Data-driven value creation in portfolio companies

pwc

Eagle Alpha

Contents

Introduction to data-driven value creation

Private equity (PE) is alive to the value of data. This paper discusses how PE firms can encourage their portfolio companies to create value from data by:

1. Exploring some of the requirements for success.
2. Highlighting case studies of companies that are successfully leveraging both internal and external data.
3. Explaining the value creation opportunity from licencing data to others.

Private Equity Historically

Historically, the PE industry has been dominated by institutions relying – often successfully – on local knowledge, personal networks and a big dose of intuition to spot opportunities and predict future trends. PE firms used to track and analyse investment targets and portfolio companies through Excel spreadsheets, static investment memos and CRM databases.

Times are changing. More and more, PE houses have been looking at the potential of technology to automate workflow processes, improve fund accounting and reporting, streamline due diligence, and analyse large datasets (both structured and unstructured).

Top Tier PE Houses Have Invested Heavily in Data

Early adopters in the PE space started using data to gain better insights into portfolio company performance and acquisition targets. These innovators are now also marrying internal and external data with data science capabilities to drive deal origination and post-acquisition value creation.

There is a growing trend among PE firms to directly hire data scientists. EQT leverages big data and machine learning to develop an edge through its “Motherbrain” platform, whose core purpose is to help EQT’s deal teams predict what the next success will be. Blackstone, for example, has created a team focused solely on data science, big data and advanced analytics. The team is led by Matt Katz, hired from Point72 Asset Management. In July 2019, KKR created a new role to oversee its data strategy, announcing the hiring of Emilia Sherifova from Northwestern Mutual, as Chief Innovation and Information Officer. In June 2020, they doubled down by hiring Emil Werr as Head of Data and Analytics. In September 2019 Carlyle also announced a new Chief Digital Officer hire, Matt Anderson. The press release stated that his role would be focused on “developing and implementing digital transformation strategies to help the firms in which Carlyle has invested grow and assist Carlyle’s investment teams in finding such opportunities during the diligence process”.

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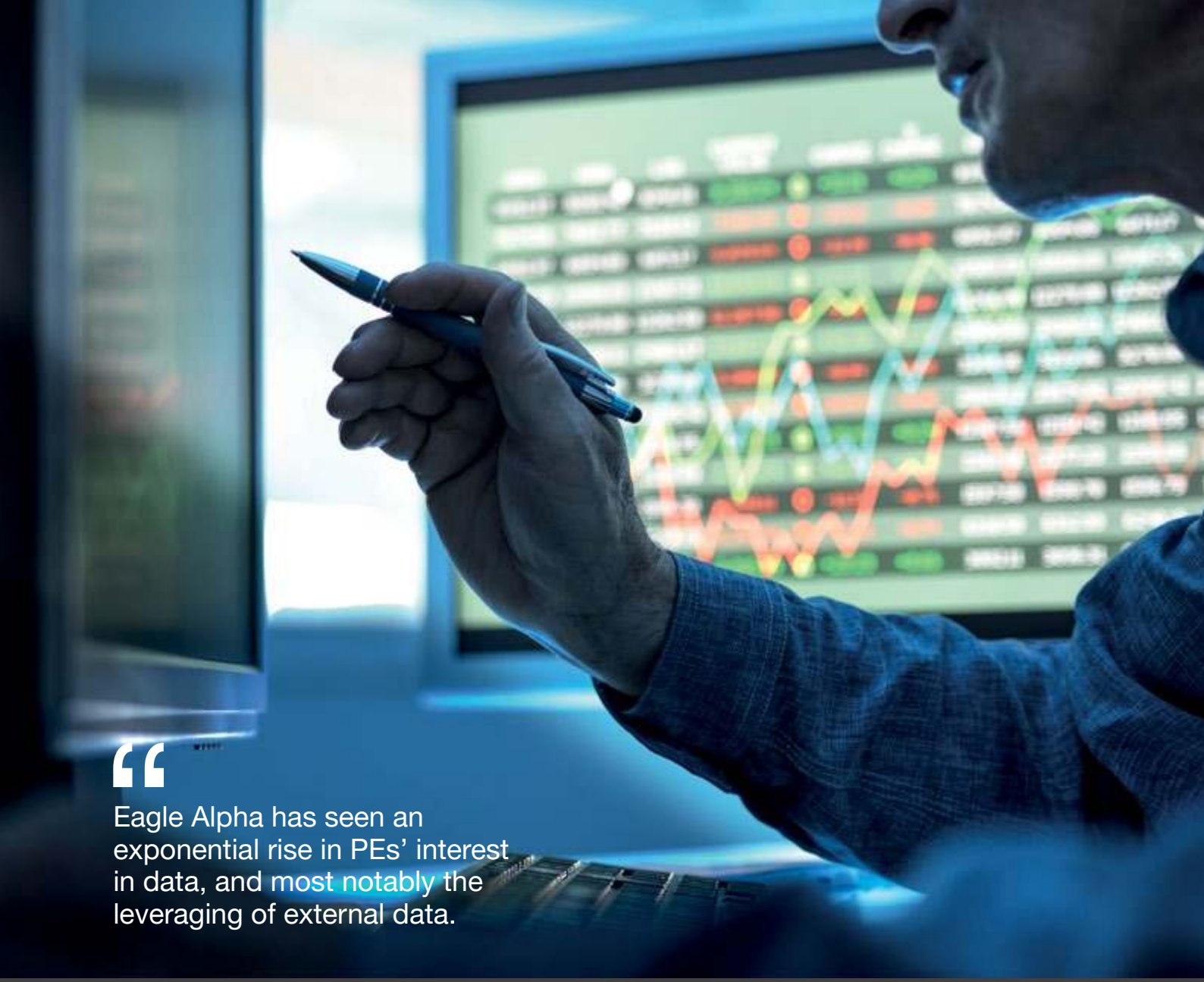

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Recent PE Trends in Data Use

Eagle Alpha has seen an exponential rise in PEs' interest in data, and most notably the leveraging of external data. Eagle Alpha conferences now have dedicated PE content and count PE and venture capital firms across all assets under management (AUM) sizes as attendees, speakers and panellists. Eagle Alpha is working with PE firms across their investment cycle, leveraging structured and unstructured internal and external data to drive deal origination, support due diligence and create value in portfolio companies. Eagle Alpha's data science team enables PE firms and their portfolio companies to quickly move up the curve through outsourced project work that fast-tracks the value data can bring to decision-making and the investment cycle.

At the same time PwC is going to market with a bespoke platform for PE known as 'Accelerated Insight' (AI), which is an automated cloud data platform focused on extracting key data from portfolio companies and presenting dashboard-based insights rapidly to the new owners.

Post-acquisition, PE firms are also using data for value creation across portfolio companies to support growth and reduce costs e.g. churn prevention, promotion optimisation and supply chain improvement. Examples in London include TDR Capital and Hg Capital. Hg Capital stated that harnessing data science and AI should now be core to how value is created in businesses – this philosophy led it to establish a Data Analytics & Insights unit as far back as 2016.

The data imperative for PE portfolio companies

As advanced economies continue their transition from a physical production base to an intangible asset base, more and more organisations are moving to harness the power of data analytics, making significant investments in the process. In the context of rapidly developing technology and data trends organisations are:

- **Finding technology is improving and costs are dropping** – Use of open source software (Hadoop, TensorFlow) is growing, and cloud storage costs are fractions of a cent per gigabyte per month. Monetising data from IoT sensors is becoming an essential element of new business models in many industries.
- **Looking for new revenue sources** – Margin pressures have created a need to diversify revenue streams, while traditional customer acquisition / retention methods are proving less effective.
- **Starting to fear big data players** – The potential for disruption from major data players (such as Facebook, Amazon, and Google) continues to increase, while customer and supplier markets continue to fragment.
- **Getting asked by others to use their data** – There is an increasing reliance on data analytics using third party datasets to drive decision-making and enable capabilities. New datasets and insights are increasingly required to keep up with evolving market requirements (e.g. more targeted marketing).
- **Starting to understand the value of being viewed as a data-centric firm** – Valuation multiples of data-driven firms can be significantly higher on the assumption that resulting insights will drive competitive advantages.
- **All while witnessing the success of others** – Companies with good data analytics capabilities (only ~4% of the total) are twice as likely to be in the top quartile of performance within their industry sectors.

In the face of these rapidly evolving trends, many portfolio companies will be thinking about investments in data assets and people. But without a realistic assessment of capability vs. strategic ambition, they run the risk of making poor investment decisions. Over the following pages we explore some of the factors that make for a successful data strategy.

> “There is an increasing reliance on data analytics using third party datasets to drive decision-making and enable capabilities.

Requirements for successful value creation from data

This section explores some of the key requirements and process needed to create a successful data strategy within portfolio companies.

Key requirements within a Portfolio Company: Transitioning to a data-driven, or at least data-enabled, business isn't easy. A business does not become a data-driven organisation simply because it adopts new technologies, or hires data scientists. The transition begins with an enlightened leader who has a clear vision and belief in how to use data to better serve customer, employee, and shareholder needs. The process starts with the setting of clear goals and getting the company's internal data in order. Only then is it possible to start layering on external data insights. Ultimately, the company's processes must evolve to include the regular collection and analysis of internal and external data to create actionable insights, which can improve business outcomes over the long term. A key enabler of this change is a culture where data-driven decisions are not feared, but rather embraced.

