The Investment Case for XOUT

Executive Summary

Rapid technological change is transforming virtually all industries. While at the company level, technological disruption can create opportunity, it can also be a threat to incumbent businesses. Companies that successfully navigate the rapid pace of change in their industry have the opportunity to thrive and become "disruptors". Companies that fail to adapt will struggle to survive and become "disruptees". XOUT's investment strategy seeks to quantify the common elements of companies successfully navigating technological and secular change, and eliminate or "XOUT" those companies that are being disrupted.

In recent years, there has been a massive shift toward passive index investing. That trend is not likely to change. From an investment standpoint, does it make sense to own all the names in a broad market index? XOUT proposes a smarter method of index investing, one that utilizes rules-based, quantitative measures to eliminate the bottom half of names that are disadvantaged or are being disrupted in the current market environment. We recognize that many of those companies may ultimately adapt to change, retool themselves and once again reemerge as industry leaders, so their exclusion is not permanent. The index components are re-evaluated on a quarterly basis. The XOUT U.S. Large Cap Index backtest results demonstrate that excluding technologically challenged companies from the investable universe delivers sustainable outperformance relative to holding the benchmark as a whole.

The XOUT approach turns the concept of alpha generation upside down, surmising that the best way to beat a passive index is by focusing not on what companies to own, but what companies **NOT** to own, or exclude, against a backdrop of dizzying technological change.

The Challenge of Industry Disruption

The annals of corporate America are full of examples of technological disruption. Disruption is an unavoidable challenge for companies across all industries. Most industries are either experiencing disruption or are susceptible to it. Successful companies innovate and adapt to the changing economic landscape. Those that do not are likely to be challenged.

Examples of Industry Disruption
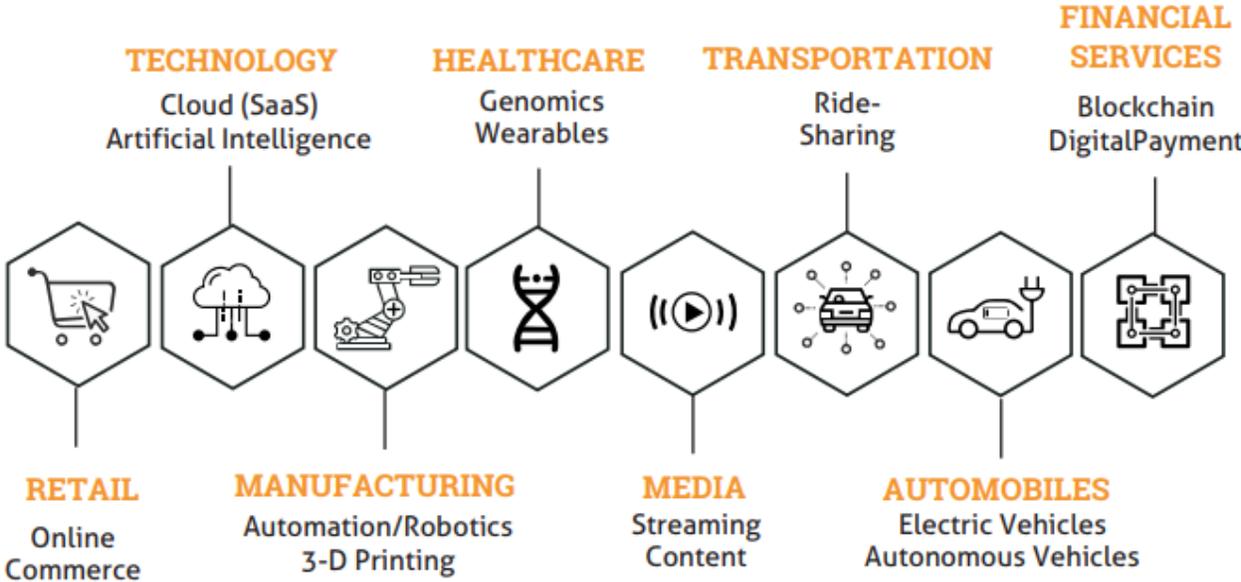
Source: EQM Indexes LLC

Amazon's online disruption of the retail industry is a perfect example of how technological change can permanently disrupt an industry. Thanks to Amazon's disruption of retail, consumers now demand that retailers have an online presence which supports extensive product selection, competitive prices, and rapid delivery options, as opposed to just shopping at traditional brick and mortar establishments. The last few years have been rife with retail bankruptcies including large retailers such as Sports Authority, Toys R Us, Bon Ton, and the 125-year-old department store, Sears. The COVID-19 pandemic has ushered in a new wave of retail bankruptcies as retailers struggle to pay rent, vendors, and other expenses. 2019 sent 17 major retailers into bankruptcy. Thanks in part to the pandemic, 29 retailers have filed for bankruptcy so far in 2020.[1]

Uber and Lyft's ride-sharing disruption of transportation and Netflix's disruption of media distribution are other recent examples of technological disruption. Emerging technologies such as artificial intelligence, robotics, autonomous vehicles, 3-D printing, genomics, wearables, and blockchain threaten to further disrupt and transform multiple other industries as well. Investors can be slow to understand and react to the accelerating pace of technological change. Incumbents, no matter how strong their balance sheets and market share, cannot thwart disruption when champions or disruptors are on the attack.[2]

