

Nasdaq Next Generation 100™ Index: Midcap Complement to the Nasdaq-100®

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The Nasdaq Next Generation 100™ (NGX™) was launched on August 24, 2020 to offer investors a new benchmark to track the same type of innovation-driven companies that are part of the Nasdaq-100 (NDX®), but residing mostly within the midcap size spectrum. The index functions as a natural complement to the Nasdaq-100, and is particularly useful as a means of gaining exposure to companies that stand a reasonable chance of graduating into the Nasdaq-100 at a future date, but are still in an earlier stage of growth.

Reasons to consider NGX:

- Very similar methodology to the Nasdaq-100, and no overlap
- On average, six NGX companies “graduate” into the Nasdaq-100 at each annual reconstitution
- NGX graduates tend to outperform, on average, prior to graduation and receive much higher index weightings while in NGX than they do upon joining the Nasdaq-100
- Much lower single-company concentration in NGX than NDX (2.1% max weight as of December 31, 2023)
- Only ~32% exposure to the Technology sector (based on ICB Industry) vs. ~58% for NDX, but overall still ~80% exposure to the top 3 “new economy” sectors (Tech + Consumer Discretionary + Health Care)
- Scores highly on key measures of innovation (R&D spending, patent filings) vs. midcap benchmarks
- Substantial exposure to key investment themes driving economic growth in the 21st century

Methodology Overview

To be eligible for inclusion in the index, a security must meet the existing Nasdaq-100 Index® eligibility criteria. The index begins with the universe of all companies, both domestic and foreign, that are listed on the Nasdaq Stock Market® (issuer of the security’s primary U.S. listing must exclusively be listed on the Nasdaq Global Select Market® or Nasdaq Global Market® exchanges). The index then removes all companies classified as Financials from eligibility according to the Industry Classification Benchmark (ICB). The Nasdaq Next Generation 100 Index follows the same annual reconstitution and quarterly rebalancing schedule as the Nasdaq-100 Index.

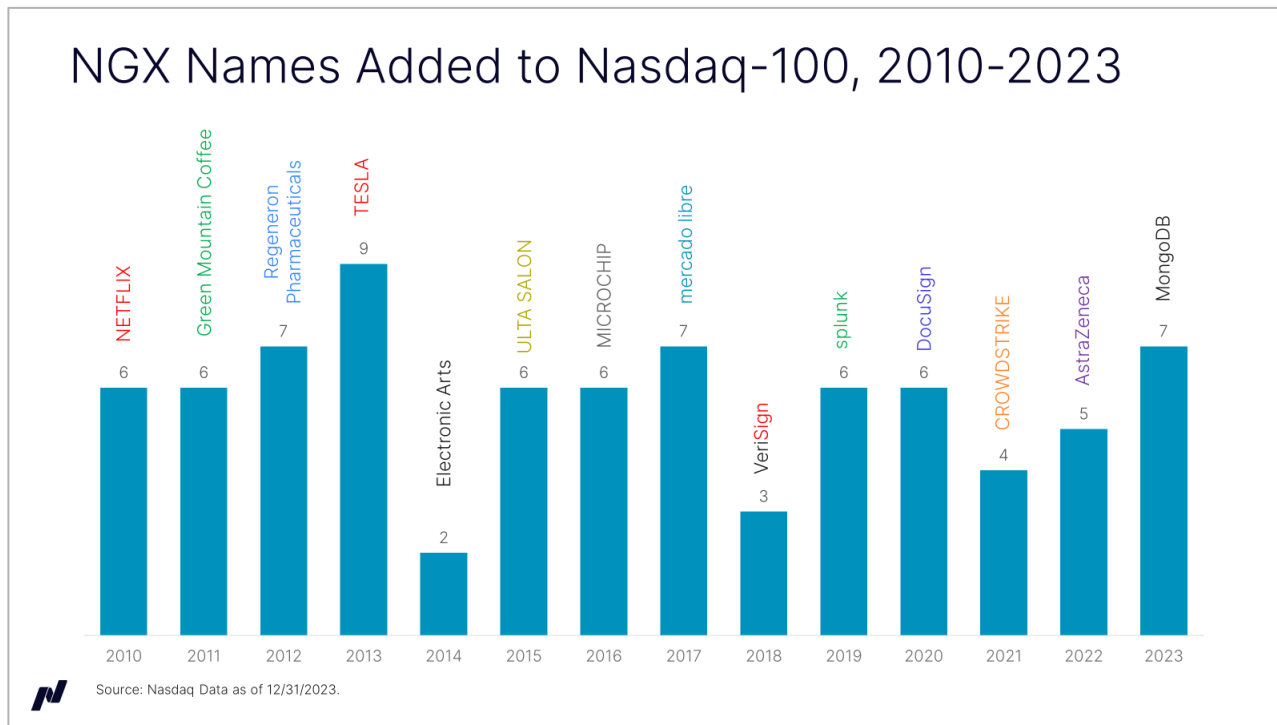
At each Index Reconstitution, all issuers that meet the applicable security eligibility criteria are ranked by market capitalization, with the issuer having the highest market capitalization getting a rank of 1, the issuer having the second highest market capitalization getting a rank of 2, and so on. The next largest 100 issuers by market capitalization that are not in the Nasdaq-100 Index are included in the index.

