

# Alternative Data Landscape

## NEXT Investors analysis

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Fall 2019



# NEXT investors team

## Co-Heads and Portfolio Managers



**Alan Freudenstein**  
Co-Head and Portfolio Manager

Mr. Freudenstein is a Portfolio Manager and Partner of NEXT Investors. He joined Credit Suisse in 2000, and prior to his current role oversaw the bank's direct private investment portfolio on behalf of Credit Suisse's Equities group.

Previously, Mr. Freudenstein was a Managing Director responsible for incubation and venture investments within the New World Ventures Group at the Bankers Trust Company. Prior to Bankers Trust, he was a managing consultant at Booz Allen & Hamilton and an equity research analyst at Salomon Brothers.

Mr. Freudenstein earned his B.A. in Economics from John Hopkins University and M.B.A. from the University of Chicago.



**Greg Grimaldi**  
Co-Head and Portfolio Manager

Mr. Grimaldi is a Portfolio Manager and Partner of NEXT Investors. He joined Credit Suisse in 2000, and prior to taking his current role in 2013 focused on making direct private equity investments on behalf of Credit Suisse's Equities group.

Before joining Credit Suisse, Mr. Grimaldi was an associate at Insight Capital Partners, a venture capital firm. Prior to his position with Insight, he was an investment banker at Merrill Lynch. Mr. Grimaldi earned his B.S.E and B.S. from the University of Pennsylvania.

# NEXT investors team

## Investment professionals



**Jared Delaney-Smith, CFA**  
Vice President

Mr. Delaney-Smith joined the NEXT team in April 2014 from the Credit Suisse Equity Capital Markets (“ECM”) division where he covered technology, media & telecom and business services companies. Mr. Delaney-Smith served as the primary Credit Suisse ECM liaison for the early-stage venture capital/accelerator community based in New York.

He received his CFA certification in September 2018. Mr. Delaney-Smith earned his dual B.A. in Finance, Investments & Banking and Management & Human Resources from the University of Wisconsin-Madison and Cass Business School in London.



**Talal Khan, CFA**  
Vice President

Mr. Khan joined the NEXT team in 2014, he was previously with Credit Suisse Equity Research where he covered IT hardware, networking and telecom equipment since 2011.

Prior to that, he was a Consumer and Commercial Finance Investment/Merchant Banking Analyst at FG Advisors.

He received his CFA Certification in June 2012. Mr. Khan earned a dual BS with high honors in Finance and Management from the Wharton School at the University of Pennsylvania.



**Nick Hryniewicz, CFA**  
Vice President

Mr. Hryniewicz joined the NEXT team in 2015, he previously spent more than two years covering internet and online gaming in the Credit Suisse Equity Research division. In addition to normal coverage responsibilities, he conducted due diligence on, and helped bring to market a number of Credit Suisse-led public offerings.

He received his CFA certification in September 2018. He earned his BS in Finance from Lehigh University.

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# Revisiting the Alternative Data Market Opportunity

## Alternative Data

- EY estimates total buy-side spend on Alternative Data to be \$1,088mn in 2019. (\$1,708mn 2020E)
- The alternative data market was worth about \$200 million in the US in 2016 and is expected to double in four years, according to research and consulting firm Tabb Group.
- There are roughly 400 alternative data providers.
- The number of Alternative Data full-time employees on the buy side - mainly data scientists and analysts - has grown ~450% in last five years.
- Hedge Fund spending on alternative data is growing by around a fifth each year and will reach \$7bn by 2020, according to a recent report by consultancy Opimas.
- The average fund spend on datasets is expected to be \$2.6mn in 2020, up from \$841k in 2016.
- Considering factors such as existing fund performance, assets under management (AuM) trends, and ongoing fee pressures, Quinlan & Associates believe leading active managers that can effectively leverage alternative data stand to improve their profit margins to 50-55% by 2022, up from an industry average of 40% at present.

## Big Data

- The global market for Big Data, related technology and analytics is currently estimated at \$130bn, and is expected to grow to over \$200bn by 2020. The financial industry, with ~15% spending share, is one of the important drivers of this growth. JP Morgan's estimate of the investment management industry's spend on Big Data is in the \$2-3bn range, and the number is expected to have double digit annual growth (e.g. 10-20%, in line with Big Data growth in other industries). This spend includes acquiring datasets, building Big Data technology, and hiring appropriate talent.
- International Data Corporation (IDC) forecasts worldwide revenues for big data and business analytics (BDA) reached \$150.8 billion in 2017, an increase of 12.4% over 2016. Commercial purchases of BDA-related hardware, software, and services are expected to maintain a compound annual growth rate (CAGR) of 11.9% through 2020 when revenues will be more than \$210 billion.
- 90% of the data in the world was created in the last 2 years and 2.5 quintillion bytes of new data is created everyday (IBM Big Data study). JPM estimates that only 0.5% of this data is being used in any form.

## Sources:

Ernst & Young Global Alternative Fund Survey, December 2018.

Greenwich Associates - The Future of Investment Research, September 2018

AlternativeData.org - State of the Alternative Data Market, December 2019

# Tracking the progress of the Alternative Data Space

## Latest findings from industry research

- Alternative data's adoption is at a **tipping point** and their use is **growing exponentially**:
  - The amount of **data generated** globally is expected to **grow tenfold** to 163 zettabytes (ZB) by 2025.
  - JPMorgan estimates **\$2 billion to \$3 billion** in **spending by Asset Managers** on alternative data.
  - The number of **alternative data analysts** has more than **quadrupled** over the last five years.
- **Two thirds** of respondents to a Greenwich study are either **using Alternative Data** or plan to do so in the next 12 months.
- **56% of investors** have **added new alternative data sources** in the last 2 years, according to a Greenwich study.
- **54% of the PMs** expect their company to **spend more** on Alternative Data sources **in the next 12 months**.
- **Investors** reported to EY that 30% of their 2018 allocations are to managers **using next-generation investment tools or data** with an expectation that these allocations will **grow to over 40%** in the next two years.
- **Private equity** managers are **further behind** in their use of next-gen data but EY is **starting to see** larger private equity managers make **investments in this space**, utilizing big data to help identify opportunities and provide analysis into pricing trends.
- EY is seeing a **push by managers** to recapture **control of their data** as they realize the **immense potential** and value of utilizing data in different ways.
- According to a Q3 2019 WatersTechnology article, some quants have questioned how much utility can be squeezed from some of the datasets on offer, and many firms have run into difficulties finding data of good enough quality or with long enough histories to use in formulating quant strategies.
- At the June 2019 Risk Live conference, Phil Alison, Head of Fixed Income automated trading at Morgan Stanley warned against "**scope creep**" where firms – perhaps inadvertently – might start to use data in ways that clash with regulations or client expectations. The industry should be ready for rules to change. "If you had to choose areas where the **regulations and standards** five years from now **will be a lot higher**, this will be one of them.
- Main **challenges** in **consuming real-time** information from **Alternative datasets**:
  - Lack of workflow integration (59%), Too many data sources (56%), Information integrity (54%).

Sources:

Ernst & Young Global Alternative Fund Survey, December 2018.

