



S-Network Medical Breakthroughs Index (PMBI)

Q4 2019

Industry Overview

- ❑ **Healthcare is expected to grow to \$4 trillion and 20% of GDP by 2020**
- ❑ **Big Pharma Pipelines Refilled Through M&A not R&D**
- ❑ **Pharmaceutical company research emphasizes extending patents, not new innovations**
- ❑ **The biotech and molecular diagnostic industries are creating the innovations that can impact disease**
- ❑ **The patented drugs become generics**
- ❑ **Big Pharma has begun to acquire biotech companies to replenish revenues**

Market Overview

- ❑ **Trial outcomes drive virtually all key capital market events in biotech**
 - Partnering/licensing
 - M & A
 - Add-on financing
- ❑ **Existing indexes do not adequately capture this**
 - Market cap weighting creates established-company bias

Index Rationalization

- ❑ **Currently there are more products in Phase II or III clinical trials with the Food and Drug Administration (“FDA”) than at any other time in history**
- ❑ **Therapies that are successful often represent significant progress against a particular disease and are therefore potentially quite valuable**
- ❑ **Most of these trials are NOT being conducted by “Big Pharma”**
- ❑ **Heretofore, there has been no financial product that captures this extraordinary level of activity and innovation**

Index Description

❑ 76 public companies with therapies in Phase II or III clinical trials

- Market capitalization greater than \$200 million
- Market capitalization under \$5 billion
- Adequate cash to guard against dilution before trial completion
 - Cash to cover 24 months of burn rate
- Potential for significant price moves upon announcements