The index is a modified market capitalization-weighted index. Initial weights are determined by dividing each Index Security’s market capitalization by the aggregate market capitalization of all Index Securities. The initial index weights are adjusted to meet the following constraint: No Index Security weight may exceed 4%.

Nasdaq Next Gen 100: Pipeline for Nasdaq-100 Graduates

Since 2010, a total of 80 NGX constituents have “graduated” into the Nasdaq-100. Some well-known examples are Netflix in 2010, Tesla in 2013, DocuSign in 2020, CrowdStrike in 2021, and AstraZeneca in 2022. Most

recently, MongoDB – a leading database platform developer with a market cap in excess of \$30B – graduated from NGX into NDX on December 18, 2023. Its total return in the 12 months leading up to graduation was just over 100%.

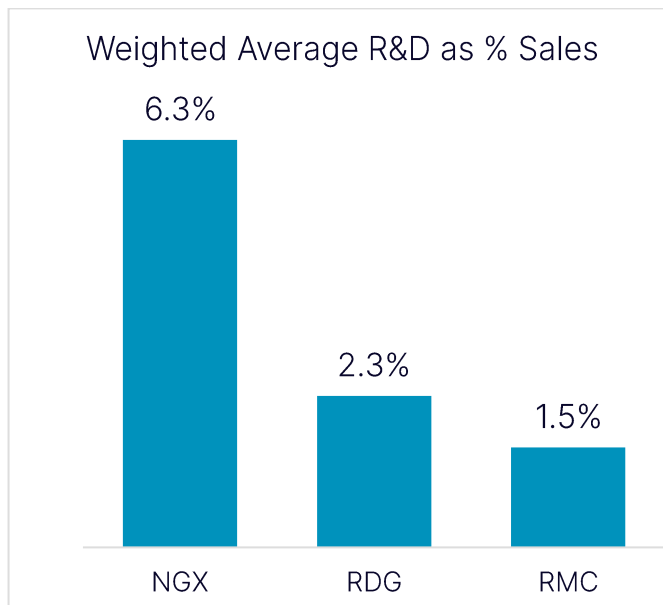
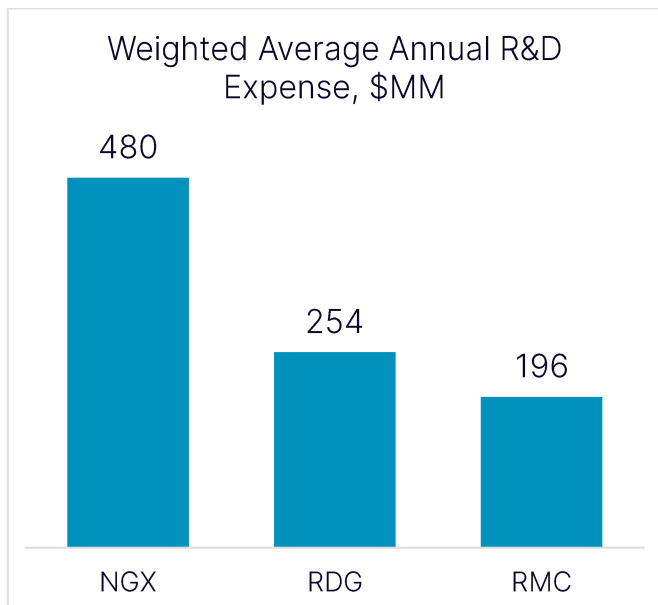


Looking at the full history of NGX graduates, a compelling argument comes into focus for adding exposure to these names before they’re added to NDX: their performance tends to be much better in the 12 months leading up to graduation (72.4% median, 82.3% average) than in the 12 months following graduation (11.0% median, 12.8% average). Their weights also drop precipitously as they exit one index and enter another. The largest NGX constituents tend to top out at around a 2-3% weighting (hard cap at 4%), while the smallest NDX constituents can be weighted as low as 0.10%. Thus a compounding effect is observed, wherein the most successful NGX companies outperform and do so at higher weights, driving overall index performance higher; once they join NDX, they tend to (initially) underperform – but at such low weights so as not to exert a measurable downward impact on index performance.

