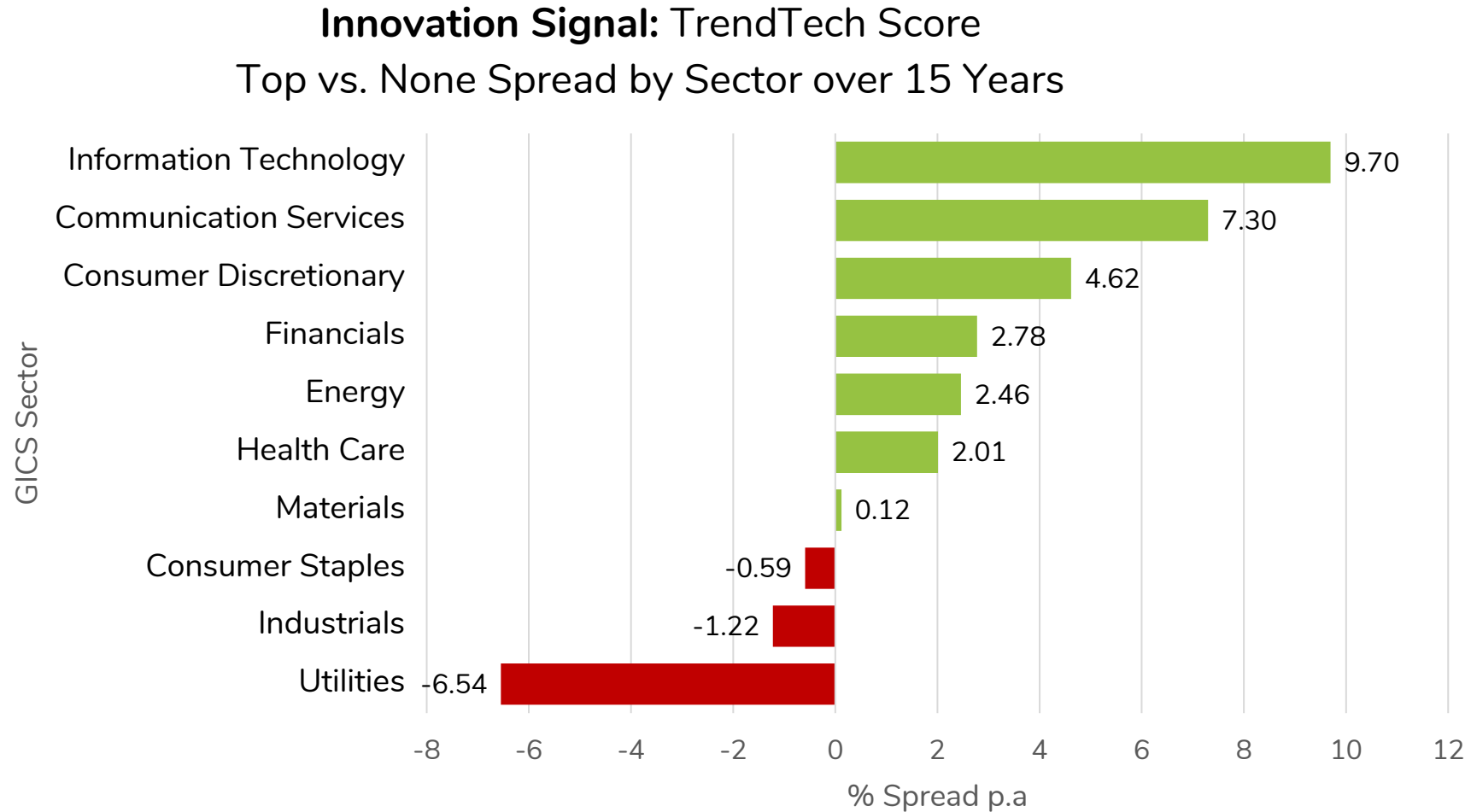
Thematic Clustering Backtest II

Sector-Specific Backtest, Jan 2026

Methodology (Construction / Universe)

- **Universe:** Developed Market Equities, Market Cap >1B USD
- **Indicators:** Quant IP TrendTech Score
- **Approach:**
 - Sector-specific within GICS sectors
 - Baseline: full sector exposure (no signal filter)
 - Signal: within-sector percentile selection by metric
 - Market cap weighted positions within GICS Sectors
 - Yearly Rebalancing
 - No transaction costs
- **Currency:** USD

TrendTech Performance in Sectors



Spreads above are based on geometric annualized returns, comparing the Top 30% of innovators to companies with no innovation. Results are based on a 15-year sample period with annual rebalancing; Real Estate is excluded due to insufficient signal history.

Appendix

Quant IP Data Quality

Quant IP Data Quality

- A solution developed specifically for financial markets participants.
- Full-service solution supporting quantitative, thematic and fundamental strategies.
- Global coverage: $\approx 57,000$ current public companies ($\approx 97,000$ companies all time), millions of private companies.
- All data is point-in-time.
- Back-testable history: US 1995, EU 2001, Asia 2005.
- All data mapped to identifiers: CapIQ ID, ISIN, ticker.
- Data sources: 1) a global patent data aggregator, 2) S&P for corporate trees and identifiers.
- Monthly update.
- Delivery: SFTP, API, Snowflake, UI.
- Mapping quality and data structure making it easy to ingest and put into production.