RISQUÉ BUSINESS

It's not easy being an American systems vendor in Paris. Maureen Duffy **finds how suppliers adapt their products to satisfy some very demanding clients**

Just over two years ago, French spending on risk management equipment was only one-tenth that of the Japanese. But the situation has changed. "Virtually every major French bank is working on developing a global limit system," says Hervé Sitruk, a Paris-based consultant. Sitruk produced a confidential report on technology in French banks for the government's Conseil national du crédit (National Credit Council).

Derivatives are still fairly new to France: Matif (Marché à terme international de France) didn't start trading options until 1988. And foreign exchange trading was illegal until 1986, says Salim Eddé, a partner in Murex, a Paris-based risk management software firm. "By comparison, currency trading has never been forbidden in the UK."

But even though they are relatively new to derivatives, French firms are sophisticated players. "There are a lot of quants [quantitative analysts] in Paris," notes Patrick Woehrling, managing director of French software vendor Login. "French firms' strength in derivatives is probably greater than their size would justify. But they're not more advanced in systems." Many firms still have central computer departments to which traders must turn for new programming.

The way staff are chosen reflects academic elitism. "The French hire from the top business and engineering schools," says Murex partner Maroun Eddé. "It's not like Great Britain, where anyone with a good gut feeling can be a dealer." These technological high-fliers, he says, are being employed to run Unix workstations, which appeal to French firms because the system was created by Berkeley academics and Bell Laboratory scientists rather than software firms.

Anyone trying to break into the French market has to take this approach into account, which can be somewhat daunting. "I guess you could look at Descartes," says Georges Bory, director of marketing for the Paris office of Quotient, an American software supplier. "His approach was very structured. He broke problems into pieces. The French are trained to do this – they do it with derivatives."

David Robson, a consultant with Price Waterhouse Management Consultants in Paris, agrees it's a tough market. "French clients want to know about not just the programs, but the formulas for them. There's a long lead time until a deal is signed – at least a third longer than in the US."

"The French hire dealers from the top business and engineering schools. It's not like Great Britain, where anyone with a good gut feeling can do the job" – Maroun Eddé, Murex

Christophe Chazot (left) and Patrick Claude of Barclays Bank Paris: perfected a new reference yield curve to improve the pricing of short-term swaps based on French indexes

Crédit Agricole uses a range of software products, including some from Devon Systems. Gérard Pellieux, the bank's markets and treasury engineering manager, says, however, that as recently as last year Devon representatives seemed to lack sufficient understanding of their own products, when it came to forex and interest rate financial product modules. "There are too many questions they can't answer," he says. "Maybe there are people who know ... maybe they're in Philadelphia [Devon's headquarters]." A spokesman for Devon, which has supplied software to at least 10 banks in Paris, told *Risk* it was not company policy to comment on an individual client matter but that Devon does support its products.

C·ATS Software, in Palo Alto, California, has started to receive enquiries from French organisations. "There seems to be quite a movement in the French market among firms that want to revise their systems," says Jerry Goldman, C·ATS' managing director. "Either they have very old systems or many have Devon systems in the front office and have had for some time."

He says customers are motivated by a desire to move away from mainframe environments or to use more structured, complicated instruments. "Older systems are too slow or their capacities too low to keep up with increased volumes. It seems just

loaded with software written by the now-defunct Drexel Burnham Lambert. This has given Garabiol another criterion for vendor selection – its ability to stay in business. The current program has to be continuously manipulated to accommodate French accounting methods. Garabiol wants to replace it with an on-line global system and is considering Quotient's Vax-based CMARK, because he already uses its TMARK front-end software for derivative pricing, hedging and portfolio analysis. Compatibility is also important and Quotient can interface with his Ibis back-office system. Murex had an "excellent front office," says Garabiol, "but it had no back-office side to offer".

