

CAPCO

ANALYTICS AT SCALE:
THE FOUNDATIONS OF AN
INTELLIGENT ENTERPRISE

INTRODUCTION

Analytics at Scale must be a foundational element of a financial services (FS) firm's operating model to create a fundamental shift of an organisation moving from a more compliance and risk avoidance stance on data to a more value driven view. This will enable greater competitive advantage through client service, whilst managing the legacy and regulatory burdens. It is imperative FS organisations transform into Intelligent Enterprises leveraging trusted and scalable AI across business processes, supported by actionable insights, and powered by managed data. Customer demand and market conditions will constantly push financial services firms to become more intelligent enterprises in the solutions and services they offer their customers:

- I. Customers demand more digital and bespoke products
- II. The need for greater efficiency in a low interest rate environment and inflexible legacy architecture
- III. The FS market becomes increasingly competitive
- IV. Regulators become more intelligent, and data driven – increasing demands on FS firms

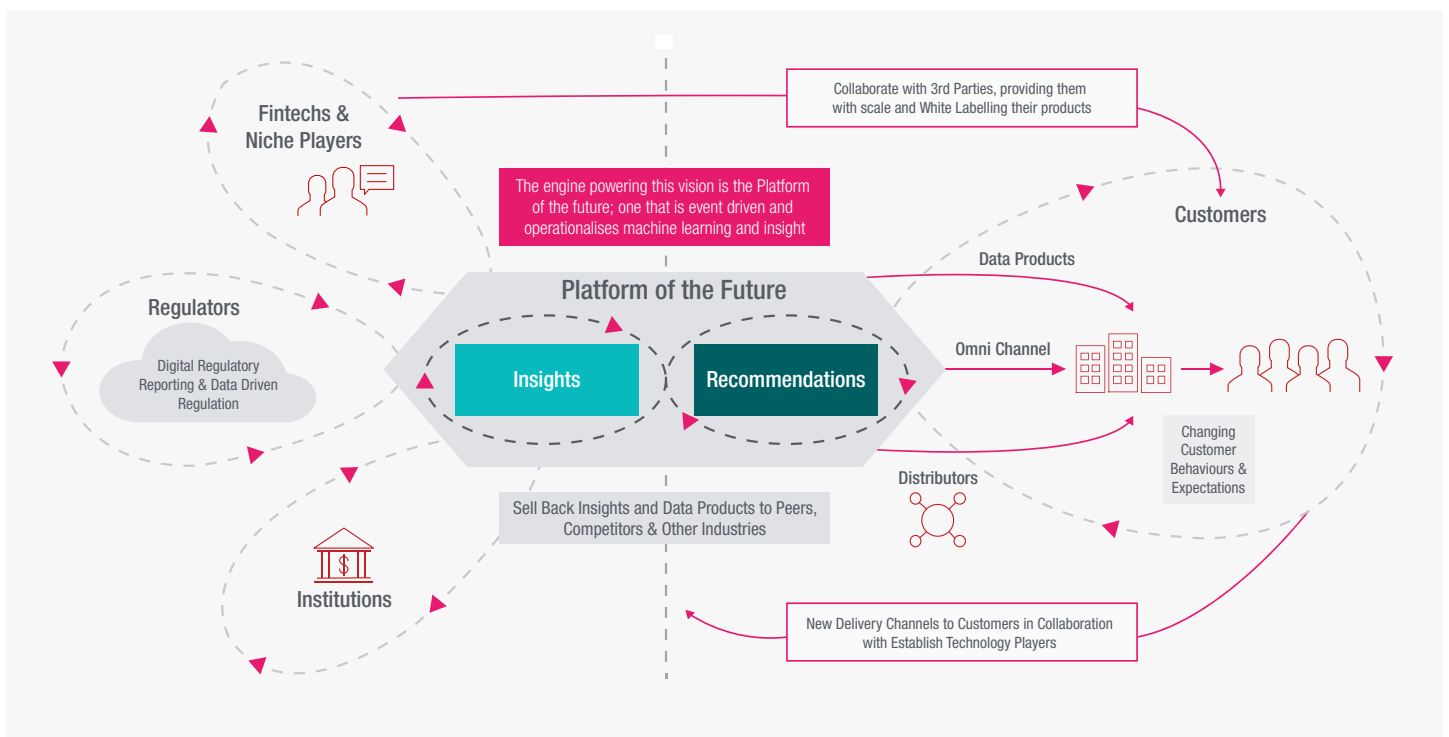
This white paper will set the grounds for future thought leadership ventures that will delve into these aspects on a more granular level.

