



COMPLIANCE RISK & OPPORTUNITY

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OPERATIONAL BUSINESS INTELLIGENCE

Why Banks Need It

This article is based on IBA-Finsight joint research report on the topic, published in November last year. Interested readers can obtain the full report from IBA-Ed.

The information requirements of banking business are unique because:

- a. Banking converts money into information and vice-versa.
- b. Banking manipulates this information to produce services.
- c. Like any service industry, banks produce in real-time.
- d. Banks are geographically dispersed.
- e. Banking services have rich variety.

To produce this variety of banking services at dispersed geographical locations and to gain the competitive advantage, banks have an equally complex business intelligence (BI) requirements. BI is a term coined for technologies and applications employed in data collection, access, analysis and information about an organisation's business. It refers to the use of several financial/non-financial metrics/key performance indicators (KPIs) to assess the present state of business and to assist in deciding future course of action. It is also understood to mean 'actionable intelligence'.

BI in Indian banking

In India, majority of banks began using information technology for management information services (MIS). The inflexibilities of Cobol programmes and batch processing were soon overcome by powerful desktop systems with rudimentary database systems, which allowed banks to analyse data, once it had been received in manual form

from branches, transcribed into machine readable formats and validated. Most of the regulatory reports were also produced in this way. These earlier initiatives laid the foundations of BI in banking.

Presently, BI tools are being used by banks for historical analysis, performance budgeting, business performance analytics, employee performance measurement, executive dashboards, marketing and sales automation, product innovation, customer profitability, regulatory compliance and risk management. However, all these BI applications cater to the needs of the top management in banks. The line managers have a different set of BI requirements, which differ from those of the top management. These requirements constitute 'Operational BI'.

Operational BI

Operational BI embeds analytical processes within the operational business structure to support near real-time decision-making and collaboration. This characteristic fundamentally changes the way how data is used, where it exists and how it is accessed. Observes Wayne Eckerson, director of TDWI Research, 'Operational BI merges analytical and operational processes into a unified whole'. This change is rapidly exposing the limitations of traditional analytical tools. Operational BI helps businesses make more informed decisions and take more effective action in their daily business operations. It can be valuable in many areas of the business, including reducing

fraud, decreasing loan processing times and optimising pricing.

Operational BI delivers information and insights to those managers who are involved in operational or transactional processes. For example, a loan recovery manager would do well to tailor the language of the demand notice or the phone call based on the total relationship of the customer (and maybe his family) with the bank.

Another important characteristic of operational BI is just-in-time delivery. The information needs to be delivered in near real-time (within minutes or hours) for the purpose of managing or optimising operational or time-sensitive business processes. The objective of operational BI is to reduce the time it takes for a line-of-business user or application to react to a business issue or requirement. This elapsed time is known as 'action time', a phrase based on a concept introduced by Richard Hackathorn. The business case for operational BI is based on identifying business situations where reduced action times can bring business benefits to an organisation.

For instance, the ability to detect and react more quickly to a fraudulent use of a credit card is a good example of how operational BI can provide business value. By analysing the history of fraudulent situations, the BI system can be used to develop business rules that signify potential fraud and operational BI can be used to apply those rules during daily business operations. The closer to

real-time the fraud can be detected, the less is the operational risk. However, not all operational BI systems need to be near real-time. Reducing action times to close to zero is beneficial only in specific types of business requirements such as the fraud example.

In fact, operational BI can be classified into being demand-driven and event-driven, the latter being more automated. If the action time requirement is a few hours, business users or applications can use the BI system for on-demand analysis and evaluate the results manually to determine whether any action is required. In the demand-driven case, it is the user who drives the BI system. But if the action time requirement is two seconds, then on-demand will not be suitable. In event-driven BI, business operations and the BI system drive the user. It is obvious that the implementation of event-driven operational BI is more complex than demand-driven BI.

transaction data as technically feasible.