Greenwich Associates - The Future of Investment Research, September 2018

AlternativeData.org – State of the Alternative Data Market, December 2019

# Tracking the progress of the Alternative Data Space

## Latest findings from industry research

### How things have changed from 2017

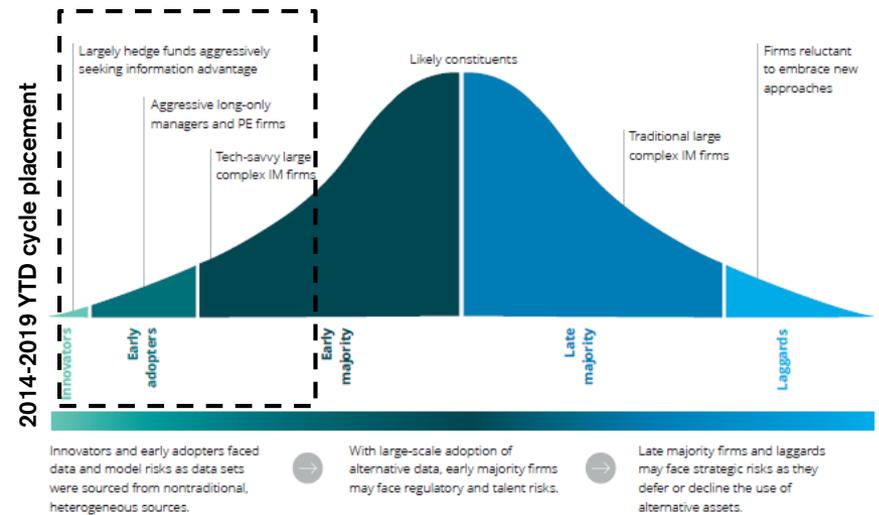
- Hedge Funds<sup>1</sup> were the innovators in this space, but they are being joined by private equity (PE) and long-only managers today.
- Alternative Data **budgets grew 52% in 2018**, down from 76% in 2017.
- Nearly 60% of buyers have a tiny or zero alt-data budget for 2019, down from two-thirds in 2018.
- A full third now have **a budget** that exceeds **\$1 million**, up from 20% in 2018
- During 2018, only **30% of Hedge Fund managers did not expect to use next-gen data** in their investment process, a **decline from almost 50%** who made that statement just two years ago. NEXT has also witnessed an uptick in multiple data source purchases.
- “The multi-million dollar data sale is something you saw maybe 3 or 5 years ago... now people understand what data is actually worth, and they're not trying to get exclusive access to just one dataset, they know it's part of a bigger mosaic”  
– Third Point's Chief Data Scientist Matt Ober.
- A larger proportion of Hedge Funds are planning to use alternative, next-gen data but are being met with declining budgets for bringing this data into their investment models (likely due to broader cost cutting needs across Hedge Fund space).

Sources:

Ernst & Young Global Alternative Fund Survey, December 2018.

Greenwich Associates - The Future of Investment Research, September 2018

AlternativeData.org – State of the Alternative Data Market, December 2019



### High data costs and ability to quantify the value of the data rises to top of fund manager concerns

2017	2019
Prohibitively high fees (38%)	Prohibitively high fees (69%)
Internal procurement processes are too slow (32%)	Difficulty in quantifying the value (55%)
Lack of time needed to evaluate data (32%)	Difficulty cleaning and integrating data (48%)
Management not convinced of data's value (30%)	Insufficient internal resources (38%)

Significant drop in PMs citing this issue likely driven by 3<sup>rd</sup> party providers focused vetting/delivering high-quality datasets

NEXT has observed a massive expansion in the number of ETL/data cleansing providers but internal builds remain common

# Alternative Data tool kits gaining traction

## Web-scraping for alpha<sup>1</sup>

### Web-scraping trends

- Web data is the **largest** publicly available **dataset in the world**, and it **doubles in size** every year.
- There is no reason why a fund should leverage internal resources to scrape and prepare web data – data ingestion/cleansing becoming increasingly commoditized/outsourced.
- Even funds that have an **in-house web-scraping team** have **to rely on third parties** to provide the infrastructure.
- As of Q3 2019 NEXT has seen enough funds run through several cycles of testing out their web-scraping capabilities with internal and/or external services. The majority of users have agreed that outsourcing some or all of their commoditized, data-collecting needs is the most efficient approach (versus the cost and resources required to manage in-house). As more funds continue down the path of outsourcing this part of the process, we believe there will be further growth and scalability from fin tech vendors focused specifically on web-scraping services.

### Regulatory and Privacy Hurdles

- As long as **data is public**, not behind fake accounts, and not behind logins, then it is generally available to anybody cruising the web. Traditional web-scraping from public sources is **not considered insider trading**.
- Outliers exist with some web-scrapers sourcing data from protected sources and/or providing questionable transparency into their sourcing processes.
  - “Some people **abide by the rules** very clearly, and **some people don’t**.” - Nick Jain, Citizen Asset Management

### Effectiveness

- The **quantity of data** needed to glean meaningful insight can be **huge**.
- **Natural language processing (or ‘NLP’)** is still in early stages but NEXT is seeing funds that find ways to **identify meaningful trading signals** based on what is and isn’t said.

Thinknum 

- Business **search-engine** that gathers specific information related to **business activity**.
- **Organizes** public **unstructured web-data** trails and makes them usable for investors.
- What data is collected depends on what the bot is programmed to pick up.

YipitData 

- “ReadyPipe” SaaS product allows users to **scrape data themselves** without worrying about the infrastructure and databases required.
- Web-scraped Datasets and reports on a portfolio of 8 sectors and 45+ companies.

Sequentum 

- **Hand unstructured data to clients** who want it raw so they can generate their own specialized reports.
- Can perform some transformation of the data, such as changing date and time formats, or converting currency to US dollars.
- Some sentiment analysis or text analytics.

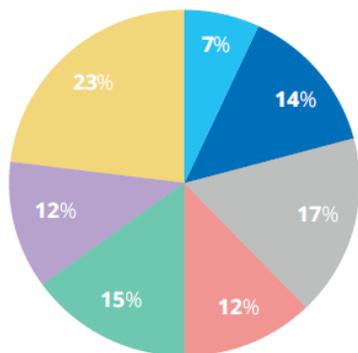
# Market Environment

## Dataminr Study

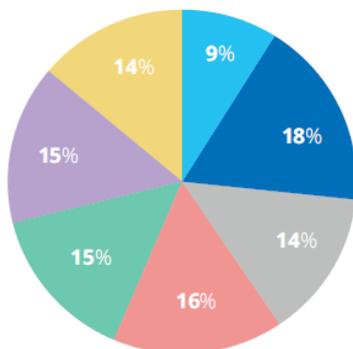
In Q3 of 2018 Dataminr commissioned WBR Insights to conduct research with 100 Traders, Portfolio Managers, and Heads of Trading in Europe and North America. The research was conducted exclusively by appointment over the telephone.

- 79% of the respondents use alternative data as an **input into their investment decision making**.
- Main use cases for alternative data used: to **make trading decisions** (63%), for **situational awareness** (61%), to gain **real-time insight** (54%).
- 54% of the PMs** expect their company to **spend more** on Alternative Data sources **in the next 12 months**.
- Main **challenges** in consuming real-time information from Alternative datasets:
  - Lack of workflow integration (59%)
  - Too many data sources (56%)
  - Information integrity (54%)

What does your company currently spend annually on traditional data sources?