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[1] *Retail Dive,* "*The running list of 2020 bankruptcy victims,*" Updated: November 25, 2020, https://www.retaildive.com/news/the-running-list-of-2020-retail-bankruptcies/571159/
[2] *McKinsey Quarterly*, "*An Incumbent's Guide to Digital Disruption,*" May 2016.
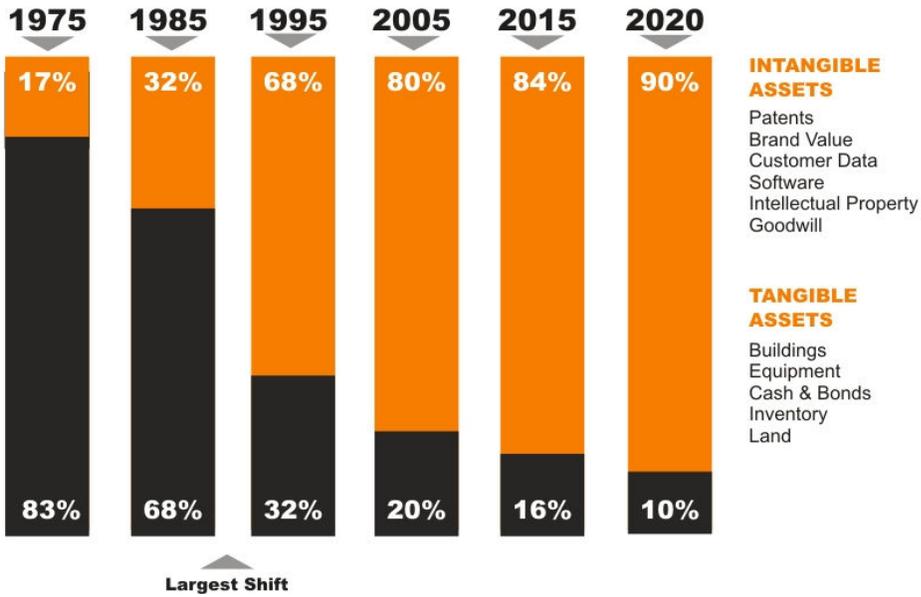
Shortcomings of Traditional Fundamental Analysis

In the past, physical assets such as property, plants, and equipment made up the bulk of a company's market value. But today, intangible assets such as intellectual property (IP), patents, trademarks, brand, and even data and software have become an increasing component of company value. Increasingly, ideas and innovation are becoming the new global capital, but these items do not appear on the balance sheet.[3]

An intangible asset market value study conducted by Ocean Tomo, LLC, estimates that more than 90% of the market value of the S&P 500 is now comprised of intangible assets.[4]

Tangible vs InTangible Assets

Intangible Asset currently account for **90%** of the S&P 500's total assets.

1975	1985	1995	2005	2015	2020
17%	32%	68%	80%	84%	90%
83%	68%	32%	20%	16%	10%

INTANGIBLE ASSETS
Patents
Brand Value
Customer Data
Software
Intellectual Property
Goodwill

TANGIBLE ASSETS
Buildings
Equipment
Cash & Bonds
Inventory
Land

Largest Shift

Source: Ocean Tomo Intangible Assets Market Value Study

The rising significance of intangible value suggests that traditional valuation metrics fall short or no longer apply. As a result, technological innovation is not being adequately being priced into the market, creating exploitable relative inefficiencies and alpha opportunity. But if that is the case, why are so few active managers able to consistently beat the market?

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[3] "*The Rise of Intangibles In An Increasingly Complex Business Environment*", Intellectual Property Office of Singapore, July 21, 2019, https://www.reuters.com/article/idUSWAOA7LMMIA27197J

[4] *Visual Capitalist*, "*The Soaring Value of Intangible Assets in the S&P 500*", November 12, 2020.
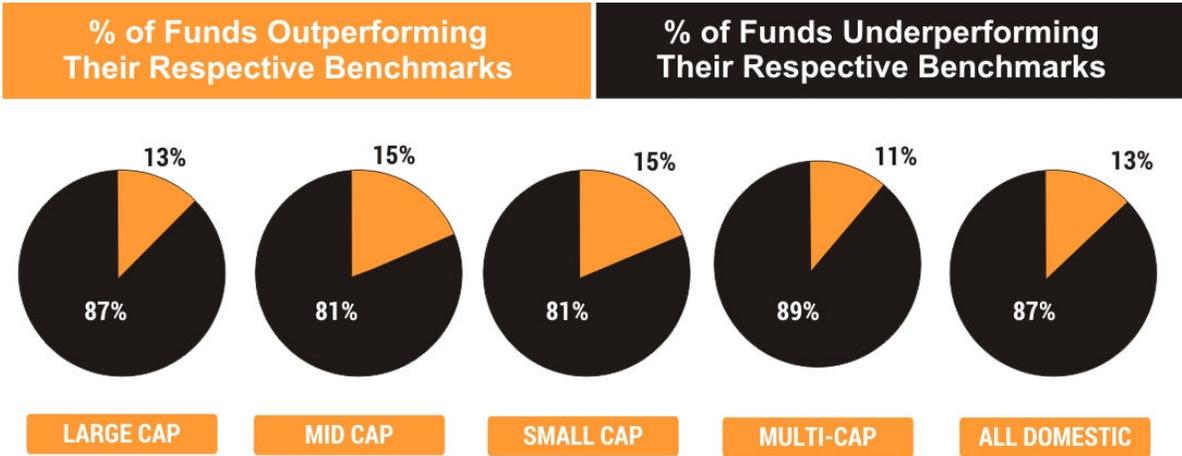
The Rise of Passive Management

S&P's SPIVA® Scorecard[5] (SPIVA stands for S&P Indexes vs. Active Management) of active managers reveals that as of June 30, 2020, 86.92% of Large-Cap Core managers underperformed the S&P 500 Index over the last 15-year period.

