Centralized Data Hubs: The Keys to Cracking the Data Quality Conundrum

For years now, data has been likened to the lifeblood of the financial services industry, given its importance to every business process and decision undertaken by market participants. Just like bad blood, poor quality data undermines firms' abilities to operate optimally in what has become an intensely competitive and unforgiving landscape.

Executive Summary
Data drives most business processes across the financial services industry. Therefore, higher quality data means more accurate and efficient business processes. This survey focuses on the extent to which financial services firms suffer from sub-optimal data, the degree to which they acknowledge their shortcomings, and the steps they have taken or are considering to remedy the situation. It also sheds light on the specific business processes most affected by poor quality data, such as the practical measures financial services firms can implement to not only improve the overall quality of their data but also ensure that it is well managed, maintained and centrally located so that those parts of the business that need to access it can do so with a minimum of fuss. Enterprise-wide data management projects tend to be long-term, complex and often budget- and resource-hungry undertakings. Still, for those firms able to make a success of such initiatives, the business gains are considerably more significant than the project pains.

Key Findings

- A majority of respondents (76.7%) see their data quality as a real issue — 31.7% are in the process of developing a strategy to address it. In comparison, 34.4% already have a plan/strategy in place.
- 48% of respondents that have embarked on a data management initiative describe their results as "promising."
- The greatest challenge facing respondents with respect to addressing their data management challenges is the complexity of their IT/data landscapes.
- The vast majority of respondents (86%) believe that building a centralized data hub is the best means of improving their data quality and accessibility.
- Compliance, decision-making and risk management are the top three business processes most impacted by poor data management/quality.
- Executive committees are aware of their firms' data management challenges, with 53% of respondents reporting that their executive committee has already allocated the necessary resources to address their data management issues.

Overview

The financial services industry has spawned numerous truisms over the years. Still, arguably none can be more enduring and yet similarly pertinent on a day-to-day basis to the firms comprising the broader financial services industry than "junk in, junk out." This maxim is invariably associated with data quality and the extent to which precise, consistent, timely and reliable results for all business processes from the front to the back office are directly dependent on the data underpinning them. The ability, therefore, for financial services firms — irrespective of whether they serve the retail sector or the capital markets — to make the most accurate, auditable and timely business and operational decisions is contingent on the

quality of data driving them. This perennial challenge has become all the more acute in recent years with the growth of data volumes and the complexity, variety, velocity and mobility of data permeating the industry.

This scenario will not be news to the small army of chief data offers, chief information officers and chief technology officers employed throughout the industry, and yet. In contrast, the challenges around data quality tend to be understood and are observable; the solutions to those problems are anything but straightforward. The industry is littered with examples of firms embarking on ambitious, multi-year data management projects, only to abandon them once the true scale and complexity of the undertaking is realized. Still, that doesn't mean those projects are without merit. On the contrary, they hold the key to delivering operational efficiencies and optimizing decision-making throughout the business, an ideal to which all financial services ought to aspire.

No Finish Line

When it comes to the process of improving data quality, there is no finish line or endpoint. There is merely a continuum along which financial services firms incrementally move in the never-ending pursuit of clean data throughout the organization in the interest of optimizing transparency, reliability and consistency. And while they might never get to a point where they can say with conviction that their data management projects are complete and that their data is clean, complete and reliable, they have little option but to grasp the proverbial nettle and continue down that road.

Approximately a third of respondents (32.6%) to the 15-question survey worked at investment banks, while insurance companies accounted for 14.4% of respondents and asset managers/wealth managers comprising 14.9% (figure 1). Almost half of the respondents (45.3%) were based in India, which as first blush, might appear unusual. However, when combined with the results of the first question and the fact that a third of respondents represent investment banks, it makes sense. Large numbers of investment banks and other financial services firms have outsourced a swath of business processes to third-party technology firms based in India (figure 2).

