Data Quality:

All Roads Lead to Data

February 2016

Report on the seventh annual RMA/AFS Survey on the State of Enterprise Data to Support Credit Risk Management

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About AFS

Automated Financial Systems, Inc. (AFS) is an information technology and software development company that provides products and professional services exclusively to the financial services industry. Its mission is to work with forward-looking financial institutions to build the industry-leading global franchise for lending processes based on a straight-through processing (STP) model, on-demand technology, and services. AFS assists clients by combining the lending applications, execution expertise, and management information to mitigate risk, reduce costs, and increase revenue. The firm is headquartered in Exton, PA and its European subsidiary, Automated Financial Systems GmbH, is located in Vienna, Austria. For further information, visit the AFS Website at www.afsvision.com.

About RMA

Founded in 1914, The Risk Management Association is a not-for-profit, member-driven professional association whose sole purpose is to advance the use of sound risk principles in the financial services industry. RMA promotes an enterprise-wide approach to risk management that focuses on credit risk, market risk, and operational risk. Headquartered in Philadelphia, Pa., RMA has 2,500 institutional members that include banks of all sizes as well as nonbank financial institutions. They are represented in the Association by 16,000 risk management professionals who are chapter members in financial centers throughout North America, Europe, and Asia/Pacific. Visit RMA on the Web at www.rmahq.org.

Executive Summary

Background and Overview

They say that an army marches on its stomach.

Without a reliable logistics network of food, supplies and materiel, no army can be expected to perform its mission well or to sustain itself very long in the field.

A bank's "stomach" is its insatiable hunger for data, the lifeblood and source of all information a bank needs to perform its mission – to customers, stakeholders and regulators – and to sustain its operations effectively in the extremely competitive field of commercial and consumer banking. Without data that is accurate, robust, reliable and timely to feed its vast networks of financial and customer activity, any bank will quickly wither and, most likely, fail or be acquired.

This has become especially true in today's global financial services marketplace, where data is the new currency of the world's banking systems. As banks attempt to keep up with the volumes of customer and financial data, they must do so in the demanding context of the real-time speed and complexity of the world's financial markets, the "new normal" of intense regulatory demands for reliable data, the rapid advances in technological innovation and capacity, and the equally impatient expectations of their customers for faster and better quality service. Accordingly, the need for accurate, timely data to support sound decision making is essential.

It is that mandate and expectation that has formed the basis for the Risk Management Association (RMA) and Automated Financial Systems, Inc. (AFS) Annual Survey on the State of Enterprise Data to Support Credit Risk Management since it was begun in 2007.

In October and November 2015, the RMA and AFS conducted their seventh joint survey. The survey was not conducted in 2013.

The unique and essential focus of the survey has always been to gather insights into how data quality is perceived and managed internally by banks. It does so by concentrating on two broad areas – data quality and organizational approaches to data management. Participating institutions are asked to provide views on their organizations' state of data quality and what they are doing to improve it. Several thematic groups of questions address areas covering the following:

- The definition and "measurement" of data quality
- The level of confidence in data quality
- Organizational ownership and responsibility for data quality
- Technology systems, issues, and challenges concerning data quality

As we wrote in the introduction to the survey, we revised many of the questions away from their prior focus on how banks were reacting and adapting to the introduction of new levels of regulatory expectations about data. Since the post-financial crisis regulatory environment is now considered permanent, and regulators are insisting on primary data as the cornerstone of reliable compliance reporting, we shifted the focus toward how banks are organizing and managing their data, and how effectively those new practices are perceived to be working.

You will see, therefore, a new level of information in several areas of this year's survey, as we wanted to explore the criteria and reasoning behind the initial survey questions.

The 2015 survey was sent to about 400 banks globally, and addressed to individuals at each bank with responsibility for credit, risk and/or data management. Responses were received from 50 global institutions headquartered in North America and EMEA, the highest response rate since 2010. 60% of respondents represented the Risk Management business function, while 28% represented Commercial Credit.

Key Findings

Two thousand years ago, as the Roman Empire was consolidating and expanding, the sentiment of the day was "All roads lead to Rome." As the military, civil, commercial and literary hub of the then-known universe, virtually nothing happened without dependence to one degree or another on Roman governance.

In the cyber-dependent world of today, and particularly in the post-Dodd-Frank environment of regulated banking, that saying can be updated as "All roads lead to data."