In a sharp contrast to traditional BI in which pre-aggregation with optional drill down to detail levels is a norm, operational BI normally requires more of data granularity to address the needs of the specific operational function it supports. Traditional BI aims at a holistic view of corporate performance, while operational BI is process and user specific. Yet, some operational BI requirements do require aggregated data, such as the lifetime value of a customer, which is required for a directed sales call.

Operational BI is intricately connected to transactional business processes. The extent of this integration depends on the level of implementation. One could use it to generate operational reports to analyse processes, or monitor them using dashboards and scorecards. In these two levels there is not much of integration. In the other two

these systems, which are of critical value in an operational BI implementation. Another issue that it has to handle arises out of the disparate transaction systems in use in most of the banks. The variety of banking services makes it very complex and often impractical for a single software solution to handle all kinds of transactions. Extracting data from such disparate systems and making use of unstructured data is required to be handled by an operational BI system.

The high level of integration with transactional business processes, demand the same level of availability from operational BI implementations that transaction-processing systems have to provide. An outage of an operational BI application could have a direct impact on the organisation's ability to do business or to service its customers. Therefore, availability becomes a critical issue for operational BI applications.

Traditional BI vendors had built their products using proprietary architectures. While these architectures are ideal for strategic BI, they are not suited for operational BI. Because operational BI entails coupling BI applications with operation processes, a component-based, service-oriented architecture (SOA) is necessary to fully support operational BI. SOA flexibly and cost-effectively supports the midstream on-the-fly data collection and analysis necessary for operational BI. The straight-through processing requirements in the banking industry necessitate immediate risk analysis, which in turn requires an online BI capability.

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Data used for operational analysis is frequently accessed before getting loaded into the data warehouse. The latency in a traditional data warehouse implementation results from the batch mode in which it is populated. It is more suited for strategic applications such as historical analysis, risk management, performance management etc. But a dashboard needs to be as close to

levels where operational BI is embedded into business processes either to facilitate them (demand-driven) or to execute other processes (event-driven), it is embedded into the process.

Traditional databases and data warehouses do not take into consideration the increasing use of unstructured data; such as emails, telephone calls, letters, internal notes etc stored outside

Sanjay Mehta, CEO, Maia Intelligence, on operational BI

Banking, finance and investment companies operate in a diverse, highly competitive and unpredictable business environment. These companies will have to turn to operational BI to deliver crucial business information to managers, employees, customers and partners. Operational BI and integration technologies will help banking companies to respond to the challenge of the extended enterprise.



Key capabilities of an operational BI solution

An enterprise operational BI reporting solution must:

1. Accommodate thousands of users while being affordable in terms of software license costs.

Affordability has major implications for a BI reporting rollout. The solution should enable organisations to reduce total cost of ownership (TCO) of BI reporting applications, while ensuring that these applications can grow as business requirements change.

2. Provide flexible reporting that improves decision-making by a wide range of users.

The operational BI reporting software should provide executives, business users, and analysts with intuitive user-directed query and analysis capabilities. It should be easy to deploy, provide access to data locked in transactional systems, and leverage information from existing data stores.

3. Be able to access any enterprise data source.

Operational BI reporting solutions should manage all data in the organisation no matter where it resides - on web servers, legacy and operational systems, diverse data stores or applications. The implementation of operational BI reporting solutions should be capable of extracting data from major core banking solutions (CBS). The solution should be able to easily and cost-effectively capture and transform data throughout the enterprise.

Spreadsheet approach has pitfalls

At first glance, spreadsheets appear to be perfect for the reporting task but defects inherent in spreadsheets make them ill-suited for repetitive, companywide tasks. Errors are easily introduced in spreadsheets. In fact, a lot of time gets wasted trying to consolidate and reconcile spreadsheet-based plans and reports. Sometimes it results in so much delay that they are outdated by the time they are ready for distribution. The usage of spreadsheet leads to misaligned strategies, inconsistent priorities, ambiguous messages across branches and ultimately a lost opportunity to generate revenue or improve profitability.