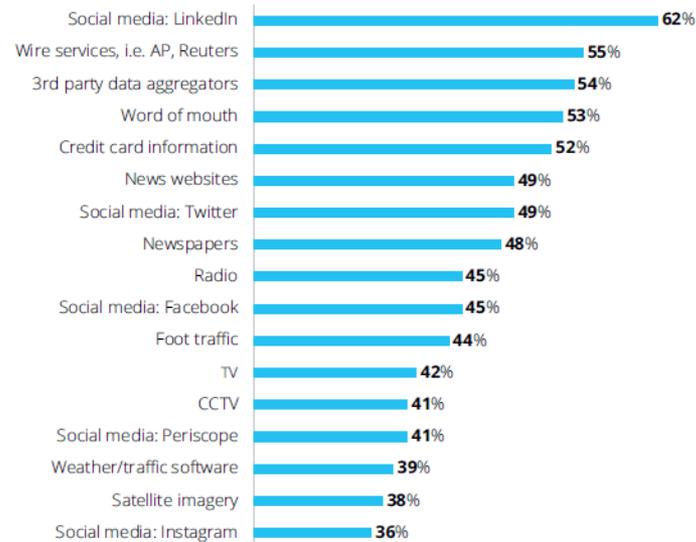


What does your company currently spend annually on alternative data sources?



- Up to \$99,999
- \$100,000
- \$250,000
- \$500,000
- \$1,000,000
- \$2,500,000
- \$10,000,000+

What sources of breaking information are you currently consuming to make trading decisions pertaining to your portfolio?



Sources: DataMinr / WBR's 'The New Data Paradigm For Traders' report, December 2018.

# Market Environment

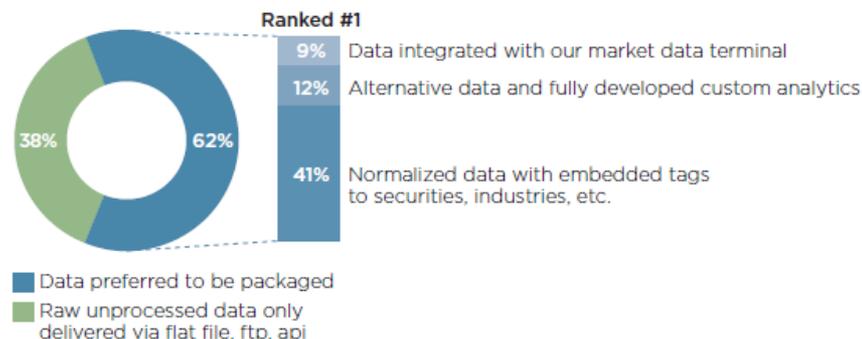
## Greenwich Associates Study

Between December 2018 and February 2019, Greenwich Associates interviewed 42 investment specialists at quantitative, fundamental and hybrid asset management companies. Respondents were asked a series of questions about their usage of alternative datasets.

- **Over 50% of the respondents** describe their firm's **usage** of alternative datasets as **medium to high**
- A large majority of investment firms, **72%**, stated that alternative data **enhanced their signal**, with over one-fifth saying they got **over 20% of their alpha** from alternative data.
- **Alternative data budgets grew 52% in 2018**, down from 76% in 2017
- **Two thirds** of respondents are either **using alternative data** or plan to do so in the next 12 months.

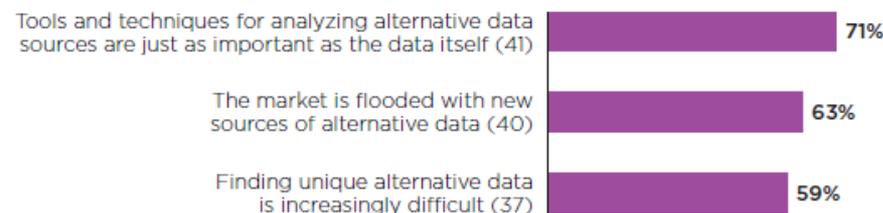
*“When thinking about the preferred level of support alternative data buyers want from their vendors, a large majority, 83%, want some assistance with ingesting and processing the data.”*

### DATA DELIVERY PREFERENCE



Note: Based on 34 respondents.  
Source: Greenwich Associates 2019 Alternative Data Study

### EVALUATING ALTERNATIVE DATA



Note: Numbers in parentheses are respondent counts.  
Source: Greenwich Associates 2019 Alternative Data Study

Sources: Greenwich Associates 'Demystifying Alternative Data' report, September 2019.

# Market Environment

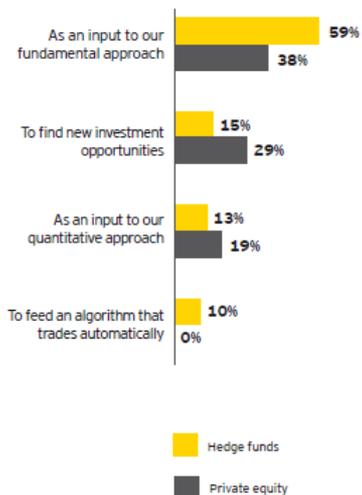
## Ernst & Young Study

Ernst & Young's 12th annual Global Hedge Fund and Investor Survey includes 102 interviews with Hedge Funds representing over \$1.1 trillion in AuM, 103 interviews with PE firms representing nearly \$2.2 trillion in AuM as well as 65 telephone interviews with institutional investors (fund of funds, pension funds, endowments and foundations) representing nearly \$2.7 trillion AuM.

- **Only 30% of Hedge Funds** do not expect to use next-generation, alternative data sources in their investment process, a decline from almost 50% in 2017.
- **60% of alternative funds** that use Alternative Data use them as an input to their fundamental investment approach.
- **Investors** reported that 30% of their 2018 allocations are to managers using next-generation investment tools or data with an expectation that these allocations will **grow to over 40%** in the next two years.

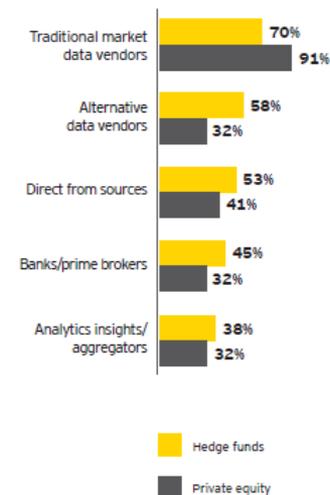
### All alternative funds

For what purposes do you use next-generation data?



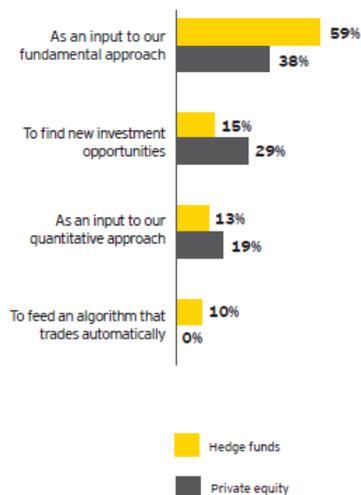
### All alternative funds

Where do you obtain your data from?



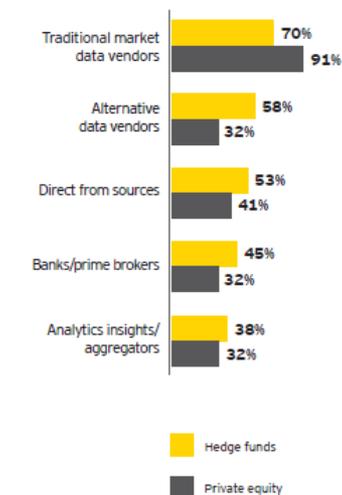
### All alternative funds

For what purposes do you use next-generation data?



### All alternative funds

Where do you obtain your data from?



Source: Ernst & Young Global Alternative Fund Survey, December 2018.