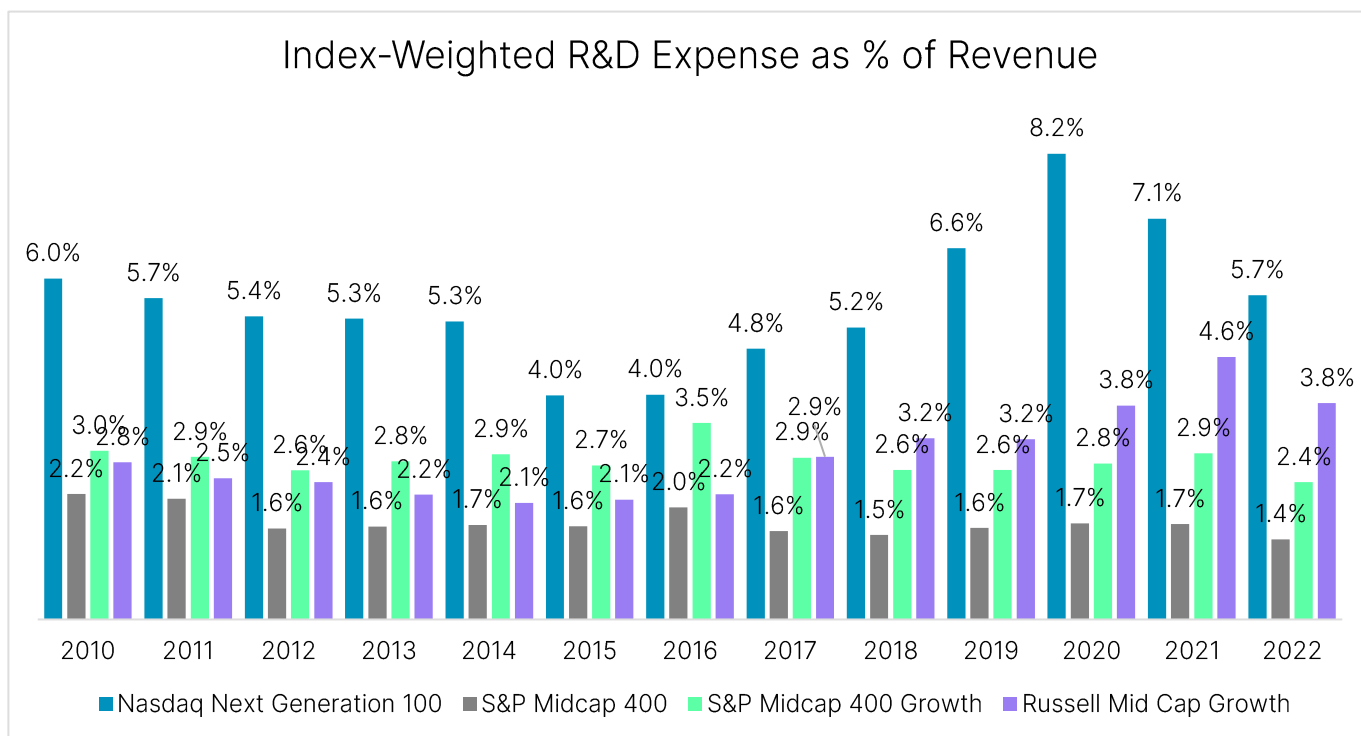
As of December 31, 2023, 39 of the current 100 companies in the Nasdaq-100 had graduated from the Nasdaq Next Generation 100 Index at some point over the past 14 years (based on simulated backtest and live results). Collectively they represent 19.4% of the Nasdaq-100’s index weightings.