In this paper, we will discuss Our Vision of Analytics at Scale and the road to reducing the marginal cost of insight and creating more intelligent enterprises through:

- I. An agile operating model that brings business users, data analytics, and engineers together to deliver and build scalable, trusted, and reusable data assets
- II. Utilising Cloud native architecture that is scalable, allowing for:
 - a. Operationalising machine learning to enable deep insights to be generated at pace
 - b. A Data Market Place to enhance the user experience of analytics that helps people find the data they need and understand how it can be used
 - c. Collaboration with FinTech's and third parties for their quick-to-implement Data Analytic processes allow for ease of transition
- III. All of which is underpinned by a broader [data literacy](#)¹ programme to ensure users understand both data opportunity and its associated risks

THE VISION: THE DATA PLATFORM

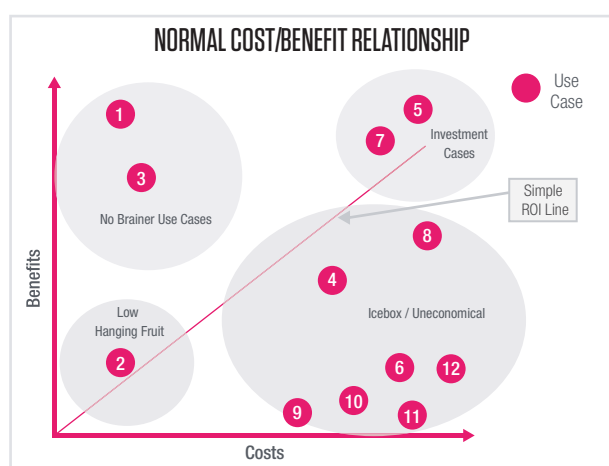
Analytics at Scale will result in a transition to a service with offerings orientated organisation-based enabled by the modern data platform used to deliver products and services at a far wider reach than traditional offerings. Data will be aggregated to be a marketplace capturing the value and not the underlying services. This will result in market players revolving around the first, true master of the platform play, achieving analytics at scale. Although this may seem like blue-sky thinking, in the rest of this paper, we will talk about the elements needed to practically pivot to the vision below.



ENTERPRISE DATA ASSETS & REDUCING THE MARGINAL COST OF INSIGHT

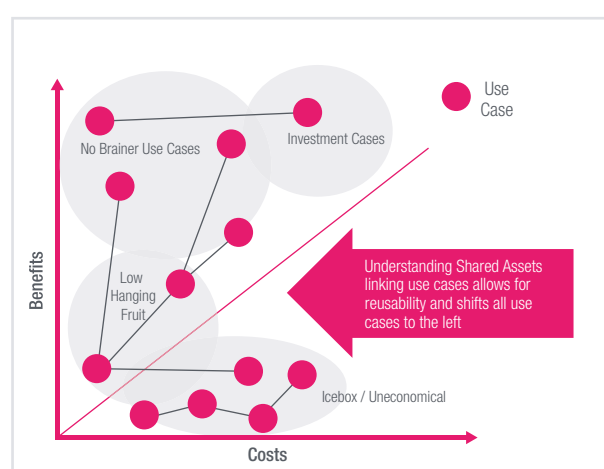
Current analytics cost models are not as effective because of expensive data sourcing, resourcing, and infrastructure costs that are included in usually simple cost-benefit analyses. This means many data, analytics, and science projects fail business case reviews due to the high burden of cost; when in fact, the same costs can benefit future use repeatedly but this isn't factored in. Therefore, we believe firms need to pivot to a model that shares these costs across use cases and is built for reusability. This means that to achieve analytics at scale, FS organizations need to pivot to a model of marginal cost reduction through the curation of common data assets.