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# Examples of Funds Using Alternative Data

## then and now – 2019 usage highlights

- **Third Point:** at the March 2019 “Data Driven NYC”-Conference, Chief Data Scientist Matt Ober said:
  - On Alternative Data
    - “In the early years, people used expert networks to really understand a healthcare or a tech company... now you can buy data to give you that insight... data is becoming more available from so many different vendors”
    - “Our approach is what type of information can help us better understand a specific company... like how sales are going to look like next quarter... so we ask ourselves, if we were that company’s data science team, what data would we want to see? And maybe tie it to macro economic data”
    - “We spend a lot of time thinking about combining datasets, that’s a lot more exciting to us”
  - On startups selling data to Hedge Funds:
    - “The multi-million dollar data sale is something you saw maybe 3 or 5 years ago... now people understand what data is actually worth, and they’re not trying to get exclusive access to just one dataset, they know it’s part of a bigger mosaic”
    - “It’s becoming more transparent who has what data, we don’t need consultants to help us find the next dataset”
    - “Most Hedge Funds are open to seeing what data is out there, but you have to have something unique, with a lot of history... at least two years of daily data”
    - “Some funds won’t tell you much feedback, but the better data teams out there will provide feedback and help you build data products”
- **Goldman Sachs:** In an August 2019 WatersTechnology article, GSAM’s Head of Quant Investment EMEA, Javier Rodriguez-Alarcon said the use of alternative data in investing today is only “the tip of the iceberg”. GSAM already uses data from patent filings to identify hard-to-see connections between companies in different sectors – connections that can lead stocks to move together. The company has also applied NLP to interpret transcripts of company earnings calls to shed light on analyst sentiment about a new stock.
- **SocGen:** In the same article, SocGen’s deputy Head of Sales, Albert Loo, expects fund managers to spend around \$1bn on Alternative Data this year, with 80% of Hedge Fund & Asset Managers using the new data. “Alternative Data will completely change the landscape in the next couple of years.”  
SocGen believes it can use Alternative Data in its quantitative investment strategies unit, for example, although these efforts are “just at the beginning”.  
Alternative Data is already being used in SocGen’s research, where it has been particularly useful in assessing the ESG characteristics of companies.

# Examples of Funds Using Alternative Data

## then and now – 2015 - 2017 usage highlights

- **Third Point's 2016** year-end investor letter stated: “We have added data science to our toolkit for identifying interesting, uncorrelated opportunities”.
- **Point 72:** at a CB Insights conference in June 2016 the Chief Market Intelligence officer of Point72, Matthew Granade, stated that alternative data is useful for generating alpha. He said: “it is a real change from how investing used to work...if you want to understand what is going on with McDonald's, you are going to have to look at credit card transactions data, you are going to look at geo-location data, at app downloads and a handful of other things. And suddenly you are going to have a very robust picture of how McDonald's is doing and you are not going to have to talk to McDonald's about that”.
- **Citadel:** the firm is building a large centralized data organization. Ken Griffin, founder and CEO of Citadel, stated “our ability to leverage big data effectively in our investment process is critical to our success as a firm”. In July 2017 it announced that Laszlo Korsos, who most recently served as a lead data scientist at Uber Technologies, was joining the firm as Chief Data Officer.
- **Schroders:** in its 2015 annual report, Schroders stated that “analysis of ‘big data’ could become a key differentiator...this year we set up a Data Insights team, representing a significant new initiative for the Group. The team is focused on developments in data analytics for investment and research, to enhance and complement the existing skills of our fund managers and analysts”. The report went on to say “the quantity of information available for investment research purposes is increasing at such a rate that traditional industry practices and skillsets are unable to absorb and process it. Global trends in digitalization, social media, open data and technology are all creating vast streams of alternative data that are often highly unstructured and extremely obscure. However, they contain valuable and often unique insights”.
- **State Street:** in an August 2016 Institutional Investor article entitled “Unexpected risk meets unexpected data,” State Street's Chairman and CEO highlighted a few ways investors can use surprising sources of information to enhance portfolio transparency and identify risk exposure ahead of potential black swan events e.g. “Online retail. When consumers order products, they may be helping investors better track inflation trends to help recalibrate investment strategies before, and after, an event. PriceStats, an inflation series built by State Street Global Markets on online data, uses technology to monitor price fluctuations on roughly 5 million items and tends to identify price shocks faster than similar measures of offline prices, helping investors quickly understand potential shifts in inflation in more than 70 countries”.
- **NN Investment Partners:** In an interview in May 2017 a senior portfolio manager (Mark Robertson) told Fund Selector Asia that “opinions and emotions expressed in online content, from news articles, through blogs, forum posts, social media such as Facebook or LinkedIn, to tweets, can provide a sense of market sentiment that can reinforce or even anticipate fundamental indicators, thereby helping make investment decisions”. Mark went on to say that “the big data we've incorporated is very good at picking out turning points and extremes”.

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# Indicative Alternative Data Population Surveyed by NEXT



<sup>1</sup> Acquired by Indigo (undisclosed amount)

<sup>2</sup> Acquired by Advance for \$500mn

<sup>3</sup> Acquired by Vista EP (undisclosed amount)

<sup>4</sup> Defunct

<sup>5</sup> Acquired by LiquidNet (undisclosed amount)

<sup>6</sup> Acquired by Nasdaq (undisclosed amount)

<sup>7</sup> Defunct

# Prevailing industry trends

## Alternative Data adoption trends

- According to the Boston Consulting Group's latest Artificial Intelligence (AI) research report, the learning curve for Asset Managers to effectively deploy AI tools has been steep, but interest has been growing.
  - ~60% of firms are engaged in exploratory proofs of concept (PoCs) and/or pilot trials
  - ~40% of firms have deployed point solutions while full-scale deployments which are still largely absent.
- It's still early innings for the institutional usage of alternative data sources – the space has become increasingly crowded and many funds haven't generated enough usage to quantify meaningful ROI or alpha-generation enhancements.
- General acceptance that proliferation of datasets will continue and the curation layer is becoming increasingly important – will be a need for the new datasets to be made useable.
- Advanced computing capabilities across sell and buy-side shops have enabled firms to consume and synthesize more complex, alternative datasets but many smaller firms still lack the necessary infrastructure.
  - One of the largest challenges in the space is that most vendors still provide non-standardized data, necessitating the need for advanced technology layers to curate/normalize increasingly complex datasets.
  - Larger, more advanced firms may have existing infrastructure in place to handle this.
- Change management (specifically with managing both investment decision work flow and cultural norms) can act as a considerable impediment to expanding current use cases.

Source: The Boston Consulting Group (BCG) / MIT Sloan 'Reshaping Business with Artificial Intelligence' research report, S. Ransbotham, D. Kiron, P. Gerbert, and M. Reeves, September 2017.