NGX Companies Score Highly on Innovation Metrics vs. Other Midcap Benchmarks

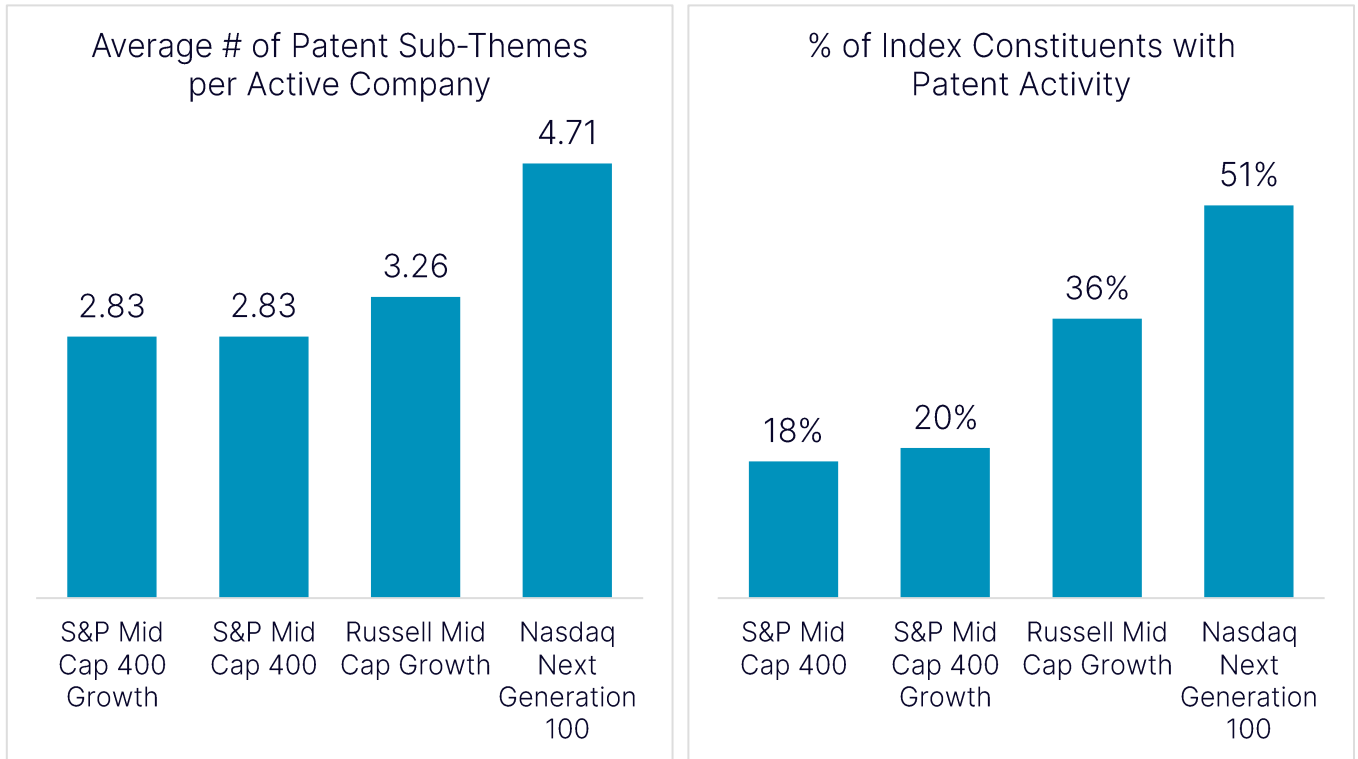
Just as the Nasdaq-100 consistently scores better than large cap benchmarks like the S&P 500 on innovation metrics such as R&D spending, patent contribution ratios and patent portfolio valuations, so too does the Nasdaq Next Generation 100 outperform its midcap competitor benchmarks on all of these measures. Compared to the Russell Mid Cap Growth Index (RDG), NGX constituents spent 90% more on R&D on a weighted average basis, and 2.7 times as a percentage of sales, in the most recent trailing four quarters of data as of December 31, 2023. Compared to the broader Russell Mid Cap Index (RMC), NGX companies spent nearly 2.5 times more on R&D on a weighted average basis, and 4.1 times as much as a percentage of sales.



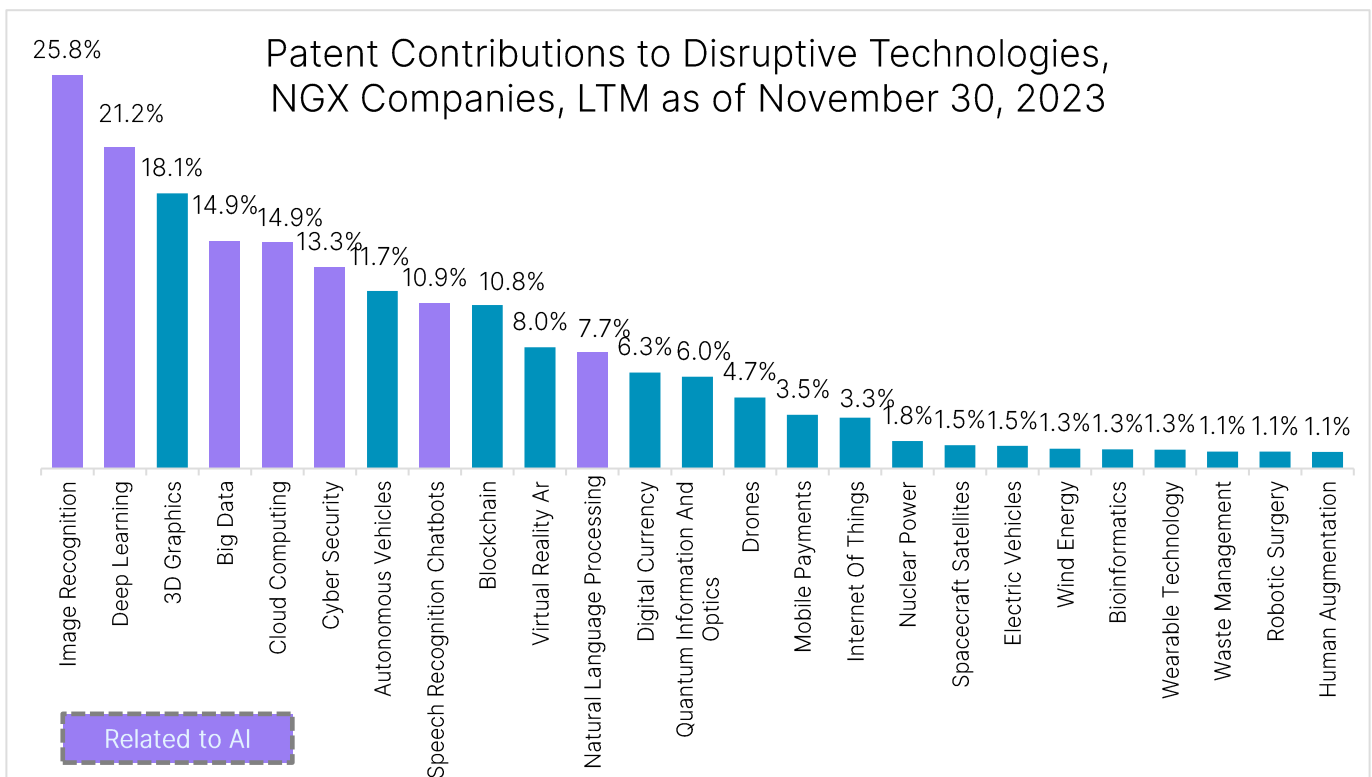
Looking at an extended time horizon, NGX appears to be a consistent outperformer in terms of the reinvestment rate of revenue into R&D, whether comparing to a broad midcap benchmark, or even midcap growth:



Compared to midcap benchmarks from S&P and Russell, Nasdaq Next Generation 100 constituents also tend to be more active in filing patents across various areas of disruptive technology, on average. Around half of the index registered disruptive tech patent activity over the most recent 12-month period ending November 30, 2023, nearly three times the rate for the S&P Midcap 400 Index. Furthermore, among the NGX constituents that do have such patent activity, they also tend to file across more areas of disruptive technology, on average – breadth and depth, in other words. NGX companies filed patents in nearly five distinct areas of disruptive technology, vs. approximately three areas each across the other three midcap benchmarks analyzed.

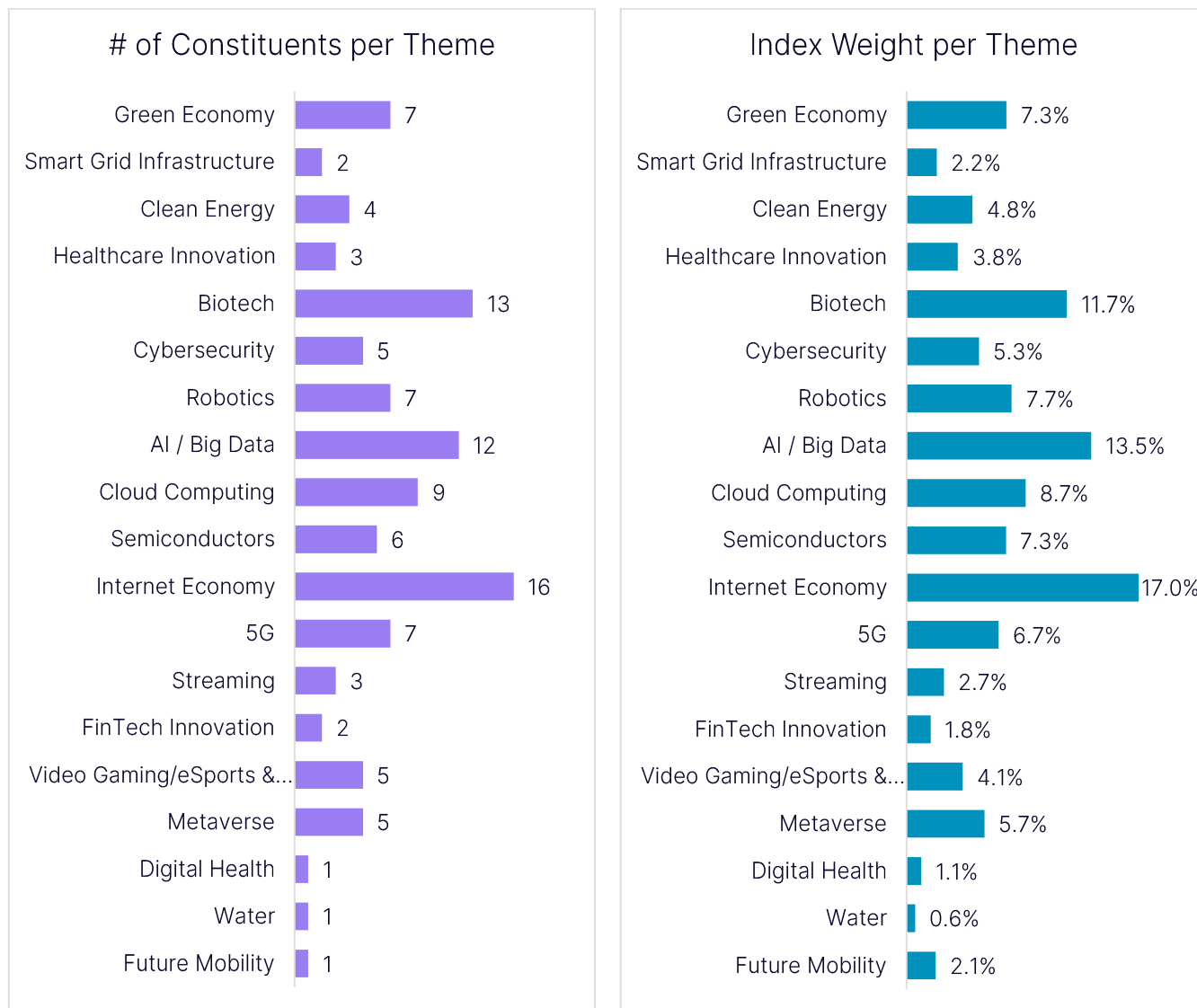


Overall, given its fairly modest size in terms of number of companies and associated market caps, NGX punches well above its weight in terms of