The great data challenge

TD Bank Financial Group is leading the way among Canadian banks in its pursuit of Basel II readiness. What approach and architecture is it adopting and what have been the main hurdles? Data quality is at the centre of much of the challenge.

While their US counterparts have wavered and resisted, Canadian banks have had to press on with meeting the requirements of Basel II, with timescales becoming ever tighter. The country's second largest retail bank, TD, is leading the way, moving at present from what associate vice president, corporate technology solutions, TD Bank Financial Group, Simon Barkla, describes as the project phase to the operational phase. There is still a fair way to go and there have been plenty of challenges along the way, both technical and business-related, but the bank would look to have a clear idea of its strategy and the components to underpin this.

The Group is the tenth largest in North America, has 50,000 staff and 14 million customers. To add to its Basel II task, it has a major and growing retail presence in the north eastern United States via TD Banknorth. In Canada, it spans retail banking, wholesale banking – typically targeting large corporates – and, via TD Waterhouse, wealth management. It also has a fairly international presence beyond North America.

TD's Basel II project kicked off in around October 2002. Barkla believes that the Group is at or near the front of the pack among North American banks, with the assertion backed up whenever he speaks to other banks, vendors and regulators. 'I kind of feel we are pioneering in this,' he says.

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Simon Barkla, TD Bank Financial Group

That pioneer role means that TD has been grappling with the issues longer than most. And in Barkla's opinion, the biggest issue of all is data quality. 'Having access to quality data is the single most important aspect of Basel II. It is truly what will make or break your Basel II implementation. It has stepped up the requirement for quality data beyond anything anyone had thought of.' As a result, he feels every bank now needs some form of a 'data steward'.

The data challenge is exacerbated when dealing with historical data, some of which might have been only available via paper-based documentation. It is also complicated by the fact that the data resides in multiple sources. On the wholesale banking side alone, there are something like 38 source systems, including a fair few packaged systems (Calypso is being implemented at present) and a range of in-house developed systems; there are also 15 additional source systems on the mid-market commercial banking side. There have been changes to a lot of these systems to collect the necessary Basel II data and 'connections between systems that were not required prior to the commencement of this project'.

Toronto's packed banking district: CIBC (left), TD Bank Financial Group towers (centre and right) and RBS in the background

The evolution of the risk architecture adopted by TD commenced with an enterprise-wide gap analysis using the Basel II Accord and the Qualitative Impact Study III as a guide. This identified the requirement for three primary data stores, mirroring the bank's wholesale, commercial and retail make-up. There is a datamart for credit risk on the wholesale banking side; Peoplesoft's Financial Data Warehouse for commercial; and a mix of sources for retail. In fact, in addition to the datamart projects, a dozen or so other projects have been undertaken since 2003 to meet the Basel II requirements, including borrower and facility risk rating initiatives for both commercial and wholesale banking, and a more structured and data intensive approach to parameter modelling for corporate assets.

The three datamarts feed into an in-house developed 'load manager' staging layer where the data is transformed into the formats required by the bank's chosen Basel II solution, Financial Architects' FinStudio. The data is passed through to FinStudio, with calculations and reports produced from here. TD is not the only North American bank to opt for the Belgian supplier's solution, with another Basel II pioneer, Bank of New York, having done so as well (see case study, IBS, November 2005). While TD has put a lot of demands on Financial Architects and FinStudio, says Barkla, the relationship has been a good one.

There was what Barkla describes as a 'pretty rigorous' selection process, commencing in March 2004.

TD then engaged in demonstrations of the different solutions which quickly knocked out around half of the vendors. The bank had already gone through the buy versus build debate, had decided firmly on the former, but a number of the vendor propositions were deemed to fall into the latter category. The short-listed vendors were then asked to perform capital calculations against internally created test cases and at that stage Financial Architects was the only one to replicate the correct results. Subsequent internal sponsorship issues and then contract negotiations meant the deal was not finalised until November 2004. The project commenced in January the following year. CapGemini was initially involved in the project but this involvement was cut short in October, at which point the bank decided to work directly with Financial Architects.

The Belgian company had what Barkla describes as the 'nucleus' for what was needed for Basel II, with the requirements themselves still unclear in some areas. A lot of the fleshing out of the platform was done jointly by the bank and supplier. While there had been initial concerns about working with a relatively small, distant supplier, the partnership has worked well. The bank has had Financial Architects resources on site since the beginning and continues to hold twice weekly conference calls with Finarch's senior management team in Belgium. The supplier's staff have been 'very available', says Barkla, and it has understood the importance of TD as a reference customer.

What have been the main hurdles? Non-financial reconciliation of the underlying data is a particular headache. The initial project plans had outlined full reconciliation by 31st July; the plan has since shifted out to 30th September.

There are a number of initiatives to try to consolidate the multiple data warehouses, with these having sprung up over the years in different business units for different tasks. Barkla favours a single physical data store. 'There is a huge overlap between risk and finance, so one would be ideal.'

That would be a pretty large data store for a bank the size of TD but Barkla feels the single store is a long-term possibility: 'We are looking five years out'. His view is that a 'federated series of data warehouses' is more realistic but, either way, the bank needs to stop the proliferation of data.

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It has to adopt a singular approach to managing data, with well structured governance and a well managed meta data dictionary. So, for instance, there would be a single set of meta data for mortgages, with this available to everyone. The bank looked closely at IBM's long-standing IFW/BDW data models or 'the Dublin model' as the bank came to call it – it resides with IBM Ireland. However, it was deemed to be expensive and would have needed extending and reshaping. TD also considered the Peoplesoft-derived financial services data model. In the end, it was felt that off-the-shelf models were not worthwhile, so it will be a wholly in-house effort.

The post-closing month-end adjustment process is another challenge, with the source system needing to reflect the changes made prior to finalisation of the regulatory reporting. The fact that the datamarts feed other reporting systems as well as contain the data that derives the parameter calculation inputs means that these have to be kept synchronised as well.

In terms of implementing the process, TD has instigated a 'Business Readiness Framework'. Says Barkla: 'This is the only project I can remember that actually spans every business, it is truly enterprise-wide'. There is a need to persuade business users to take ownership of their parts of the project. 'It is always easy to point the finger at IT,' he says. Those people within the bank who know Basel II and credit risk clearly have full-time jobs. Basel II is a full-time job in its own right. The Framework includes training staff for new roles and responsibilities. It is also difficult to find resources in Toronto. All of the big banks' offices in this city reside within a 100 yards or so of each other.

One other major part of the Basel II task is stress-testing. Regulatory capital issues need to be built into a bank's enterprise-wide stress tests. TD does such tests on a regular basis, to model the effects of anything from bird flu to a commodities crisis. The stress-tests should encapsulate client balance sheets, counterparty income statements, and ultimately the impact on the bank's capital requirements.

All of the challenges continue to be met against the backdrop of tight deadlines. The US presence also throws up the parallel demands of Sarbanes-Oxley and the need to meet the needs of 'Basel IA', the US take on credit risk ahead of any agreement on full Basel II.

As with a lot of banks, TD is highly focused at present on meeting the immediate Basel II requirements, with a full risk architecture starting to evolve, but with this only coming to full fruition in the medium and long-term, potentially in the form of that single, massive data source or at least, if spread across multiple sources, still meeting the common rallying cry these days of 'one version of the truth' across the entire Group.

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