

Using Business Intelligence *Effectively* for Credit Information Management

by Peter L. Cherpack

Business intelligence combines tools and technology to extract relevant and useful information from large volumes of data in various parts of an organization. Now more affordable, BI can deliver the goods for bank credit managers if the system is properly engineered. This article gives some of the “ins and outs.”

Credit professionals have been under the gun—almost literally—to respond to new regulatory and internal pressures. Regulators and shareholders alike demand more transparency and access to whatever credit and risk-related portfolio information they deem relevant. Sarbanes-Oxley, Basel II, and BSA are the drivers; exposure to pockets of risk is the target; and the credit analysts need to be armed with effective tools to hunt down the answers.

Direct access to credit data isn't nearly the problem today that it was 30 years ago, but converting that data into useful and actionable information remains a

gargantuan task. Time-consuming manual processes have turned many credit analysts into number hunters-gatherers-crunchers. The daunting task includes needing to

combine data from multiple sources and create linkages to provide useful information on demand. Business Intelligence (BI) has been offering help to data analysts with these tasks for many years in many different industries.

Reduced costs and wider availability of BI tools and applications have made



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BI solutions for banks, and even individual departments of banks, achievable for most institutions.

A properly engineered BI solution is flexible enough to deliver different views of the same information when and where they are needed. CEOs, CCOs, CLOs, Loan Review, board members, and regulators are all looking for the same information, but they need to be able to customize it for their immediate area of focus. BI can automatically generate the required periodic credit reports and charts as well as report on the bank's strategic key performance indicators.

There are some specific issues that a bank needs to consider when evaluating a credit data BI project, which can make the investment of resources really pay off.

There are plenty of horror stories of "black hole" data warehousing projects, but as you will see in this article, there is every reason to believe that your bank's BI credit solution will succeed.

The Credit Professional's Legacy of Gathering and Crunching Data

In the 1970s, banks were more or less completely dedicated to mainframe systems to collect and manage data. Management and performance information was generated in a series of standard hard-copy reports.

In the 1980s, office automation products like VisiCalc® and Lotus® gave the bank professional the ability to take some data from the mainframe and manipulate it to create more useful information.

DELIVERY OF BI INFORMATION CAN BE IN THE FORM OF FORMULAIC ANALYSIS, TRENDING, CHARTS, AND GRAPHS. THE GOAL IS A FORMAT THAT CAN LEAD TO DECISIONS AND ACTIONS.

In the 1990s, desktop computers became more powerful, with far more personal storage. Personal database applications like Access and advanced spreadsheet applications like Excel workbooks gave the individual user more sophisticated reporting and analytical capabilities.

The downside of the personalization of data management was that important corporate information was now held by individuals on their workstations, with little control or security. Certain groups or departments in the bank manually created and controlled "the numbers" and built up their own technology and controls.

Key stumbling blocks today continue to be the need to pull together credit and risk data from disparate sources and systems, and the requirement of linking this data into one centralized, consistent "authority" for credit analysis and reporting.

The Decade of BI

In the mid-1990s, the Gartner Group introduced banking and other industries to the BI concept, which was to use a combination of data management systems, tools, and formulas to automate data gathering and analysis, and then deliver a multidimensional view of useful information to the business community.

In brief, then, a BI solution is

an automated process of gathering related data from disparate sources, categorizing and aggregating that data into meaningful information, and then delivering it to the businessperson in a format that is quick and easy to use.

Delivery of information can be in the form of formulaic analysis, trending, charts, and graphs. The goal is a format that can lead to decisions and actions. In many cases, BI solutions are actually called "executive information management" and "decision support" systems.

Other than the smallest community banks, most financial institutions today have some form of BI systems somewhere in the bank. Marketing, Finance, and Sales Management often have specialized data-mining and management tools to deliver aggregated and sliced-and-diced information for performance management needs. These are typically "point solutions" that deliver information for specific departments in specific formats to meet their business needs.