Not Perfect

Question 3 of the survey focused on the extent to which poor quality data affects respondents' firms, with only 23.3% reporting that while their data is not perfect, they don't believe it materially impacts the business. The other responses were equally significant: 75% of respondents believe their data to be a "real issue" with 34.4% already having implemented a satisfactory plan/strategy to address it, while a further 31.7% are in the process of developing such an approach. Surprisingly, just over 10% of respondents acknowledged that their data is a problem, although they currently have no formal plans to address it. Clearly, they understand the extent of their data challenge even though they haven't taken the necessary steps to address it.

"It is not surprising that about 76% of respondents acknowledge that their data is a real issue," explains Genady Chybranov, CTO, financial services APAC, Hitachi Vantara. "This finding is aligned with what we see in the industry where companies acknowledge challenges associated with their data management, and as illustrated by this survey, they either already have a comprehensive strategy to address these issues or are in the process of developing one. I believe that organizations that excel in their data management and utilization have a distinct advantage in the market."

Question 4 was closely related to its predecessor, seeking to establish the extent to which respondents had embarked on or have completed data management projects/strategies with the view to improving the quality of their data. This is significant for two reasons. First, only

a small minority of firms do not see any value in implementing processes and procedures to improve their data quality. Second, the notion that a financial services firm would choose not to at least attempt to improve or even consider trying to improve its data quality is remarkable. Significantly, just under half (47.2%) indicated that they had already embarked on such initiatives and that the results were promising, with a further 27.8% indicating a similar scenario. However, they believe it's too early to assess the efficacy of their initiatives.

Challenges

Question 5 of the survey sought to identify the most significant challenges standing in the way of respondents addressing their data shortcomings, with almost 40% (37.2%) citing the complexity of IT and data landscapes, suggesting that legacy technologies, systems and architectures continue to hamstring appreciable numbers of firms. A lack of expertise and or technical knowledge (23%) and finding a reliable technology partner to assist with the project (22.1%) also feature prominently, underlining just how daunting and complicated such undertakings tend to be.

That only 17.7% of respondents cited a lack of executive management support as their greatest challenge indicates the extent to which their data quality issues are understood across the upper echelons of the business, a scenario that Chybranov explains has improved markedly in recent years. "It is very encouraging that less than 20% of respondents said their primary challenge was a lack of executive management support," he says. "When we asked a similar question two years ago at an industry roundtable involving senior data and technology managers in Singapore, the majority said their main issue was a lack of executive support. That shows that senior management is aware of the critical role data plays in supporting the business and the importance of having quality data insights to support their business decisions. Data strategy is, therefore, no longer just an IT issue."

Question 6 addressed the issue of what technology vendors can do to aid financial services firms when it comes to improving their data quality. Just over half (50.4%) believe that it depends on the vendor in question and the nature of the data management initiative. This finding is unsurprising, given the variety of data management challenges that exist within firms across the financial services industry and the number of technology vendors serving the market. It is important to note, however, that this result in no way invalidates the value of the vendor proposition when it comes to developing strategies to remediate firms' data deficiencies. After all, almost 30% of respondents indicated that they believe vendors can significantly bolster their efforts in this area by leveraging their experience, scale and technology. What is also clear from this question is the belief that not all technology vendors serving this market are equal. Therefore, selecting the right partner becomes all the more critical.

Given the complexity and length of many data management projects, firms would do well to consider the following:

- Select a partner that has deep domain experience and a multi-year track record of delivering successful data management projects in this market globally.
- Opt for a vendor that can offer a strategic and long-term partnership, understand the industry trend and can provide technical support and advice across additional parts of the business.
- Seek a provider whose products and services have a well-deserved reputation for consistent quality, reliability and resiliency.
- Select a vendor that provides an open and modular architecture that can be easily integrated with existing and future applications ecosystem.