❑ Reconstituted semiannually

❑ Rebalanced quarterly

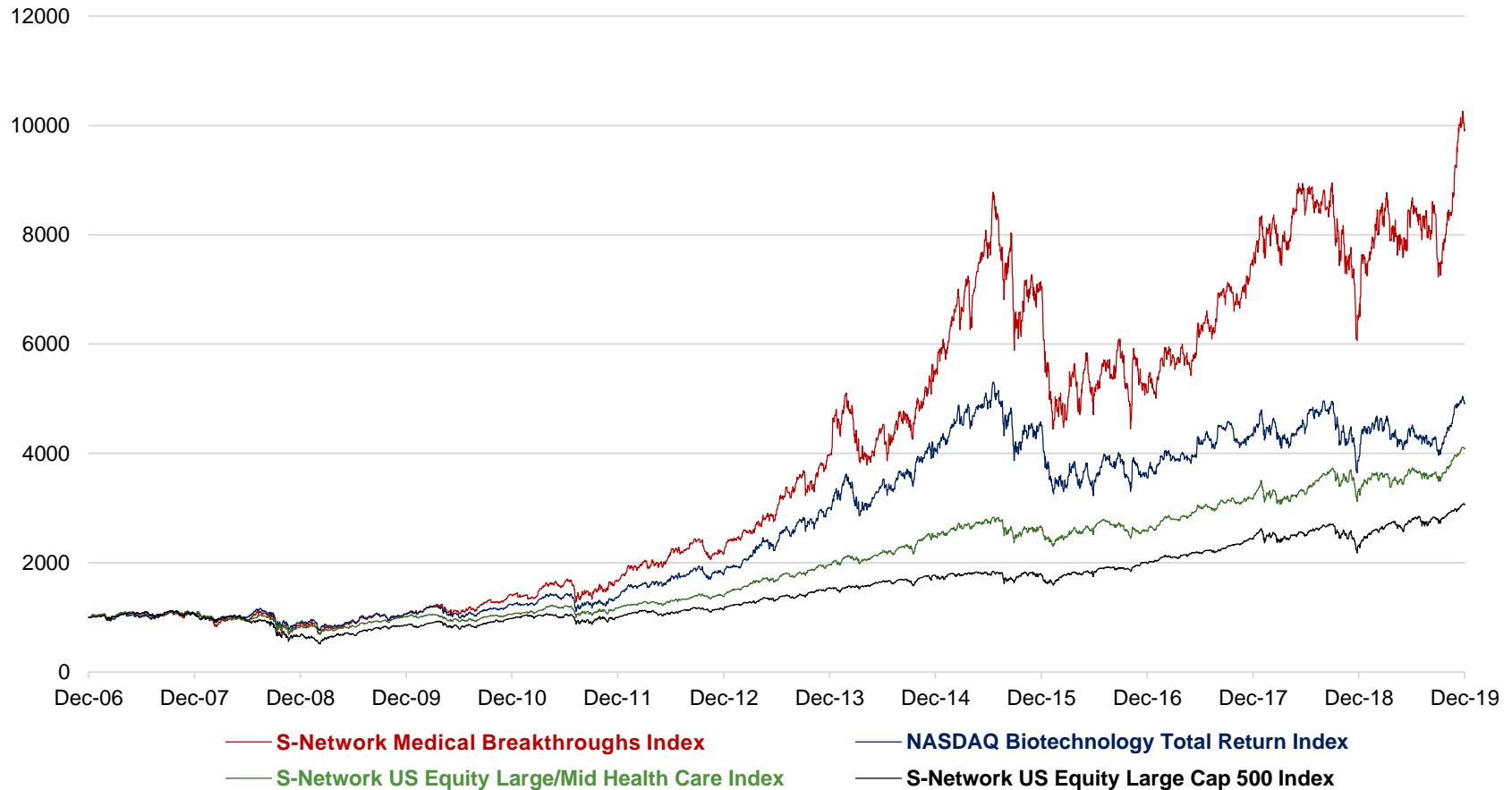
Universe

□ Universe of small-cap and mid-cap firms is regularly rejuvenated

- 490 public companies with products in trial
- 29 biotech IPOs in 2019 alone (YTD as of 10.28.19)
- Big Pharma only performs 1/3 of clinical trials

Historical Performance

S-Network Medical Breakthroughs Index vs. Benchmarks
(12/31/2006–12/31/2019)



*To ensure fair comparisons, all of the starting index values are normalized to 1,000 as of December 31, 2006.

Source: Bloomberg, as of 12/31/2019

Top Ten Constituents

Company	Ticker	Country	Weight
Mirati Therapeutics Inc	MRTX UQ	United States	4.57%
Bluebird Bio Inc	BLUE UQ	United States	4.37%
Global Blood Therapeutics Inc.	GBT UQ	United States	4.31%
MorphoSys AG ADR	MOR UQ	Germany	4.08%
Immunomedics Inc	IMMU UQ	United States	3.93%
Intercept Pharmaceuticals Inc	ICPT UQ	United States	3.65%
United Therapeutics Corp	UTHR UQ	United States	3.48%
Allakos Inc.	ALLK UQ	United States	3.45%
FibroGen Inc	FGEN UQ	United States	3.37%
Alkermes plc	ALKS UQ	United States	2.89%

Source: Bloomberg, as of 12/31/2019

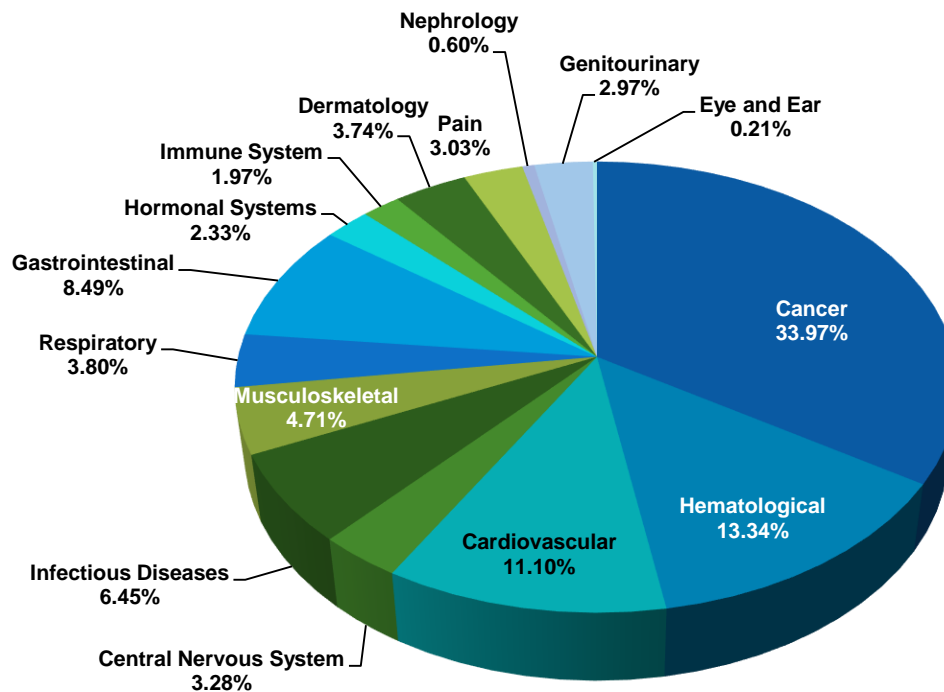
Market Capitalization Profile

Market Capitalization Profile	
Number of Constituents	69
Total Market Capitalization	112.83 Billion USD
Largest Market Capitalization	5.08 Billion USD
Smallest Market Capitalization	219.93 Million USD
Average Market Capitalization	1.64 Billion USD
Median Market Capitalization	1.25 Billion USD