Below we touch on five key requirements for portfolio companies to think about:

1. **Defining the goal** – Being clear about how the data strategy supports the company's strategy.
2. **Understanding what data already exists** – Identifying and classifying the existing data within the company.
3. **Assessing resources and capabilities** – Understanding the company's data resources and capabilities, compared to its strategic ambitions.
4. **Investing in people, infrastructure, and processes** – Investing in a targeted way focused on easy wins.
5. **Changing the culture** – Building a company-wide acceptance of the value of data.

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1. Defining the goal

A data strategy must be linked, either directly or indirectly, to a company's wider strategic goals. Data should be seen as a strategic enabler to the wider firm strategy. The figure below shows three examples of high-level business strategies driving EBITDA growth:

1. Enhancing the performance of the current business (Strategy 1)
2. Entering an adjacent business (Strategy 2)
3. Developing a new business (Strategy 3).

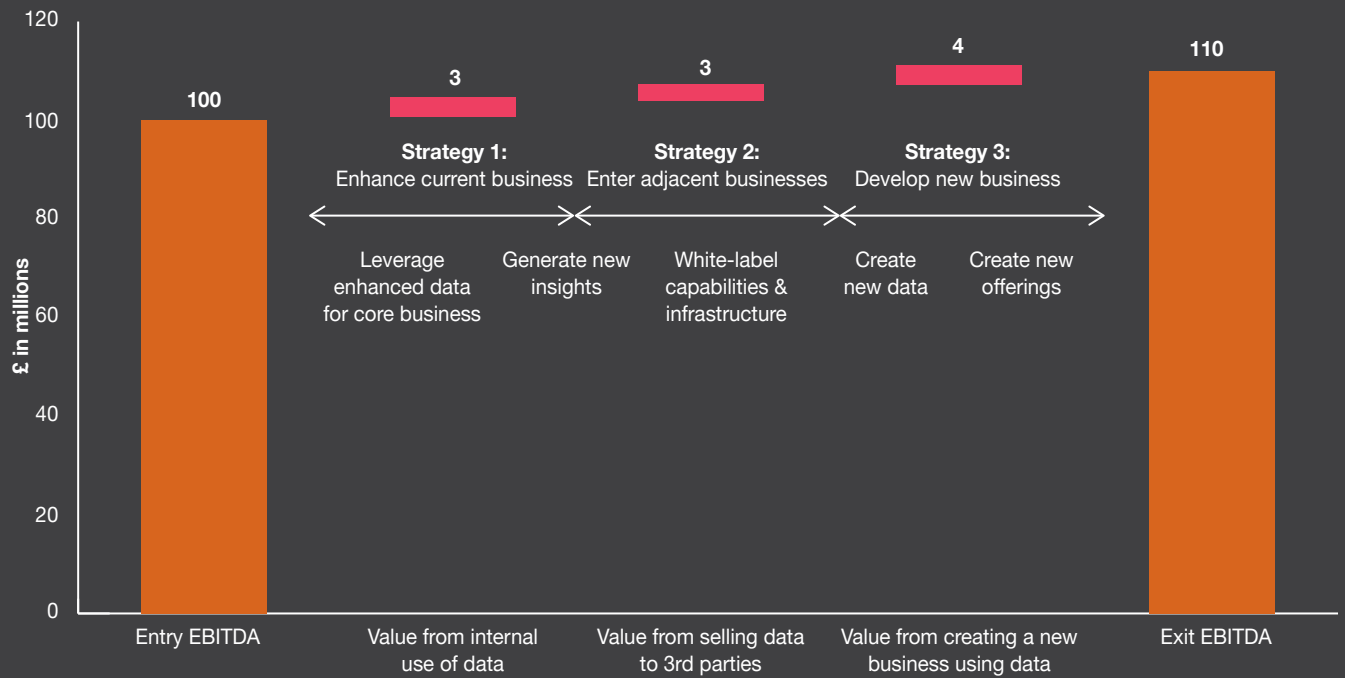
Underneath are 5 related data strategies ranging from using data to enhance the core business, to monetising data by selling it as a product in its own right. Take 1 as an example. The overarching business strategy is to enhance the performance of the current business, which could be broken down into increasing revenues or reducing costs.

Such a primary strategy would typically be deconstructed into elements which can be translated into department or functional goals and acted on.

For example, the procurement function in the business might be set a strategic objective to reduce supplier costs. The associated data strategy needs to be clearly linked to that objective so that everyone in the department understands how the data strategy supports the departmental objectives and in turn the organisation's broader strategic goals.

By analysing the company's internal data on purchases from the same supplier by different business units, the procurement function is able to negotiate larger company-wide bulk discounts with suppliers. This is a simple example, but highlights the importance of linking the board level value creation strategy to the supporting and more granular data strategy.

Value creation bridge



2. Understanding what data already exists in the organisation

Once the strategic goal has been clearly defined, the next step is to understand whether it can be delivered using insights gained from existing internal data, or whether this needs to be supplemented with additional external data to really add valuable insights.

Taking an inventory of the data that already exists in the organisation will allow the portfolio company to assess the data gaps against its strategic goals. It will also highlight any issues with data quality, such as its completeness, consistency and accuracy.

It will also assist employees in understanding what data is available within the organisation and in developing a common understanding of data across the business. The inventory example below considers three main dimensions – the data source, the data category and sub-category.

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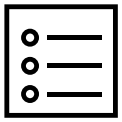
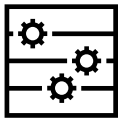




User Provided Data	Data category	Sub-categories	Illustration
Author Data • Typically created through some kind of creative, human process. • E.g. Architectural drawings, photographs.	**Master data** • Describes people, places, and things that are critical to a firm's operations.	• Customer data. • Supplier data. • Product data. • Employee data.	• Customer address. • Contact address. • Products, Features. • Employee name.
User Provided Data • Data purposefully provided by users into a system without any expectations. • E.g. Social media, ecommerce reviews.	**Transactional Data** • Describes an internal or external event or transaction.	• Sales data. • Payment data. • Touchpoint data. • Geospatial data.	• Customer purchase history. • Payment data. • Call record.
Captured Data • Recorded from events occurring in the real world or in software. • E.g. Financial transactions, Web browsing logs.	**Reference Data** • Information that is used solely for the purpose of categorising data.	• Jurisdictions. • Control data. • Currencies. • Industry standard data.	• Provinces. • Holiday calendar. • Currency codes. • Country codes.
Derived Data • Generated by combining aggregating and otherwise processing other data. • E.g. Credit scores, aggregated transactions.	**Metadata** • Characterises other data making it easier to retrieve, interpret, or use the data.	• Descriptive data. • Tables, columns. • Lineage data. • Audit trail data.	• Author, Abstract. • Type, Relationships. • Modifications, Accesses, Changes.
	Unstructured Data • Data lacking a consistent format or syntax to describe objects and attributes.	• Audio data. • Text data. • Video data. • Picture data.	• Recordings. • Reports. • Surveillance footage. • Social Media postings.

3. Assessing resources and capabilities

Transitioning to a data-enabled business requires changing mindsets, new skills, processes and resources. Companies are starting from very different positions in terms of their level of sophistication in the use of data, from ad-hoc use of simple Excel analysis, to sophisticated predictive analytics. These different levels of data use are illustrated in the table below. The majority of businesses today will be using data in the way described under levels one and two, which may be entirely consistent with a successful business strategy.

Few will be at levels three and four. In reality, most businesses' use of data will vary considerably across departments, functions and markets and different levels of data use can co-exist perfectly successfully within the organisation.

For example, a sales and marketing function may have ambitions to use data in the way described in 3 and 4 below to generate sophisticated predictions about customer buying behaviour, but HR may function very efficiently using Excel spreadsheets.

Levels of data analysis

Degrees of data sophistication	Description	Advantages	Disadvantages
1 **Ad-hoc data analysis**	Simple, opportunistic data analysis in Excel.	Cheap and easy to implement.	Little quality control and the risk of conflicting or misleading information. Data entry can be very labour intensive and prone to error. Often stored solely on an individual's desktop. Limited dissemination through the organisation and can produce contradictions due to errors, different sources and interpretations.
2 **Departmental data analysis**	Data analytics programmes are segregated and function/ department specific. Approaches, capacity, capabilities and toolsets may vary considerably between departments.	Reporting business information is more advanced than ad-hoc analytics and individual departments have more useful information to base decisions upon. Investment costs are still relatively modest.	Information is segregated and there is little knowledge sharing between functions. While costs are relatively low, there is often duplication in different departments.
3 **Enterprise-wide data analysis**	A more holistic approach involving sharing information across an enterprise, not just between individual departments. Requires data to be cleansed and standardised to enable analytics discovery. Process and collaboration become key, as does security and data governance as centralised reporting repositories are built.	Allows executives to combine data elements and obtain more valuable insights. Provides a more accurate picture of performance and operational health.	Costs can escalate quickly unless managers prioritise.
4 **Predictive and Prescriptive analysis**	Statistical modelling, forecasting, machine learning and artificial intelligence (AI) come to the fore, allowing users to run through multiple 'what if' scenarios.	Analytics change from trailing to leading, impacting innovation and market differentiation, and supporting operational effectiveness.	As data analytics becomes more advanced, the required resource capabilities, models, processes, and tools become more complex and specialised. Governance, controls and security become even more important to improve data handling and protection.