Thanks to new desktop and Web-delivered BI tools, a bank can tailor a credit BI solution built to specific analysis and reporting needs that can be run in-house for less than \$100,000. Another model outsources the technology portions through a subscription to off-site vendors (ASP model); the

credit information is then delivered to the bank through a secure Internet connection. Depending on features, the outsourcing runs around \$1,000 to \$2,500 per month.

How BI Differs from Data Warehousing

There are many bank horror stories about multiyear, million-dollar data warehouse projects that didn't deliver on a fraction of their promises. The bank may have collected and standardized data, but for the bulk of the bank managers (almost always including the credit management department) it wasn't delivered in a meaningful and actionable format.

In contrast, a true BI solution may start with a large transactional data warehouse, but it quickly narrows the data down to smaller, usually single-business-function dedicated data stores called "data marts." In some cases, data is also imported into the data marts from sources internal and external to the bank that are not even in the corporate data warehouse.

Steps to Building a BI Data Management Solution

Identify business information goals. The first step is to review business goals and translate them into information that will act as indicators or decision support information. This begins with identifying the data that a business unit needs to effectively manage its business, which isn't as simple as it sounds. You can't always start with the same data you get on your current reports. In many cases this data is derived manually from other sources; in

others, the reports that are available are either used only partially or no longer actually meet current business needs.

The business unit—in this case, Credit—has to identify key performance, risk, and quality indicators that act as both leading and lagging indicators. For example, delinquency and charge-off volumes are lagging indicators (happening after the fact), while exposure by industry and trends of average weighted risk ratings—by lending officer and products—could be leading indicators.

Organize data into information. Data in the data mart needs to be organized based on business criteria and hierarchies specific to the business unit (credit). Examples of such categorizations for a bank or credit management department include an outline of the bank's organizational structure, product offerings, rating codes, delinquency categories, and industry groupings. A critical part of converting the bank's credit data into useful information is to create categories of data into "dimensions" and "measures."

Typical dimensional hierarchies for credit data include:

1. Delinquency (30-, 60-, 90- and 90-plus-day buckets).
2. Products (commercial and consumer and their subsets, such as construction and real estate).
3. Industry (NAICS, SIC).
4. Days to maturity.
5. Collateral types.

A well-defined group of eight 10 dimensions is probably sufficient for most analytic and reporting needs.

Deliver information where and when needed. Finally, the categorized information can be displayed instantly at the businessperson's desktop in charts, spreadsheets, graphs, and reports. This information is formatted, aggregated, and rolled up in ways that make sense to the specific user of the information. Once the data is sliced and diced down to a specific subset (for example, by selecting a product, then a branch that sells that product), the credit manager can drill down to select all data for specific records. Credit management can intuitively move through the portfolio, answering questions as they go and immediately answering such questions as "Why did this happen?" and "What is causing this trend?"

BI assists the credit process across all departments. The real beauty of a BI solution for credit managers is that the credit data mart and BI delivery tool can support many different purposes and related business segments within the bank. Since the BI delivery method can be customized to the business user, each group can view the information in the way it needs it, usually allowing it to create and store its own views of the information.

Data security can easily be implemented to allow business people access only to the data categories required and restricting access to categories of information that management deems inappropriate. BI rules can easily be set to allow only the affiliates to see their own data while also creating aggregate rollups for the holding company.

Examples of How a Bank Credit BI Solution Assists Different Business Units

CEO. The bank's CEO primarily needs to be confident that credit information properly depicts the credit risk profile of the bank for management purposes, the board of directors, regulators, shareholders, and depositors. A BI solution gives the CEO immediate answers to questions about the bank's credit portfolios. The CEO can demonstrate proactive knowledge and control of important credit trends and concentrations by bank-specific criteria, such as interest rate, relationship, industry, vintage, and product. The CEO can take comfort in knowing that this data is correct and validated and feel confident that the information given to all stakeholders is timely, accurate, and comprehensive. This is especially relevant for Sarbanes-Oxley compliance.