Percentage of U.S. Equity Funds Outperformed by Benchmarks
15 Years (as of June 30, 2020)

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)
Large-Cap Core Funds	S&P 500	63.17	71.24	77.97	82.06	86.92

Source: S&P Dow Jones Indices

The SPIVA scorecard studies demonstrate that active managers consistently underperform relative to passive benchmarks. The results for active management in other market capitalization categories such as Mid, Small, and Multi-Cap are equally dismal.

% of Funds Outperforming Their Respective Benchmarks | % of Funds Underperforming Their Respective Benchmarks

LARGE CAP	MID CAP	SMALL CAP	MULTI-CAP	ALL DOMESTIC
13% / 87%	15% / 81%	15% / 81%	11% / 89%	13% / 87%

Source: SPIVA MID YEAR 2020 Scorecard

The SPIVA studies have helped give credence to the rise of passive management as reflected by investor outflows from active managers in favor of passive index approaches. Ironically, one of the biggest industry disruptions has occurred in the asset management industry. Active management is being disrupted, and passive indexes are the disruptors.[6]

Active vs. Passive Flows (USD Millions)

■ Active Flows (MF & ETF)   ■ Passive Flows (MF & ETF)
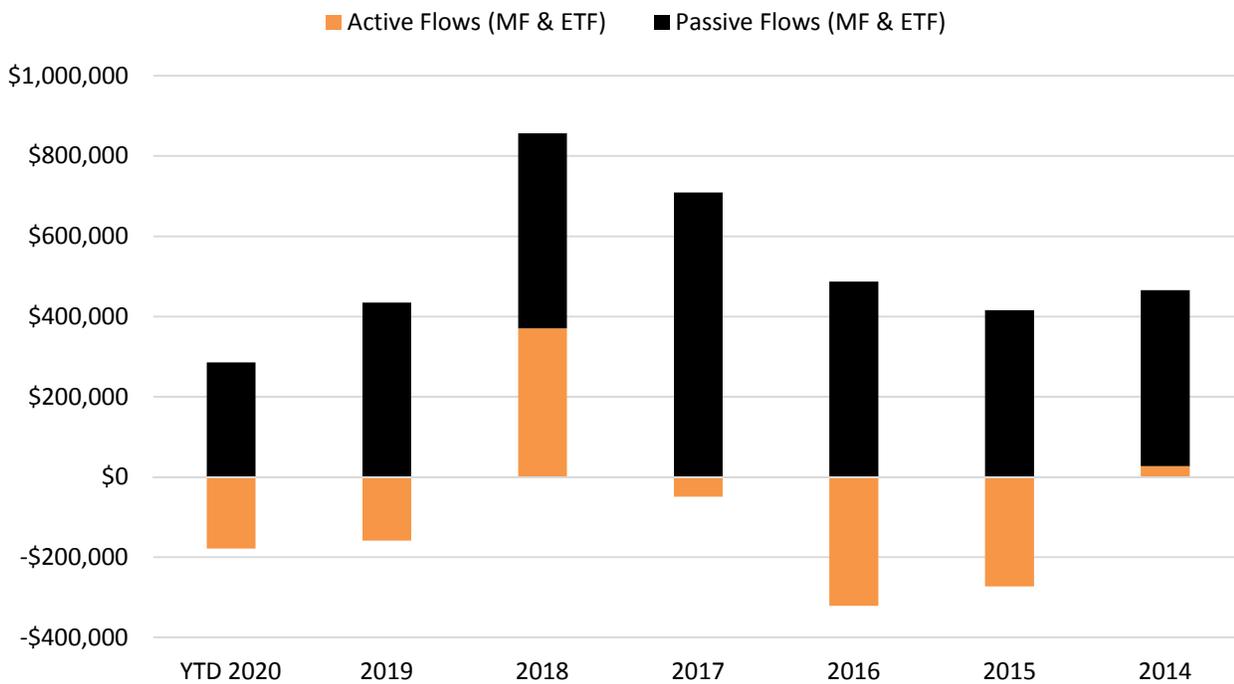
Source: Bloomberg, as of 2/11/2020

Since 2014, there have been more than $1.7 trillion in cumulative passive inflows to mutual funds and ETFs, while over the same time period, active managers have experienced $954 billion in outflows.

[6] Jim Bianco, "*The Active Money Manager Model Is No Longer Viable*," Bloomberg, April 23, 2018, https://www.bloomberg.com/opinion/articles/2018-04-23/active-money-managers-are-doomed

Failure to Deliver Alpha

Cleary, active managers have failed to deliver excess return relative to the benchmark (alpha) over the last several years. They also failed to outperform in 2020, which was full of pandemic alpha opportunities. There are many theories as to why that is the case. Some posit that fundamentals and risk management were not adequately rewarded in the liquidity-driven, post-financial-crisis environment. Other research studies offer that the higher fees[7] and cash return drag[8] of active managers in a rising market environment are to blame. For years, active managers have blamed the low volatility environment,[9] but despite rising volatility levels in the current market environment, active managers continue to underperform.