So, there is a place for varying levels of sophistication in data usage both within and between companies, but strategic ambition needs to be aligned with capabilities. PwC's Data Value Diagnostic assesses an organisation's data quality and organisational capabilities against its strategic ambitions, leading to practical recommendations to address material gaps and align data strategy with capabilities.

Assessing resources and capabilities

Data readiness	What & where is your data? Is it consistent, clean, complete, accurate? How is it classified or organised?
Barriers & risks	Have issues of sovereignty, ownership & restriction been properly considered? – Data use & sharing is becoming increasingly regulated, which can constrain potential applications.
Analytics tools	What tools are you using to analyse your data? Is it providing the insights required to execute your data strategy? What is missing?
Talent	What capabilities exist in the organisation? An organisation's ability to exploit the potential value of data is contingent upon having the right skills
Platforms & Infrastructure	Does your technical infrastructure support the organisation's ability to gather & store the data, but also the ability to transfer the data securely & in compliance with any industry or government prescribed standards?

Value Creation

What is the value creation strategy being supported by data? 1) Enhance current business 2) Enter adjacent business 3) Develop new business. Is the related data strategy clearly linked?	**Data strategy**
How big is the market for your data proposition? Are potential data customers upstream or downstream in the value chain or are they served layers removed from your direct customer & supplier base?	**How big is the opportunity?**
Can more value be found by combining data from related or third parties to create an array of enhanced data products?	**Who do I need to partner with?**
Disruptive new players are used to leveraging data in innovative ways. Are you realistic about the value of your data & your ability to compete?	**Who am I competing with?**
Is your strategic intent consistent with the technical infrastructure & human resources required?	**Do my capabilities match my strategy?**

4. Investment in people, infrastructure, and processes

Implementing a data strategy requires people who understand how to gather, process, store, disseminate and analyse data. For larger organisations, the role of a Chief Data Officer (CDO) is best placed to champion and take action on data initiatives. He or she not only defines a data strategy to meet current needs but also evolves the strategy to ensure that the organisation derives value far into the future. Although a CDO may be supported by data engineers, data scientists and data analysts, the implementation of a data strategy does not require mass hiring. Resources can be outsourced to help jump-start the journey or drive specialist data initiatives. By making full use of modern technologies & services (such as SaaS tools), it is possible to build a reliable and low-maintenance data infrastructure, opening up data access to all employees and allowing them to focus their expertise on actually using the data.

A lack of data knowledge and skills can be addressed through a targeted or company-wide training initiative, depending on the goal. Education and training should start from the top and filter down to department specific training. It could be something as simple as educating and rewarding sales teams for managing the completeness of their CRM data, followed by showing them the benefits of accurate customer data for the purposes of targeted marketing campaigns, lead generation, etc.

Infrastructure, systems and workflow integration need to be evaluated to understand how they facilitate or perhaps hamper data-driven decisions. How data is created, collected, stored, processed and analysed will determine the efficiency and effectiveness of the data strategy. Advances in cloud technology make all this architecture much more easily available and relatively flexible.

5. Developing a data-centric culture

Successful data transformation of a business or department requires a change in culture. Data projects should be designed to be highly accessible with the benefits communicated for all to buy in to. Teams across the organisation will have varying data needs and preferences for how they would like to interact with the data. There is no one size fits all. An inclusive data culture will take these preferences into account and develop data solutions that the business will want to work with and ultimately will drive value creation.

Successful data initiatives require senior management buy-in. The key to any change management strategy is to start small and look for the easy wins. Identify a project where a succinct cost/benefit analysis can be performed on the data initiative. Get the business to own the data project and create a champion, it should be the portfolio company's project to implement with the support of the PE firm's portfolio team. This should create the internal desire to change, with the PE firm's portfolio team being the enabler. KPIs should be established to measure the outcomes with targets and timelines being set.

Although a CDO may be supported by data engineers, data scientists and data analysts, the implementation of a data strategy does not require mass hiring.

Adding value through external data

Once a data strategy is established internal and external data can be used strategically for value creation. In this section we examine practical examples of how internal and external data could be used to drive value creation.

Internal data refers to information which is generated, processed and stored within the company. Companies have lots of it. In fact, they are drowning in it. To put things into perspective, 90% of all data that exists on the internet today was generated in the last two years, equating to 2.5 quintillion bytes of data generated on a daily basis.

Rather than mountains of data, what management really needs are insights. Finding and organising internal data to fit corporate decision-making needs is a good start and an essential building block to more sophisticated applications of internal and external data as the organisation's capabilities develop.

Introduction to external data

External datasets include categories such as social media, satellite, consumer transactions, geo-location and employment data. The image below outlines Eagle Alpha's taxonomy of 24 external data categories. These datasets are from two primary sources: 1.) data companies that are set up to monetise data, and 2.) companies that have 'exhaust' data to monetise.

External Data Categories

Source: *Eagle Alpha*

Eagle Alpha's September 2020 Virtual Conference included a panel discussion titled 'Are Corporates Getting Real About Engaging With External Data' and included contributions from PwC, ThoughtSpot, Snowflake and Google. Two key themes resonated:

1. Take a more top-down approach – what is the business question you are looking to answer? It is important to focus on the business value or business question first rather than the data. Become more imaginative in terms of the types of datasets that can be leveraged to answer the business questions.
2. Data collaboration and the cloud – the number of corporates implementing cloud solutions is growing rapidly, especially driven by remote working and COVID-19, however it still has a way to go. The cloud will allow for more collaboration across the organisation, driving data use across departments with more broad applications of data solutions encouraged.

External datasets can be leveraged by several departments within portfolio companies to improve business outcomes and create value see chart below. On the following pages we outline the advice of a Fortune 500 company on how to become more data-driven and detail 3 case studies of how external data can be leveraged.

Example Use Cases by Corporate Departments

Purpose	Relevant Department	Example Categories And Use Cases
Customer Insights	Marketing	• Social media data – analyse brand perception. • Online search data – analysis into customer behaviour.
Market / Competitive Intelligence	Product, Sales	• Satellite – analyse activity at a competitor manufacturing plant. • Web crawling – crawl competitor websites for pricing data. • Pricing data – trends by category • Employment data – utilising job listings data to find growing companies for lead generation
Product Development	Product	• Patent data – how much should we be investing in R&D? • Geo-location data – where should we launch new stores? • Review data – consumer reviews to understand product issues
Supply Chain Management	Procurement	• Shipping data – monitor output of supplier using HS (Harmonized Shipping) codes. • Credit data – track account receivables of suppliers.
Macro Environment	Board, Finance / Treasury	• Shipping data – insights into FX by analysing shipping between countries. • Credit data – track credit levels by sector, state and country. • Employment data – track hiring/firing trends, labour supply/demand
People Insights	Human Resources	• Employment data – Natural Language Processing (NLP) analysis of employee review comments. • Employment data – analysis of employment, skills and hiring trends at competitors, workforce analytics, labour supply/demand
Acquisitions	Board / M&A Team	• Web traffic data – track visitors to 'order page' of e-commerce site. • Employment data – analyse sentiment of staff at target or companies with growing employment numbers.
See What Investors See	Investor Relations	• Consumer transaction data – understand revenue predictions. • Pricing data – insights into price points and trends.

Case Study:
A data-driven corporate

Eagle Alpha's September 2020 Virtual Conference included numerous Corporate-focused sessions including a Keynote from a Fortune 500 company. Sophisticated corporates are using the cloud to offer data-as-a-service within their own organisation, a single source of truth for all departments to access. Some have even taken this a step further and layered on the tools needed to glean insights from the data e.g. analytic tools, natural language processing, machine learning and visualisation services.

Three key lessons to becoming a more data-driven organisation were noted in the Corporate Keynote:

1. Brand the data – branding the single source of truth helps people throughout the organisation understand and familiarise themselves with the data solutions.

2. Partner for speed – leverage the expertise of others who have gone through the hard work and learned the lessons.

3. Get a quick win – show the value and demonstrate the financial impact to get buy-in.

The following are three examples of use cases focused on answering business questions with external data.