Source: Bloomberg, as of 12/31/2019

Therapeutic Areas Distribution

Therapeutic Area Distribution



Source: Bloomberg, as of 12/31/2019

Construction Methodology

❑ Unique component weighting methodology that incorporates:

- Economic potential of therapy in relation to company size based on independent consensus estimates
- Status of trial – likelihood of success
- Basic screens for investability and liquidity

❑ Gains from successes should drive profitability in entire index

Statistical Profile I

Total Return Appreciation

	S-Network Medical Breakthroughs Index	NASDAQ Biotechnology Total Return Index	S-Network US Equity Large/Mid Health Care Index	S-Network US Equity Large Cap 500 Index
10 Year	843.40%	364.74%	307.02%	260.14%
5 Year	81.45%	21.91%	65.80%	75.14%
3 Year	94.01%	38.69%	59.07%	54.64%
1 Year	50.10%	25.11%	22.10%	31.88%

Compound Annual Growth Rate

	S-Network Medical Breakthroughs Index	NASDAQ Biotechnology Total Return Index	S-Network US Equity Large/Mid Health Care Index	S-Network US Equity Large Cap 500 Index
10 Year	25.16%	16.61%	15.07%	13.67%
5 Year	12.66%	4.04%	10.64%	11.86%
3 Year	24.72%	11.52%	16.73%	15.64%
1 Year	50.10%	25.11%	22.10%	31.88%

Source: Bloomberg as of 12/31/2019

Statistical Profile II

Annualized Monthly Standard Deviation

	S-Network Medical Breakthroughs Index	NASDAQ Biotechnology Total Return Index	S-Network US Equity Large/Mid Health Care Index	S-Network US Equity Large Cap 500 Index
10 Year	27.36%	21.15%	12.66%	12.52%
5 Year	31.25%	23.41%	13.72%	12.15%
3 Year	25.67%	20.90%	13.26%	12.31%
1 Year	27.95%	23.37%	11.95%	13.19%

Sharpe Ratio

	S-Network Medical Breakthroughs Index	NASDAQ Biotechnology Total Return Index	S-Network US Equity Large/Mid Health Care Index	S-Network US Equity Large Cap 500 Index
10 Year	0.9456	0.8106	1.1326	1.0443
5 Year	0.5086	0.2421	0.7291	0.8974
3 Year	0.9271	0.5457	1.1122	1.1115
1 Year	1.5272	0.9802	1.5608	2.0220

Source: Bloomberg as of 12/31/2019

Statistical Profile III

Correlation (Monthly, vs. SN500T)

	S-Network Medical Breakthroughs Index	NASDAQ Biotechnology Total Return Index	S-Network US Equity Large/Mid Health Care Index
10 Year	0.6045	0.6788	0.8013
5 Year	0.6248	0.7079	0.8018
3 Year	0.6869	0.7643	0.8133
1 Year	0.6404	0.7086	0.6822

Beta (Monthly, vs. SN500T)

	S-Network Medical Breakthroughs Index	NASDAQ Biotechnology Total Return Index	S-Network US Equity Large/Mid Health Care Index
10 Year	1.3204	1.1461	0.8097
5 Year	1.6072	1.3642	0.9055
3 Year	1.4326	1.2974	0.8760
1 Year	1.3566	1.2553	0.6182

Source: Bloomberg as of 12/31/2019

Statistical Profile IV

R-Squared (Monthly, vs. SN500T)

	S-Network Medical Breakthroughs Index	NASDAQ Biotechnology Total Return Index	S-Network US Equity Large/Mid Health Care Index
10 Year	0.3654	0.4607	0.6420
5 Year	0.3904	0.5012	0.6429
3 Year	0.4718	0.5842	0.6614
1 Year	0.4101	0.5021	0.4654

Source: Bloomberg as of 12/31/2019

Portfolio Details & Distribution

- ❑ **Price and Total Return Indexes Calculated Daily (EOD) in USD**
- ❑ **Index Values Distributed via the NYSE GIF**
- ❑ **Comprehensive Historic Data (including simulated back-tests from 12/31/2006)**
 - Daily Prices for Price-Only + TR Indexes in USD + EURO
 - Semiannual Portfolio Snapshots (Historic Constituents and Weights)
- ❑ **Extensive Analytic support**
 - Quarterly Reports (“Index Insights”)
 - Industry Overviews
 - Extensive Statistical Data
- ❑ **Comprehensive web site**
- ❑ **Broad data distribution via third party vendors**
 - Bloomberg, Yahoo, Marketwatch, etc.
 - S-Network contribution page on Bloomberg: SNET

Complete data availability and index transparency facilitate more effective benchmarking and investment analytics.