Chief credit officer. The chief credit officer is focused on risk to the bank and balancing portfolio growth with credit quality. With a BI credit solution on his or her desktop, the CCO can have immediate access to predictive and historical portfolio information, including risk ratings, exceptions, delinquencies, and risk migration trends. The CCO is able to drill into the bank's portfolio by meaningful categories and then quickly generate reports, charts, and spreadsheets for the credit committee, loan reviewers, and the board.

Chief lending officer. At the chief lending officer's desk, credit information can quickly display performance by lender and prod-

uct. Changes in balances, maturities, and payments are aggregated by categories like *market* and *department* and can be drilled into by date and lender. Top-customer relationship information can be brought up on demand and reviewed by custom criteria, printed, and electronically distributed where needed.

Credit administration and loan servicing. The business of creating credit reports has become more complex as bank executives, investors, committees, the board, and regulators ask for more detailed information. With BI, reports typically can be generated within a day of the last data update and then immediately distributed electronically throughout the bank. All reporting and analytical data come from the one central validated credit data mart, so settlement is immediate.

Chief financial officer. The chief financial officer must be assured of proper reporting of information for all financial accounts of the bank, especially in view of recent Sarbanes-Oxley requirements. Credit information represents a significant component of the information that the CFO has to validate and upon which he or she must attest.

The development of the ALLL (allowance for loan and lease losses)—a critical component—requires accurate informa-

tion; inaccurate analysis of this important reserve has created enormous credibility problems for some banks with their regulators and investors.

Considerations for Achieving your Credit BI Solution

Justification and securing executive sponsorship. Creating executive buy-in for a credit BI solution is critical for the justification and approval of the project. The justification process can be a minefield for credit management due to differing motivations and perceptions by members of the bank's management regarding the value of a credit BI solution.

Building consensus in the bank around the value of a centralized, automated credit data management solution is important, but it takes the demonstrated support of bank executives to ensure success in any reasonable timeframe. The project sponsor will need to prove to executive management the value of the project to the bank and clearly share the vision of the benefits before moving forward. A key justification for a BI solution is that the bank's credit data must be considered an important corporate asset. This fact has been underlined by the intent of the recently implemented Sarbox and related regulations.

Another part of this vision is that when properly managed, a bank's credit information can

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UNFORTUNATELY FOR THE CREDIT MANAGEMENT SPONSORS OF SUCH PROJECTS IN MANY BANKS, THEIR PRIMARY JUSTIFICATION FOR A BI CREDIT SOLUTION IS TO CREATE EFFICIENCIES WITHIN THE CREDIT REPORTING AND ANALYSIS PROCESS.

become a competitive advantage—possibly creating direct financial benefits to the bank’s bottom line as the tenets of Basel II suggest.

Of prime importance to executive endorsement of the project is a shared understanding of the concept that properly managed risk information can enhance revenue growth for the bank. This is possible through enabling the bank to enter new markets and offer new products while still keeping risk to an acceptable level through proactive management.

Unfortunately for the credit management sponsors of such projects in many banks, their primary justification for a BI credit solution is to create efficiencies within the credit reporting and analysis process. A problem with this as primary justification is that in most cases the credit staff that directly feels the pain in the credit reporting and analysis process (credit-data gathering, crunching, and manual manipulation from multiple sources) is well isolated from the “C level” of the bank—the level that must endorse the project. Though recent Sarbox process reviews have helped bring issues of manual data manipulation and reporting to light, bank executives are usually not aware of the real depth of the problem or of the significant opportunities for

improvement. While reporting efficiencies is an important benefit, bank executives are most likely to be attracted by increased value for the bank through creating a competitive advantage resulting in revenue enhancement.

Short-term project goals with long-term view. As is true for most information and technology projects, it is important to first clearly establish the business objectives and then understand what value is *really achievable* in the short and long terms. It is crucial that the project deliver some useful business result within three to six months. This can be done by selecting goals and milestones that represent “low-hanging fruit,” that is, by resolving some visible problem areas. Creating a phased approach with real results in the first six months is sensible and allows the project and project manager to build up credibility through early wins.