# Prevailing industry trends

## Alternative Data vendor landscape

- NEXT believes that data-source providers with strong, reproducible back-testing capabilities (who also own the data) are proving to be leaders in the alternative data space and are best-positioned to attract higher valuation multiples (buoyed by the value of their data ownership.).
- Increasingly competitive marketplace has led to clear leaders within certain pockets of Alternative Data and multiple examples of failed followers.
- Vendors who are able to provide **real-time data** could become increasingly differentiated (strength/velocity of signal matters).
- Discernible proliferation of vendors providing tools to better analyze and curate insights from standardized sources like SEC filings, financial statements and earning reports/transcripts.
- More value from delivering differentiated datasets than from providing sentiment analysis and investment signals (these players continue to be regarded as less differentiated) – most users just want the data so they can do as they wish with it.
- Emergence of incumbent vendor offerings has been met with limited success (i.e. FactSet, Bloomberg, Alternative Data aggregation platforms), but capabilities strengthening through acquisitions (i.e. Nasdaq/Quandl, Liquidnet/Prattle).
- Given increasingly constrained Hedge Fund tech budgets, NEXT has developed a stronger preference for data providers with a diversified customer base including corporates, government and non-Hedge Fund Financial Services users.
- NEXT has witnessed several pivots from vendors looking to provide Alternative Data “access” marketplaces with tool kits for enhancing the process of digesting the data and incorporating it in existing investment models.
  - The pain point of addressing enhanced usability is sound but fund pricing models that customers have been hesitant to pay for those tools on top of existing data source fees.
  - Several marketplace models pivoting to data-provider-facing products focused on preparing their data for usage before the sale. That charges for distribution rather than subscriptions charged to funds for access.
  - Data Aggregators and marketplaces continue to struggle with cultivating a critical mass (or inventory) of data providers to drive repeat fund customers. The complexity of making all these data sources useable goes beyond the standard Extract, Transform and Load (ETL) capabilities built into data analytics platforms – we believe this is a particularly hard and expensive problem to solve.

# Prevailing industry trends

## Alternative Data usage and pricing trends

- Many “older” datasets are being revisited with new mining and curation technologies – enhanced natural language processing capabilities leading a second wave of assessing old datasets.
- Pricing appetite depends on the quality of data and its contribution to alpha generation.
  - Industry standard is paying up to ~15% of the incremental generated return (assuming 100% certainty, so need to be able to prove this).
- Wide range of annual contract values across vendors (between \$5k-\$2m p.a.) - industry average of ~\$120k p.a. per vendor with general appetite for 1-2 year contracts, although some established alt-data providers moving to multi-year terms as value of data further validated as it’s combined with other datasets over time.
- “The multi-million dollar data sale is something you saw maybe 3 or 5 years ago... now people understand what data is actually worth, and they’re not trying to get exclusive access to just one dataset, they know it’s part of a bigger mosaic”.
  - Third Point’s Chief Data Scientist Matt Ober.
- Some well-capitalized quant/data-driven funds who must fundamentally consider any and all relevant datasets still committing to sizable purchase orders.
- Considerably larger proportion of Hedge Funds are planning to use alternative, next-gen data but are being met with declining budgets for bringing this data into their investment models.
- Active managers (particularly Hedge Funds) going out of business and creating TAM and go-to-market challenges for players focused on Hedge Fund use cases (gross Alternative Data supply > achievable demand).
- Massive influx of Alternative Data providers has created issues with firms needing figure out which add the most value, which typically requires the hiring of expensive data science teams, driving the expansion of Alternative Data testing/vetting tool kits by start-ups.

# Takeaways from recent NEXT vendor assessments

	Pros	Cons
<b>Alternative Data Sources</b>	<ul style="list-style-type: none"> <li>▪ Heightened industry interest in using Alternative Data.</li> <li>▪ Most successful providers offering easily-digestible data formats.</li> <li>▪ Validated results/back-tests for alpha generation.</li> <li>▪ Aligned with industry need for fund differentiation and improved performance.</li> <li>▪ Real-time data becoming a differentiator.</li> <li>▪ Market leaders selling into a diversified customer base of Hedge Funds, corporates and other Financial Services.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lots of hype and low-quality providers with numerous examples of failed businesses.</li> <li>▪ Increasingly important for providers to <u>own the data</u>.</li> <li>▪ Challenging to differentiate with data sourcing capabilities alone.</li> <li>▪ Demand for data decreases with more Hedge Fund customers – scarcity value creates scalability challenges.</li> <li>▪ Demand dynamics = generally short contracts.</li> <li>▪ User IT infrastructure must be developed enough to ingest and use data properly.</li> <li>▪ cultural acceptance critical for growth.</li> </ul>
<b>Alternative Data Aggregators /Marketplaces</b>	<ul style="list-style-type: none"> <li>▪ Aligned with industry need for better access and ability to work with increasingly complex data sources.</li> <li>▪ Widening universe of providers (exchanges, liquidity pools, traditional data providers all focused on building alt-data aggregation/access platforms.</li> <li>▪ Curating/synthesizing the data can be secret sauce.</li> <li>▪ Several prior success stories from data/content aggregators in Financial Services space.</li> <li>▪ Customer traction of incumbent Alternative Data marketplace models (Bloomberg/FactSet) has been slow.</li> <li>▪ Aligned with need for better distribution of product, particularly to smaller consumers in a MIFID<sup>1</sup> world.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Limited proof of buy-side willingness to pay on top of data source licenses; examples of models pivoting to data vendor pay models.</li> <li>▪ Limited desktop real estate amongst users.</li> <li>▪ Many models dependent upon sufficient supply and demand flows – challenging to scale without critical mass of high-quality data.</li> <li>▪ Lack of data-ownership depressing equity values.</li> <li>▪ Very challenging to provide across the rapidly expanding universe of data sources – challenging and expensive tech resources required.</li> </ul>
<b>Sentiment/Signal Tools</b>	<ul style="list-style-type: none"> <li>▪ Heightened industry interest in using Alternative Data, particularly within equity markets.</li> <li>▪ Aligned with industry need for fund differentiation, improved performance and improved productivity levels supported by tools to pre-populate investment ideas and/or enhance research efforts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Space is still rife with low quality data/signals.</li> <li>▪ Investors averse to tech that encroaches on their core competency – “just give us the data”.</li> <li>▪ Cadence of signals/strength of tech.</li> <li>▪ Willingness to pay.</li> <li>▪ Limited customer stickiness.</li> <li>▪ Short contracts.</li> <li>▪ Too many vendors just focused on <b>opinions</b> – not good enough data.</li> </ul>

1) MIFID refers to the ‘Markets in Financial Instruments Directive’ introduced in the European Union beginning in January 2018.

# Table of contents

- 1** Framing today's Alternative Landscape
- 2** Inside look into how Financial Services customers are using Alternative Data
- 3** Alternative Data Vendor Landscape and Prevailing Themes
- 4** **Appendix A: Insights from older alternative data research reports**

# Market Environment

## Greenwich Associates Study (1/3)

In June of 2017, Greenwich Associates interviewed 50 Asset Managers and Hedge Funds in the U.S. and Europe. Study participants were asked about their current and expected use of alternative data and its contribution to the investment process.

- Over **60% of Asset Managers** and nearly **75% of Hedge Funds** are using **social media** and **social-driven news feeds** as part of their investment process.
- **55% of Asset Managers** seek out data to **support a strategy while two-thirds of Hedge Funds** utilize alternative data to **unearth new investment ideas**.
- Nearly **two-thirds of the Asset Managers** believe their **risk managers and analysts** could **also find value** in working with new alternative datasets.
- **95% of respondents** say that alternative data **helps to explain strategy** to their clients, ultimately increasing the total assets they manage as well.
- **90% of alternative data users** have **seen the return they hoped for**, with Hedge Funds slightly more positive than Asset Managers.

