

Title : Reaching Out
 Source : Java frees Habib bank from single vendors and fat clients
 Dated : September 1997

NEWS FOCUS

Java frees Habib Bank from single vendors and fat clients

Efficient IT infrastructures are critical to a bank's fortunes. In this month's focus, ACW looks at how bank's are using IT to help improve internal processes and how the region's more far-sighted institutions are using it to give them a customer service edge.

When Habib bank decided in 1996 to shift its banking applications over to Java, the move was more of an evolution rather than a revolution. The bank had already decided, way back in 1994 and well before Java arrived, to throw out its COBOL and C/C++ applications and move over to a platform independent model in which applications were stored and distributed centrally.

At the time, Habib evaluated application development options from Oracle and Sybase, but found that they would tie the bank into those companies' environments. The bank also wanted to be able to run its banking applications on its existing base of 286 PCs. It was impossible with those development environments, which demanded huge client resources. In the end, Habib Bank came up with a very innovative solution: to write Reza Habib: "We looked at Java and fell in love with it. It was just the tool we needed."



its own development language and compiler. Siraj Chaffar, manager, Habib Bank explained all when ACW was invited into Habib bank's IT department last month: "We decided that we would write the front end so that it was not tied to an operating system, to a particular vendor, or to a particular environment. So what we did was write our own programming language, which we called hPLUS, and we wrote our own compiler. "We were successful and the application is running. There are more than a thousand options written in the language, and the system can run on any machine upwards of a 286. There were tools we looked at - Oracle has

SQL Forms and Sybase has Power Builder - but none of them are as scalable as our system. They don't run on a 286, plus they are tied to a particular environment." Using hPLUS, Habib bank put together a comprehensive banking solution, which it also decided to call hPLUS, consisting of 55 core modules and 1000 options. The system has been operational in Habib's branches worldwide since 1995.

Then, along came Java with its promise of true cross platform independence. "We looked at Java and fell in love with it. It was just the tool we needed," said Reza Habib, chief executive and VP, Habib bank. "The advantage for us in future is that we won't have to think about enhancing our own language. Java has become a standard, so we will take care of that," he added. Last

year, work began on porting over hPLUS to Java. "We feel that with Java, we are not tied to a particular environment or to a particular client. The slogan that Sun has written once, run anywhere' is pretty much true," added Siraj Chaffar. "Also, we continued



Java helps Habib Bank free itself from fat clients

didn't rewrite the application in Java, that would have taken years. We just wrote a program that converted hPLUS from our programming language to Java. That's why we've been so fast in doing it." Rather than working with development tools and classes, Habib Bank has used the Java Development Kit (JDK) directly to develop hPLUS. "We have not used any of them [third-party Java tools] until now. We have to live with the fact that the JDK is changing rapidly. The tools also need time to mature in a more stable environment," Ghaflar told ACN. JDK is a set of classes supplied by JavaSoft that comes bundled with the Java Runtime environment (JRE).

"JDK classes are used to write Java programs - in fact, they could be thought of as libraries in other environments. Meanwhile, we have come up with an application architecture of our own, called Comet, and we are using it to develop the application logic. The programs we converted from hPLUS programming language to Java fit into the comet architecture specifications," said Ghaflar.

Ghaflar said that he had personally experienced no problem picking up the language because of its similarities with C++, but added that there were advantages and disadvantages. "The runtime environment takes away a lot of headaches: memory management, for instance, is a problem in C++," said Ghaflar. However, he said that more could be done to improve Java's performance.

Besides the peace of mind of working with a big name vendor, moving hPLUS over to Java means developers can add GUI functionality to what are currently character-based applications. Right now, the Java implementation of hPLUS is in the final testing stages. However, moving user applications to GUI-based applications presents its own set of challenges, Siraj Ghaflar explained. "We now have people testing it out, giving us feedback on how they feel about the application. There are some issues. For instance, people are not used to using the mouse, they are using text-based applications," Ghaflar told ACN.

PCs bite the dust? "If you look at the teller, he doesn't need this mouse. Most of the users are at the lower end:

they don't need all those fancy screens. We have to sort out how easy people find the interface and we're getting



Siraj Ghaflar: "Now we believe a technology is there [Java] which gives logical answer to people's problems."

In Habib bank's existing hPLUS system, all that sits on the client device is an executable file, called hPLUS.exe. When the user chooses an option, such as debit and account, the compiled program is downloaded from the back end to the front end and is executed using hPLUS.exe. One thing that this could mean is more strain being placed on the network, with potentially hundreds of client devices all dialling into the server and sending off applications and data.

Ghaflar said that two things will ensure that this is not the case. Firstly, the various components of hPLUS have a footprint of no more than a few bytes each, meaning little stress on the network. Secondly, when the Java version of hPLUS goes live, Habib will have a series of secondary application servers in place. In each bank branch, Habib bank will install what it calls a "Version Server."

Each client device within a branch will download hPLUS applets from that version server, never directly from the central server, a Sun Enterprise 6000 system, located at Habib's head-quarters. All changes made to hPLUS are carried out centrally and copied to the Sun Enterprise 6000. In order to ensure that those changes are then replicated to the Version Servers, Habib will install a "Version Monitor". When we change a program, we change it on the Sun application server. When we make the change there it informs the Version Monitor. Whenever the Version Monitor knows that there is a change, it informs all the version Servers in the entire global network," Ghaflar told ACN. So although everyone will be using exactly the same



applications, the networking problem is reduced because people are not directly accessing the main host. All customer data, however, will be maintained on the Enterprise 6000 server in a Sybase database. Client devices will download the data across 64-kbit/s leased lines. Version Servers will not contain any data; that will remain central for security reasons.

Once the entire project has been completed with Habib Bank, the company may look to profit from hPLUS commercially. "It is beginning to look very commercial," said Reza Habib. "Since we are a niche player, we don't compete with major banks, so it would be quite possible for us to market it to them," he added.