patent contributions to a number of important disruptive tech areas including several that are closely tied to Artificial Intelligence, such as Image Recognition (26% of all patents filed across ~20,000 publicly listed companies), Deep Learning (21% patent contribution), and Big Data (15%).



NGX Thematic Exposures

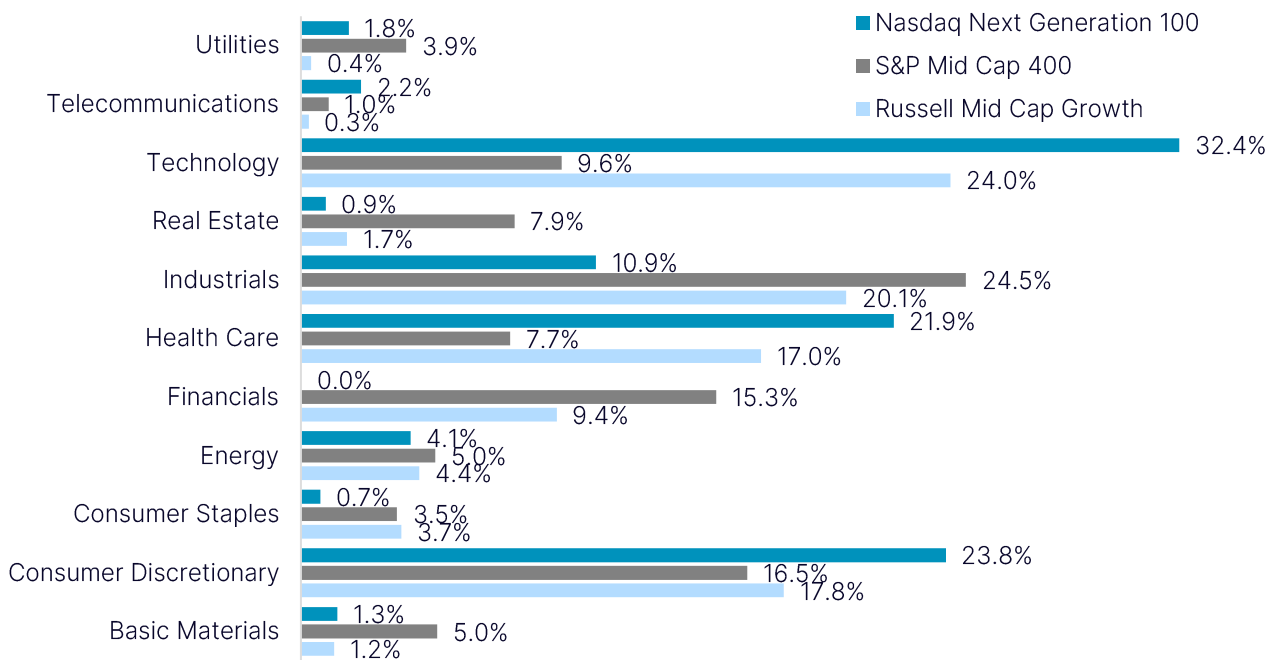
Reinforcing the idea that NGX provides significant exposure to some of today's most important innovation-oriented investment themes is the simple analysis of the index's overlap with various thematic indexes that Nasdaq (or, in a few cases, competitor index providers) maintains to provide more targeted one-off exposure. As of December 31, 2023, 12 of the index's constituents were also featured in one or more of Nasdaq's AI indexes, representing 13.5% of NGX index weight. Internet Economy was overall strongest with 16 overlapping constituents and 17% of index exposure.