No one in the banking industry needs to be told that "data quality" has rapidly become one of the most critical challenges facing banks, thanks to a global crisis, the Great Recession, reactive legislation, and a laser-like regulatory focus. Data quality at banks is now front and center of nearly every strategic agenda, and the underlying driver of billions of dollars of investment to reverse decades of benign neglect and paying attention to data only at the overall balance sheet level.

The primary agents of such a rapid turnaround have of course been banking regulators, at both a national and international level. Increasing, constantly evolving regulatory requirements have forced banks to take a hard look at how they manage their data from an enterprise-wide perspective—an entirely new concept and brave new territory for many in the financial industry.

The volume, granularity and precision of data that regulators are requiring continues to increase, and signals a growing reliance on data quality for regulatory supervision. Formal regulatory reporting is no longer simply an inconvenience, but crucial in determining direction and profitability. Banks can no longer be content with data accuracy at the aggregate portfolio level, but are now expected to understand their customers at the individual loan level, and to attest to the accuracy and integrity of loan-level data. Lines of business are now expected to be the "first line of defense" in risk management, and therefore accountable for data quality.

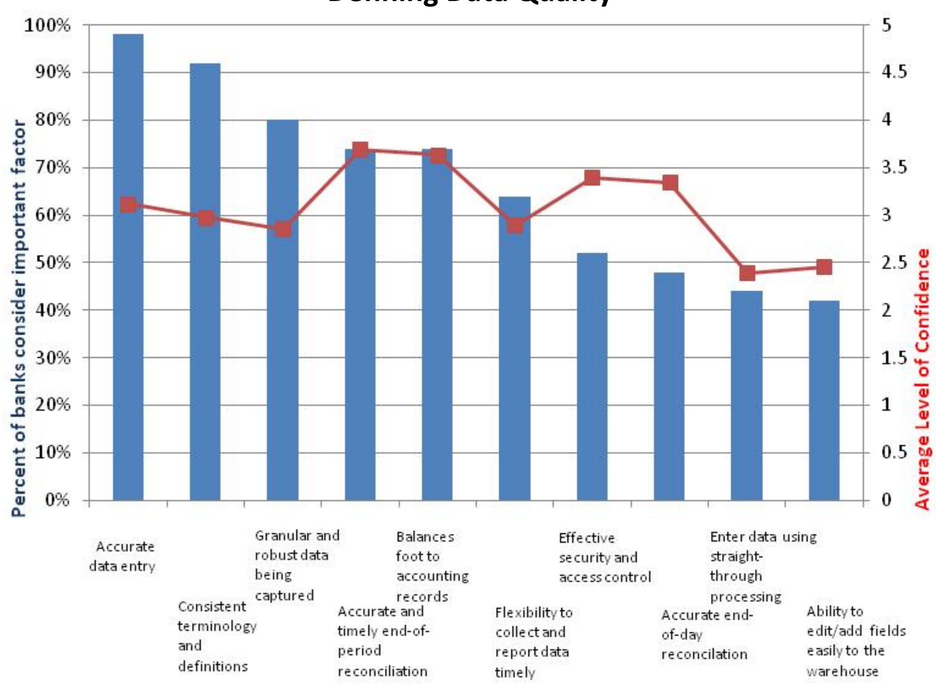
These expectations are fueling a massive transformation in the governance, organization and management of data at banks, whose patterns and practices are only now taking shape.

Last year, the sub-title of the 2014 report was "The Bar Keeps Getting Higher." This year's survey not only cemented that truth; for the second year in a row, our data quality survey has seen a drop – and a very significant drop – in the confidence banks have in their data quality.

This result was not entirely unexpected, but the equally newsworthy insight of this year's survey is that it exposed the resulting dilemma to banks of how best to adapt, to reconfigure their governance policies and data management practices, in order to turn that decline in confidence around, and to execute practices and controls that would not only improve but also sustain data quality as a cornerstone of their future growth and profitability. They are grappling now with various directions and models, but none of them has yet solidified a consensus as the "best practice." We look forward to next year's survey when such a direction may well have presented itself.

What Defines Data Quality? As in past years, the survey devoted a number of questions to understanding what the underlying criteria are upon which banks base their responses about data quality. In other words, it seeks to answer the question, "What really is data quality?" Banks were asked to indicate which factors they considered to be important components of data quality, and as the blue columns in the graph below indicate, the three most significant factors are accurate data entry, consistency and granularity. Banks were then asked to indicate their level of confidence in all the selected factors (red line), which yielded a very noteworthy result. The same three factors that banks indicated as the three most important factors were the three that elicited three of the lowest levels of confidence.