One theory proposed in a paper by Cremers and Petajisto (2009)[10] is that many so-called active managers are actually "closet indexers", closely tracking the benchmark while claiming to be active managers. Closet index funds are doomed to underperform given their higher fee structure relative to their passive peers. Cremers and Petajisto introduced a measure called "Active Share" be used to identify closet indexers and predict active manager outperformance. Active Share represents the percentage of a fund's portfolio differs from the fund's benchmark, ranging from 0 to 100%. This measure, he argues is a reasonable proxy for stock selection, as opposed to tracking error which measures the volatility of the fund's return in excess of the benchmark, emphasizing bets on systematic risk.
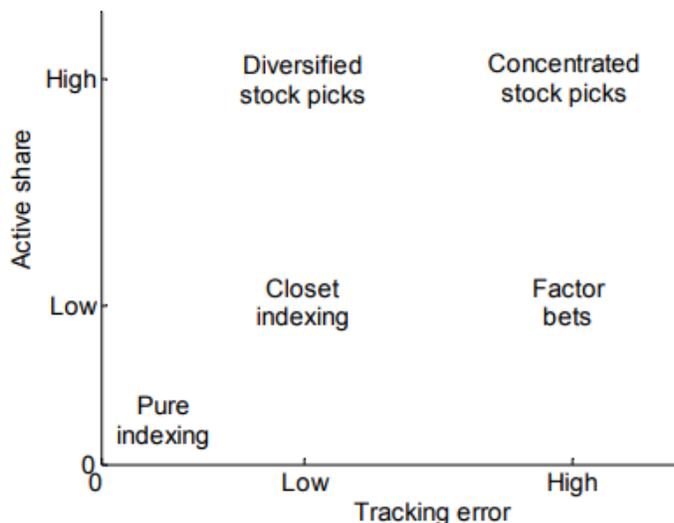
Source: Cremers and Petajisto (2009)

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[7] Russell Kinnell, "*Predictive Power of Fees – Why Mutual Fund Fees Are So Important*," Morningstar Manager Research, May 2016. http://oreillywa.com/wp-content/uploads/2017/08/morningstar-study-on-investing-expense-ratios-2016.pdf

[8] Dan Kemp, "*Active vs Passive Funds: The Cash Drag Conundrum*," Morningstar, March 24, 2017, http://www.morningstar.co.uk/uk/news/157286/active-vs-passive-funds-the-cash-drag-conundrum.aspx

[9] Victor Xing, "*What constitutes the greatest risk to active portfolio management*," Quora, April 21, 2017, https://www.quora.com/What-constitutes-the-greatest-risk-to-active-portfolio-management/answer/Victor-Xing?share=3a111af3&srid=zlKD

[10] K. J. Martijn Cremers and Antti Petajisto, "*How Active is Your Fund Manager? A New Measure That Predicts Performance*," (March 31, 2009). AFA 2007 Chicago Meetings Paper; EFA 2007 Ljubljana Meetings Paper; Yale ICF Working Paper No. 06-14 https://ssrn.com/abstract=891719

A later paper by Petajisto (2013)[11] demonstrated that high-conviction stock pickers and more concentrated approaches, those demonstrating higher Active Share, outperform their benchmarks after fees. Later studies such as Frazzini (2016)[12] have tempered the enthusiasm for the measure, "deactivating" Petajsito's results and instead finding that while Active Share does correlate with benchmark returns, it does not predict positive outperformance and is therefore not an effective manager selection tool.

Creating a New Investment Paradigm for a New Market

While the active versus passive debate remains ongoing, XOUT offers a differentiated solution to generating alpha relative to the benchmark. XOUT's unique approach turns the investment process upside down. Instead of trying to be a "stock picker," fixated on security selection, XOUT's approach is to focus instead on eliminating stocks from the index that are technologically disrupted or disadvantaged.