**\$940bn**

*Money managed  
by Quantitative Hedge Funds  
(Source: Hedge FundR)*

**\$6bn → \$50bn**

*Two Sigma AuM  
between 2011 and 2017*

**\$1.5trn**

*Total quant strategies AuM  
(Source: Morgan Stanley)*

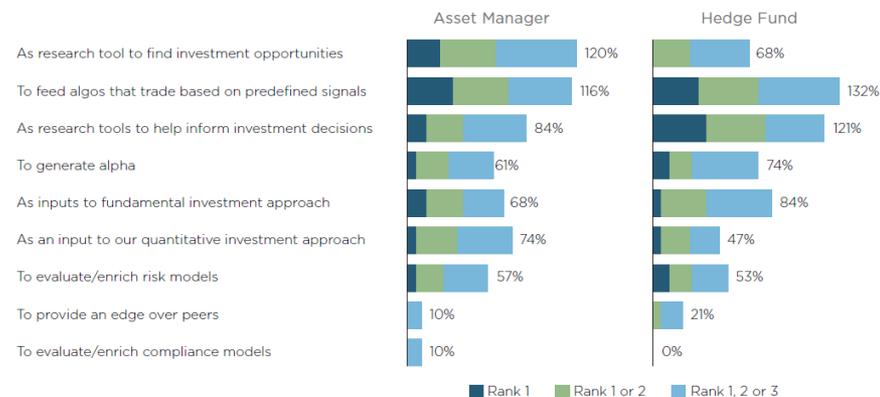
Source: Greenwich Associates 'Alternative Data for Alpha' report, June 2017.

# Market Environment

## Greenwich Associates Study (2/3)

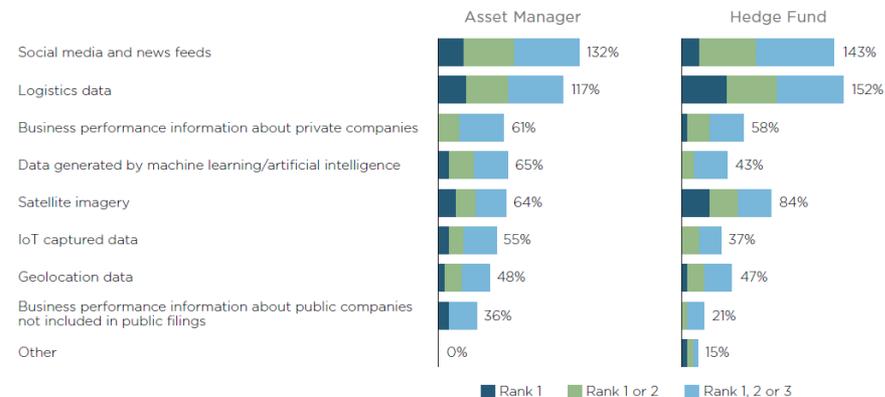
### Reasons for using Alternative Data

Most funds using Alternative Data for research and/or algo feeds.



### Alternative Data used

Social media/news and logistics data is most prevalent.



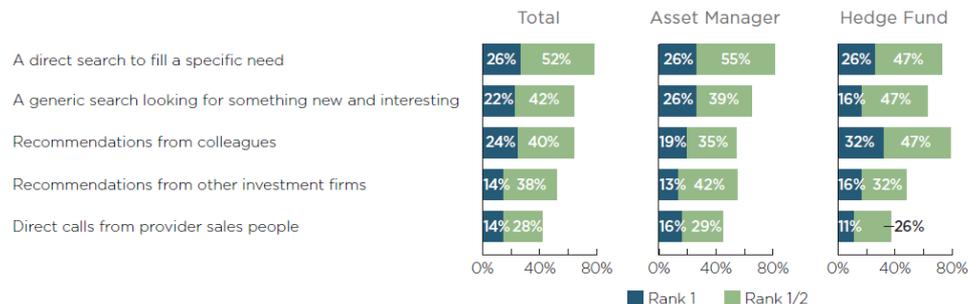
### Users of Alternative Data

Risk managers and investment analysts are most likely to use, but ~50% of Fund CEOs are also consuming.



### How to find new Alternative Data

- AMs are either finding Alternative Data from direct search for specific needs or generic searches for unique data.
- Hedge Funds typically know what they want and are most receptive to colleague recommendations.



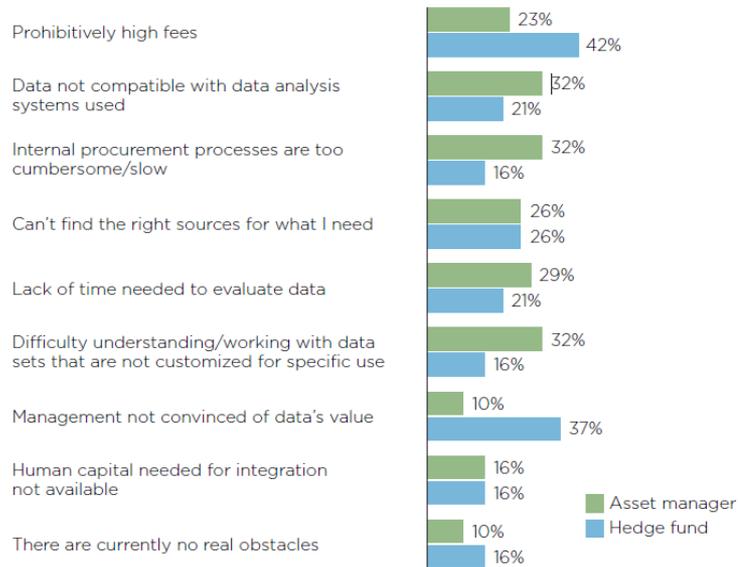
Source: Greenwich Associates 'Alternative Data for Alpha' report, June 2017.

# Market Environment

## Greenwich Associates Study (3/3)

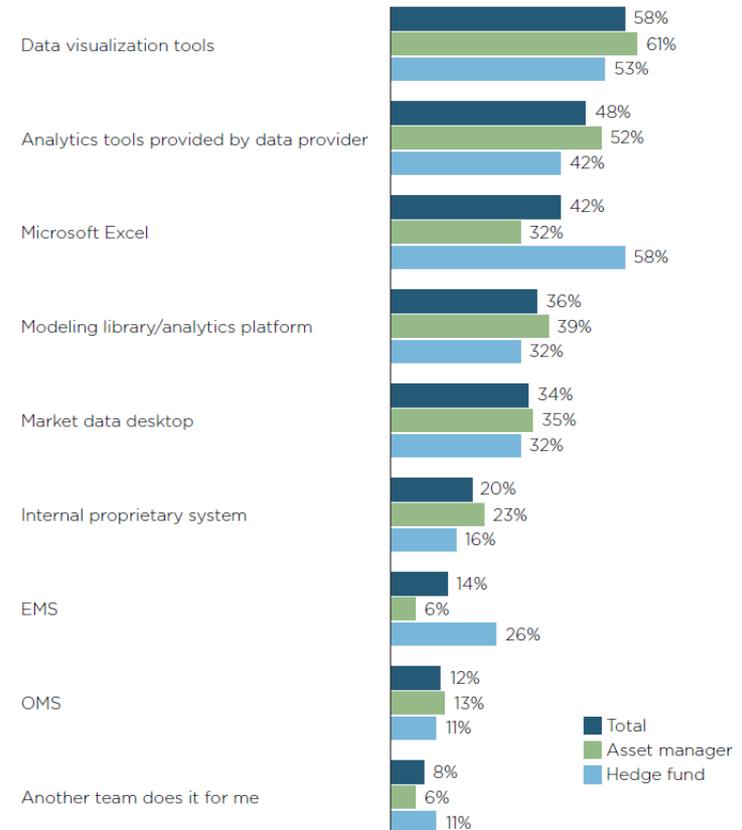
### Roadblocks to using Alternative Data

- Hedge Funds are averse to high fees for alternative data and some fund management teams remain unconvinced of its usefulness.
- AMs have struggled with data compatibility and internal procurement processes.



### Technologies being used with Alternative Data

Visualization, analytics and Excel remain the most common tools coupled with Alternative Data.