However, Garabiol must also replace Ibis and will probably choose Quotient again: "Quotient's OMARK has the capacity to merge a global book, to link up with the front end and to do complex calculations on options and interest rates." Garabiol says he picks up useful product knowledge from traders, who use different systems as they move from bank to bank. "I have six or seven processing people working under me and they have a good idea of the capacity of suppliers."

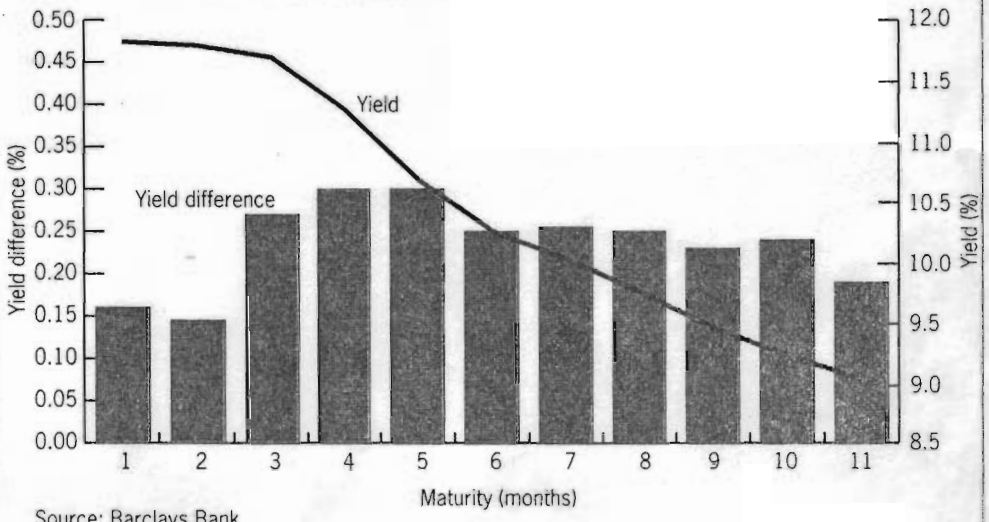
One major flaw in Ibis, an American product, is that it cannot manage T4M (taux moyen mensuel du marché monétaire), the interest rate index derived from the monthly average of the TMPs (taux moyens pondérés), overnight interbank loan rates weighted by volume, and other French indexes. France is an exception in that T4M is the popular floating-rate index.

In many other markets, Libor (or its local equivalent) is the norm. The Devon system, which Garabiol uses to enter option data for settlement purposes, has the same flaw. For caps, floors, and short futures on French options, Garabiol uses in-house software. "I have yet to find any system that makes accurate calculations on the French system," he says, with the exception of one package that couldn't link up to the other systems. "Quotient should be able to do this."

The ability to work with the French reference rates is important because firms trust averaged daily rates to give a more accurate picture for short-term instrument pricing than one-time snapshots of an indicator. But getting existing programs to work with these reference rates is another story.

Standard international software values swaps traded between the first and 15th of the month as if they were traded on the first; those traded between the 15th and 30th are valued as of the first of the following month. With long-term instruments (three years or more) the gaps from one period to the next are negligible because they level out over time (although extreme volatility in the short-term market has been known to influence long-term prices).

Difference between standard and exact methods



Source: Barclays Bank

Distortion of short-term rates

Maturity	Prices (%)
1-month TMP swap	11.375
3-month TMP swap	11.29
6-month TMP swap	10.24
9-month TMP swap	9.649

Maturity	Conventional method (%)	Barclays' method (%)
3-month TJJ swap	11.132	11.13
6-month TJJ swap	9.96	9.964
9-month TJJ swap	9.30	9.274
11-month TJJ swap	8.636	8.654

Source: Barclays Bank

The problem is most obvious in short-term swaps, especially when the valuation moves from the 15th to the 16th, says Quotient's Bory. "You have a big jump in valuation, which is reflected in your P/L being wrong, unless your system recognises the anomaly," like Quotient's TMARK.