Data assets consolidate the fragmented enterprise-wide data ecosystem into a curated set of data. The data is curated by domain (Client, Lending, Payments) that embeds data quality and removes physical naming from sources into a common language that describes the data (an ontology) more suited to the enterprise. This is a strategic foundation for analytics at scale because domain centric enterprise data assets are designed to meet business outcomes.



On the figure above, we see a typical situation within FS firms. Data, analytics, and science projects are plotted on a Costs/benefits axis with a simple ROI line. Only the use cases to the left of the ROI line will be deemed worthwhile enough to be delivered in-year (e.g. use cases 1, 2, and 3) with borderline cases such as 5 and 7 overlooked, also.

However, a lot of benefits are being overlooked with this simple view. If you were to scale data & analytics through common acquisition and refining of data assets in a common modern data platform, you can keep taking on new use cases such that would typically be on the right of the ROI line such as that in the diagram below.

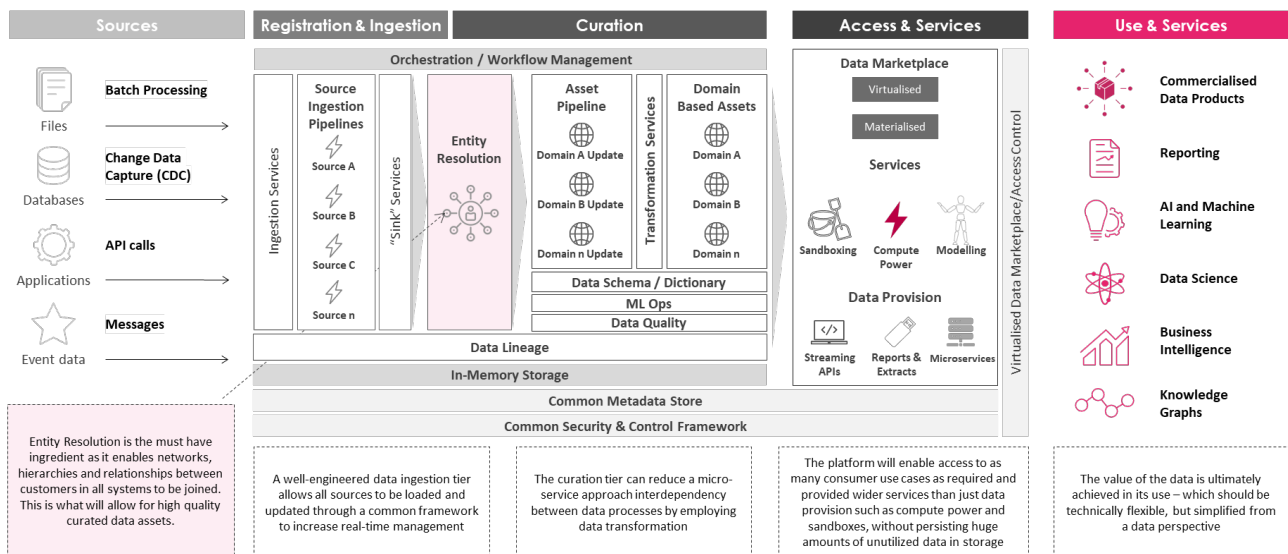


By finding interdependencies and relationships between use cases to discover value in all assets you can shift more use cases to the left of the Costs/Benefits line. With integration, comes lower costs and higher benefits and failure to provide use case specific deliverables can still produce successful outcomes, through the creation of reusable data assets.

Therefore, it is imperative to understand and map out the relationship between use cases and build into a domain centric data asset roadmap. Then, you build scale through organic increments, rather than aiming for perfect target state and continue to innovate, adapt, and change.

MODERN DATA PLATFORMS

The biggest, largest, and most effective enabler for analytics at scale is the modern data platform. An event-driven and dynamic data architecture approach is required to build a platform capable of supporting analytics at scale.