Select an industry-experienced BI solution vendor. The best way to achieve short- and long-term goals that reduce risk or increase efficiency is to begin with guidance from experts that have expertise in both business intelligence technology and bank credit.

A vendor with bank credit-specific knowledge will greatly shorten the cost and expense of

delivering a credit BI solution. Not only will the vendor be able to “hit the ground running” by quickly adapting existing solutions to your bank’s specific needs, but it also should bring best practices around credit data management and reporting as part of the deliverables.

One size does not fit all in this process, as a data management project without a strong, knowledgeable, business-specific resource leading the effort is much less likely to deliver on its promises. The dedication of strong internal bank resources can help compensate for lack of vendor industry knowledge, but this will result in a much longer project timeline as well as require more extensive bank resource involvement throughout the project.

Commit the bank resources to support the project when required. No matter what your selected vendor’s project plan shows, success depends on significant commitment of internal bank resources. This may not require a full-time bank resource or even require many hours from specific bank staff members, but there must be a clear understanding that without the availability of the appropriate bank resources at the right time in the project, the project will likely fail.

It is critical that the bank take “ownership” of the success of the project and set appropriate expectations with key bank staff. Just as important is the realization that even after the project is completed, some commitment of resources on both the business and IT sides will be required to

maintain the implemented BI credit data management.

The project phase that can cause the most resource-related problems is during the validation of the first versions (or prototypes) of the solution. Once the vendor delivers an example of the solution with actual bank data, credit staff who understand the data and how typical credit reporting output is organized will be required to validate the information presented.

This validation process includes testing the business logic around the dimensions, reviewing the calculation formulas of the measures, and checking the completeness of the data itself. If validation is delayed due to not having the proper bank resources available, the entire project will stop with no value from the solution realized.

Make an ongoing commitment of bank resources to support the solution. A well known axiom is: “The one consistent quality of bank information is that it will constantly be changing.” As the business climate and requirements adjust, new categorizations and measurements of bank data are required. Banks add branches, divisions, products and officers—in some cases, due to M&A activity, entire new product lines and divisions are added. System changes by accounting/core system vendors are not unusual, and a bank can add entirely new accounting systems.

If not maintained, data management solutions can lose their value to the bank over time. Tables that maintain product and

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branch names need to be continually updated. Hierarchies of products rolling up to product type categories must be maintained. New feeds into the BI credit solution may be required to maintain a comprehensive view of credit portfolio information. While this process may seem daunting, with the proper solution design and user interfaces, most of this can be managed easily by designated credit business staff or an IT group as a routine process.

The best practice for ongoing support for a BI credit data solution is the following arrangement:

- Designate a clear “business owner” who understands the design of the credit solution, the way the data gets into it, how that data is categorized, and who has the responsibility of performing regular validation of its completeness and accuracy.
- Designate a clear IT “owner” who understands how the BI credit-data-solution process works—from source data extracts through to the “refreshes” of the data—and can validate and troubleshoot each step in the process should problems arise, or at least be made aware of a possible problem by the business “owner.”
- Designate a specific resource (usually IT) to maintain the

source data feeds as requirements change and a resource (either IT or business) to manage maintenance of the dimensional hierarchies—such as new branch linkages to regions and new product linkages to product groups.

Conclusion

Today, more than ever, having control over your credit and risk data is important—to your bank’s management, shareholders, investors, and regulators. Access to and control of proactive credit risk information where and when needed will turn your data into a real corporate asset—and potentially a competitive advantage and revenue generator.

Powerful business intelligence tools and systems are available, usually within budgetary considerations of most banks, and can deliver useful information in ways that are readily understandable and usable by many different areas of the bank. A central, validated, and automated source for all credit information reduces concerns about manual information management and long processing delays. □

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