

Bridging the gap between data science and decision-making in financial services





Introduction

In a financial services landscape where modernisation is an imperative, utilising data science effectively for decision-making is critical. Data teams represent a locus of opportunity for greater productivity, better data communication and enhanced data-driven decision-making within fintech and finserv firms.

Based on knowledge acquired from data teams, business leaders and stakeholders in the financial services space and related industries, this white paper unpicks the challenges that data teams and decision-makers face in dealing with data within their organisations, articulates what is needed and proposes possible solutions.

For those seeking more efficient and effective solutions in terms of data team working, whether that's data science managers, lead analysts or decision-makers and key stakeholders, what follows may help conceptualise the key issues and guide the way.



Challenges for data teams

For data teams in the financial services space, we know that specific areas of concern include team productivity, data management issues including an increasing volume and complexity of data, effectively communicating data and insights, modernising and future proofing data team processes, as well as leaving room for innovation in the data team setting.

Barriers to productivity

For data teams in fintech and finserv firms, productivity is paramount. Good productivity not only benefits business objectives, but also means that team members feel motivated and happy in their work. Data scientists, engineers and analysts we've spoken to report that good productivity often hinges on three key aspects.



First, effective and efficient collaboration is critical. Systems need to be in place that allow team members to contribute to projects in a way that maximises their skillset without the encumbrance of clunky workflows or time-consuming admin tasks.



Second, there must be good oversight. Managing teams working at the intersection of science, technology and innovation can be challenging; for data science and data analytics managers, keeping track of what team members are working on is necessary for clarity on project progress and updating stakeholders and decision-makers within the business.



Third, good productivity relies on effective training and onboarding processes. Productivity can grind down if it takes too long for new members to learn the ropes, or for existing members to adopt new responsibilities.



Data management

Digging deeper into the mechanics of data team working, and we see some key challenges in terms of managing data that are especially relevant in the financial services sector today. First, data teams, whether working in fintech startups or established financial services institutions such as big banks, are dealing with large volumes of data.

But it isn't just the sheer volume that is the challenge; it's also the diversity of data. A distinct challenge for data teams in the finserv space is also the vast amounts of personalised data they may be handling.

Indeed, according to [a recent survey from the Department for Digital, Culture, Media and Sport \(DCMS\) and the Department for Science, Innovation and Technology \(DSIT\)](#), financial services firms deal with more personal data than any other sector. Data management systems must thus be agile, scalable and secure.

Communicating data

Another key challenge that data teams face relates to how data is communicated. Data communication is critical, not just within the data team and with data managers, but also more widely within the business with stakeholders and decision-makers, and other teams.

There are several aspects to this challenge. First of all, good data communication starts with being able to dig deep into the data, easily pull data and do complex manipulations. Then, it's a case of effectively communicating those findings and insights.

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Teams need to be able to translate complex data research to stakeholders and decision-makers in a way that is user friendly and easy to interpret. But a common problem is that data teams can become encumbered with the task of data communication, with specialised resources diverted away from core roles. For team members, this can lead to frustration; on an operational level, it is an inefficient use of skilled data team resources.

Modernising and future-proofing data teams

Data teams, like the wider businesses within which they operate, are looking for agility on a whole new level. While many analysts still rely on Microsoft Excel to interpret and communicate data, the trend is towards adopting more sophisticated methodologies and tooling in line with evolving industry standards.

This shift need not be daunting; the benefits just need to be demonstrable. For instance, systems whereby data can be accessed by data team users with no specialised knowledge or coding proficiency means greater democratisation within data science and a move away from an overreliance on specialised processes. Generative AI has the potential to play a big part in this, and the prospects for data teams in this respect is exciting.

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Breathing room for innovation

While data teams and the systems they use must be agile, scalable and secure, there must also always be breathing room for innovation. For teams in the contemporary fintech and finserv space, this may, for example, mean having the tools and resources, including time, to prototype state-of-the-art machine learning models. If teams are too knotted up with inefficient workflows, or wrapped up in time-consuming tasks such as data communication, the oxygen will soon get sucked out of innovation.



Challenges for decision makers

In their recent [Global Banking Annual Review for 2023](#), McKinsey and Company suggest that financial services firms see technological disruption as a major factor in the finance sector’s outlook. They also report that technology represents a competitive advantage for firms, and that those that are the most digitally advanced perform the best.