Users are also frustrated when they try to input the daily averages. Programs not written for the French market reject input on prior cashflows, such as for the period from the 15th back to the date of the swap. Garabiol's Ibis is one such system. "All the architecture of the system is against accepting that information," he says.

At Barclays Bank in Paris, Patrick Claude and Christophe Chazot wrestled with a related problem last year. Claude, responsible for managing trading activity risk, and Chazot, who develops new swap products, wanted to avoid price inaccuracies in the bank's TMP, TJJ (taux au jour le jour) and Tag (taux annuel glissant) swaps, which are hedged with T4M swaps, and any resulting fluctuations in the marked-to-market rates of the short-term book. The commonly used reference at the time, the zero-coupon yield curve, "did not allow for the French specificity", says Chazot.

So Claude and Chazot worked on the swaps' pricing reference, the T4M yield curve. Accuracy was also important to

SHOPPING IN PARIS

Gérard Pellieux is a tough customer. As market engineering manager for Credit Agricole's markets and treasury department, he knows what he wants, asks a lot of questions and checks the answers with his colleagues.

Pellieux can't be rushed. He started shopping for a new front-end system two-and-a-half years ago and his short list is now down to two: Renaissance's Opus OTC derivative software and "Company X". Pellieux reveals nothing about the latter, prompting some sources to speculate that Company X may be Crédit Agricole. An inside project perhaps, just to keep his own technicians jumping.

Pellieux's goal is to consolidate market risk in real time for three of the bank's main centres – Paris, London and New York. He says he may add Tokyo two years after the first task is completed. Another system, for limits, will manage credit risk so client limits can be moved between countries. The centres will feed back position data to a global system based in Paris, while back-office operations will remain local, where they can accommodate varying regulatory requirements.

However, for the short-term, Pellieux's priority is volume – paper-generating transactions, foreign exchange and money market deals. For this he wants a "turnkey solution", by which he means the vendor should do all the work and hand him the completed system. "Otherwise," he says, "we may as well do it ourselves." After this system is in place, Pellieux will probably instruct his team to build derivative trading solutions in object-oriented programming system (Oops) languages or in Unix, as modules, and bridge them to the turnkey system.

The system must handle commercial paper, certificates of deposit, FRAs, interest rate swaps and long-dated instruments. It must cover counterparty and P/L sensitivity exposures. And it has to have reporting functions.

So far the search for a system to handle OTC foreign exchange and money market transactions has included:

■ **Remos** (Resources Management Online System) from Bankers Trust Financial Services Information Systems. Pellieux describes this system as "expensive like a Ferrari, and its money market and forex systems weren't homogeneous because they were built by two different teams".

Pellieux wants to consolidate interest rate products for exposure purposes. He could have done so using Remos for the money-market system, but not for the interest rate swaps because "the sensitivity analysis was not developed enough to consolidate it properly. This was a year ago and the ability to compute for the net present value of cashflows either from forex or money market modules was unavailable. The deeper we went, the more holes appeared". Mark Michener, director of sales and marketing for Remos, was unavailable for comment.

■ **Storm** (Strategic Treasury Online Risk Management System) from Intelcom Data Systems, New York. Pellieux found the forex capability to be good but the money market side lacking when it came to consolidating the exposure position. Also, he worried that the company might be too far away to respond quickly if there were any problems. He is also wary of smaller companies which may "disappear".

When first contacted, Geronimo Rodriguez, Intelcom's executive vice-president, acknowledged that foreign exchange functions were Storm's forte and that, since Pellieux's review, it has added flexibility to the money market side of the product. He later told *Risk* that Intelcom had established an agreement with a Paris distributor to serve that client base and was able to "respond quickly to client requirements" precisely because it was a small company.

