

# Alternative Data in Investment Management: A Perspective

## Abstract

Asset and wealth managers are increasingly seeking to improve alpha, diversify investments, and reduce risk and costs. One established way of achieving these objectives is getting insights before the competition. Consequently, investment firms including hedge funds and quantitative funds, have started adopting alternative sources of data ranging from unstructured text to satellite images and mobile geo-location data. The firms are also investing in data engineering, analytics and machine learning (ML) techniques that can be applied to alternative data sources to gain critical insights required to arrive at superior trading and investment strategies, research and so on.

This paper discusses the sources of alternative data and their applicability in various areas of investment management.

## The Alternative Data World

Investment firms have started to look at alternative data as an important additional source for insights. Alternative data sources include data from public sources, social media, weather reports, geospatial information, and satellite imagery and so on. Initially, the hedge funds were the only consumers for this data but with institutional asset managers and investors facing challenges like fee pressures, rising regulatory scrutiny, increase in passive investments and so on, alternative data sources are being increasingly integrated into investment models as a way to drive alpha. Let us examine the various areas in investment management where alternative data sources can help unlock value.

### **AI based portfolio management**

Portfolio construction and rebalancing has so far been a manual process relying largely on traditional data sources, portfolio manager's expertise and decision-making skills. This is not only a time consuming process but also challenging as the rationale behind the decision-making may sometimes be hard to explain to the investors due to reasons such as siloed data, lack of centralized statistical models etc. With rising regulatory focus on investor engagement, consumer protection requiring investment decisions to align with the client's best interest and profile, and scrutiny of the rationale underlying investment decisions, firms are looking to automate portfolio construction and rebalancing based on traditional as well as alternative data. There is also pressure to reduce the expense ratio as more investors move towards passive investments.

Portfolio managers are looking at adopting artificial intelligence (AI) powered tools with the ability to assess thousands of stocks per day based on insights gleaned from both traditional and alternative data sources. In our view, investment firms must adopt a framework incorporating tools that combine analytics techniques with cognitive models to provide insights on the potential stock selections, capital appreciation, and portfolio rebalancing decisions along with the underlying rationale. By leveraging the larger data ecosystem, the framework provides augmented intelligence and also eases the reporting challenges associated with investment decisions. Several investment firms are embracing this new model (see Figure 1), especially firms that specifically float and rebalance funds like exchange traded funds. The framework utilizes data and analytics tools to assimilate data and natural language processing (NLP) techniques to extract relevant information from unstructured data such as news, blogs, social media and so on. It also incorporates cognitive models to perform decision analytics and arrive at portfolio recommendations and

rebalancing recommendations as well as visual analytics tools in portfolio impact dashboards. Predictive dashboards with the capability to leverage alternative data and recognize early indicators of portfolio risks to provide timely warnings can be built, which in turn will help portfolio managers to make insightful decisions.

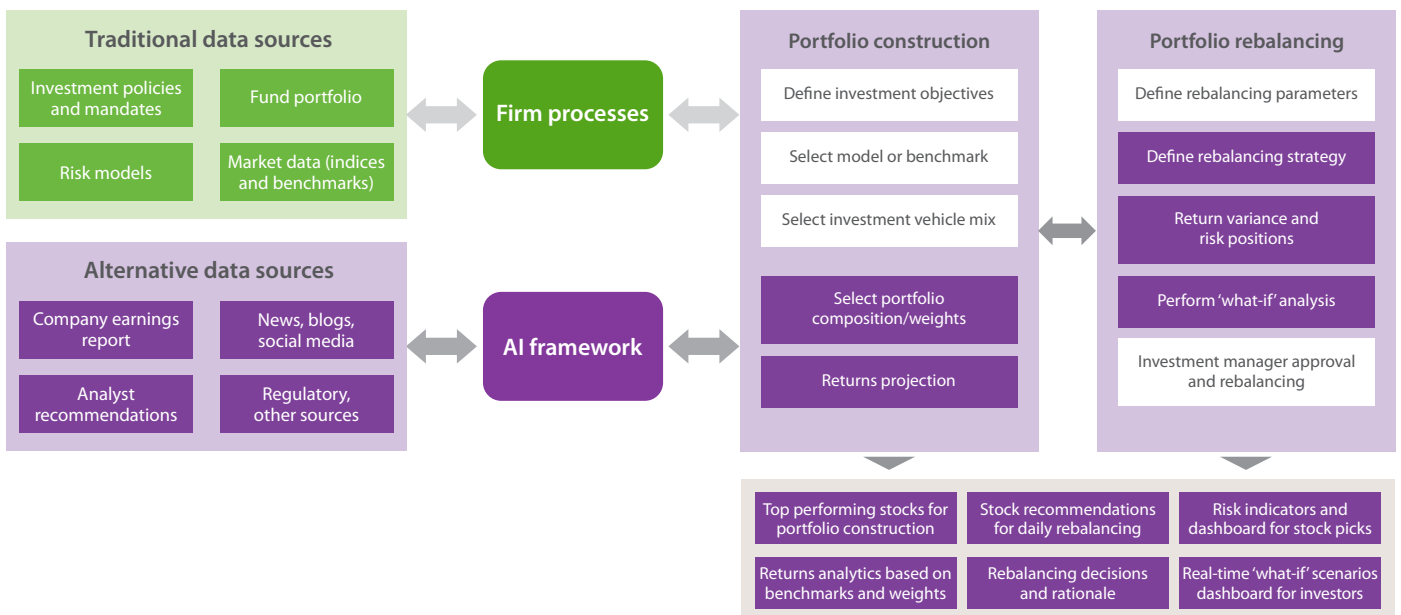


Figure 1: Suggested AI Framework for Portfolio Management

### Innovations in real estate and private equity investments

Investments in real estate funds are increasing year on year. Real estate investment products include private equity investments, real estate investment trusts (REITs), public and private real estate funds, and real estate financing and infrastructure assets in areas like residential, commercial, logistics, hospitality, multifamily and so on. Since most firms invest in multiple geographies, the valuation, deal management, and management of the assets involves significant manual documentation resulting in delays and increased transaction costs.