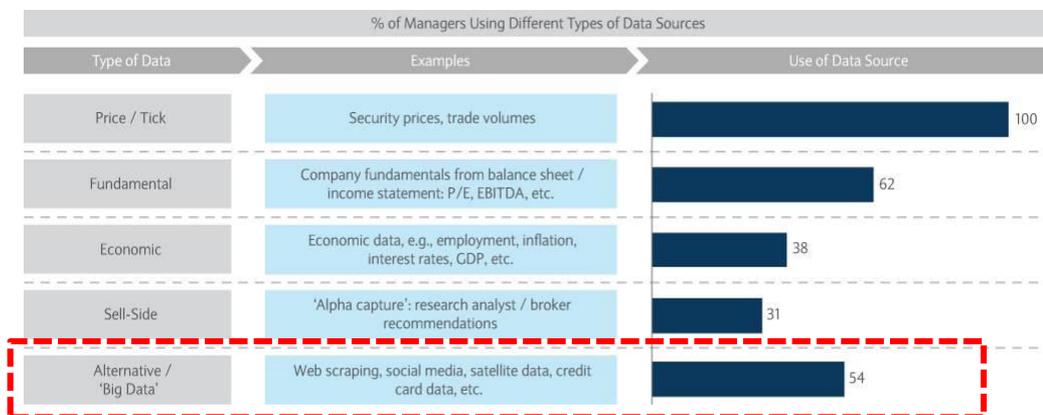
Source: Greenwich Associates 'Alternative Data for Alpha' report, June 2017.

# Market Environment

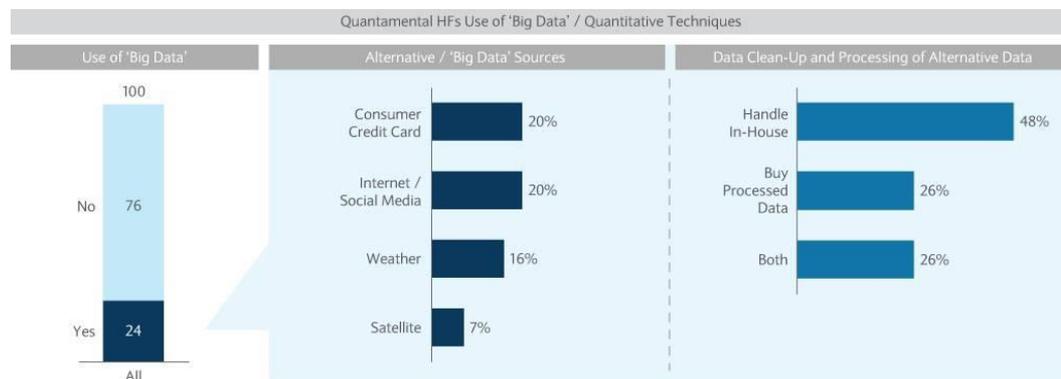
## Barclays Study

Between 3Q16 and 1Q17, Barclays analyzed data from **64 Hedge Funds** across systematic, discretionary, and hybrid strategies and **25 discretionary investors** representing ~\$240bn in total Hedge Fund assets:

- **54%** of the **systematic managers** are **now employing alternative and 'big data' sources** such as web scraping (i.e., a technique to extract large amounts of data from websites, social media data, satellite data and credit card data).



- Among **discretionary managers**, **24%** are using **'big data'** and approximately **50%** have **incorporated quantitative techniques** across the information gathering, idea generation, portfolio construction/risk management, and performance analysis components of the investment process.



# Market Environment

## Ernst & Young Study

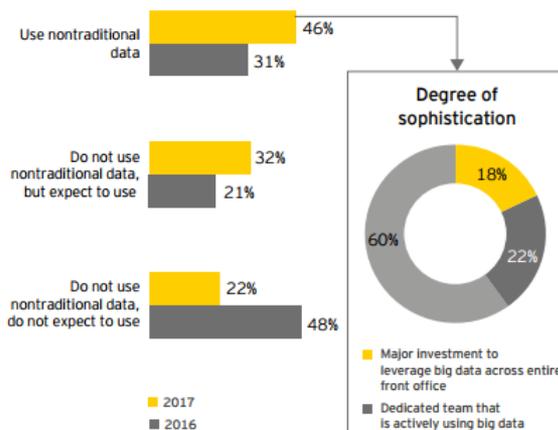
Ernst & Young's 2017 11th annual Global Hedge Fund and Investor Survey includes 106 telephone interviews with Hedge Funds representing over \$1.3 trillion in AuM as well as 55 telephone interviews with institutional investors (fund of funds, pension funds, endowments and foundations) representing nearly \$1.6 trillion AuM.

- **27%** of **Hedge Funds** use or plan to use **social media data** in their investment strategies over the next six to 12 months.
- **25%** of funds use or expect to use **credit card data**, **14%** see value in **satellite imagery** and **10%** use data that **tracks the installation of apps**.
- EY found that **78% of Hedge Funds** use or expect to use **alternative datasets** over the next year, up from around 50% in 2016.

### Using nontraditional/next generation data

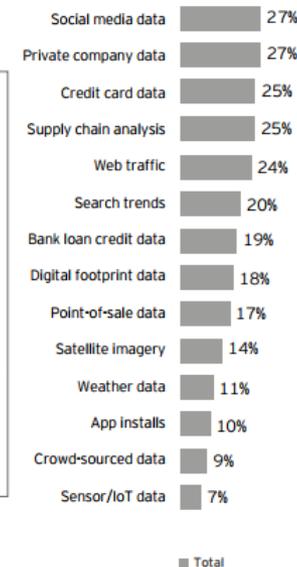
#### Hedge funds

How would you describe your organization's current state in using nontraditional or next generation data (e.g., social media sentiment vs. market data) and "big data" analytics/artificial intelligence to support the investment process?



#### Hedge funds

Which of the following types of data do you currently use or plan to use in the next 6 to 12 months?



Source: Ernst & Young '2017 Global Hedge Fund and Investor Survey', November 2017.

# Applying Big Data and Artificial Intelligence in Alternatives

- In an attempt to better understand the potential development of investing through Artificial intelligence and the utilization of Big Data, CS IWM Liquid Alternatives Team has classified the industry into this chart.
- As you move up along the y axis, data complexity increases. On the x axis you gradually introduce more advanced data processing techniques that are better equipped to interpret these complex datasets: from traditional tools (like analytical statistics) to AI-based research systems (e.g. Natural Language Processing) to fully autonomous artificial intelligent trading systems.
- In order to demonstrate how the techniques differ in practice, the Liquid Alternatives Team has taken the case of trading McDonalds stock (NYSE: MCD) and subsequently provide wider examples from the investment management industry. Similar processes could be used for other companies and assets with more complexity.
- The central column is where the Liquid Alternatives Team currently spends much of their focus. These trading strategies utilize advanced processing techniques to analyze large datasets and tend to have proven performance track records.