Defining Data Quality

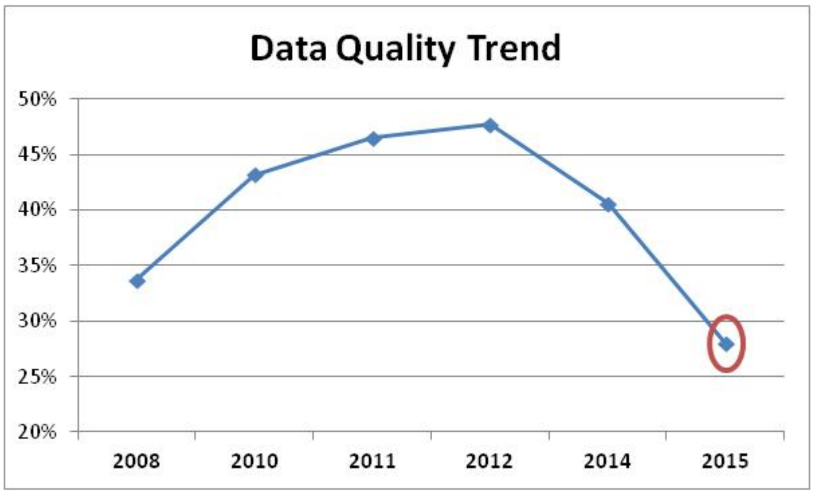


This year's survey produced what we see as three major "headlines," particularly when viewed in the context, as described above, of DFAST, CCAR, ECB Stress Tests, and other intensification of regulatory expectations around data quality, which have had the practical effect of making it the *lingua franca* and litmus test of reliability for regulatory reporting.

I. The hard reality of regulatory stress testing and capital oversight has further damaged banks' confidence in their data quality.

- Only 28% rated their credit risk data as above average or trending positive
- Only 33% agreed that their systems meet the demands of effective risk management

Institutions rating the quality of their data as above average or excellent



In the 2014 survey, for the first time since the RMA/AFS Data Quality Survey began, the percentage of responding banks expressing confidence in their credit data quality declined, and by a considerable margin, from 48 to 40 percent. We expressed our belief that the cause of the decline was the hard and perhaps unexpected reality of Basel III, Dodd-Frank, CCAR and other regulatory expectations about data quality in the aftermath of the financial crisis, and speculated that confidence would drop even further as this new regulatory regime became more fixed. At the time of last year's survey report, the major European banks had not yet completed their first round of ECB stress testing.

The results of those tests, and another year of CCAR plan reviews in the U.S., have confirmed that banks' confidence in data quality has indeed plummeted in the face of that reality. This year's survey showed a large drop, from 40 to 28 percent, in banks that rated their own data quality as either "excellent" or "above average." No banks rated their data quality as excellent, nor did any in the prior survey.

This drop in confidence, however, should not be seen necessarily as unilateral and severe, as other responses in the survey would appear to mitigate it. 56% of respondents, for example, indicated that their level of confidence is higher than it was a year ago, and 42% rated it “about the same,” perhaps due to the fact that different institutions and individuals participate in the survey from year to year.

In another instance, 43% responded that they believe their bank’s technology is “generally sufficient to meet BCBS 239, CCAR, AQR and other regulatory requirements for data.”

Taken all together, these responses present a somewhat mixed message, but there is little doubt that the “bubble” of high confidence in bank data has now been punctured. The drop in the 2015 survey’s confidence level was therefore not unexpected, but leads directly to the question that will follow it, and will likely dominate the data quality debate in the industry for the next few years: What is the new structure and business model that will replace the *status quo* and provide the optimal combination of strategy, policy, governance and capability that will not only ensure a higher level of quality and integrity in data, but be able to sustain it for the indefinite future.

Which brings us to the second major “headline” from this year’s survey results: banks are in the initial, “trial and error” mode of reorganization and responsibility for data, and no pattern seems yet to have emerged as the preferred or more effective approach.

II. Data quality has become the regulatory flashpoint, yet banks are still grappling with how best to govern and manage their data effectively.

- Responsibility for data quality remains largely decentralized at more than 50% of respondents.
- The business unit primarily responsible for data quality management varies widely across respondents, and appears to have been shifting from year to year.
- Banks in the past several surveys have generally perceived the line of business as weakest in support of data quality efforts, in relation to other major units such as the C-Suite, Risk Management, Finance and IT.
- Only 28% say data quality policies are well managed and effective, even though 56% report that their credit risk management system is “able to generate reports adequately for internal purposes.”