Data is centre stage in this picture. We know that some key concerns for decision-makers in the finserv space include: how data is leveraged for decision-making; data science democratisation across organisations; issues of legacy infrastructure, security and regulations on the path to modernisation; and, ultimately, improved business efficiencies in terms of how data is managed.

Leveraging data science for data-driven decisions

The need for user-friendly access to data is also hugely important for decision-makers in fintech and finserv firms. Decision-makers and stakeholders seek cogent interpretations of complex data that can be transformed into actionable insights, which can ultimately guide strategic decision making. Indeed, [recent research from Thomson Reuters](#) indicates that the vast majority (78%) of financial services professionals want to increase their use of data analytics to advise their business.

Whether it’s big banks seeking to enrich the customer experience in the B2C space or fintech firms entering new markets, clear and understandable data is critical to achieving strategic business objectives. Decision-makers up to and including the c-suite want the confidence that comes from knowing that insights and decisions are directly driven by high-quality data and insights.

Data science democratisation

Data now permeates most aspects of business operations. On one hand this means an increasing demand for data team professionals, but it also necessitates better access for users beyond data engineers, scientists and analysts. In other words, we’re seeing a diversification of needs in terms of who is accessing and using data within firms. As such, the need for data science democratisation is an absolute necessity

for firms. Further, it isn’t just a benefit for end users to be able to access data and generate insights more readily – it also makes strategic business sense.

Data science democratisation means dismantling barriers to use on a wider operational level, removing unnecessary gatekeeping to data and freeing up resources within data teams. In fact, 74% of respondents to a [recent Thomson Reuters survey](#) indicated that data technology had the potential to give the teams within their financial services business more time on value-added activities.

74%

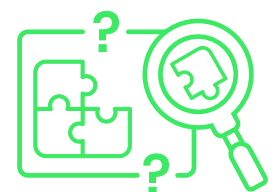
believe data technology has the potential to create more time to spend on value-added activities

Source: Thomson Reuters



of financial services professionals want to increase their use of data analytics to advise their business

Source: Thomson Reuters



of brand-side marketers across all sectors are concerned about a lack of data and analytics skills within the marketing function

Source: Marketing Week

However, [a recent survey by Marketing Week](#) shows that more than 36.9% of brand-side marketers across all sectors point to a lack of data and analytics skills within the marketing function as an area of concern. Perhaps with systems in place that allow for insight generation without the need to code, marketing team members would feel more empowered to work with data, alleviating the need for highly skilled data expertise within their teams.

Challenges on the path to modernisation

Financial services firms are acutely aware of the need to modernise, with a major barrier to agility and scalability being legacy infrastructure. Data tooling within data teams is no different – and systems must be compatible and easily integrable with existing systems no matter what stage a firm is on the path to modernisation.

But whether firms are operating with on-site or cloud infrastructure, key issues remain. Data security is an imperative, whether systems are cloud-native, on a private cloud or on-premises. It is also a primary concern in the context of data science democratisation, where there's an increase and diversification of users across firms.



Further, on the path to modernisation, including data science democratisation, regulations and data governance are primary concerns, not least because they can prolong changes to data management systems within organisations.

Improving business efficiencies

Ultimately, firms in the fintech and finserv space want to know that the adoption of new systems and technologies will improve business efficiencies. [Recent Thomson Reuters research](#) highlights how nearly three in five (58%) professionals surveyed in the financial services sector experience issues with the effective use of data software.

We are aware of firms that have maintained in-house data platforms for many years, but a major problem arising with that setup is that data team resources are perpetually tied up with maintaining the platform, rather with working more directly towards business objectives. That represents a major inefficiency.

Vendor solutions may be much better equipped to minimise maintenance costs. And, while SaaS platforms require very low maintenance, they are in many cases not viable for larger finserv companies. Whether it's an on-premises or SaaS solution, businesses need to be confident that a shift towards a new data platform alleviates maintenance issues and accordingly represents a good return on investment.



