A wake-up call for mainframe data centers

It seems as if the world is finally waking up to the impending data center skills problem. A large proportion of mainframe specialists are nearing retirement, and the hordes of young recruits ready to take their place have somehow failed to materialize.

AFCOM should take some credit for bringing this issue to public attention. Back in early 2002, AFCOM and the Data Center Institute started to put educational and research programs in place to gauge the true extent of the problem and start to put 'big iron' skills back on the curriculum with the help of educational institutions such as Marist College.

At that time the so-called Millennium Bug was still a very clear memory, and IT managers were well aware that a small army of COBOL and Assembler programmers had been drafted out of retirement during 1998 and 1999 to examine tens of thousands of lines of code and pinpoint offending two-digit date formats. Surely that was the wake-up call the industry needed to the fact that certain essential IT skills were beginning to disappear!

On the other hand, I'm not convinced that the world's data centers are about to grind to a sudden halt (as we feared they would on January 1st 2000) as the operator and sys prog population diminishes. There are still plenty of willing and able data center professionals around who understand the operational complexity of the world's most business-critical mainframe systems; but you can't deny there's an imbalance in the commercial IT environment that needs to be addressed – and soon.

IBM is all too aware of the problem. At the SHARE user conference in August, it announced its zNextGen initiative, a combination of training investment, employment opportunities, and professional communities that will lead to the creation of 20,000 new mainframers by 2010. They will join or replace an estimated 90,000 large systems specialists worldwide. It's interesting that 10,000 of those newbies will be in China, but that's a topic for another day!

This is not Big Blue's first attempt to build a new generation of large systems enthusiasts (though it is certainly the best publicized). Ever since the publication of the *Mainframe Charter* in 2003, the company has been working behind the scenes with its Academic Initiative and zSeries Scholars' Program to fund appropriate courses and to put universities and large businesses in touch with one another. The success of Marist College is well known but there are many other examples, such as the University of Arkansas, which recently benefited from $7 million of IBM investment to build up its mainframe educational resources, and the strong alliance that has emerged between the Royal Bank of Canada and Mohawk College.

Making educational resources available is one issue, but there are other problems to tackle. Even though the mainframe platform is now more powerful and technically diverse than at any time in its history, the upcoming generation are very skeptical that the future lies in large systems. Working with Java-based applications and SOAs on the mainframe may be attractive enough; supporting legacy apps and maintaining low-level MVS internals is another matter entirely.

For the computer science student looking for the most exciting career path, it's all a question of perception. IT promises a range of exciting possibilities for the newcomer (though not all of them deliver on those promises by any means), and the new graduate might need some convincing that, by following previous generations into the glass house, he is not closing off his options or following a dead-end path. Ironically, mainframe data centers offer just the opposite in today's less predictable economic climate. As Clipper Group's Mike Kahn commented in a recent *Computerworld* article (talking about his recent discussions with a large number of computer science students), "They were all talking about job security and getting a good job and not being laid off in three months. There is a lot of security in large systems. Mainframes is a place where you're needed."

The other problem is that many data center skills – particularly those on the operational side – simply cannot be taught in universities and colleges. They can only be learnt through on-the-job experience, and even the high levels of automation that are now commonplace with large systems are no substitute for years spent at the management console. Many user organizations are now looking at a widening gap in their data center staff profile, between the mature professionals who have been in place for some years and the new recruits who are now coming on-board. The lack of relevant expertise in the twenty-something and thirty-something age range may cause some serious technical continuity issues for enterprise data centers in the next few years. If your company has yet to consider the implications, now would be a very good time to start.