As serious and portentous as the declining data confidence level may be, the more compelling and directional insight from the survey focuses on the emerging efforts at a new order of governance. In the newly emerging data environment, institutions are beginning to evaluate how best to govern and manage their data on a number of fronts – organizational, functional, technological and financial – in efforts to improve and sustain their data quality. They clearly understand by now the gravity and implications that poor data quality poses to them, but the industry is in the beginning phase of establishing a secure and ongoing data governance structure that could be seen as a "best practice."

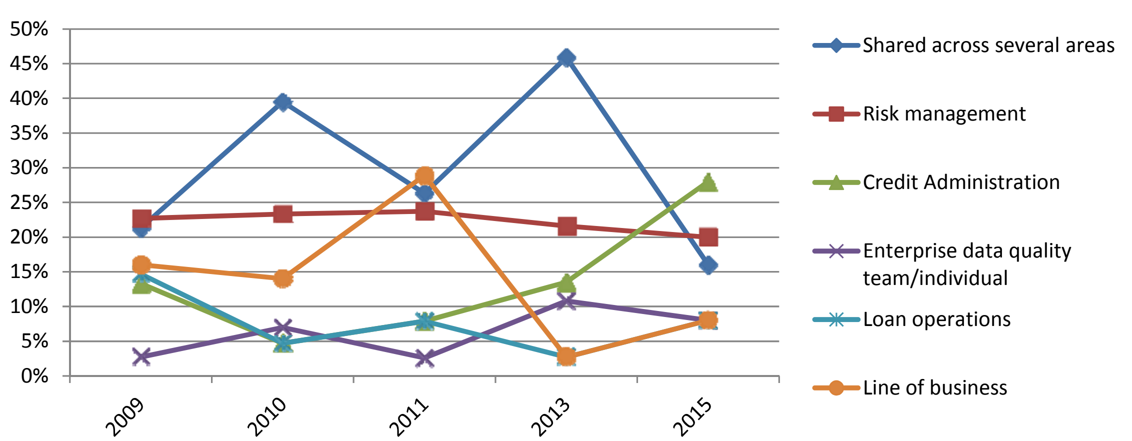
As may be expected in such a state of affairs, survey respondents expressed a further lack of confidence in the way data governance and credit risk management are being conducted now. Fewer than 30% agreed that data quality is well managed at their banks; more than half do not have a senior executive with data quality responsibility (although the percentage that do have such a position has increased from the prior survey); and barely one in five banks collect metrics on data quality at the enterprise level.

In large part this is because the variables that have contributed to the current state of data across the industry, and those that are driving the need for a transformation in data management, are many, varied and interdependent:

- regulatory expectations for reliable data that drill down to the individual account level;
- escaping the business and technology silos that developed over the past decades;
- the growing need for enterprise-wide integration of financial and risk information;
- assigning and accepting responsibility for processes that span multiple business units;
- capital and financial restraints stemming from the macro economy, regulatory requirements and industry competition;
- lack of consensus on strategic investment priorities;

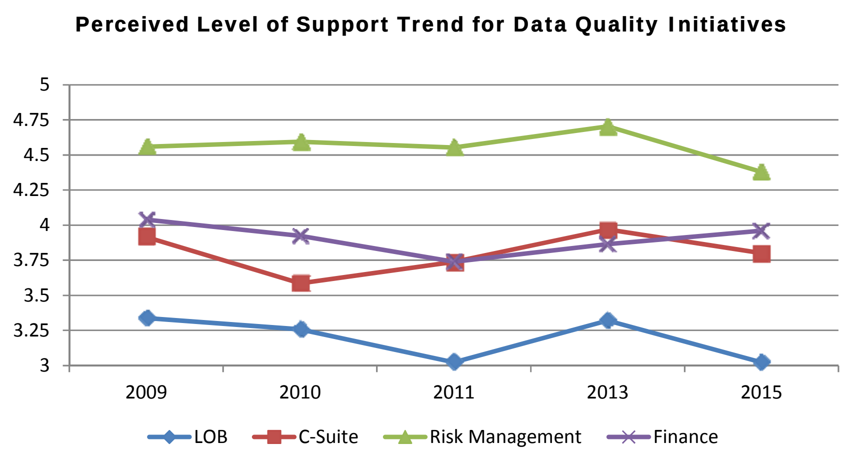
and perhaps several more. Banks globally are in a state of flux about what the "right" business model will be for data quality and management, and we expect it will take a few more years for a consensus to develop around a preferred and effective approach. As the chart below indicates, the business unit with primary responsibility has varied considerably over the past few years, indicating shifting business models.