58%

of financial services professionals experience issues with the effective use of data software

Source: Thomson Reuters

Financial services case studies

By using Datalore as one of their decision support systems, one investment management firm highlighted that they were able to vastly speed up their analytical processes thanks to the extensive customisation options available to the Datalore Enterprise customers.

Another investment management firm praised Datalore in that it uniquely suits quantitative developers and traders because it provides an interactive, collaborative and visualisation-rich platform for essential daily data analysis.

Importantly, for such financial services firms, the Enterprise edition of Datalore has no telemetry and no data is sent outside of the Datalore instance without an explicit intent of the operator. Customers are able to run Datalore together with their mission-critical workloads, making sure their data is safe and won't be exposed anywhere it shouldn't be.

Building better ways of working with data

Having travelled through some of the key challenges data teams and decision-makers face, it is clear that firms want to be able to generate insights faster and increase productivity in their data teams and beyond. But what might a solution look like in these respects?

Data teams want to work with platforms that offer real-time collaboration. Team workspaces must be intuitive and accessible so that users with diverse skills and expertise can collaborate. This includes having the ability to share files and data sources, and to adjust access and permissions as required.

Teams also want automations for repetitive and time-consuming tasks such as writing boilerplate code. Generative AI can help here by providing coding assistance, and this is especially useful for users who do not have specific coding knowledge or expertise. AI can also assist by automating data quality analysis and processing, and for creating reports out of research projects.

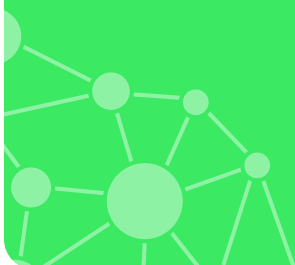
As such, a solution needs to aid the communication of data; it must support users across all corners of an organisation to access data, produce research and generate insights, no matter what their specific skillset. For example, whether that's with marketing teams seeking customer insights, business analysts wanting to visualise market trends, or even HR teams seeking to identify resource expenditure. Accordingly, decision-makers want hands-on access and they want to see data science democratised across their organisations; a solution must facilitate this.

With a platform that supports better access for a more diverse range of users and offers tools that aid the communication of data, data teams and their wider businesses can unlock extra hours a day of highly skilled resources. Productivity is improved and firms can see greater data science democratisation across their organisations.

Further, with data team members no longer occupied by time-consuming tasks, their skills can be diverted to development. That means improved business efficiencies, a good return on investment and a greater focus on business objectives.

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Case study: Datalore helps Constellation accelerate data science workflows



Software company, Constellation, reports that initiatives that used to take months to complete within traditional BI tools can now be accomplished within weeks thanks to Datalore.

Key benefits unlocked:

- **Faster results.** Constellation enjoys 50% faster delivery of data science R&D tasks.
- **Improved efficiency.** Highly customised reports are now delivered to clients within weeks instead of months.
- **Increased satisfaction.** Both developers and clients report that they're much happier with data science workflows thanks to Datalore.

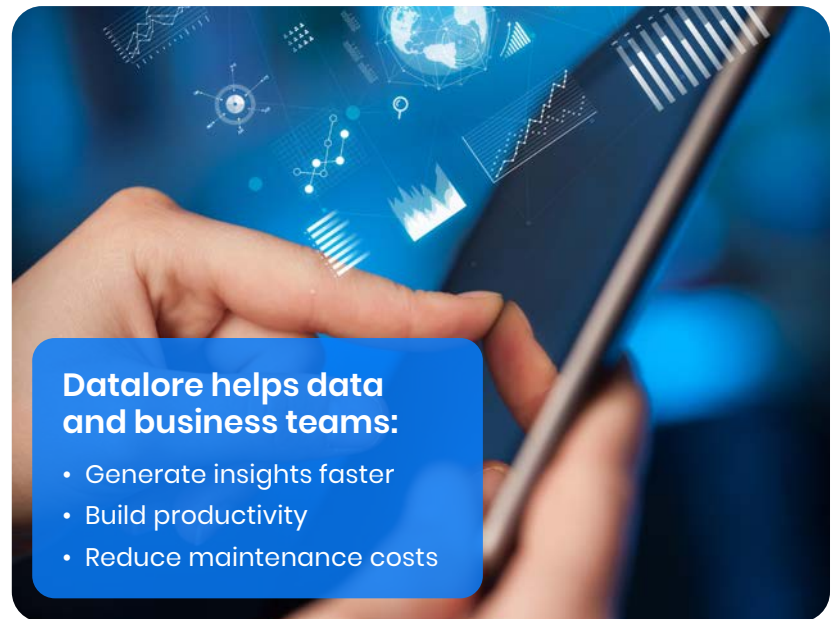
“Datalore's real value lies in its ability to connect all of our teams, creating a shared workspace that simplifies communication and collaboration across the board.”