SMARTER INDEXING

Technology is a game changer. Companies, in every industry, either effectively manage technological change and become disruptive leaders, or they are disrupted and become losers. The XOUT Large Cap US Index is a differentiated investment index that is distinguished by its XOUT Methodology, a proprietary-research process that discovers and discards companies that are being disrupted or disadvantaged by technological change. Why own the losers? XOUT!
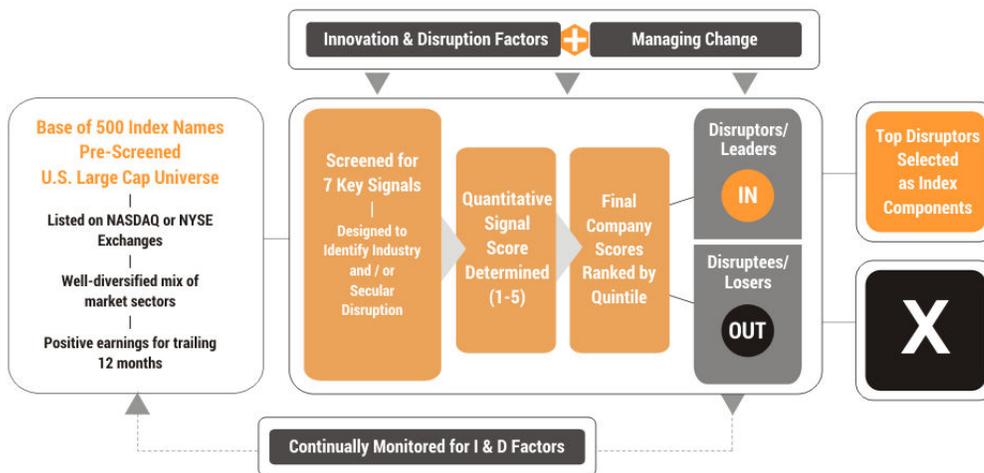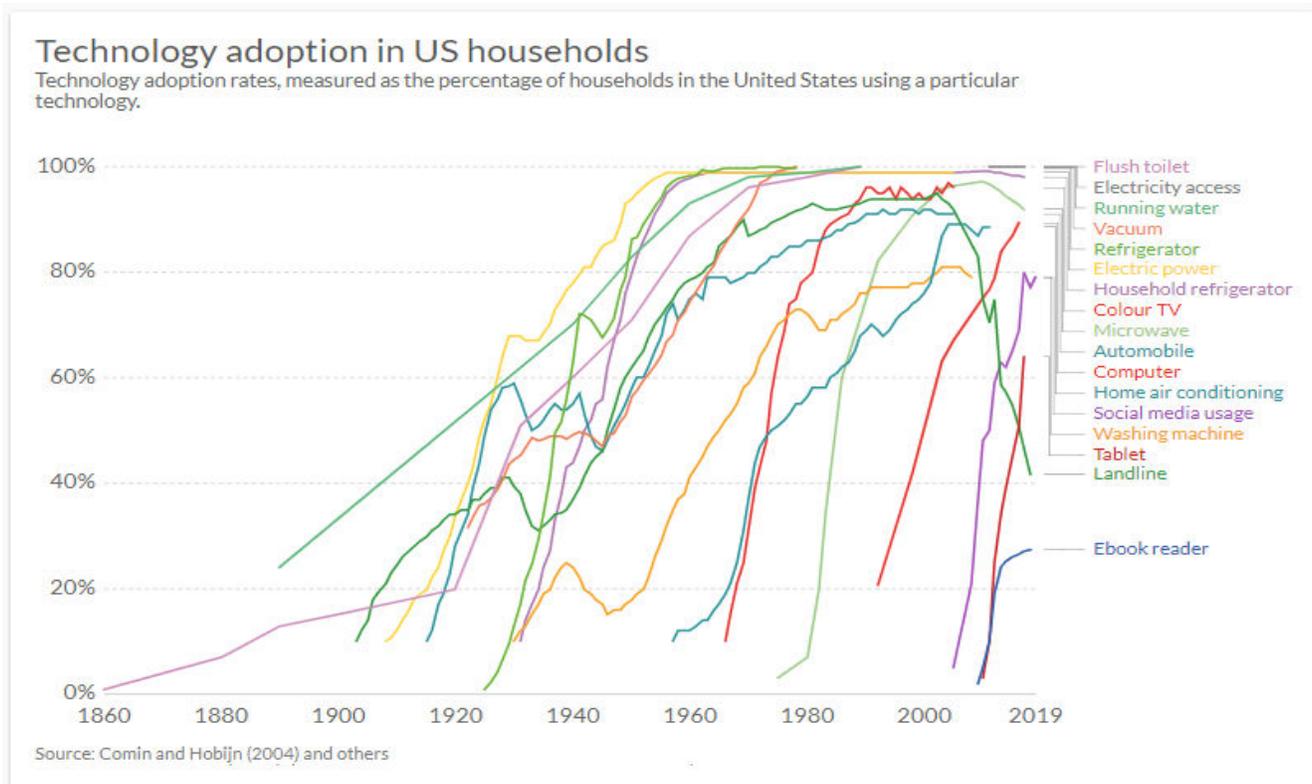
Source: EQM Indexes LLC

The current pace of technological change is unprecedented, rapidly progressing at dizzying speeds, and no industry is immune. Not only is technological progress rising at an exponential rate, but the rate at which newly commercialized technologies are adopted by consumers is also accelerating. The accompanying chart depicts how rapidly microwaves, cell phones, smart-phones, social media, tablets, and other inventions from the modern era have been adopted.

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[11] Antti Petajisto, "Active Share and Mutual Fund Performance," (January 15, 2013), https://ssrn.com/abstract=1685942 or http://dx.doi.org/10.2139/ssrn.1685942
[12] Andrea Frazzini, Jacques Friedman and Lukasz Pomorski, Deactivating Active Share (April 21, 2015), Financial Analysts Journal, vol. 72, no. 2 (March/April 2016), https://ssrn.com/abstract=2597122

Technology adoption in US households
Technology adoption rates, measured as the percentage of households in the United States using a particular technology.

Source: Comin and Hobijn (2004) and others

One prime example depicted in the chart above is the tablet computer, which went from nearly 0% to 50% adoption in only 5 short years. The implication of the faster adoption pattern is that the accelerated propagation of technology spurs the development of additional advances.

In his book *The Age of Spiritual Machines* (1999), author Ray Kurzweil introduces the "Law of Accelerating Returns". He proposes that the rate of progress in an ecosystem that learns via evolution (iteratively via trial and error) increases exponentially. The more advanced the system becomes, the faster its rate of progress grows.[13] Taking that once step further, innovation begets even more innovation. For example, GPS technology leads to location-driven applications like ride-sharing. Voice recognition technology begets smart home devices like Alexa.