■ **IDSS** (Integrated Dealer Support System) from Forex Advisory Services, Chelmsford, England. "Good product and price," says Pellieux of this Unix-based solution. "The functionality was good, but its integration into the dealing room wasn't turnkey." Pellieux knew Banque Nationale de Paris (BNP) had the system and had had problems with it. He noted that the distribution technology for getting data to the workstations was "a little old" but he might have worked out these problems if internal support for expanding his bank's forex trading hadn't waned at the time.

Jon McNerney, director of sales for IDSS's new owner, Investment Intelligence Systems (IIS), says: "Unfortunately, the combination of Forex Advisory Services' fiscal problems and Credit Agricole's shift of project focus made it difficult to fulfil the system's turnkey requirements. IIS recognised the value of IDSS and has since dedicated significant resources to a wide range of distribution enhancements . . . pleasing the current clientbase – including BNP."

■ **Opus** from Renaissance Software, Los Altos, California. Pellieux calls this "a swap product that can be adapted to the cash products." It is "definitely in contention" with the mystery company.

At present, Pellieux's team uses a range of products. His colleague Christophe Lauvergeon, head of equity and commodity derivative trading, worked with Murex at another company and liked it. So they got Murex for forex OTC derivatives, interest rate derivatives traded on Matif, and the CAC-40. (It is not a turnkey solution.)

"Four years ago, Devon was alone in the market and could do what it wanted," says Pellieux. "Now there is Quotient and Murex. "Devon can't handle the cost of carry because the interest rate product module doesn't compute the cost of carrying a position automatically. The trader must key in data for any interest rate-based product. Other software automatically computes the cost of carrying these open positions, sensing their presence and presenting them to the trader to assign a value or default to the overnight rate.

"It's an important part of market risk. It's not enough to buy and sell: you have to know the cost of financing the position."■

about every French bank has a project going on or is deciding what to do next."

Murex's Maroun Eddé says that Sun Microsystems dominates the workstation market. "But IBM, with its RS6000 (incorporating Reduced Instruction Set Computer technology), is becoming more popular. The workstation craze has been fed by aggressive sales techniques, considerable price reductions and the significant power advantage of Unix over Microsoft's DOS." He warns that Unix requires a sizeable support staff to maintain its platforms. "The cost hits later and keeps on because there are no standard programs for Unix, as there are with DOS," says Maroun. "You have to create them."

Consolidation of positions can mean a return to the main computer departments if the systems serving different trading desks aren't integrated. Murex supplies exposure models for each product and builds the interface to feed into customer risk management systems. "We developed a lot in-house because it was difficult to create all the different interfaces needed to link our own systems to vendor packages," says Dominique Garabiol, director of risk management at Indosuez, Paris.

Indosuez's increasing international activity, which now accounts for three-quarters of its business, has heightened its need for a global risk system. The bank also plans to widen its bond exposure (mortgaged-backed securities in particular), so Garabiol has decided to install Bloomberg's risk management system for his 350 dealers. He expects the system to get the firm up to speed faster than if it were to build a model in-house. Garabiol plans to be able to monitor dealers' positions in 24 countries from a Bloomberg terminal in Paris. Traders will feed their bond deals into the system, which calculates risk exposure. However, Garabiol won't use the Bloomberg system for his risk management position, because his Ibis system (supplied by IBM) has in-house calculations that take a broader view of exposure than he'd get from the Bloomberg bond system alone. Bloomberg provides exposure information to feed a Digital Equipment, Vax-based risk manager.

Unfortunately, Garabiol's Vax system is

The ability to work with the French reference rates is important because firms prefer averaged daily rates for pricing short-term instruments

Barclays because errors in the pricing curve can affect the netting of Tam (taux annuel monétaire) swaps and cause unexplained swings in the risk management system, explains Chazot.