Case Study 1:
Growing footprint – How big data identified where the next Lowe's should go

The Challenge

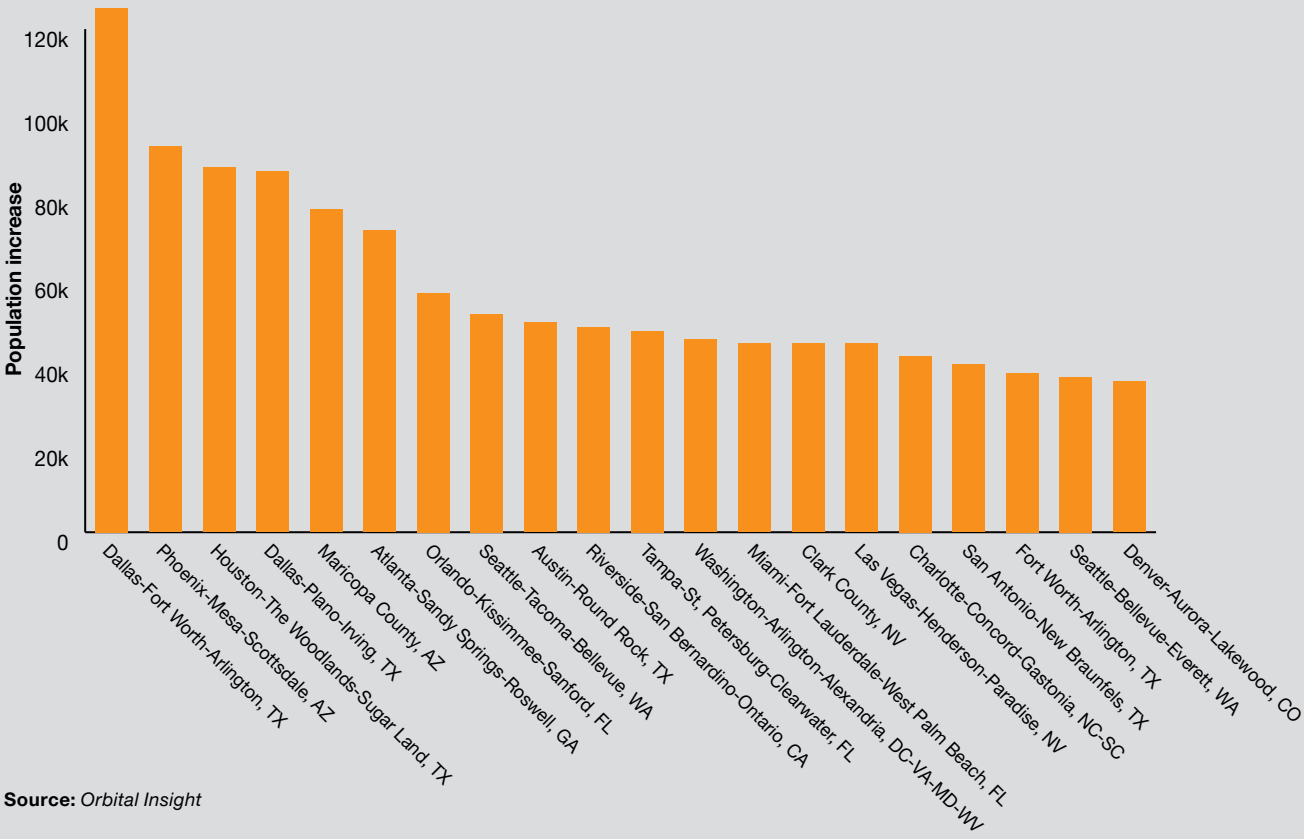
Lowe's is an American retail company specialising in home improvement and competes with the country's largest home improvement retailer, Home Depot. In this use case we consider store location as a key consideration in retail wars. A leading geolocation vendor, Orbital Insight, utilised location intelligence paired with market share, trade area and demographic analysis to identify Home Depot locations ripe for Lowe's to cannibalise. The Lowe's brand is 30 years older than Home Depot and despite this, its store sales have historically lagged those of Home Depot and it does not attract traffic in the scale of its rival.

Dissecting The Problem With Data

The issue was analysed as follows:

1. **Understand the areas of fastest population growth in the US utilising core-based statistical areas (CBSA).** A CBSA consists of one or more counties (or equivalents) anchored by an urban centre of at least 10,000 people plus adjacent counties that are socioeconomically tied to the urban centre by commuting.

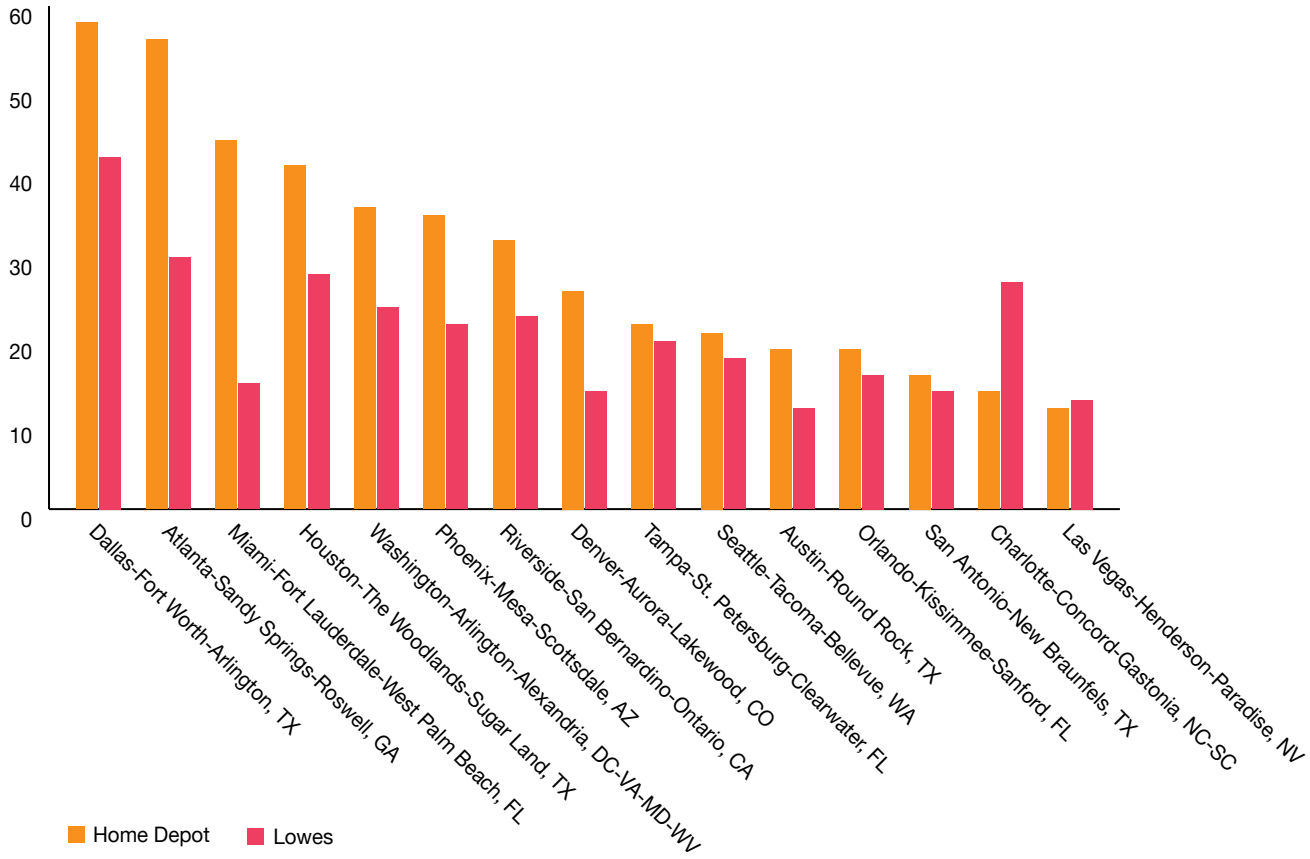
2017-208 Fastest Growing CBSAs



Source: *Orbital Insight*

2. Identify the number of Home Depot and Lowe's locations in each top CBSA.
The analysis showed Lowe's lagged Home Depot in 18 out of 20 fastest growing CBSAs.

Number of locations in each top CBSA

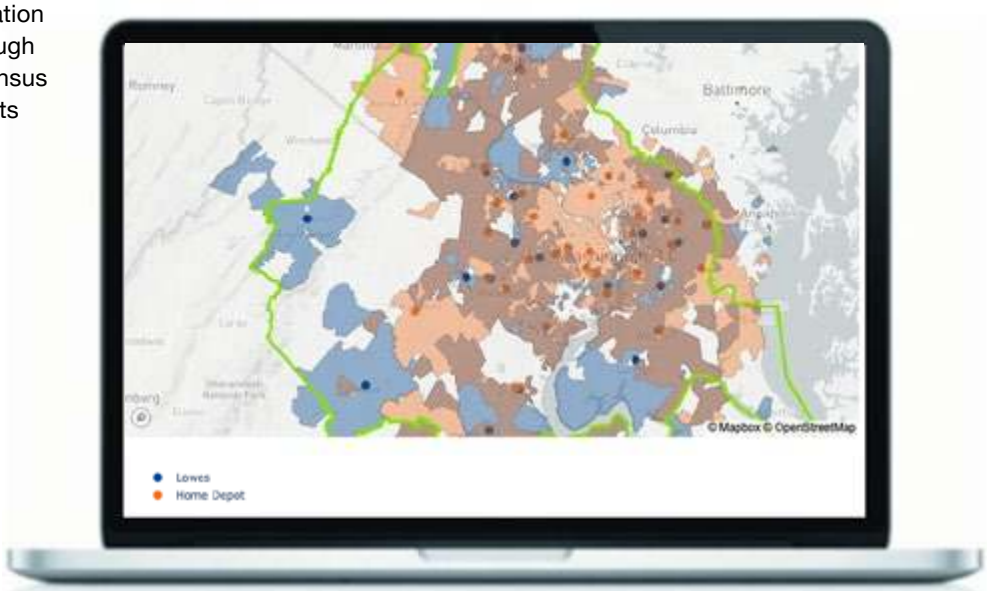


Source: *Orbital Insight*

> Geospatial data can support corporate strategies through gaining an empirical understanding of a corporate's trade area.