Operational BI product enables users to avoid the pitfalls of calculation using cumbersome formulas and create more accurate strategic plans, reports, revenue projections, budgets and rolling forecasts.

How to deal with multiple data sources?

It requires data integration using operational BI solution optimised for security, performance, scalability and availability. As data volumes and sources increase banks need an enterprise-class operational BI solution that can help them access, transform and move any type of data. The challenge is in choosing a flexible and powerful solution that is easy-to-use. A good BI solution creates a single view of multiple data sources, reduces query time and ensures that the data is accurate and usable - even if outside the data warehouse.

Pre-packaged reports or a toolkit?

Pre-packaged reporting solutions from CBS vendors can only analyse data in a monolithic environment. Compared to these reports, operational BI solutions have two distinct advantages - they integrate with other applications far more readily and can draw data from more types of sources. But only the end users know how they are going to use the data. It is here that operational BI becomes useful. It allows end users to slice and dice the data on-the-fly. Initially, investments in transaction processing solutions appear to be the cost of doing business but once you implement BI on top of these solutions, you get fantastic return on investment (ROI).

Banks also need to collate voluminous data generated by transactions. Analysis and interpretation of this data provides BI for both strategic and operational purposes. This data, which was earlier locked up in manual books of the branches, is now dispersed over disparate systems. Even the most technology-savvy bank in India today, uses different software solutions for different products and services. A credit card issuing software or a retail loan origination system has weak to negligible linkage with the core transaction processing data. Product-centric approach has not been replaced by customer-centric approach despite the use of technology.

Due to this problem, most middle-level managers in banks have no other recourse but to import data from disparate systems into an Excel sheet for operational BI. While Excel is an excellent analytical tool, it does not have

emphasis on customer retention. The techniques and solutions of retail business have been put into banking business by BI vendors. Due to its specific nature, banking business requires BI for decision support.

Banks have attempted to develop specific internal BI solutions tailored for specific purposes such as classification of advances and provisioning requirements in the past, and now for probability of default and loss given default estimation. Similar exercise of data collection and analysis of foreign trade accounts has since been undertaken to minimise the exchange risks. Other specific purpose solutions relate to asset liability management, anti-money laundering etc.

Now that most of the major banks in India have adopted centralised transaction data processing, popularly known as CBS which means both 'core banking solution' and 'centralised banking

transaction processing systems. This poses a formidable challenge for BI implementation in these banks. And if that is not enough, there are other challenges to cope with. A core banking solution, by definition, claims only to deal with core banking transactions. It does it using a centralised database, yes, but does not cover all banking transactions. In other words, a CBS is not to a bank what an ERP solution is to the manufacturing industry.

It helps improve service delivery for better customer service, supports online transaction capability offered by alternate delivery channels, and enables anywhere, anytime banking. It also automates tedious tasks such as interest application, standing instructions, charging fees, and reconciliation of transactions. However, it still remains to be seen what and how much role it can play in providing operational BI.

Operational BI proves a smart investment from both the business and technology perspectives. By taking the guesswork out of operational decision-making, banks can link decisions directly to critical business information and make decisions on-the-fly throughout the enterprise.

Operational bankers of the future will need real-time data to do immediate risk analysis for each transaction. Those decisions can be based on information pulled in from a wide variety of data sources, both structured and unstructured. By applying analytic solutions at the operational point of pain itself, banks can derive immediate business advantages. ■

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support for data consistency across the enterprise.

Technology-led operational BI is sales-focused, that is acquiring a new customer or selling another product to an existing customer. It does not place an equal

solution'. Except for a few private banks and major foreign banks, bringing all branches under CBS is still a distant dream. Till this complete coverage happens, such banks in India, most of them being large public sector banks, will have to deal with multiple