Centralizing Data

Possibly the most emphatic result from the entire survey came from question 7, what is your organization's view on building a centralized data hub to improve the firm's data quality and accessibility. Answers to this question were just shy of 87% of respondents who either already use a centralized data hub to improve the quality and availability of their data (44.2%) or are planning on creating such a repository (42.5%), underlining the value they see in such an initiative. Interestingly, 11.5% of respondents see the value of building a centralized data hub and have attempted to do so but have failed due to the project's complexity. In comparison, a statistically insignificant number (1.8%) do not see any value in centralizing their data. Based on these findings, it is safe to conclude that building a centralized data hub holds the key to improving firms' data quality and accessibility. However, such undertakings are anything but trivial affairs (see box). (**Graphics will be added to improve the layout)**

BOX: A step-by-step guide to creating a centralized data hub

Creating a comprehensive data management strategy based around a centralized data hub is a significant challenge for financial services firms, although the benefits of data democratization are well worth the effort.

According to Chybranov, **the first step along the road to success entails firms fully appreciating the complexities associated with such projects**, while senior management commitment to the initiative is similarly crucial. He recommends keeping the scope of the project as narrow as possible to ensure focus and minimize scope-creep.

The second step entails data discovery and tagging, which are necessary in order to understand the full breadth and depth of the organization's information. Once that is complete, data management rules can be developed and implemented. The process of data discovery and profiling should be automated as far as possible using rule- and machine learning-based approaches. Automation helps to minimize human errors and overall project costs in the long run.

The third step of a successful data strategy is focusing on agile data pipelines that are fully automated to ensure that the right data is delivered to the right parts of the organization if and when it is needed. Moving away from manual data pipelines helps to build controls and data lineage, while simultaneously improving security and ensuring data quality. Chybranov explains that once all essential data is adequately tagged and identifiable, the actual centralization and governance tasks are relatively simple to manage. Once all of the above has been achieved, data becomes readily available allowing analysts and other users to start deriving business insights in a secure and compliant way.

Question 8 dealt with the business processes respondents believe to be most impacted by poor quality data. There was a near-even split between compliance (33.3%), front-office decision-making and trading (29.2%), and risk management (29.2%), all three of which are "mission-critical" processes that all financial services firms absolutely need to manage as accurately and efficiently as possible, increasingly on an intraday basis. Clean and consistent data used to support these functions invariably means more accurate and reliable results such as demonstrable compliance with client and regulatory mandates, the ability to make more accurate investment decisions and the calculation of more timely and precise risk measures. The "junk in junk out" maxim is apt, although in this instance, "quality in quality out" would be more pertinent.

The notion of business functions only being as useful as the data underpinning them is continued in question 9, where respondents were asked about the extent to which better quality data would enhance their day-to-day roles. Unsurprisingly, 79.1% believe that better quality data will improve the quality and timeliness of all decision-making within their organizations. Just under half (45.8%) of respondents said the improvement would be significant, further emphasizing the view that the efficiency, transparency and overall quality of financial services firms' entire operations from the front to the back office are directly contingent on the data underpinning them.

Improvements

From question 10 onwards, the survey changed tack: Whereas the first nine questions focused on data quality problems, the final six — questions 10 through 15 — dealt with the practical steps financial services firms can take to remediate their data deficiencies. Question 10 sought to identify the most significant challenge standing in the way of firms improving the overall quality of their data, with almost a third of respondents (29.2%) believing the answer to lie in better defined/more disciplined data management/governance practices. In contrast, a quarter believe the sticking point to be a shortage of internal skills to address the challenge appropriately. There is no shame in the latter finding, given that substantial numbers of financial services firms — with the possible exception of the industry's largest investment banks, asset management firms and retail banks — lack the internal resources, the technical know-how and the budgets to satisfactorily address what is essentially an industry-wide problem. After all, their core business is finance-related, not software development and data management functions, which underlines just how important it is for them to partner with a specialist technology provider with deep domain experience, scale and financial clout to address the problem on a long-term basis satisfactorily.