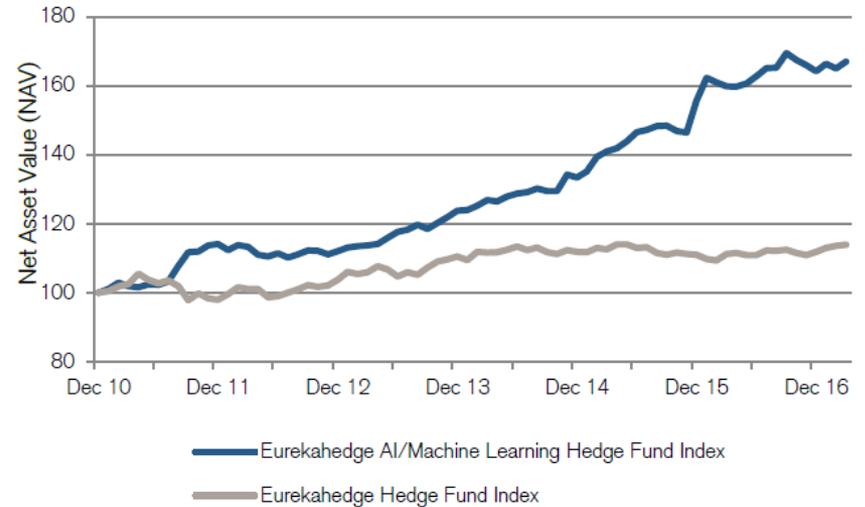
Increasing volume, variety, velocity, and veracity of data ↑ Big Data Unstructured Data Structured Data	<b>Analyst Army</b> Analysis of voluminous, real-time, noisy data sets using traditional tools such as multi-variate regression. <ul style="list-style-type: none"> <li>• MCD: Live collection and analysis of restaurant parking lot information across the globe.</li> <li>• Potentially feasible but time and cost prohibitive as the manual work required would entail an army of analysts.</li> </ul>	<b>Master Data Scientists</b> Identification of novel, preferably proprietary, data sets using cutting edge techniques to identify alpha signals across multiple sources. <ul style="list-style-type: none"> <li>• MCD: Use of machine vision to count cars in satellite images of parking lots, whilst adjusting for local weather, seasonality, and local holidays/events.</li> <li>• The trading of commodity markets by using real time geo data regarding ports/harbours/roads combined with meta data (such as identity and capacity of vessels).</li> </ul>	<b>Holy Grail or Apocalypse</b> Autonomous data collection, analysis of unstructured data and independent strategy development. <ul style="list-style-type: none"> <li>• MCD: The machine collects information from promising sources and develops new trading strategies wholly independently.</li> <li>• Humans spend their time on the beach or under the control of their robot masters (!).</li> </ul>
	<b>Data Collectors</b> Large structured proprietary data sets analysed using traditional methods to identify potential alpha signals. <ul style="list-style-type: none"> <li>• MCD: Social media sentiment from Google Trends used to analyse mentions of healthy lifestyles vs. convenience and the impact on the firm.</li> <li>• Systematic collection of bid/ask and flow information from multiple banks on FX pairs for signal generation (quoting real time spot and forwards on a range of \$ sizes).</li> </ul>	<b>Competitive Data Scientists</b> Use of established data science techniques on public or proprietary structured and unstructured data sets. <ul style="list-style-type: none"> <li>• MCD: Natural Language Processing (NLP) techniques used to analyse competitive positioning in other countries (press releases and texts in different languages).</li> <li>• Use of NLP to analyse if media is positive or negative on a group of stocks in a region/sector/country.</li> </ul>	<b>Strategy Development &amp; Execution</b> Machine identifies promising structured and unstructured data sets. Development and execution of trading strategies is conducted with very limited human intervention. <ul style="list-style-type: none"> <li>• MCD: The machine identifies superior data sources and is able to evaluate and process them independently.</li> <li>• The machine aspires to assess other machines/models and decide which to allocate to. Models are further advanced to reconstruct data sets.</li> </ul>
	<b>Traditional Alternatives</b> Use of traditional analytical tools to build sophisticated models incorporating publicly available structured data. Known in the industry as Systematic, Algo, Quant, and Discretionary Traders. <ul style="list-style-type: none"> <li>• MCD: Sentiment analysis from exchanges, macro data from regions McDonalds operates in, sub-sector fundamental analysis (\$ consumer spends on junk food vs healthy lifestyles) executed in a systematic or discretionary way.</li> <li>• Typical approaches include Momentum, Trend Following, OTC (Over The Counter) Trend Following, and Volatility Strategies.</li> </ul>	<b>Advanced Trading</b> More sophisticated analytical techniques to process existing data, enabling faster reaction times, a larger research universe and extracting information that single factor strategies miss. <ul style="list-style-type: none"> <li>• MCD: Combination of technical and fundamental information and its utilization in the context of other stocks. Ability to structure and carve out nuances in financial statement analysis.</li> <li>• Use of Machine Learning to guide positioning in the markets traded (i.e. examine how the market reacted to features historically, and take real time readings of the current feature).</li> </ul>	<b>Autonomous Trading</b> The machine develops and executes trading strategies with little to no human intervention based on preselected structured data sets. Systems are very advanced and able to act qualitatively and think in terms of what-if-scenarios. <ul style="list-style-type: none"> <li>• MCD: The trading system takes long or short positions in the stock autonomously (advanced algorithms identify market regime changes).</li> <li>• The system is advanced enough to adjust the portfolio composition, net /gross exposures, take profits, cut losing positions and maintain high conviction trades.</li> </ul>
	No AI	Advanced Data Processing	AI Research & Trading
	Increasing use of advanced data processing techniques →		

Source: Credit Suisse 'The Rise of the Machines Technology Enabled Investing' report, IS&P Liquid Alternatives, July 2017

# AI-based trading strategies showing early success

- This chart compares the performance of emerging strategies with more “traditional alternative techniques”.
- The initial returns look attractive as managers have been successful in utilizing new techniques and data sources to generate differentiated returns. However, as Machine Learning and Artificial Intelligence driven investing are relatively new approaches; the sample size is small and performance comparisons must be taken with a pinch of salt.
- Part of the outperformance can be explained by first mover advantage, which is an edge that will diminish as the industry grows.
- As an increasing number of investors utilize alternative datasets, it is also likely that markets will begin to react in advance of the traditional sources, and at some point, Big Data and AI will become a core tool in the investment management industry.

## Eurekahedge AI/Machine learning vs. Traditional alternatives



Source: Eurekahedge, March 2017. Please reference the ‘Additional Disclosures’ pages in the Appendix section for definitions of these indexes.

Source: Credit Suisse ‘The Rise of the Machines Technology Enabled Investing’ report, IS&P Liquid Alternatives, July 2017

# Additional Disclosures

## *Key Term Definitions*

**Hedge fund** = An investment fund that pools capital from accredited investors or institutional investors and invests in a variety of assets, often with complicated portfolio-construction and risk management techniques.

**Long-Only Asset Manager** = A fund that takes only long equities positions, seeks undervalued securities, and reduces volatility and downside risk by holding cash, fixed income or other basic asset classes. Typically referred to as an 'Asset Manager' within this document.

**Quantitative (or "Quant") Fund** = A quantitative fund is an investment fund in which investment decisions are determined by numerical methods rather than by human judgment.

**Private Equity Fund** = An investment fund used for making investments in various equity securities according to one of the investment strategies associated with private equity.

**The Eurekahedge AI / Machine-Learning Hedge Fund Index** = The index (Bloomberg Ticker - EHF1817) is an equally weighted index of 27 constituent funds. The index is designed to provide a broad measure of the performance of underlying hedge fund managers who utilize artificial intelligence and machine learning theory in their trading processes. The index is base weighted at 100 at December 2010, does not contain duplicate funds and is denominated in USD.

**The Eurekahedge Hedge Fund Index** = The index (Bloomberg Ticker - EHF1251) is Eurekahedge's flagship equally weighted index of 2414 constituent funds. The index is designed to provide a broad measure of the performance all underlying hedge fund managers irrespective of regional mandate.

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