Hammad Chaudhry, data engineer at Constellation

Conclusion

As financial services firms continue on the sharp trajectory towards modernisation, there are exciting opportunities to refresh how data teams work in fintech and finserv firms.

Data science democratisation represents an opening up of data accessibility, but it is not without its challenges. With intuitive tooling such as the Datalore platform, the possibilities to access data, generate insights and power data-driven decision-making is an exciting prospect for firms seeking better business efficiencies.



A platform such as Datalore is designed to bridge that gap between data teams, other teams operating in finserv organisations and the decision-makers who drive business objectives and success.

Harnessing generative AI, Datalore allows those who don't code to generate code and analyse the data. For example, users who can't write a single line of Python code can generate code at the click of a button and produce visualisations from a data set.

Importantly, for financial institutions, Datalore works with all the modern infrastructure providers. It works on AWS, Azure, GCP and any platform that can run a Kubernetes cluster. It can run on bare metal or fully in air-gapped environments, which may be an important consideration for financial services organisations that aren't exposed to a public network.

What's more, smaller teams can leverage data online, within a few clicks, without the need for installing and configuring the platform.

About JetBrains

JetBrains has transformed from a company that creates tools for developers into one of the leading global providers of versatile software solutions. Our sustained investment in AI technology enables our customers to achieve remarkable productivity gains and enjoy an enhanced product experience. Our award-winning developer tools, including IntelliJ IDEA, ReSharper and PyCharm, are complemented by a comprehensive set of products designed for team collaboration. Highlighting our commitment to teamwork and innovation is Datalore, our pioneering collaborative data science platform featured in this whitepaper.

[Learn more about Datalore and schedule a personalized demonstration today.](#)



“ Since Datalore has just been deployed, we managed to free up internal development resources when we decided to switch from our in-house data science platform to Datalore. We also managed to satisfy our data governance requirements, which was critical for LINE compliance policies. ”

Seongduk Cheon, senior manager, LINE Corporation

Datalore



Collaborative data science platform for quantitative finance, customer behavior analytics, risk modeling, and more.

↑ Faster insights



With Datalore, our Customer Success team delivered blazing-fast insights, greatly benefiting our clients.