The men struck gold when they perfected a new curve, using a matrix methodology similar to the one used to create a long-term zero-coupon swap curve. The "real T4M zero-coupon yield curve" takes into account the fact that the T4M swap has three payments within its three-month term, making the swap value unknown until the end of the term. Most systems in Paris use the T4M prices directly as a straight zero-coupon yield curve. But the curve is based on the Libor swap and so only calculates for a single payment in the three-month term. Consequently, the zero-coupon curve can only approximate the value of the T4M. Chazot and Claude say that their method allows the correct pricing of all short-term swaps that use French indexes.

The "real curve" has also produced more accurate prices for netting Tam swaps, says Claude. Netting Tam involves calculating the net present values of the fixed and floating legs. The fixed leg is easy because it depends on the known cash-flows. However, the floating leg contains the future coupon, whose value is unknown until the end of the coupon period. "Most back-office systems in Paris compute the net present value of the Tam leg as accrued interest, calculated from the last coupon date to the present date. Our solution gives us the real T4M forwards, which allows us to compute the expected Tam coupon, which provides the correct up-front payment for the netting of the Tam leg."

However, says Claude, "because French banks don't necessarily use the same methodology for computing this accrued interest figure, it is sometimes difficult to reconcile netting positions." Barclays now has to convince counterparties that its price is the right one. If the counterparty offers a different price that is in the bank's favour, Claude says, Barclays accepts. When the counterparty's price isn't better for Barclays, the bank reserves the right to decline the net, provided Barclays hasn't made some prearranged netting commitment to the counterparty.

Claude and Chazot shared their T4M zero-coupon yield curve with Quotient, which added it to its TMARK pricing software. Six interbank brokers are currently using the T4M zero-coupon yield curve on TMARK for pricing long- and short-term T4M caps, floors and swaptions. Ironically, Barclays uses the formula on an Excel spreadsheet instead of TMARK. To use the curve for short-term swaps pricing on TMARK, it would have had to add an additional conversion formula to change the pricing screen. Quotient chose not to invest in redesigning the screen because the system meets the needs of most of its user base, says Bory.

For example, Citicorp in New York is using the upgrade to trade French domestic Tam swaps. Bory claims mispricing is eliminated and true arbitrage opportunities are clearer, giving firms that use the technology an edge.

C·ATS' Goldman says his firm has developed a product to support the Tam swap which the firm will introduce as an upgrade to its Cash Flow Organizer (CFO) accounting module. CFO customers, mostly small institutions, will get the Tam support as a routine upgrade. They need a strong "reset engine" to cope with the daily rate changes, says Goldman. "It's similar to some commercial paper pricing in the US in terms of the required resets."

Meanwhile, the specific needs of French users continue to challenge vendors. In January, the Banking Commission's Swaps Rule came into effect. According to the directive, all swaps must fit one of four categories:

- open or speculative position;
- micro hedging – such as a swap linked to a bond;
- hedge – a balance sheet position that may be used for asset/liability management;
- market-making transaction.

The real contest is expected to be the quest for a back-office system that can signal changes in the regulatory criteria by which a swap is classified

The rule also governs the way in which swaps are to be moved from one category to another. No one person can be responsible for monitoring more than one class of swap. But the real contest is expected to be the quest for a back-office system that can alert the department to changes in the criteria by which a swap is classified and which will be flexible enough to allow the operator to change the swap category without too much fuss.

The purpose, says Price Waterhouse's Robson, is to force banks to think about organising off-balance sheet activity as they would on-balance sheet items and to analyse the positions in this way. "Off-balance sheet positions are frequently bigger than those on the balance sheet."

As in the US, the threat of tighter regulation of off-balance sheet operations has prompted increased risk control. The Banking Commission is considering extending its risk division ratios, which limit the credit lines a bank can extend to a single customer, to cover off-balance sheet counterparty credit. And in 1990 the Ministry of Finance urged banks to review their risk procedures. Guidelines such as these inspired Jean-François Casanova, the director of Barclays' capital markets activities, to create complementary roles such as those held by Claude and Chazot: trading activity risk manager and swaps development engineer. Says Casanova: "I want to be confident that what we do today won't become a time bomb."■