Unleash Data Potential in Times of Credit Crunch

Rajat Sharma, Onward Systems Inc.
Ava Bradach, California Bank & Trust

Executive Summary

In the wake of IndyMac, and the failures of both Freddie Mac and Fannie Mae, banks are worrying more and more about tracking their spending and making ends meet, trying to achieve profitable accounts while at the same time turning around riskier customer ventures. The nation's banks are increasingly facing the credit crunch due to the sub-prime loan debacle. While financial stability and a surplus economy might be a mere vision of the future, there are still measures that can be taken in order to proactively cut losses and prevent future financial woes.

Because of current conditions, it is becoming more and more important to identify, monitor and avoid riskier accounts. Inversely, it's also necessary for banks to pay more attention to the profitable accounts, protecting their direct influence on the bottom line. While insecure financial times often provoke a more conservative loan volume, that doesn't mean that the overall revenue needs to suffer because of it. Because new markets might not always be an option, especially when customers are feeling uncertain about switching banks, there is also a large market for cross-selling to current clients.

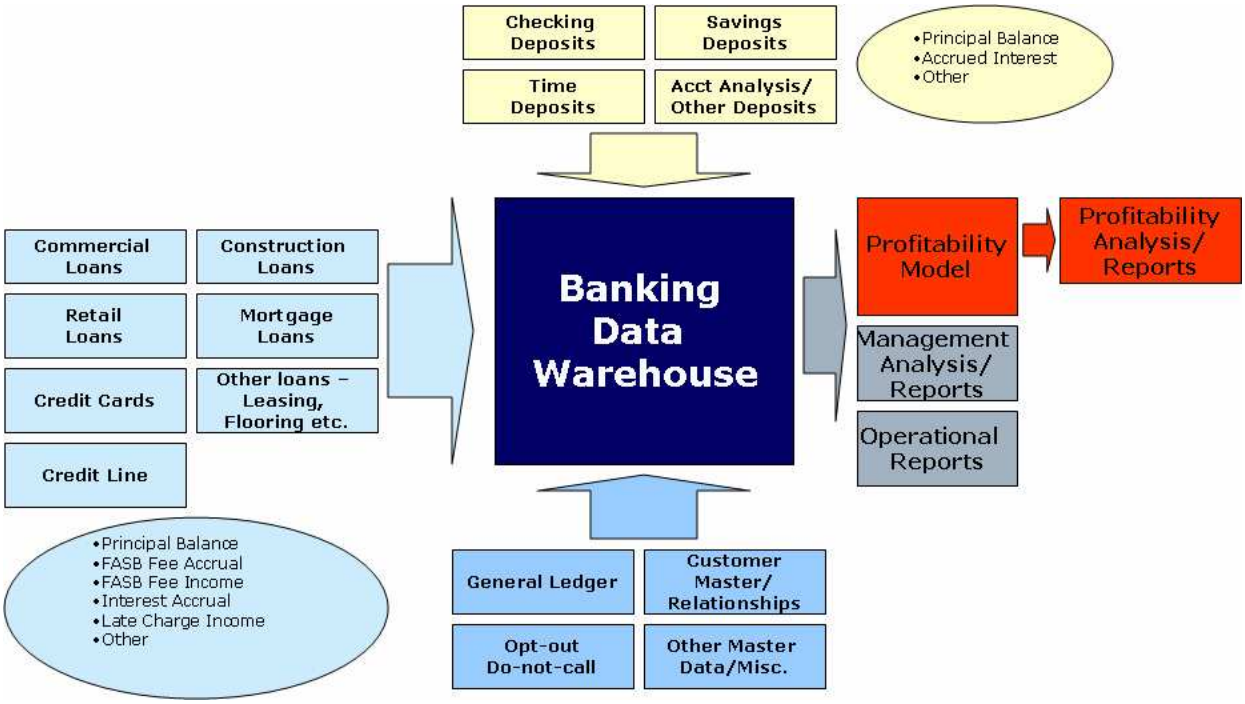
A bank's customer data is sometimes broken into multiple databases/applications, which can complicate any potential for an overall portfolio data analysis. Mainframes, the legacy technology that many banks use to store their data, have become limited due to the scale and rigor of the current banking infrastructure. In order to maximize on the potential for cross-selling and profitable data analysis, it is important to have a bank's data organized in a well-mapped, streamlined fashion. One of the best approaches to this is data warehousing.

The Benefits of a Data Warehouse

Every bank has its own mainframe for housing its customer database and other important information. A data warehouse is similar in that it is a large repository of information collected from a range of databases. Because it compiles all the data into one centralized location, it can generate a number of in-depth reports and analysis. These reports are ideal for helping solve issues pertaining to a customer's profitability potential.

A typical data warehouse architecture would include:

A Proposed Architecture that Works



Some benefits of the banking data warehouse include:

- **Customer Transaction Analysis**
  Housing information in one central data warehouse allows bank officers to analyze customer transactions. Such analysis would help to monitor customer activity and track customer satisfaction, as well as how customers interact with the bank. Because of this, banks could better prevent any possible customer departure.