↑ Data team productivity

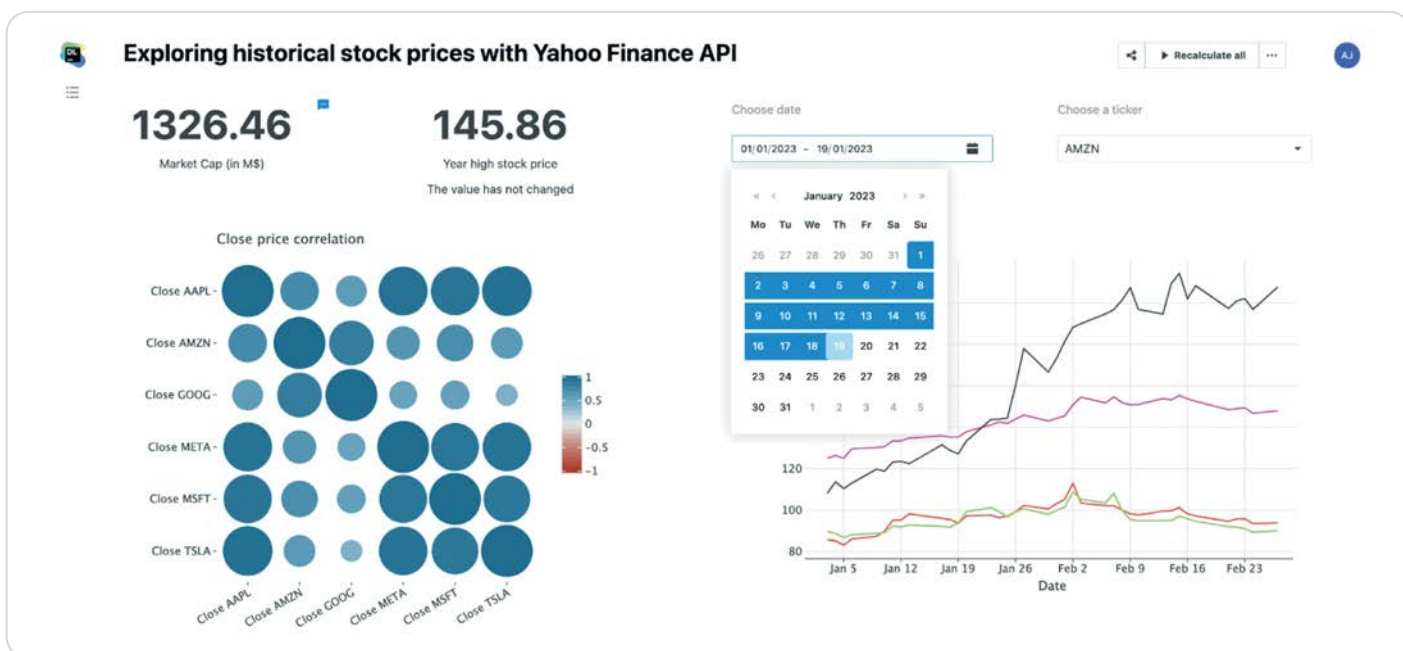


Now we can collaborate much more easily both within our ML team and with stakeholders.

↓ Maintenance costs



We managed to free up internal development resources when we decided to switch from our in-house data science platform to Datalore.



Why Datalore?

Analyze customer behavior to increase CLV

Easily pull data from your internal databases with SQL, and use Python to access APIs and spark clusters – all from one Jupyter notebook environment. Produce visualizations in seconds with a no-code chart builder or Python.



Perform better risk analysis and detect fraud

Streamline your development of state-of-the-art machine learning models for risk analysis and fraud detection with first-class code completion, AI Assistant, pre-configured environments, and easy-to-access CPU and GPU machines.

Leverage data science for quantitative finance

With an intuitive interface, Datalore offers a complete environment for your data teams to implement rebalancing strategies, perform backtesting, and run simulations.

Free up internal development resources

Move from in-house data science platform development to a ready-to-go solution and reallocate development resources.

Power your stakeholder decisions with flexible data apps

With support for Python, SQL, and R, coupled with interactive controls, Datalore empowers your data professionals to create not just ordinary dashboards but advanced data applications you can interact with.



Get the green light from your infosec team

Whether you choose a private cloud, on-premises or fully managed deployment, your data stays safe. JetBrains has SOC 2 Type II certification, is GDPR-compliant, and offers SSO integrations and audit logging to help you ensure data governance.



Want to try Datalore for your team?

