

WHITE PAPER

Big data in capital markets

Unleashing the true power of data



Introduction

The business landscape has been going through a constant change since the financial crisis in 2008. Also, market events, technological changes, and regulatory reforms continuously throw up new challenges for the capital markets industry. Furthermore, problems like dwindling revenues and increased cost pressures are snowballing continuously.

Amidst all these, the capital market industry has been forced to continuously think of solutions to improve revenues and reduce costs at the same time. Though the industry has taken various steps towards achieving

increased revenues and high profit margins it still seems to be playing catch-up.

Solutions for many of the issues that the industry faces today lies in-house, and leveraging available data is one of them. The capital market industry captures data in each and every operation, which results in huge volumes of data. These massive data troves can be processed through big data and acts as a game changer. Big data technology can influence the business landscape by finding solutions to current business problems as well as by identifying new business opportunities.



What is big data?

Big data refers to data that can be categorized by the following four Vs:

- **Volume:** Quantity of generated data
- **Velocity:** Speed at which data is generated and needs to be processed
- **Variety:** Types of data like text, audio, and video
- **Veracity:** Integrity and quality of data being processed



Four Vs of big data

The capital markets industry has varied data sources. This includes structured data like traditional banking transactional data, reference data, and market data. Also, a lot of unstructured data like corporate filings, news feeds, and indicators (macroeconomic and microeconomic) are available.

Traditional tools cannot efficiently process such large datasets. However, big data tools can sift through massive data warehouses that are present in modern business environments. These tools can analyze both structured and unstructured data and create logical patterns to help businesses take decisions. The speed of this processing is exponentially faster than that done by traditional processing mechanisms. This real-time information provides actionable intelligence that can be leveraged by stakeholders in their respective business domains.

Big data use cases for investment banks

Investment banks are still warming up to the idea of big data. This is unlike their retail counterparts or e-commerce companies that have started multiple programs to integrate such capabilities into their mainstream business. Thus, investment banks have an untapped opportunity to utilize big data to solve many of their business problems. By efficiently using the huge data trove that investment banks have access to, these banks can improve their operational efficiency as well as explore newer ways of revenue generation.



Big data use cases

Big data tools can help investment banks achieve optimum results across these four areas:

- **Trading strategy**
As per a survey, 93 percent¹ of capital market executives agree that it is important to use technology to gain a competitive advantage.

By using unstructured data like the news feed or social media streams, big data system can perform a sentiment analysis that can help traders decide on their trading strategies. During a market event (like Brexit, Turkish coup, etc.), this can

¹"Top financial IT trends for capital markets in 2016", CDW Financial Services, <http://fintalk.cdw.com/2016/01/26/capital-markets-financial-it-trends-infographic/> (published 01/26/2016, accessed 08/20/2016)

help traders choose appropriate stocks to maximize revenues and minimize losses. Similarly, processing data like weather forecast and mining industry news can help traders working on commodity desks.

- **Automated reporting**

The latest regulatory requirements require banks to cross reference multiple sources of data for trade reconstruction. Furthermore, it might be necessary to perform some quick ad hoc reporting too. Big data tools can consolidate various data silos and present a single correct view of the current

state of transactions. They also provide excellent data management capabilities for extremely large datasets and, thus, can be an enabler for regulatory reporting.

- **Compliance**

Trade surveillance and compliance requires sifting through loads of data, emails, and chat history. Nowadays, it is also mandatory to analyze voice information to identify any potential financial misconduct. Big data tools can analyze these diverse data sets

and facilitate banks in their compliance strategies.

- **Operational simplification**

Big data simplifies data aggregation activities across diverse data warehouses. It also helps in easily managing the different feeds that come from both internal and external sources. It further assists businesses in audit requirements by versioning the transactional data. All these operational improvements translate to cost benefits for stakeholders.



Challenges in big data programs

Big data programs impact the whole organization and, hence, they should be viewed as a transformational exercise rather than just another 'IT project'. The key challenges normally present in a big data implementation program are:

- **Architecture issues:**

Investment banks have been using legacy and custom-built software for decades now. Subsequently, it is a challenge to integrate relatively new big data technologies into the existing platform. A solution to this problem could be to modernize legacy applications so that they can integrate with big data products. Also, key business data that would be needed by big data products should be migrated from legacy databases to a high-speed data warehouse so that it does not become a bottleneck for big data processing.

- **Organizational silos:**

Big data projects typically span across

the organization. All divisions in the organization need to be fully committed to this project. Coordination and governance activities across different divisions often become challenging. This problem could be mitigated by having a C-level project sponsorship and by bringing all division heads on board for such projects. Having division heads buy into such initiatives will ensure that project teams remain motivated and committed toward successful implementation.

- **Lack of data privacy:**

This is a key issue in today's scenario. Since big data applications connect to data warehouses across the organization, the commercially and legally sensitive information must be protected. Also, there might be regulatory restrictions on sharing the data across jurisdictions. To address this challenge, a separate data security and privacy team should be constituted. This team must draft the data security / privacy guidelines in accordance

with regulations and implement them carefully.

- **Scarcity of talent:**

Big data projects are meant to create value for business. It is critical that these projects are driven by those people who understand the technology and have a good understanding of organizational business processes. Given the relative newness of big data technologies in the market, it is hard to find such profiles. A way to address this issue would be to include people from different skill sets in the project team. Some of these people could be big data experts while the rest could be organizational business process champions. As these two sets of people regularly interact, they would exchange technical and business knowledge amongst each other. This would ultimately create a pool of big data resources that the organization can utilize for its needs.

Conclusion

Banks need to start their transformational journey by providing the C-level mandate to big data programs and identifying the low-hanging fruit to realize quick gains. This will not only help them solve the current problems, but also make them future-ready for newer challenges.

Big data has already shown its tremendous value in other industries. It is high time investment banks also start using this technology to solve their business problems and stay ahead of the curve.

References

1. "Big data in capital markets: At the start of the journey", Virginie O'Shea & Rishi Shah, [http://share.thomsonreuters.com/general/PR/Big%20Data%20IB_White%20Paper Aug2014.pdf](http://share.thomsonreuters.com/general/PR/Big%20Data%20IB_White%20Paper%20Aug2014.pdf) (published 06/2014, accessed 08/18/2016)
2. "Top financial IT trends for capital markets in 2016", CDW Financial Services, <http://fintalk.cdw.com/2016/01/26/capital-markets-financial-it-trends-infographic/> (published 01/26/2016, accessed 08/20/2016)
3. "Big data and capital markets", CH & Co, http://fintank.net/position_papers/bigdata_capitalmarkets/ (published 04/06/2016, accessed 08/19/2016)



About the Author



Mohit Mahajan

Lead consultant, Infosys

Mohit Mahajan is a lead consultant with Infosys. He has more than 10 years of experience across the IT consulting and financial services industry. He is currently working for a leading investment management firm in North America in the reference data management area.

He can be reached at mohit.mahajan@infosys.com

For more information, contact askus@infosys.com

Infosys®

© 2016 Infosys Limited, Bengaluru, India. All Rights Reserved. Infosys believes the information in this document is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of other companies to the trademarks, product names, and such other intellectual property rights mentioned in this document. Except as expressly permitted, neither this documentation nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, printing, photocopying, recording, or otherwise, without the prior permission of Infosys Limited and/or any named intellectual property rights holders under this document.

Stay Connected    