- **Lowering Charge-offs**
  Centralized information also assists in tracking late payment patterns. This, with review of quarterly FICO and D&B business scores could indicate loans about to go unprofitable. These precautionary measures and early detections could prevent default and potential charge-offs.

- **Ease of Compliance Reporting**
  Especially pertinent post-Federal takeover of IndyMac, data warehousing facilitates all compliance reporting for transactions, unfunded commitments, Community Reinvestment Act (CRA), Opt-out/Do-not-call, etc. These reports, once tedious and time-consuming, become extremely quick and easy to produce with the readily-available data in the data warehouse.

- **Cross-Selling and Up-Selling Can Be More Effectively Executed**
  Because data relationships are easily mapped within the data warehouse, cross- and up-selling can be more effectively executed, as it's easier to correlate customer-to-account, customer-to-customer and account-to-account relationship data.

- **More Effective Customer Interactions**
  Armed with detailed customer information, bank officers can be more informed and effective when interacting with customers. This personal touch will result in a higher customer satisfaction rate and the potential to up-sell. By customizing a financial program to meet the customer's needs, it will help with customer retention and driving the profitability options for more stable and consistent customers.

- **Fine-tune Product Strategies**
  Product performance tracking by GL categories can help fine-tune product strategies. Because the GL breaks down incoming revenue by product, it becomes easier to track expenses versus returns on a product. Based on this product analysis, banks can pursue those products that are more profitable, as well as either fine-tune or eliminate a product strategy that is not driving the bottom line in a favorable manner.

- **Enhanced Customer Management**
  Data warehousing assists in ranking customers by profitability to the bank. By proactively reviewing all of a customer's account and relationship information, bank officers can examine which high-ranking customers should be given more appropriate attention, or low-ranking customers who might benefit from assistance with turning around their finances.

- **Business Unit Performance Monitoring**
  Performance monitoring can be extended not only to customers, but to business units as well. By detecting positive and negative trends, it allows banks to reward high-performing units or take corrective action for under-performing branches, personnel and other individual units.

New Technology, New Challenges: Acquisition, Mapping and Modeling

As with the advent of any new approach or technology, there is always a transition period that can be rocky and prolonged. There are challenges associated with data warehousing, primarily in the mapping, modeling and acquisition of data. Mainframes, the legacy technology for collecting and storing data, have been eclipsed in terms of effectiveness and scalability. This older technology compresses data for the sake of limited space.

Because of this compression, it is often difficult to retrieve and cohesively piece together such data.

Though there are bumps in the road associated with such a data transfer, especially in the interpretation, extraction and reengineering of data into the new data warehousing format, the work is well worth the effort. The challenge comes not in the file formats themselves, but in the integration of so many types of files: Microsoft Excel, Access, multiple sources, etc. Neither Microsoft Excel nor Access was meant to include the functionality of a data warehouse. As banks and other institutions have increased their bottom line and expanded their product offerings, they have outgrown the need for such limited programs. Data warehousing provides the scale and rigor needed for complicated calculations and processing of reports.

Additionally, there are factors that can halt the process of data transfer in a mainframe system, or even from mainframe to data warehousing. These can include:

- Lost or changed data quality, due to mainframes lacking conformity in their data fields. Data warehousing will enforce strict mapping and organization that might not exist in a mainframe.

- Ensuring a secure transmission to prevent outside threat and help maintain accuracy. Data warehousing allows for continuing from the break in connectivity, rather than forcing the transmission to be restarted and resent.

- Reconciliation of multiple data sources. Data warehousing cuts down on redundant processes and files by consolidating data in one single source location.

- Unorganized modeling and organization of data. By unifying the data model and grouping like data with like, the data warehouse streamlines data accessibility and management. This helps to cut down on storage space and speed up reporting processes.

- Mapping issues due to vague or complicated data. Mapping data ensures that data is accurate. By using a knowledge expert during the transfer process, the expert can help with identifying the source of the data, finding the correct field for storing that particular bit of information and proving that the information is accurate. Though time-consuming, this process is a preventative measure that will make calculation metrics and other report processes easier in the long run.

- Tedious and time-consuming testing. This last step ensures that the data warehouse is on par with the client's data and that everything is mapped according to preset mapping rules. Though an often tedious process, this again ensures that all of the warehouse's data and functionalities are workable and understood. By using experience developers, this process can be made faster, as subject matter experts QA test to make sure data is stored right the first time. This prevents any need for reorganization down the line.

Data Integration – How and Why

How We Integrate

As mentioned above, a frequent issue with integrating bank data is that customer data is often formatted in multiple ways. By stripping data of any unique source code and standardizing a file format, banks can unify their information into one consistent source. This streamlines the data-pulling process and ensures consistency of information. Everything a bank official might need to know about a customer's multiple accounts is available in one location without having to search under several different loan, checking and other account numbers.