The represented architecture for a modern data platform outlined above provides a central access possibility to the relevant data resources for all users. They can create simple analyses on the platform, generate reports, and work on complex AI models that can be stored in the platform (“repository”) and reused. The platform is designed in such a way that it can be successively built up and expanded via use cases and thus enables scale by operationalising machine learning and insight into BAU. Event-driven architecture unlocks a fundamental principle of store once, read many, reducing engineering overheads associated with moving data. The notable features of a modern data platform include:

- An organisation-wide consumer view on data assets which boosts value generation, enforces consistency, and helps to impose both governance and architecture standards
- Access to a plethora of products and services, such as:
- Provision of data through reports, BI, and insights, as well as commercialised data products
- Collaboration and build services on the platform: machine learning model outputs, compute power, and sandboxing environments for users to access and build their own insights
- Common ontologies and machine learning models baked into assets to enable scalability but also enable third-party collaboration and data commercialisation

- Effectiveness of Data Security, Governance, and Data Quality is improved, and costs are reduced when engineered to apply consistently across data regardless of its source or purpose
- The cost and insight benefits of machine learning and Predictive Analytics cannot be ignored – a modern data architecture is designed with this in mind and will turn this into BAU

As we mentioned above – the modern data platform is the biggest enabler and unlocks three key components of analytics at scale which we touch on in more detail in the next three sections:

1. Third-Party Collaboration

2. Machine Learning and Insight in BAU

3. The Data Market Place

THIRD-PARTY COLLABORATION

Once the modern data platform is in situ, FS firms can leverage bespoke, customer-centric products and services. By onboarding products and services from third parties, FS firms can white label from FinTech's and other third-party players. These white labelled solutions ensure large FS institutions can offer innovative products and solutions to their customers without incurring the associated risks and costs. Collaboration allows companies that have many barriers for change to provide the latest technology, ensuring retention of their market share through the provision of the bespoke services their competitors are offering. Collaboration with regulators is an essential process in the development of Analytics at Scale. It illustrates transparency, legality and ensures customer trust in all products offered. Successful collaboration with regulators will ensure company and platform sustainability. Gone will be the days for large, multiyear data remediation programmes whenever a new regulation comes into the horizon – but through well curated data assets with built in ontologies on the platform. FS firms can onboard regulators and third parties onto the platform to accelerate mutually exclusive benefits as depicted in the data ecosystem in page 3 and outlined below.

MACHINE LEARNING & INSIGHT AT SCALE

As we touched on **previously**² in FS, machine learning is still a largely untapped opportunity. When machine learning is discussed in FS, it is still talked about with regards to its potential as opposed tangible implementation. This is in stark contrast to other industries; if FS machine learning is on the periphery, or the practical applications have been quite small.

Therefore, it is important, when starting small, to test and iterate from within the enterprise data assets on the modern data platform rather than on standalone systems. The benefits of machine learning can then be unlocked further in financial services use cases, such as:

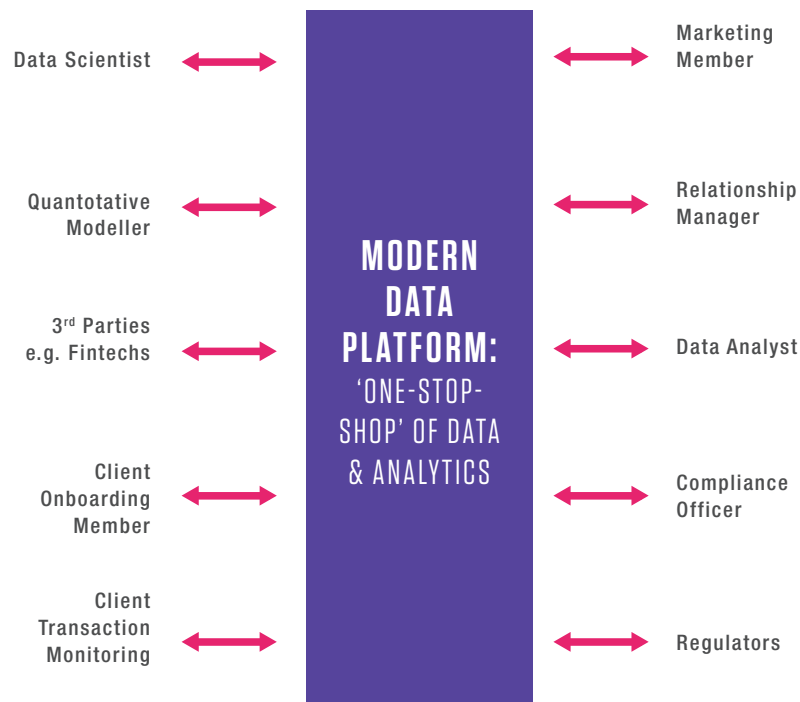
- New product offerings and services that are bespoke to customers in much faster speeds to deliver through automated processes
- Fraud prevention and customer anomaly detection to prevent financial losses in real time and predictively
- Capacity modelling: building a 'capacity calculator' to enable efficient resourcing in back-office functions
- Reducing manual reviews: automating the review of legal documentation
- KYC optimization: predicting file completion time to identify bottlenecks in the KYC process
- Predicting client profitability: using ML to predict the profitability of clients, helping relationship manager to prioritize their time and unprofitable clients to be flagged.