One of noted behavioral economist Richard Thaler's key arguments undermining the efficient market hypothesis is that investors often overreact and underreact to changing information[14]. In today's dynamic market environment involving exponential technological disruption, investors are at an even greater disadvantage. Human beings think linearly, but the world is changing exponentially.[15]

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[13] Ray Kurzweil, *The Age of Spiritual Machines: When Computers Exceed Human Intelligence*, (New York: Penguin, 1999).
[14] Richard Thaler, *Misbehaving: The Making of Behavioral Economics,* (New York: W.W. Norton & Company, 2016).
[15] Peter H. Diamandis, "*The Difference Between Linear and Exponential Thinking*," BigThink.com, May 22, 2013, https://bigthink.com/in-

Cognitive dissonance occurs when newly acquired information conflicts with preexisting understandings.[16] Human beings gravitate toward ideas which they already believe to be true and are confounded by change. Cognitive dissonance results not only in mispricing opportunities, but also in industry misclassification. For example, there are no sector or industry classifications for new disruptive industries like blockchain, cloud, or even cannabis.

One prime example of cognitive dissonance is how investors failed to comprehend the extent that Amazon would disrupt retail when it first launched as a mere online bookseller. As recently as late 2013, the market discounted the potential of Amazon's disruptive growth, complaining that even though revenues were soaring, no profit was in site.[17]

Even companies themselves are guilty of underestimating and failing to adapt to technological change. One of the best examples in boardroom history was Blockbuster deciding not to buy Netflix.[18] Multiple times throughout the early 2000's, Netflix CEO and co-founder Reed Hastings courted a deal with Blockbuster-chief John Antioco to purchase the DVD-by-mail rental company for $50 million. Blockbuster lacked the vision to see where the home video industry was going and Blockbuster management was myopically blinded by the fact that Netflix, on paper, was losing money.

Exclusionary Investing Quantified

Investors can try to find the next Amazon or Netflix or Facebook, but history has proven it is a challenging task given cognitive dissonance and the limited ability of human beings to fathom exponential technological innovation.

> **XOUT's main investment premise is that it is easier to exclude losers, than to pick winners.**

XOUT reverses the stock picker mentality and starts with a base index of names and then excludes the bottom half of companies that quantitative inputs suggest are being "disrupted" and ineffectively managing change.

their-own-words/the-difference-between-linear-and-exponential-thinking
[16] Michael Pompian, *"How Cognitive Dissonance Thwarts Investment Decision-Making,"* April 19, 2018. https://www.morningstar.com/articles/858071/how-cognitive-dissonance-thwarts-investment-decisi
[17] David Streitfeld, *"Amazon's Revenue Soars, but No Profit is in Sight,"* New York Times, 10/24/13,
[18] Marc Graser, *"Epic Fail: How Blockbuster Could Have Owned Netflix."* Variety, November 12, 2013, https://variety.com/2013/biz/news/epic-fail-how-blockbuster-could-have-owned-netflix-1200823443/

The quantitative factors informing the XOUT proprietary growth model include a combination of fundamental growth signals designed to unearth industry and/or secular disruption such as:

- **Weak revenue growth** *(companies failing to grow their sales)*

- **Lack of employee growth** *(companies that are not hiring or growing their workforce)*

- **Failure to reinvest in the business and/or company stock** *(companies not reinvesting in R&D or share repurchase)*

- **Negative earnings sentiment** *(companies consistently disappointing investors)*

- **Lackluster management performance** *(companies not focused on building shareholder value)*

- **Poor profitability** *(companies without pricing power and shrinking margins)*

In business theory, disruptive innovation is innovation that creates a new market and value network and eventually disrupts and displaces established market-leading firms, products, and alliances.[19] Harvard professor Clayton Christensen, the inventor of the term (1995), offered that incumbent companies are aware of innovations, but their business environment prevents them from immediately engaging. In essence, incumbent companies "play the game the way it is supposed to be played" when confronted with disruptive technology, but embracing such technologies requires a "very different set of rules".[20]

This insight supports the methodology of de-selecting laggards rather than selecting winners, as even experienced management teams can be slow to adapt to disruptive change. As Wall Street Journal technology reporter Christopher Mims states, "It is not surprising that investors and boards long obsessed with quarterly profits are now hunting for leaders to make big, fast bets to fend off upstarts shooting for the moon."[21]

It is not enough, for example, that traditional automakers deliver consistent profits. The automotive market is experiencing a disruptive revolution of electric vehicles, autonomous technology, and ride-sharing with disruptive stars like Uber, Tesla, Lyft, and Google's Waymo leading the way in disruptive transportation innovation. Belatedly, executives, shareholders, and investors are beginning to realize that the best way for incumbents to inoculate themselves against digital disruption is to become a disruptor and stave off your own disruption.[22]

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[19] Disruptive Innovation, Wikipedia, https://en.wikipedia.org/wiki/Disruptive_innovation
[20] Clayton Christensen, "*The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail,*" (Cambridge, MA: Harvard Business School Press, 1997), 82-83, 112.
[21] Christopher Mims, "*Wall Street to CEOs: Disrupt Your Industry, or Else,*" The Wall Street Journal, May 26, 2017, https://www.wsj.com/articles/wall-street-to-ceos-the-future-is-now-1495791003
[22] Ibid.