NGX Sector Exposures: Less Concentrated in Tech than NDX, Similar Exposure to “New Economy”

The Nasdaq Next Generation 100 is overweight on Technology, Health Care, and Consumer Discretionary compared to S&P Midcap 400 and Russell Mid Cap Growth. Despite having substantially less Tech exposure than the Nasdaq-100, the combined weighting across these three “new economy” sectors is similar at approximately 78%, vs. 84% for NDX as of December 31, 2023. It is underweighted across most other sectors relative to broader midcap benchmarks, just as NDX is vs. large cap. No exposure to Financials by design, just like the Nasdaq-100.

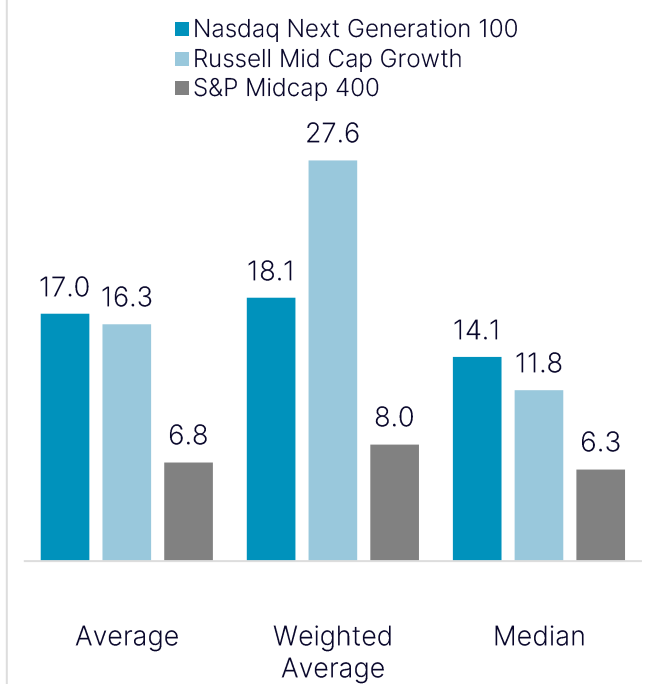
ICB Industry Breakdown vs. Midcap Benchmarks



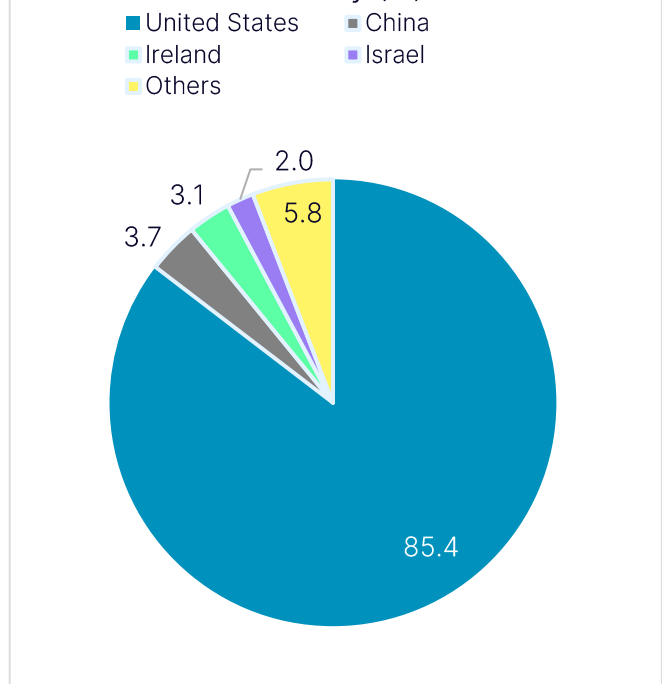
NGX vs. Midcap Benchmarks: Higher End of Midcap, International Diversification

The Nasdaq Next Generation 100 Index tilts much smaller than the Nasdaq-100, but still meaningfully above the S&P Midcap 400 – closer to the Russell Mid Cap Growth. It also maintains a sizable international allocation (~15% of index weight), due to a relatively large number (16) of non-US-headquartered, Nasdaq-listed companies. This is a unique feature relative to the other midcap benchmarks which select only US-based companies.