Question 11, How would you make the business case for developing/building a centralized data hub, illustrates the broad appeal the model has across the financial services industry, with more than 95% of respondents convinced of its benefits. That almost 60% of respondents cited "all of the above" — i.e. a centralized data hub would improve firm-wide collaboration, new business opportunities and operational efficiencies — underlines the potential industry practitioners associate with such implementations. But, as outlined earlier in this paper, building and maintaining a centralized data hub that is fit for purpose and delivers on its promise is not a trivial undertaking, even if the benefits are clear. That theme is explored in question 12, where respondents were asked about the specific business benefits likely to be attained on the back of developing such a hub, the results of which were spread fairly evenly between enhancing the client experience (27.8%), increased transparency around market risk functions (26.1%), and the ability to make better investment decisions (22.6%). That there wasn't an overwhelming favorite option in response to the question is of little consequence. What is far more significant is that respondents believe the benefits to be numerous and widespread across the business, which further underlines just how important clean data is for the majority of day-to-day business functions across the financial services industry.

Cloud

No data-related survey would be complete without a few questions dealing with the cloud, the benefits the model offers to its users and their security concerns, especially when it comes to maintaining the integrity of client data outside of their domain. Questions 13 and 14 concentrated on respondents' use of cloud-based solutions/services to address their data shortcomings. In response to their critical reservations regarding cloud adoption (question 13), the findings were clear: 42.6% cited security and data issues, while just under a third

(32.2%) reported organizational challenges and inertia as the primary obstacles to overcome.
Question 14 focused on firms' preferences with respect to the three cloud models — internal, external and hybrid — the results of which illustrated a clear bias (almost 40%) towards the hybrid model. In contrast, 27.4% of respondents favored internal clouds.
These findings, Chybranov explains, are consistent with his experiences working with financial services firms, although he was anticipating a higher proportion of respondents opting for the internal model. "We speak to many of our clients about their cloud strategies, and the majority of the banks we work with have adopted a hybrid strategy," he says. "Data management is one of the major factors contributing to the hybrid cloud approach. And while public cloud providers offer agility, the sensitive data that banks deal with must remain within their own firewalls."
Financial services firms have security concerns when placing sensitive data in the cloud. However, it's difficult getting an accurate handle on the extent to which they suffer security breaches in the cloud. After all, they tend not to go public when they suffer a data breach, which begs the question: To what extent are their concerns real and how much are they based on perceived yet unrealized threats?
According to Chybranov, data and security concerns related to the cloud continue to grow, driven by a general awareness of cloud services across the industry and the significant benefits the model offers financial services firms. "With cloud, there is always a trade-off between security and agility," he says. "Cloud provides agility — it's not necessarily cheaper, but it is more convenient. Smaller organizations often go for convenience, while larger organizations that have the resources tend to go for safety. The move to the cloud started five to six years ago and I would say that every major organization now has a hybrid strategy precisely because of the controls."
The final question of the survey dealt with upper management's understanding of the nature of the data quality challenges facing the business. Just under half of the respondents (49.6%) reported that their executive committees (ExCos) have a sound appreciation of the challenge and have consequently allocated the necessary resources to address the issue satisfactorily. However, the remainder of respondents indicated that addressing such initiatives was not considered a priority right now (37.2%) or that their ExCo has no idea how acute the challenge is (13.3%), which, while statistically modest, is nonetheless surprising.

Summary

What this survey illustrates is the extent to which financial services firms understand the challenges they face with respect to improving the quality and general management of their data and the clear benefits they stand to derive on the back of remedying their data deficiencies. What is also clear is that they recognize the importance of developing a centralized data hub to help them along the data management continuum. Bear in mind that data is never "done," and there is no finish line, an understanding that has spread to the upper echelons of the business. However, such initiatives are not trivial undertakings, even for the largest financial organizations with extensive internal resources and deep pockets. And for those firms seeking a helping hand in this regard, there are several experienced technology providers with the deep domain experience to help them on their way. Selecting an appropriate partner — not one just to address immediate data quality issues, but a provider that can offer technology and consultancy support on an ongoing basis — therefore becomes one of the most crucial operational decisions any firm can make.