The year 2020 was the penultimate example of industry disruption in action. In the bifurcated "stay at home" and "work from home" economy created by the COVID-19 pandemic, companies with a robust virtual and digital strategy thrived at the expense of those overly reliant on a physical presence, unable to pivot their legacy business models.
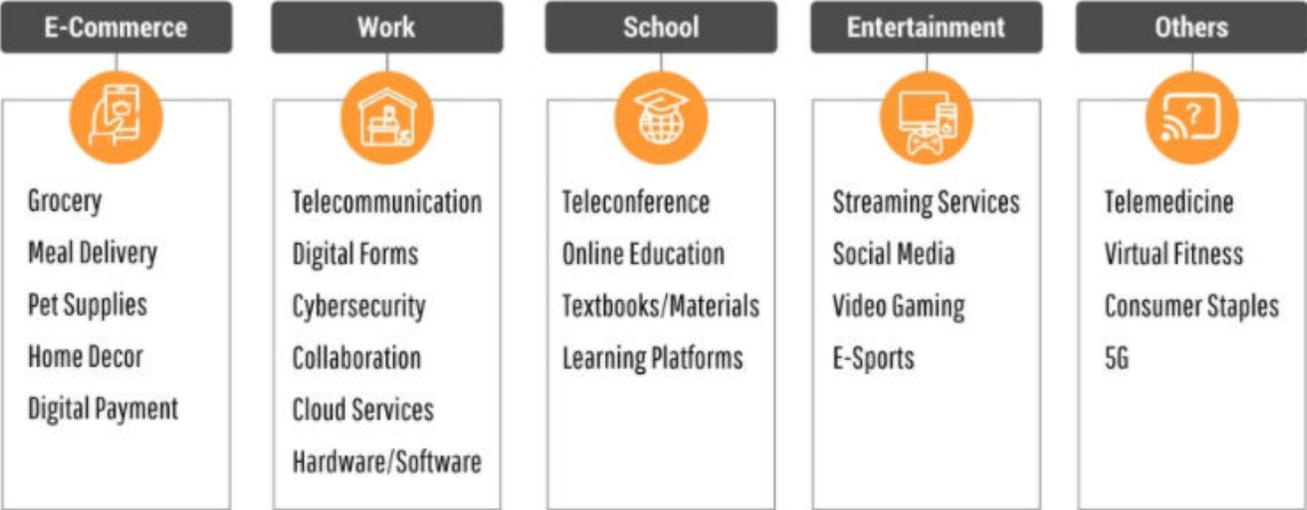
Source: EQM Indexes

A Better Passive Approach

As stated previously, there has been a massive shift toward passive indexing. While passive indexing consistently outperforms active approaches, does it really make sense to own all the names in a broad market index? It seems prudent to own the disruptors, but why own the disruptees?

XOUT proposes a smarter method of index investing, one that utilizes rules-based, quantitative measures to eliminate the bottom half of names that appear to be disadvantaged or disrupted in the current market environment. We recognize that many of those companies may ultimately adapt to change, retool themselves and once again reemerge as industry leaders, so their exclusion is not permanent. The index components are re-evaluated on a quarterly basis.

The XOUT U.S. Large Cap Index backtest results demonstrate that excluding technologically challenged companies from the investable universe, delivers sustainable outperformance relative to holding the benchmark as a whole.

XOUT U.S. Large Cap Daily Index Performance

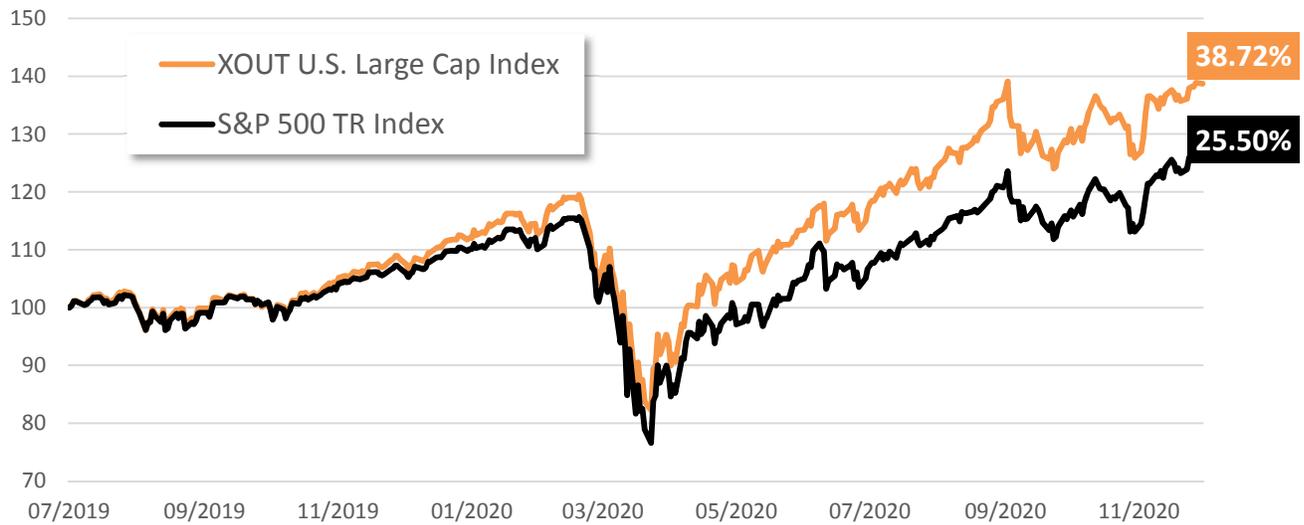*Source: Bloomberg, EQM Indexes (see disclosure)*

The Global Pandemic: An Out of Sample Stress Test

The global pandemic of 2020 has provided a rigorous "out of sample" stress test for the XOUT model and investment philosophy. Not surprisingly, in a market environment bifurcated between disadvantaged, physical old economy laggards and advantaged, digital new economy winners, XOUT has significantly outperformed the overall market.

Since the index launched on July 1, 2019 through November 30, 2020, the XOUT U.S. Large Cap Index was up 38.72% versus 25.50% for the S&P 500 TR Index, generating more than 13.2% alpha over that time period. It also performed better than the overall market during the pandemic trough period in March of 2020.