Trend for Primary Responsibility for Data Quality Management



Accordingly, next year's survey will address this aspect with more detailed questions.

A key issue in this focus will be what role and responsibility the "line of business" will play in framing the new data environment. As we discussed in last year's survey report, regulators have increasingly expressed their preference and expectation that the line of business should be the "first line of defense" for data quality, with Risk coming next and then Audit as the third line. Whether the line of business is willing to step up and accept that role, however, remains to be seen, as the chart below, from this year's survey, indicates. Although a large percentage of respondents to the survey indicated that the line of business ***should*** have responsibility as the first line of defense (78% in one question, 38% in another), they also felt that the line has shown the least support for data quality improvement initiatives. The chart below indicates responses to this issue over the past few surveys, and we will continue to watch this development closely in future surveys.



III. Banks recognize and agree that the level of regulatory expectations about data are appropriate, and have increased spending on data quality initiatives, but remain more focused on improving compliance and reporting than on longer-term solutions.

- 72% of respondents feel that the "level and scope of regulatory requirements and expectations concerning data quality are appropriate for financial institutions of their bank's size"
- 42% have raised data quality spending by 25% or more, yet most has been for data cleanup efforts and increased staff for compliance and enhanced reporting capabilities.

Several questions in the survey addressed either initiatives banks have under way already, or investments they plan to make, to improve their data quality. Not surprisingly, nearly all respondents (98%) indicated that they have raised spending levels for data quality improvements, with 20% reporting spending increases of 50% or more. Perhaps as an implicit consequence of these increased levels, approximately 50% of banks reported that they are now devoting "sufficient investment" to data quality improvement.

When asked to identify the areas and purpose of this increased spending, a majority indicated that current or planned expenditures are focused on initiatives to increase staffing for quality assurance and regulatory compliance, and to improve reporting capabilities. These activities would be generally considered as directed toward improving the detection, monitoring and reporting compliance concerning data issues, as opposed to expenditures that would be directed toward upgrading technology or processes that would be aimed at preventing further data entry or processing errors. 64% of respondents cited increasing staff for regulatory compliance as the reason for their increased spending, while 50% indicated they were increasing staff to expand their data quality assurance efforts.

Data clean-up and repair projects may well be tactically necessary in the immediate term to shore up quality and reliability reporting, but they are not sustainable in the longer term. As soon as one such exercise is finished, the need for the next one has already been established.

Basel 239 Principles

For the first time, this year's survey included questions about the "Basel Principles for Effective Risk Data Aggregation and Risk Reporting" (BCBS 239), which were first espoused in 2013 as a set of 14 foundational principles of data management and reporting, to which the top 31 global banks considered "systemically important banks" (G-SIB) were expected to comply by January 2016.

These 14 Principles, 11 of which apply to banks and 3 to banking supervisors, address minimal regulatory expectations around data governance, storage, retrieval, timeliness, robustness and reporting, that would be necessary to satisfy ongoing requirements for regulatory confidence in bank data.

Since 2013, the Basel Committee has conducted two interim progress reviews of banks' readiness for compliance, and found that virtually none of the 31 banks would be fully compliant by this year. That has further driven regulators' insistence on accelerated capability upgrades, and has fueled speculation that the expectations embodied in these Principles would be broadened to apply to many more institutions, since they encompass virtually the entire spectrum of data imperatives that regulators have been pressing since the financial crisis.

On that basis the survey wanted to find out how the responding banks, most of whom are not among the 31 targeted G-SIB banks, rated themselves against the Principles.

We asked banks to assess their own compliance with each of the 11 applicable Principles, in exactly the same way the original 31 banks were asked by the Basel Committee to assess themselves. Ironically but perhaps not surprisingly, survey respondents rated themselves very consistently with those 31 G-SIBs. They felt generally that they were not very compliant with any of the Principles, but rated themselves as considerably more compliant with the five Principles that covered reporting capabilities, and considerably less compliant with the six Principles covering data collection and aggregation capabilities, as the chart on page 31 indicates.

In light of new regulations and expectations likely to be required of banks in the coming years, such as the new FASB CECL rule for loan loss provisions, this area of compliance and data quality will be continued and closely monitored in coming surveys.

The remainder of this report contains the full results to all questions in the RMA/AFS Data Quality Survey. To learn more about the full results and how you can participate, please contact AFS, Lee Kidder at lkidder@afsvision.com or 484.875.1537.