Send me an email at anatolii.simakov@jetbrains.com

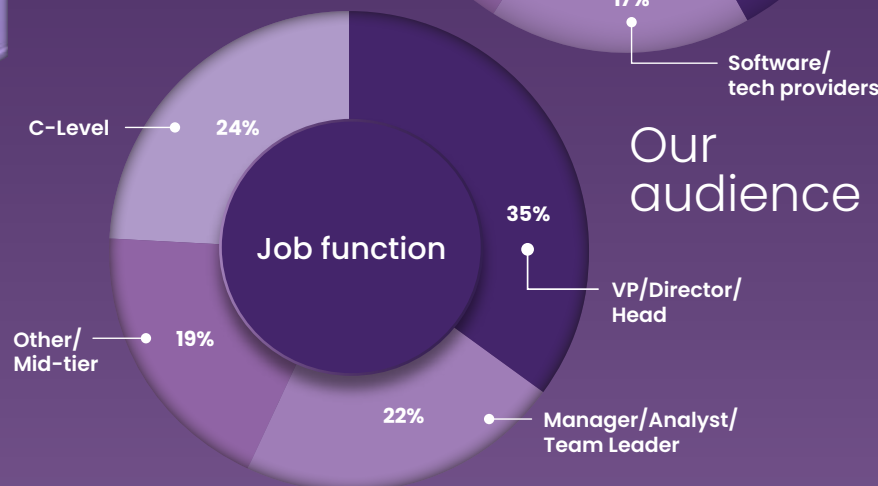
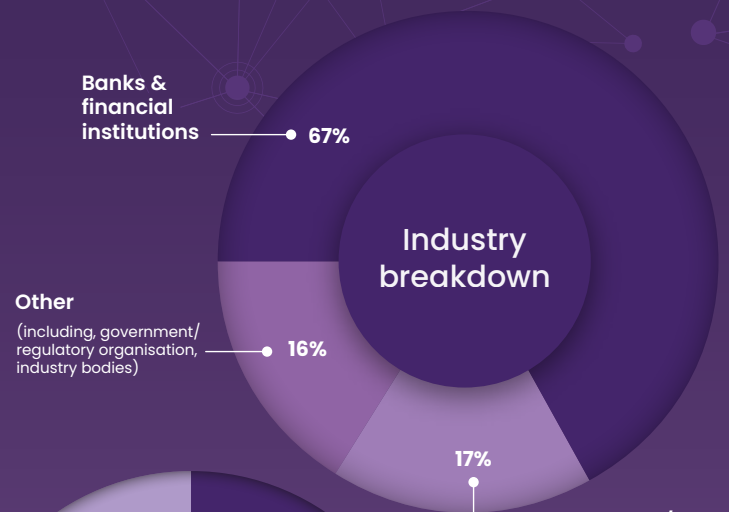
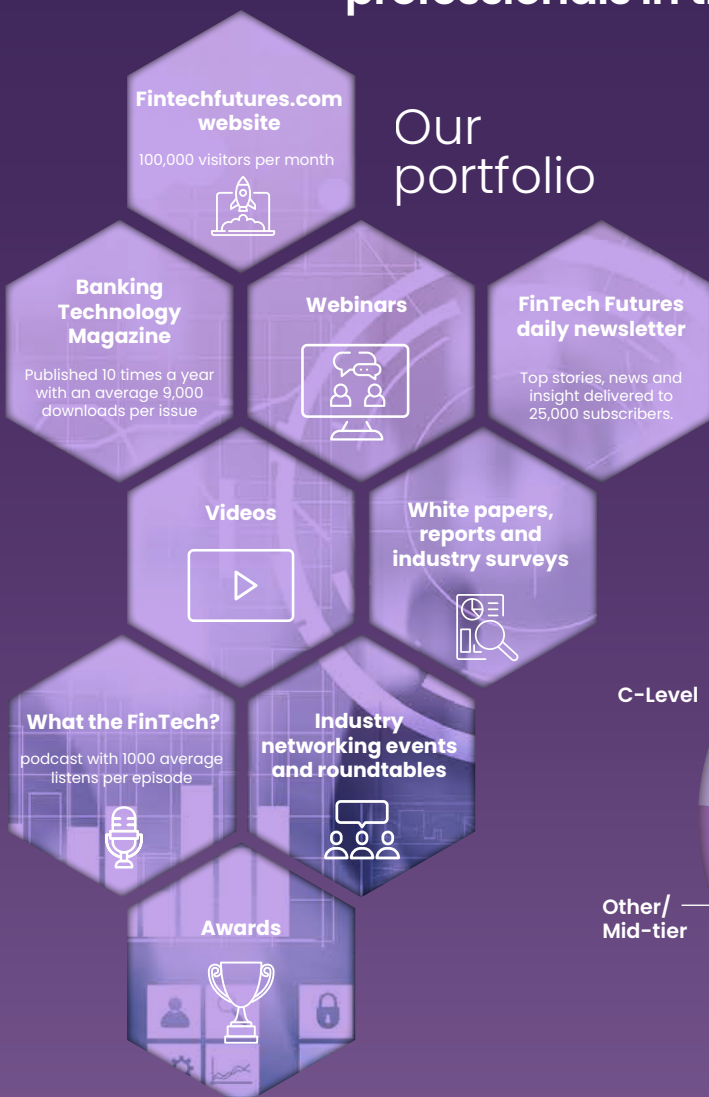
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