XOUT U.S. Large Cap Relative "Out of Sample" Performance Since Inception

Source: Bloomberg, EQM Indexes (see disclosure)

Goldman Sachs has described the COVID-19 pandemic as a "great reset", a rule changing event, capable of creating new paradigms and destroying old ones.[23] Companies whose models are no longer working will be forced to adopt new business models that are more productive and effective in order to survive. The global pandemic has accelerated the pace of many changes already in place. For example, according to a new report from the IBM U.S. Retail Index, the pandemic has accelerated the shift away from physical stores to digital commerce by roughly 5 years.[24]

To the extent that the XOUT Model seeks to successfully identify the companies failing to manage industry disruption, this has been the perfect "stress test" for the XOUT investment model and its index and it has performed even better than originally backtested.

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[23] Steve Strongin and Deborah Mirabal, "*The Great Reset: A Framework for Investing After COVID-19*," Goldman Sachs, Global Portfolio Analysis, May 27, 2020, https://www.goldmansachs.com/insights/pages/gs-research/the-great-reset/report.pdf
[24] Sarah Perez, "*Covid-19 Pandemic Accelerated Shift to Ecommerce by 5 Years, New Report Says*," TechCrunch, August 24, 2020, https://techcrunch.com/2020/08/24/covid-19-pandemic-accelerated-shift-to-e-commerce-by-5-years-new-report-says/

Conclusion

o The accelerating pace of **technological change is reshaping and transforming** many industries.

o At the company level**, technological disruption is simultaneously an opportunity** for differentiation and an existential threat.

o The asset management industry is a prime example of an industry in disruption, as **active management is being disrupted and passive indexes are the disruptors.**

o Due to behavioral biases and linear thinking, **exponential innovation is not being efficiently priced into the market by participants.**

o XOUT employs a rules-based, quantitative approach to identify and **eliminate the bottom half of companies experiencing disruption.**

o The XOUT approach **turns the concept of alpha generation upside down**, demonstrating that the best way to beat a passive index is by focusing not on what companies to own, but what companies **NOT** to own, or exclude, against a backdrop of dizzying technological change.

ABOUT US

EQM INDEXES LLC.

EQM Indexes LLC is a woman-owned firm dedicated to creating and supporting innovative indexes that track growth industries and emerging investment themes. Co-founded by Jane Edmondson, a former Institutional Portfolio Manager with more than 25 years in the investment industry, our index design expertise spans a wide range of asset classes and financial instruments.

We partner with issuers and work jointly with other index firms to provide benchmarks for Exchange Traded Products (ETPs) such as Exchange Traded Funds (ETFs), Exchange Traded Notes (ETNs), and other similar products. EQM Indexes LLC also assists firms on a fee basis to design and implement their index ideas. EQM Indexes does not offer investment advice, nor offer the sale of securities.

IMPORTANT DISCLOSURES

EQM Indexes, LLC ("EQM Indexes") is a woman-owned firm dedicated to creating and supporting indexes that track growth industries and emerging investment themes. Co-founded by Jane Edmondson, a former Institutional Portfolio Manager with more than 25 years of investment industry experience, EQM Indexes' index designs spans a wide range of asset classes and financial instruments. EQM Indexes does not provide investment advice, nor offer the sale of securities, but does partner and receive compensation in connection with licensing its indices to third parties to serve as benchmarks for Exchange Traded Products ("ETPs") such as Exchange Traded Funds ("ETFs"), Exchange Traded Notes ("ETNs"), and other similar products. All information provided by EQM Indexes is impersonal and not tailored to the needs of any person, entity or group of persons.

The XOUT U.S. Large Cap Index ("XOUTTR" or the "Index") seeks to identify which U.S. large cap companies are likely to be disrupted by technical innovation and eliminate them from consideration.

Backtested Methodology - Values between June 30, 2014 and June 30, 2019 have been calculated pursuant to a backtested methodology. Back-tested calculations are prepared with the benefit of hindsight and no hypothetical record can completely account for the impact of financial risk in actual trading. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying in the Index, or investment funds that are intended to track the performance of the Index, the imposition of which would cause actual and back-tested performance to be lower than the performance shown. Past performance of the Index is not an indication of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is available through investable instruments based on that index. EQM Indexes does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. EQM Indexes makes no assurance that investment products based on the Index will accurately track index performance or provide positive investment returns. EQM Indexes is not an investment advisor, and makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this article. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other vehicle. Inclusion of a security within an index is not a recommendation by EQM Indexes to buy, sell, or hold such security, nor is it considered to be investment advice.

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Definitions

Intangible Assets - an asset that lacks physical substance. It is defined in opposition to physical assets such as machinery and buildings. An intangible asset is usually very hard to evaluate. Patents, copyrights, franchises, goodwill, trademarks, and trade names are examples of intangible assets.

Disruptive Innovation - in business theory, a disruptive innovation is an innovation that creates a new market and value network and eventually disrupts an existing market and value network, displacing established market-leading firms, products, and alliances.

Cognitive Dissonance - situation involving conflicting attitudes, beliefs or behaviors. This produces a feeling of mental discomfort leading to an alteration in one of the attitudes, beliefs or behaviors to reduce the discomfort and restore balance.

Active Share – measure of the percentage of stock holdings in a manager's portfolio that differs from the benchmark index.

Exponential – an increase becoming more and more rapid.