Why We Integrate

This data integration also assists on other levels, such as allowing bank employees to gain a whole picture of the accounts that a customer has and how these accounts might be related to other customers within the bank, such as business partners, spouses and other family members. Thus, bank employees can pinpoint exactly what marketing opportunities would be most appropriate for each individual customer, depending on the types of accounts they have access to and interest in.

Conversely, the same procedure can be applied to bank employees. Bank officers and managers can track performance of employees to decipher who is most valuable and most productive. By generating performance-tracking reports, bank officers can determine who is a high performer, whose business portfolio has increased, and reward those hardworking employees as such. Performance can also be tracked to proactively prevent a loss in productivity in less-stringent performers, thus improving a bank's bottom line.

As anyone involved in finance knows, performance metrics and other functions can be challenging to calculate. By mapping the data integrating in the warehouse, calculations such as FASB fees and Commitment Availability can be performed by the warehouse itself without the need for extra software. Data standards can also be applied through data warehousing. Implementing rules such as Basal II compliance ensure that the data will be stored for the requisite seven years before being purged, according to the rules dictated by the programming of the data warehouse and in compliance with Basel II's retention requirements.

Such data integration and rule application will capture all data that is fed through the warehouse, giving a more accurate picture of transaction trends. This assists in GL reconciliation as well as tracking the revenue that flows in and out of the bank. This data integration can be used as a barometer to see how accurate both the data warehouse and the general ledger are, and that they align with each other.

Reconciliation – What it Is, How to Do it, and Why It Should be Done

Reconciliation itself is simple enough. Not only a process to discover inconsistencies in data during transfer from mainstream to warehouse, it also helps to ensure that the data remains accurate, and that the math adds up correctly regarding all financial transactions.

What do we reconcile?

Sample Balance Sheets-based metrics

- Loan metrics
  - Principal Balance
  - Interest Earned Uncollected
  - FASB Fee Accrual
- Deposit Metrics
  - Principal Balance
  - Accrued Interest

Sample Income Statements-based metrics

- Loan metrics
  - FASB Fee
  - Late Charge Income

Any data deemed relevant, that is easy to cross-validate with application reporting.

As for how, it's important to understand how applications will interface to the general ledger, knowing which data in the warehouse will correlate with that in the GL, and how that information relates to its corresponding part. As long as one knows the general ledger categories for application types and is prepared to go to the individual record level if necessary to identify anomalies, accuracy and reconciliation is achievable.

Comparing the warehouse data to source reports helps, but if it seems impossible to find an application report to validate an anomaly against, use a report extractor tool to create your own report. If this isn't quite within the scope of the bank's ability, save time by enlisting a subject matter expert familiar with the detail of reconciling the data. It's easier for a fresh, experienced set of eyes to find the solution to the problem.

The 'why' of reconciliation is simple: information is accounted for, accounts are accurate and up-to-date, and any potential errors can be pinpointed proactively. The benefits of reconciliation include:

- All application records are present
- User confidence in data accuracy
- Ensure initial and ongoing mapping is correct and current
- Uncover any application data errors or inconsistencies

Conclusion

The banking data warehouse is a wealth of information. It provides a bank with accessibility, accuracy and uniformity when it comes to data, ensuring that all information is stored in a central location and in a standard manner. Many options are available when it comes to such a product, including pre-built banking data warehouses and customized all-encompassing solutions. As with any off-the-shelf versus custom-designed effort, there are pros and cons to both. While pre-built data warehouses might offer a 'quick and easy' approach, these solutions don't often address the complexity that comes with such a task. Data warehousing is a process that requires time and dedication to properly cleanse, integrate, load and calculate the complex business rules involved in the world of finance.

Many data warehouses are canceled in the implementation process, due to the lack of continued senior management process. To reduce the chances of that happening, it is critical to phase in the data warehouse implementation, integrating data in smaller, more manageable chunks. This phased-in implementation will produce results sooner, often boosting management morale and inspiring the staying power needed to see the project through. When confidence-building results are seen in earlier phases, it can assure management's commitment to seeing the completion of the data warehouse.

And once a data warehouse is in place, there is no limit to the how much it can boost a bottom line. This process is worth the extra effort for the sheer organization it provides to a bank's data. This wealth of information is worth the cost and wait, especially when considering the time and money that will be saved in the long run.

About the authors

Rajat Sharma

- Rajat Sharma is the CEO of Onward Systems Inc., a company specializing in information systems, business intelligence and data warehousing in the banking industry. Onward has recently completed performance measurement data warehouses for two community banks, one in California, and the other in Arizona.

Contact information:
www.OnwardSystems.com
rsharma@onwardsystems.com
Ph: 909-843-6495

Ava Bradach

- Senior Vice President and Program/Project Manager at California Bank and Trust, Ms. Bradach has been involved in bank information systems for the past 28 years. Her most recent project was to install a performance measurement data warehouse.

Contact information:
www.CalBankTrust.com
Ava.Bradach@calbt.com
Ph: 951-697-3041