Technological advancements such as online portals, quantitative models for real estate investments and analytics, and product solutions for underwriting, financing, accounting and so on are increasingly being used by the industry. However, the industry is also looking at alternative data like geospatial and satellite imagery, and smart building solutions as part of a larger ecosystem play in the real estate market. This can potentially help bring down the transaction costs and improve deal management and facility management thereby reducing the turnaround time for investment decisions.

- **Geospatial and satellite imagery services:** Leading real estate firms and private equity funds are increasingly using satellite data to identify potential investment opportunities and strategies. Location and spatial data like demographics, traffic conditions, risk of natural disasters, and amenities help the investment managers make informed decisions on property valuation, potential profitable investments, rental options and so on. Investment firms can leverage the larger data ecosystem comprising satellite imagery like the number of parked cars outside a store as a measure to determine sales, crop production data for commodities trading and so on and integrate it with the investment data for running analytics resulting in augmented intelligence for defining investment strategies. Similarly, geospatial data can be integrated into the portals and other front-end applications for better monitoring of investments.

Similarly, private equity funds could use the satellite imagery data to track parameters like retail store car park count, real-time weather, supply chain transportation and so on to predict sales, profitability, and pricing for specific investments.

Firms have traditionally focused on integrating historical data and analytics into quantitative investment models. Factoring in alternative data sources into these models will influence the investment strategies of the firms and require them to embrace a new business model, which comes with an element of risk.

- **Smart buildings:** Investment firms also pool into real estate funds where environment, social and governance (ESG) factors are becoming increasingly important to decision-making given the rising focus on sustainability. In our view, investment firms must adopt smart building solutions (see Figure 2) to measure ESG metrics for their real estate portfolio and win the confidence of customers, especially millennials who consider the position of a company on ESG issues when making investment decisions. A smart buildings solution runs analytics on sensor data to enable real-time monitoring of environmental parameters such as energy and water consumption, greenhouse gas emissions and so on besides facilitating digital workplaces that offer a superior user experience. A digital workplace helps optimize energy usage and tracks sustainability performance by measuring the ESG score for specific investments based on parameters like carbon emissions, waste management, energy efficiency and so on. In addition, a digital workplace enables demand-supply optimization and integration of efficiency scores into ESG models and includes dashboards for ESG monitoring to ensure that the investments stay compliant with investors' ESG goals.

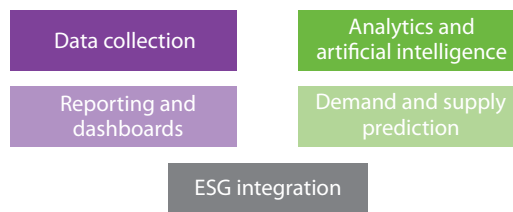


Figure 2: Components of the Proposed Smart Building Solution

### Investment advisory

Firms are using the abundantly available customer data from alternative sources such as social media, public forums and so on to graduate to the segment-of-one marketing. Based on factors like personal preferences, social preferences, demographics, spending and investment patterns, past history of investments, risk appetite and so on, firms are leveraging natural language processing (NLP) and natural language generation (NLG) to personalize investment portfolios for individual clients. Automating the process using intelligent technologies is enabling personalization on a large scale in investment advisory.

Clearly, alternative data has the potential to reimagine investment advisory and management. However, adoption comes with its own set of challenges: lack of data standardization, regulatory ambiguity on the use of varied data sources, huge investment in cleansing of traditional data, and difficulties in rationalizing and integrating alternative data into investment strategies. To effectively leverage the volume of alternative data available in the form of un-structured data from different sources, satellite imagery data and so on, firms must take some initial preparatory steps:

- Build an enterprise data platform by deploying data lakes and data warehouses – either on-premise or on the cloud
- Eliminate organizational silos to ensure efficient data gathering from various alternative sources
- Deploy AI tools and analytics models to extract actionable insights
- Integrate alternative data into quantitative investment models
- Ensure data rationalization to build risk models

### In a Nutshell

Leveraging alternative data to extract insights and drive informed decision-making is at a nascent stage in the investment management industry. Combining alternative data sources with traditional ones will immensely benefit firms and help deliver a competitive edge through information advantage, which in turn will help drive alpha. In our view, the benefits of integrating alternative data sources into investment strategies far outweigh the challenges and firms must take proactive steps toward incorporating them within their operations.

### About The Author

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Anusha Sivaramakrishnan is a domain consultant with the Investment Management group of TCS' Banking, Financial Services, and Insurance (BFSI) business unit. She has over 19 years of experience in the capital markets space, and has worked with leading Wall Street firms on back-office transformation programs. Sivaramakrishnan specializes in utilities, derivatives, and buy-side processing and consulting in both wealth and asset management areas, and has been involved in the development of IT solutions for TCS' clients the world over. She has a Master's degree in Management (Finance and Technology) from the Birla Institute of Technology and Science, Pilani, India.

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