3. **Analyse and compare the trade areas of Home Depot and Lowe's.** Quantitative geolocation data tracked store visits through mobile devices from each census block group, providing insights into trade area overlaps or uncontested areas.

Washington-Arlington-Alexandria trade areas



Source: *Orbital Insight*

4. **Understand the trade area stats** including population within trade areas, trade area overlap by company and demographics (wealth & density). The analysis showed that Lowe's trade areas tend to be slightly more wealthy and lower in population density. The chart on the right details the Home Depot stores with the most similar demographics to Lowe's and largest uncontested populations.

Home Depot Store Analysis

Source: *Orbital Insight*

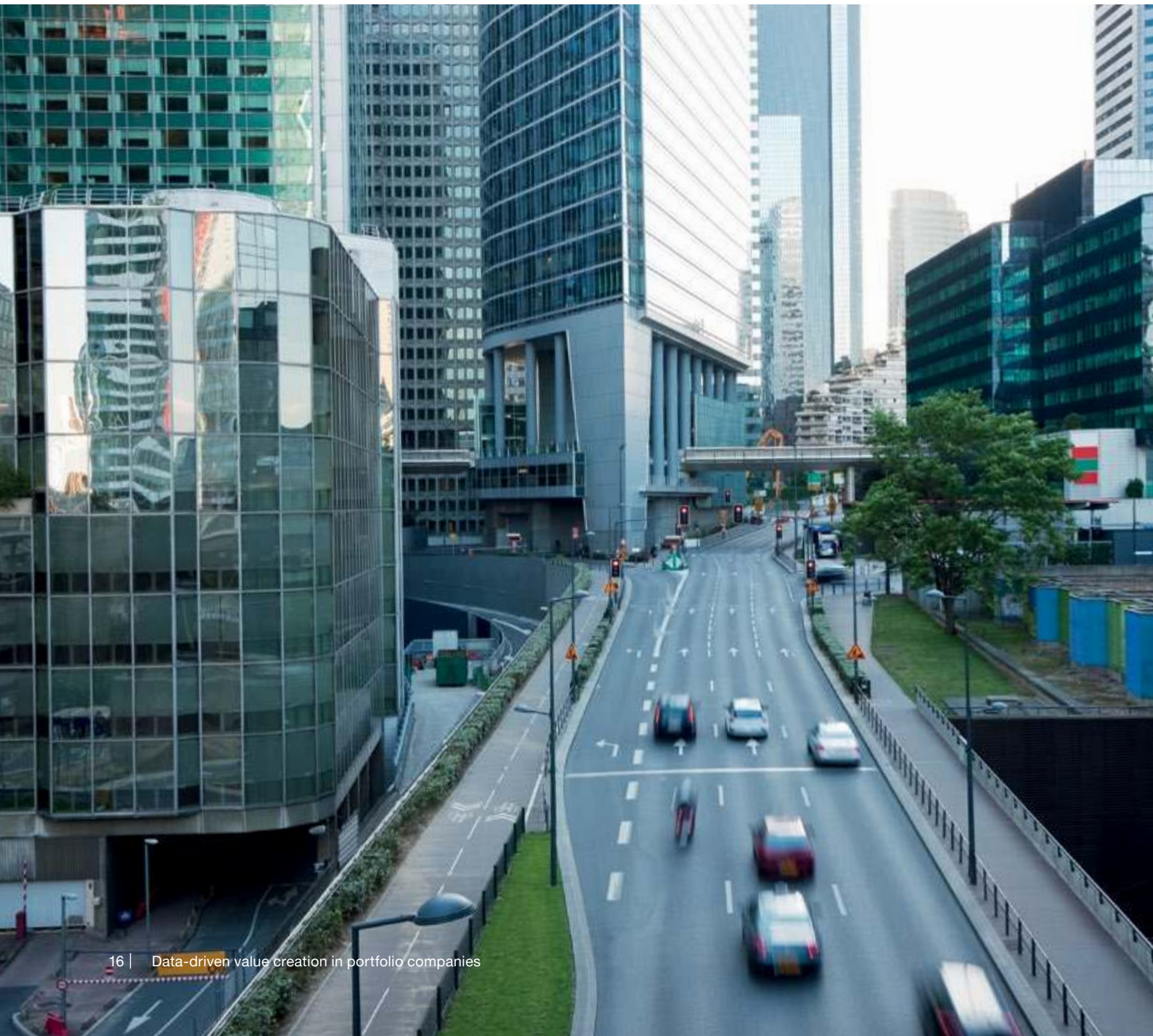
5. **Apply the ideal demographics, market share and trade area overlap** to discover new Lowe's store locations. The analysis concluded that Lowe's stores should be located in Home Depot trade areas that:

- Are within 30% of Lowe's historical median wealth target.
- Are within 30% of Lowe's historical median population density.
- Have more than 10 minutes driving distance from an existing Lowe's.
- Are in a trade area where Lowe's has less than 30% market share.

Geolocation analysis was also utilised to evaluate foot traffic at the targeted Home Depots to understand how the stores were actually performing.

Conclusion

Geolocation data allowed Lowe's to discover ideal real estate site selection to drive foot traffic and cannibalise Home Depot locations. Geospatial data can support corporate strategies through gaining an empirical understanding of a corporate's trade area. The demographic insights can also be valuable information for marketing teams to leverage.

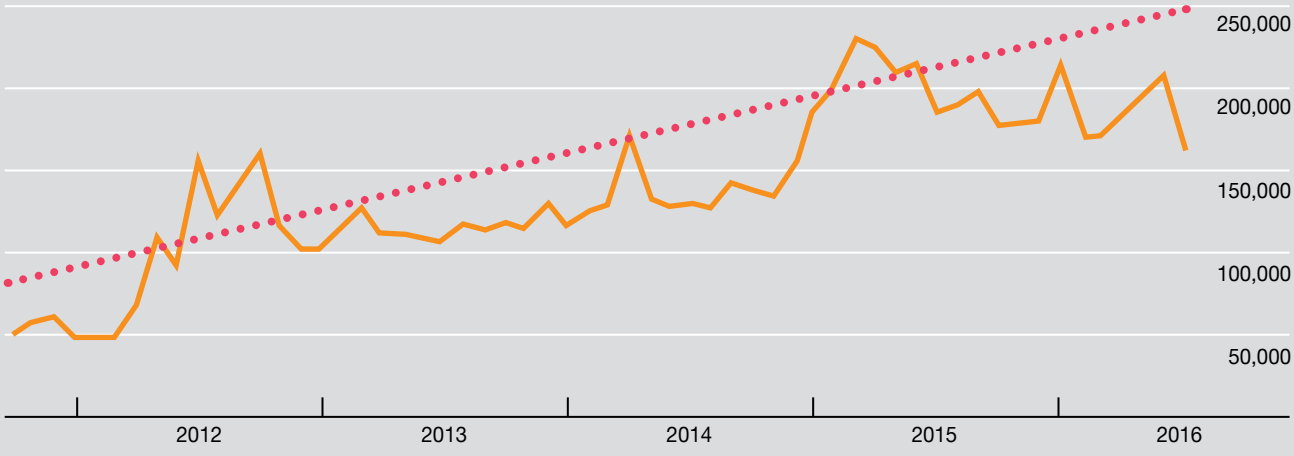


Case Study 2:
People Insights – Honing Chipotle's Hiring Strategy With Job Postings Data

The Challenge

Chipotle is an American chain of fast casual restaurants in the US, UK, Canada, Germany and France, specialising in Mexican food. The company was struggling to fill positions in restaurants at specific locations in the US. The company utilised LinkUp's job postings data to understand the reasons for the hiring difficulties. LinkUp indexes millions of job postings every day from employer websites, to deliver job market information.

Job Openings



Based on companies LinkUp monitors

Source: *LinkUp*

Data-Driven Insights

The employment data analysed proved that Chipotle's problem was not due to a tighter labour market.

Historical job growth

Source: *LinkUp*

A peer group analysis was carried out on the fast-casual restaurant industry and Chipotle's hiring strategy was compared to its peers. It was clear that job titles and job descriptions were a key factor in Chipotle's hiring struggles.

Conclusion

Employment data provided key competitive intelligence and allowed the human resources department to optimise its hiring strategy. Employment data has many value-add use cases for portfolio companies. Job postings data can be used to evaluate corporate strategy, growth rates, employee churn, employee location, part-time/full-time, gender diversity and demand for specific skills. Employee sentiment data can provide insights into internal opinion on management and sentiment by job type.

Linkup is able to capture job data from 75% of the top 50 fast-food restaurant chains in the U.S. Among these chains, McDonald's, Starbucks, Panera, Domino's, and Taco Bell all have over 10,000 jobs open now.

McDonald's	25%
Starbucks	10%
Panera	9%
Domino's Pizza	7%
Taco Bell	7%
Jack in the Box/Qdoba	5%
KFC	5%
Carl's Jr./Hardee's	3%
Marco's Pizza	3%
Steak N Shake	2%
Checkers	2%
Sonic Drive-in	2%
Chipotle	2%
All other	17%

Current job openings as of Ocotber 2016

Based on the companies LinkUp Monitors, there are just over 160,000 positions currently open at fast casual restaurants in the United States.The job titles of Team Member and Crew Member account for just over 30% of all current job openings.