It is also key to deploy and use ML within the modern data platform to make your Data & Analytics more intelligent. Implementing ML into the data lifecycle stages allows you to have more intelligent data operations leading to democratisation of ML and the ease of business adoption of data assets. One perfect example of this is in the ingestion of data – you can ensure quality of the data from ingestion by implementing, automated anomaly detection and alerts, ML assisted data creation (e.g. auto filling values in forms) and data enrichment.

It is important to build these models into BAU through the enterprise data assets to enable reusability of features, testing and models, and exposing them through sandbox environments will increase the ML adoption in your organisation.

THE DATA MARKET PLACE AND THE UX OF DATA

Applying Analytics at Scale is a chance to revolutionise the way external and internal users access data by providing a 'one-stop-shop' to access anything from generic reports, governed data assets or advanced analytics thus eliminating access-time delays, time-consuming approval processes and data quality issues. Regulators, internal and external customers are becoming increasingly demanding for data and insight. The vision for Analytics at Scale is to easily cater for the needs of a wide variety of internal and external stakeholders with significantly different requirements and different personas. All require high-quality data at their fingertips presented in a way that fits their needs, understanding, and expectations. The user journey of sourcing bespoke data is currently inefficient, and the user experience is not friendly or intuitive. In many FS organisations, it can take as much as 30 days if the data already exists in the platform – if the data isn't curated into assets the timelines can exponentially increase.



CONCLUSION: RISKS OF NOT APPLYING ANALYTICS AT SCALE

To conclude, Analytics at Scale will have to become a key component of FS firm operating models as they look for greater competitive advantage through client service, whilst managing the legacy and regulatory burdens.

Capco's Data Practice has a strong track record of helping financial services' organisations transform into intelligent enterprises leveraging trusted and scalable AI across business processes, supported by actionable insights, and powered by managed data.

Customer demand and market conditions will constantly push FS firms to become more intelligent enterprises in the solutions and services they offer their customers. The risks of not becoming an intelligent enterprise are too great otherwise, some of which are articulated below.



CUSTOMER'S RETENTION IN FS FIRMS

- Risk of customers leaving to seek out firms that meet their digital needs due to the increased demand for digital products and recommendations



REGULATORY RISK IS STEADILY INCREASING

- FS firms face continued pressure to adhere to regulatory demand and increased transparency of their processes and data
- This increases the inherent risk of compliance and the costs of governance to keep up with demands



AN INCREASINGLY COMPETITIVE MARKET SQUEEZES FS FIRMS

- There is risk that traditional FS firms will be left with only lower margin and higher complexity products services, this is doubled in low interest economy reducing margin is likely to stay for some time.
- As new entrants are entering the market (e.g., Open Banking) that target "higher margin and lower complexity" services and they are able to as they are not burdened with legacy architectures and processes.

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ABOUT CAPCO

The Capco Digital team are a collaborative, diverse, and passionate team focused on user-centric design, lean product development, and emerging technologies. They lead complex institutions into the future with a bold, entrepreneurial perspective.

Capco, a Wipro company, is a global technology and management consultancy specializing in driving digital transformation in the financial services industry. With a growing client portfolio comprising of over 100 global organizations, Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to deliver end-to-end data-driven solutions and fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its Innovation Labs and award-winning Be Yourself At Work culture and diverse talent.

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