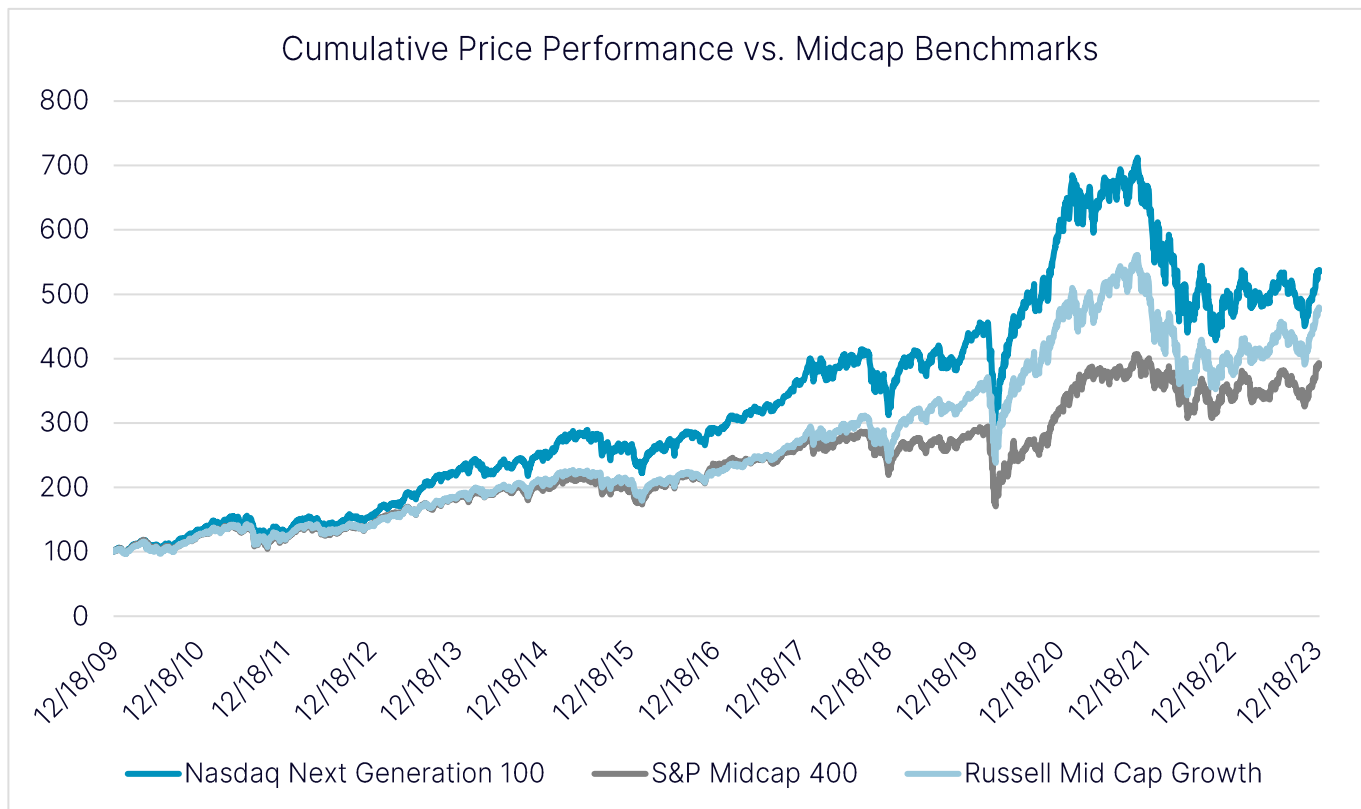
Constituent Market Caps (\$Bn) as of 12/31/2023



NGX Index Weight by Domicile Country (%)



NGX vs. Midcap Benchmarks: Outperformance Mirrors NDX vs. S&P 500



Compared to the S&P Midcap 400 Index, the Nasdaq Next Generation 100 Index has delivered impressive (blended live and backtested) outperformance over an extended time horizon, up 435% on a price-return basis from December 18, 2009 – December 31, 2023, vs. only 289% for its competitor benchmark. On an annualized basis, that translates to more than 250 bps of outperformance each year (12.7% vs. 10.2%), before dividends.

NGX Can Offer Investors a Natural Midcap Complement to NDX Exposure

With its similar, derived methodology, the Nasdaq Next Generation 100 Index offers a straightforward, logical complement to the Nasdaq-100, one of the most tracked indexes in existence and a perpetual leader in growth and innovation. With its natural exposure to predominantly midcap companies, and less dramatic weightings toward Technology as a sector, it also provides instant diversification to existing investors in Nasdaq-100 tracking products. Its tighter range of constituent market caps ensures both less concentration at the top end of the spectrum, as well as more meaningful allocations to fast-growing, newer additions to the index at the bottom end. With a similarly high level of R&D intensity, a meaningful subset of Nasdaq Next Generation 100 companies are often in a position to graduate into the ranks of the Nasdaq-100.

ETFs currently tracking the Nasdaq Next Generation 100 Index include the Invesco Nasdaq Next Generation 100 ETF (Nasdaq: QQQJ), the Invesco Nasdaq Next Gen 100 Index ETF – CAD (Canada: QQJR) & CAD Hedged (Canada: QQJR.F), the Invesco Nasdaq Next Generation 100 UCITS ETF (London: EQQJ), the Betashares Nasdaq Next Gen 100 ETF (Australia: JNDQ), and the Mirae Asset TIGER NASDAQ Next 100 ETF (South Korea: 429010).

Sources: Nasdaq Global Indexes, FactSet, Bloomberg.

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