Source: *LinkUp*

Team Member	25%
Crew	10%
Assistant Manager	9%
General Manager	7%
Shift Manager	7%
Shift Supervisor	5%
Delivery	5%
Barista	3%
Shift Lead	3%
All other titles	2%

Current job openings as of Ocotber 2016

Case Study 3:
Using data to attract more customers and clients to the West End, encourage them to stay longer, and come back more often.

A 2020 Challenge For A Global Icon

The New West End Company (NWEC) represents more than 600 businesses, across 74 streets in the West End of London. They support their members in three ways: marketing to promote the area; management to create a cleaner, safer, welcoming environment; and advocacy, making sure the West End's voice is heard.

Their goal is to make the West End the world's number one retail destination by 2020.

One of their major objectives is to attract more customers and clients to the West End, encourage them to stay longer, and come back more often.

To succeed, they needed to get to know those customers and clients better – to better understand them and how their members can better serve them.

Getting The Data Advantage

NWEC has always had access to traditional sources of data. For example, they conducted on-street surveys, and analysed information from tax-free shopping providers. But this kind of data was problematic in a number of ways:

- **Sample sizes** are small. On-street surveys reach around 3,000 people a year – a tiny percentage of the 200 million annual visitors to the West End.
- **Representativeness** is problematic. For example, data on tax free shopping is valuable, but doesn't cover everybody – e.g. EU citizens, who aren't eligible for refunds. Or people who spend under the minimum threshold to qualify for a refund. And It doesn't take into account that cultural differences affect the data, e.g. people from certain countries tend not to apply for refunds.
- **Bias and subjectivity** also plays a role. With on-street surveys, what people tell you will always involve a degree of personal opinion, and could be inaccurate or exaggerated.

This all matters because, right now, conditions for the retail sector are tough. It's more important than ever to be able to respond to customer needs and provide a superior customer experience. As a retailer, insight is critical. To give you an advantage the data must be complete.

Enhanced Insight – Because Assumptions Aren't Enough

PwC worked with NWEC to overcome their data challenges, so they could generate more valuable insights, and make decisions with greater confidence. While they'd always used things like footfall, EPOS data, and sales indices, we brought our own data sources, and those from data partners, to paint a much bigger picture. For example, we drew on:

- Data from mobile phone providers.
- Payment card data.
- Travel industry sources – such as flight and traveller information.

This gave our retail experts the chance to augment their business understanding with powerful data, so they could create an accurate and in-depth picture. Advanced analytics tools could now be used to tell a bigger, better story: who was coming; where they were coming from; what socio-economic class they belonged to; how much money they spent; where they visited; why they visited; and how long they spent there.

NWEC were even able to look into the future, to generate these kinds of insights weeks or months in advance.

Making Data-Driven Decisions

For NWEC and its members, the data and analytics provided a source of advantage in two ways. First, it exposed some insights that had an immediate impact (see below). Second, it gave them a large bank of data that they could use to model different 'what if?' scenarios – using modelling tools to show the business impact of making certain decisions and choices.

In terms of the more immediate insights, these included:

- **Better recruitment choices** – For retailers, it's important to know which languages your assistants need to speak. A big part of that depends on who your most important customers are – but it's not always immediately obvious. For example, payment card and travel data told us that while there were fewer shoppers from certain countries, they spent significant sums of money. Retailers could therefore make smarter recruitment decisions about this less-visible group.
- **Forward-planning for demand** – Having access to travel data meant that we could help businesses build a picture of future tourist numbers. We could predict, with greater accuracy, when people were likely to be visiting the UK, from which countries, and how many were going to be coming. Retailers could therefore plan ahead.
- **Responding to shopper preferences** – For some countries, we were able to show that lots of visitors came to the UK – but they spent smaller sums, in multiple transactions, in particular types of stores. This kind of insight means those stores could plan accordingly, based on their tastes.
- **Day-to-day staffing levels** – The data also provided interesting insights into the reality of 'busy periods'. The busiest days weren't as expected, at the weekends, but certain mid-week days. We could also provide more accurate data about the busiest times of day, and busy seasons – again, not the times you might expect.

The data also provided interesting insights into the reality of 'busy periods'. The busiest days weren't as expected, at the weekends, but certain mid-week days.

These insights were provided in just two weeks, from start to finish. In a short space of time, PwC analytics and tools started the process of creating more accurate, valid and reliable insights, helping to expose unexpected observations that give retailers an advantage in a tough marketplace.

https://www.pwc.co.uk/issues/data-analytics/insights/new-west-end.html

For further examples of data use cases and insights from industry experts tune in to Eagle Alpha's Profiting From Data podcast. Top industry experts in the data universe join Emmett Kilduff, CEO & Founder of Eagle Alpha, in engaging and informal episodes to provide a deeper dive into alternative and external data.

Profiting From Data

Profiting From Data Podcast:
...with Neil Hampson, Partner at Strategy&, part of the PwC network.

On this episode, Neil talks about companies using and gaining an advantage out of external data, challenges to adoption, use cases including corporates use of data across different divisions and departments, as well as PE firms using data to get an edge. Please enjoy this dialogue between Neil and your host, Emmett Kilduff.

https://podcasts.apple.com/us/podcast/profiting-from-data-neil-hampson-partner-at-strategy/id1532057122?i=1000498489476

https://open.spotify.com/episode/66KqNpBUzaR5sl2PEhQdlr?si=zQQ6DcPHQUap9HAc7FcS8A

“For retailers, it’s important to know which languages your assistants need to speak. A big part of that depends on who your most important customers are – but it’s not always immediately obvious.

Data monetisation opportunity – licensing data to others, a new revenue stream

Leveraging internal and external data to enhance decision making can be a key driver of value creation in portfolio companies. Data monetization through licensing data to third parties provides further scope for value creation. This section discusses how a PE firm and its portfolio companies can put this into practice.

The current economic environment and COVID-19 pandemic has re-focused organisations on their bottom-line and the possibility of new revenue streams. Licensing data to third parties is an opportunity that companies are turning to due to its high margin impact and diversification benefits. 'Infonomics' is a growing trend. The theory, study and discipline of asserting economic significance to information, and one which Doug Laney (formally from Gartner) authored a book of that title focused on how to monetise, manage and measure information as an asset for competitive advantage. Innovative companies are thinking about data as an asset rather than an expense.

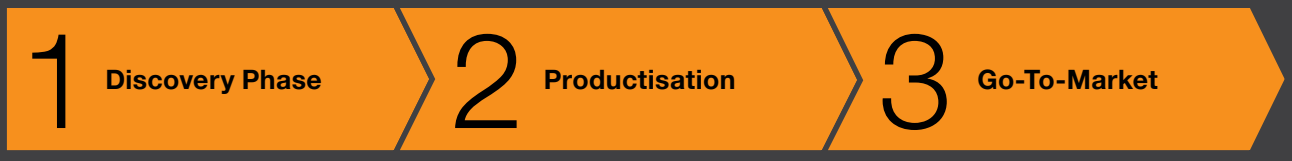
External data users were once limited to sophisticated quantitative funds but it is not just investment firms that stand to benefit from the surging availability of external data sources.

The appetite for external datasets has grown rapidly over the last few years and even more so in 2020 due to the COVID-19 outbreak as the world searched for more real-time data insights. External data users now include asset managers, private equity, venture capital, corporates, consultants, central banks and government entities. The opportunity to monetise portfolio company data by selling to third parties is growing at a rapid pace.

"The current economic environment and COVID-19 pandemic has re-focused organisations on their bottom-line and the possibility of new revenue streams. Licensing data to third parties is an opportunity that companies are turning to due to its high margin impact and diversification benefits. 'Infonomics' is a growing trend.

The data monetisation journey

The data monetization journey follows three main steps as outlined in the graphic below and the following text.



Discovery Phase

Launching any new product or service requires significant market research and launching a data product is no different. There are a number of key items to consider in this Discovery Phase.

1. Groundwork

Familiarise yourself with the dataset category and comparable datasets to your data product. Data aggregators have extensive market knowledge that can be leveraged. An aggregator like Eagle Alpha has access to case studies using similar data, knowledge of the most successful data vendors and general external data market intel. External data research analysts can be used to take a first look at the data and consider the potential use cases for the dataset. Early stage groundwork includes assessing the following:

- **Potential buyers** – asset managers by investment strategy (quant/fundamental/macro/etc.), private equity, venture capital, corporates, consultancies, central banks, governments. The pool of data buyers will be driven by the various attributes of the dataset, for example quant funds will want longer history, broad coverage and delivery via API.
- **Dataset uniqueness** – clearly the more unique your data the more valuable it can be. Two questions to consider (i) can buyers get similar information elsewhere and (ii) are there proxies that achieve the same outcome?
- **Dataset structure and quality** – raw vs. processed data, mapping to unique identifiers, anonymization of PII and data consistency all need to be considered. Does the dataset require significant remediation work?
- **Data delivery** – accessed on demand or files transferred daily/weekly/monthly? Preferences for file formats and delivery methods will vary depending on the end buyer being targeted e.g. less sophisticated buyers prefer an intuitive user interface (UI) or csv format vs. APIs for more sophisticated buyers.
- **Dataset coverage**, frequency of collection and latency (how recently the data updates).
- **Micro vs. Macro** – company level data is typically more actionable and therefore more valuable than macro level data. Macro datasets which are highly relevant to an asset class, such as global currencies or agricultural commodities, may be exceptions.
- **Predictive power** – data that be used to predict the subsequent movements of a stock price or specific KPI is highly sought after.

The above analysis coupled with the insights from an aggregator can steer you to the most suited data buyers and potential dataset pricing. Below are some learnings from two well-known data vendors.

> “With the massive growth in all kinds of alternative datasets, it’s definitely a more crowded environment...Eagle Alpha has a tremendously informed perspective about the industry and what it takes to be successful” LinkUp (employment data vendor).

> “Newcomers to the data arena should do proper due diligence on the markets they would like to approach. We often see vendors that don’t have the market expertise needed to succeed in today’s competitive environment. Steps such as understanding the market’s needs, create a proof of concept product, provide back-tests that showcase the data are all items newcomers should consider” Advan (geolocation data vendor).

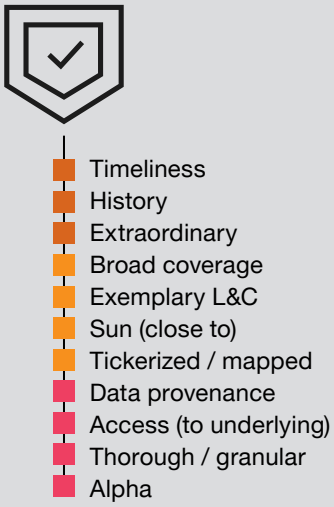
2. Assessing The Commercial Opportunity

The commercial opportunity is twofold; price and sales volume.

Price

There are a number of factors that affect dataset pricing, including length of history, granularity, latency, delivery frequency, coverage, security/company tagging, historical revisions of the data, uniqueness of the dataset, and predictive power. Bringing to market a well-structured and clean dataset is important. The more work a data buyer has to do to clean the dataset generally the less valuable it is to them. Similarly, a long history and broad coverage will enhance the value of a dataset. The more granular the data the more questions can be asked of the data and the more predictive it can be, which adds further value. The graphic below outlines the key criteria for the best datasets.

Criteria for the best datasets



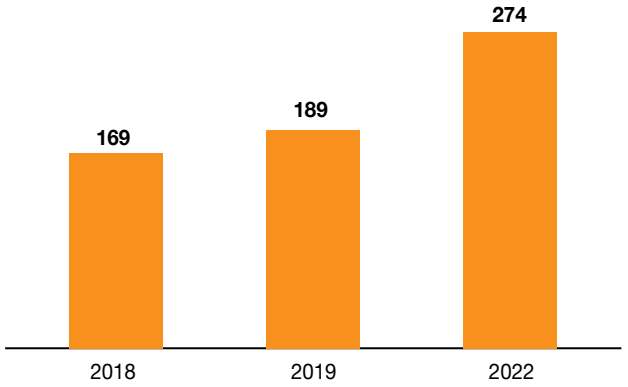
It is important to understand the needs of the data buyer and how these vary. For example, quantitative asset managers generally need datasets with at least three years of history, numerical time series and delivered via an API. Quantitative funds also require very broad coverage and ideally would like thousands of tickers (companies) in the dataset but need at least several hundred tickers. Anything below that may not be even entertained. On the other hand a discretionary fund, private equity firm or corporate may be able to work with less history and a narrower coverage but may want pricing optionality (i.e. options other than purchasing the entire dataset). Licensing structure will also be a factor to consider e.g. enterprise vs. team vs. per user, number of users, usage model and term.

A realistic pricing strategy is imperative. Pricing needs to be in-line with comparable datasets that are already available in the market. One asset manager noted, “it is better to hook a few whales at a lower price, gain traction, learn what is going right and going wrong, and build new products”.

Sales Volume

The addressable market is growing significantly as depicted in the IDC Spending Guide below. The number of asset management firms using external data is growing but users of external data now also include private equity, venture capital, corporates, consultants, central banks and government entities.

Projected revenues for big data and business analytics ($bn)



Source: *IDC Worldwide Semi-annual Big Data and Analytics Spending Guide 2019*

Sales volume will be dependent on the type of data buyer that your dataset is applicable to, whether you offer any exclusivity, and your route to market. For example, data vendors that sell their dataset to investment banks firms run the risk of diluting the value as it will dilute the alpha opportunity available to asset managers. Some asset managers will not purchase data that has been sold to the investment banks. For these reasons Eagle Alpha recommends not selling data to the investment banks. If data vendors do approach the investment banks they should only sell data at an aggregated level. The chosen route to market will impact the sales volume opportunity. Vendors that complement their internal initiatives with a specialist external data partner like Eagle Alpha will have a larger market opportunity and get to market faster. As mentioned earlier in this paper "partner for speed".

A great way to assess the commercial opportunity is to engage a partner like Eagle Alpha to conduct a pilot fishing teach-in exercise, a fail fast approach. Invite a small group of carefully selected target buyers across the various verticals, deliver a presentation and obtain feedback. This gives a strong view regarding likely demand, reasonable price points and an estimate of the amount of work required. It will provide the key information needed to make the go/no-go decision.

3. Legal & Compliance Considerations

Regulation in data sharing
Compliance and associated costs must be considered in any data monetisation exercise. As data and cross-border transfers become progressively globalised, increasing regulation of data means that companies must invest more in tackling regulatory risk. In particular, when considering compliance and risk across multiple jurisdictions, the question arises as to how best to position data policies.

Faced with a variety of data protection laws and regulations, many multinationals choose to create a set of stringent, internal 'gold standards'. These standards can help to build consistent data handling practices across the organisation for compliance purposes, while also building awareness of the regulatory boundaries which may influence the design of future products and services.

Evolving data policy is increasingly driven by consumer concerns, whether or not relating to personal data. Principles of data classification, security and integrity, transparency and accountability for the storage and transfer of data are consistent across areas of regulation beyond personal data protection.

Data protection

Data protection regulations place obligations on data providers, intermediaries and consumers to prevent the misuse of individuals' personal data. In turn, this helps to build trust in the sharing of data which is necessary to support e-commerce and other digital transactions and ultimately to increase the value of the data itself.

The OECD Privacy Principles, a global set of standards subscribed to by most jurisdictions concerned with data protection (with the exception of the United States), require fairness and proportionality in handling data throughout its life cycle from collection to transfer, through to rights of access and deletion.

'Personal data' means any data that can be used to identify an individual, such as a mobile number, personal email, or photograph. When combined with behavioural data and transactional datasets, personal data enables organisations to develop comprehensive profiles of individuals and derive valuable insights into their spending habits and preferences. As such, the data monetisation potential of sharing personal data is high, by means of applications such as targeted advertising and individualised deals.

Although data protection rules vary between jurisdictions, increasing global convergence can be identified in international regulatory efforts. Key principles such as purpose limitation, accountability, transparency and consent are commonly emerging across developing regulations. This is reflected in the fact that many concepts (such as those shown in the graphic below) are found in the seven key principles guiding data processing under the EU General Data Protection Regulation (GDPR).

Compliance obligations may be limited in some circumstances, such as where steps are taken to pseudonymise data such that the remaining data cannot be used to identify any particular individual. Organisations may therefore be inclined to pseudonymise data to avoid the regulatory burden that comes with holding and processing personal data, however must also consider the potential for a corresponding reduction in data value.

Lawful basis for collecting & processing data	Data may only be collected & processed where there is a lawful basis to do. Common legal bases include consent or legitimate interests/ legal or business purposes.
Purpose limitation	Data may only be collected & processed for specific & legitimate purposes. Data not required for these purposes must not be collected.
Transparency & accountability	Organisations must be transparent in disclosing the personal data they collect & purposes for doing so. Organisations are accountable for their collection & use of data.
Access & correction	Individuals have rights to access personal data & information relating to the processing of that data, as well as to correct inaccuracies.
Accuracy	Organisations have positive duties to ensure the accuracy of personal data they collect, retain & use, erasing or rectifying inaccurate data as necessary.
Retention limitation	Organisations must erase personal data where the legal basis or purpose for retaining that data expires.
Transfer of data	Personal data may only be transferred to third parties in defined circumstances. Personal data may only be transferred outside of the jurisdiction where adequate, equivalent protections are in place.
Security	Personal data must be subject to appropriate security measures. Upon data breach, appropriate notifications may be required to the authorities & affected individuals.

Data Sovereignty

The principle of data sovereignty provides that data should be subject to the laws and regulations of the country in which it is collected, stored or used. Data sovereignty challenges arise when companies intend to transfer or store data across multiple jurisdictions (e.g. cloud storage or transferring data between private secure servers), as the laws regarding the management and protection of data, particularly private data, could vary significantly or even conflict between jurisdictions.

As many governments take steps to implement and update domestic data protection frameworks, companies face an increasing number of compliance obligations when sharing data across borders. The extra-territorial effect of new data protection regulations such as the GDPR increases the burden on companies that have a presence in the EU, offer goods or services or monitor the behaviour of individuals within the EU.

Achieving data protection compliance across borders can be complicated and costly. Under the GDPR for example, data controllers who breach the regulations may receive fines of up to 20 million euros or 4% of worldwide turnover. In order to manage the risks around potential conflicts of data sovereignty, companies should be aware of how and where their data is collected, stored and used. Extra caution is required when there is a third party (e.g. a cloud service provider) involved in the handling of the data.

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The extra-territorial effect of new data protection regulations such as the GDPR increases the burden on companies that have a presence in the EU, offer goods or services or monitor the behaviour of individuals within the EU.

Data Transfer

Despite efforts to eliminate barriers to data sharing, many jurisdictions incorporate restrictions in their data protection regimes on the transfer of data across borders. Under the GDPR, transfers of data outside of the European Economic Area require either that the recipient country is subject to an adequacy decision, or the use of measures such as Binding Corporate Rules or Model Contractual Clauses. Additional complexities arise when it comes to US data transfers, particularly given the decision of EU Courts in the Schrems case to invalidate arrangements regulating data transfers between the US and EU.

These rules, as well as the general need to consider applicable foreign laws, mean that businesses must be aware of their cross-border data flows. Businesses must look closely at existing and future business operations and relationships and in which jurisdictions these activities may involve the collection, use or transfer of personal data.

Sectoral Regulation
As well as complying with state level data protection rules, businesses in certain industries must comply with additional industry-specific legislation and advisory guidelines. Often subject to these specially regulated areas are businesses in the financial, healthcare and telecommunications sectors, who due to their activities tend to deal with more sensitive data.

FISD is the global forum of choice for industry participants to discuss, understand, and facilitate the evolution of financial information for the key players in the value chain including consumer firms, third party groups, and data providers. Eagle Alpha is a member of FISD and the only intermediary that is integrating FISD standards across its dataset profiles. Eagle Alpha is working with the Alternative Data Council working group within FISD to engage the external data community and establish best practices and standards for the delivery of external data. The establishment of FISD standards such as standardised tear sheets and due diligence questionnaires allows data buyers to quickly understand and assess a dataset, helping to save time and costs, drive adoption and promote the ethical use of data.

> “Level set on your ground truth data with careful measurements of KPIs that matter. Identify what the data is supposed to measure, catalogue structural drivers of differences” Consumer Edge (consumer transaction vendor).

Productisation

This is the longest step in the process of producing a new dataset and can take upwards of six months. During this stage research analysts, data scientists and engineers work to build the dataset. It may be worth considering whether combining your data with another dataset would add value. The productisation phase includes a lot of data pre-processing, including mapping to tickers/company/security identifiers. Key considerations include:

- Look to build a minimal viable product (MVP) which encompasses all that was learned in the Discovery Phase. Again, partner for success, seek advice from data hunters, engineers, data scientists and data analysts. Do not make the same mistakes as other vendors.
- Utilise beta trials and feedback to help you prioritise items to work on for a full product launch. A technical data review by external data experts allows for a thorough evaluation of your dataset.
- Leverage advice from Eagle Alpha’s data engineering and data science teams who can ingest the data and conduct data quality testing.
- Technical advice and recommendations from engineers and data scientists will cover items such as data structure, file formats, anonymisation of personally identifiable information (PII), outliers, missing values, duplicates, delivery and publication standards. This enables vendors to view the dataset from the viewpoint of a sophisticated buyer and make any relevant amendments before going live.

> “Do you truly understand your own data set, the full capabilities, have you tested it internally, and productized it effectively in the way investors need to digest information” SimilarWeb (app usage & web traffic vendor).

Go-to-market

Getting your dataset in front of the right data buyers needs to be a well thought out process and will be driven by your Discovery Phase and subsequent Productisation. The external data space will be a new concept for many data vendors, lean on partners who understand how to tackle this market. For example, many data aggregators like Eagle Alpha will offer a free profile listing of your dataset on their data catalogue, this will immediately get you into the ecosystem.

Ensure your documentation is world-class and in line with the industry standards. The Alternative Data Council is a series of working groups and information-sharing forums within FISD focused on establishing best practices and standards for the delivery of alternative data to the investment industry. FISD standard tear sheets and due diligence questionnaires (DDQ), as well as data dictionary, sample data, trial data, case studies, trial agreement and subscription agreement all need to be considered for a successful go-to-market strategy.

Getting data in the hands of prospective data buyers as quickly as possible will reduce the sales cycle. A great way of reducing the friction and data access challenge is by delivering trial data in a format and delivery method most aligned with that of the prospective data buyer. Eagle Alpha now facilitates trial data through its Data Discovery & Prioritisation solution. This solution addresses the cumbersome support burden a data vendor faces fulfilling the various compliance, file format, and data delivery preferences of interested data buyers by providing a complimentary single, secure location on Eagle Alpha's cloud environment to store and maintain their data products.

> Getting data in the hands of prospective data buyers as quickly as possible will reduce the sales cycle.

Further, Eagle Alpha provides an expanding set of tools and services for creating "snapshot" trial products to help fulfil each unique set of trial requirements. For data buyers, this solution now enables them to specify their preferences for file formats, filter specific coverage or data attributes for each trial, and receive trial data delivery via a growing number of methods. This enables data buyers to quickly onboard custom-specified trial data onto their trusted in-house environment, instead of being required to fit the mould on a third party platform to assess datasets.

Boost your dataset's profile with marketing, conferences and roadshows. An IPO-type roadshow can be a great way to go-to-market quickly. Building content around your dataset such as analyst reports and whitepapers will help end users begin to understand the data's value and how that can be applied to various investment strategies or commercial insights.

Finally, many vendors work with a referral partner to drive sales traction. These types of partnerships generally take the form of a commission model and can also include access to conferences, roadshows, qualified leads and monthly calls to assist in managing the sales funnel.

There are many ways to go-to-market, choose the one that is most suited to your areas of expertise or resource constraints. Lean on partners to fill the gaps in knowledge or market expertise.

Case Study
Monetising data on the flexible office space market by selling insights to a potential investor

The flexible office space has seen remarkable growth in recent years. Changes in lifestyle and working patterns, together with advanced developments in technology, have contributed to how office space is now used. COVID-19 has only accelerated these trends.

A leading real estate investor wanted to enter the market by buying an established flexible office operator. They wanted to understand the current flexible office environment and where a target business was positioned in this market.

The opportunity

PwC's previous work with an organisation that helps place companies in flexible office space all around the world highlighted a rich, but unexploited source of proprietary information covering space requirements of different customer types, their economic behaviours and key drivers of successful new sites.

We worked with this company to help them monetise this valuable data, applying advanced analytics, including AI machine learning, sentiment analysis, clustering and predictive modelling, to create a bespoke analytical platform that could be sold to potential investors.

The outcome

The tool used the proprietary data to assess market supply and demand across countries, cities and postcodes, demographic profiles, site clustering and price predictors to provide visibility over which drivers were more attributable to a successful site location. This enabled the investor to understand the market in which the target business operated, how their target performed against competitors in light of the wider socio-economic indicators, to make a well informed, data-driven decision about the purchase.

As well as generating revenue from the sale of the data, the provider gained valuable insights into use cases for their data, how to package, present and monetise the data.

About Us

About Eagle Alpha
Established in 2012, Eagle Alpha is the pioneer connecting the universe of data.

First adopted by alpha-seeking hedge funds over 10 years ago, alternative data is now being sought for use in the wider asset management space, as well as the private equity and corporate verticals. In parallel, there is an explosive increase in the supply of alternative datasets, as many corporates are looking to monetize their exhaust data and new technologies enable the emergence of new alternative data vendors.

Eagle Alpha was one of the first companies to recognize the value from these new data sources and has been investing in educating and connecting alternative data vendors and buyers since 2012, in the process building trusted relationships with both sides of this market. As of October 1st, 2020, Eagle Alpha partners with over 1,398 data vendors and hundreds of data buyers across the asset managers, private equity and corporates.

Eagle Alpha's solutions mirror the user journey of our customers. There are three steps in the vendor user journey: discovery phase, productization and go-to-market. There are three steps in the buyer user journey: data strategy, discovery and prioritization, delivery and insights.

Our unique breadth of datasets, knowledge of the industry and customer relationships have cemented Eagle Alpha as the global leader and strategic partner in the data space.

Eagle Alpha partners with industry leaders to continue to shape the industry:

- J.P. Morgan, lead sponsor of our data conferences
- FISD, member of this association
- Lowenstein Sandler, partner with this US law firm

About PwC
At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 155 countries with over 284,000 people who are committed to delivering quality in assurance, advisory and tax services.

Our large, international team of private equity specialists are on hand to provide you with advice at every stage of the private equity deal lifecycle. We have extensive experience of working with private equity investors, funds and portfolio-backed businesses, so we are well-versed in the fast-paced demands of the industry.

Our private equity specialists support your needs across due diligence, mergers & acquisitions, IPOs, tax services, fund structuring, and more. Our deals experience by industry and deep sector knowledge is also harnessed to add value to the private equity deal process.

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Darren assists Private Equity firms and Corporates in becoming more data-driven in their investment processes and business decisions. Previously he worked in EY's Transaction Advisory team with deal experience across, London, New York, Zurich and Dublin.

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Nigel leads our data analytics and modelling practice. He has over 20 years of deep analytical, modelling and commercial experience including senior finance roles at GE Capital and has led a number of engagements across a range of different sectors. Nigel represents the UK firm on PwC's Global Deal Analytics steering committee with responsibility for D&A centres of excellence and for upskilling > 15,000 deals professionals in data analytics.

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Adam has over 20 years of specialist valuation experience in the technology, media and telecoms sectors.

He is a specialist in intangible asset valuation and regularly advises clients on valuing different types of intellectual property, including data.

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