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Whither the AS/400?

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It is a question on the minds of several healthcare IT managers, and their counterparts in other fields of business. What is the future of IBM's AS/400, a workhorse in hospitals and other enterprises across Europe? In spite of a blizzard of technology and marketing firsts, IBM itself seems to be seriously reconsidering the future of this robust but veteran system, born two decades ago.

When one of the world's largest companies begins to serially rename the same product, it is a sign of challenges ahead. The AS/400, which was born 20 years ago as the Application System/400, proved to be one of the biggest success stories in the history of computing. The first computer to use a 64-bit processor, the AS/400's accomplishments, speed of take up and durability exceeded the expectations of IBM's own marketing wizards (a rare occurrence in a profession whose raison d'etre is to shoot metres over the bulls eye). The AS/400 was the first off the- shelf IT system to attain the highest security rating from the US National Security Agency (the CIA's electronic Big Brother, last in the headlines in 1998 when the European Parliament accused it of wiretapping phone conversations).

What's In a Name?

Since 2006, IBM has called the AS/400 the System i after shrugging off a rebranding exercise dating back to 2000, when it had been renamed as the iSeries (as part of the US giant's e-Server initiative). In April 2008, however, IBM announced yet another rebaptism, after integrating System i with the System p platform to a

new product range called IBM Power Systems.

Robust and Serious

For IT veterans, the key advantage of the AS/400 was that it was built for programming applications – robust ones (a reason why one of its biggest customers has been the US military). Making this possible was an integrated relational database management system and seamless set of development tools, alongside a virtualised hardware with rapid access to its DB2/400 database and its RPG (Report Program Generator) programming language.

Many IT managers at large institutions (hospitals included) swore by the AS/400, given that RPG was by far one of the best languages to devise and implement business rules and create applications closely tailored to their own specific business requirements.

As with much in IT, there are strong views and camps about the future of the AS/400. Some believe that the AS/400, though venerable, is still popular. 'Serious' users, they say, prefer what works, and explain the lack of any new applications precisely because they look for new tools to enhance productivity, or provide a new feature for system administrators – or top management, especially those (and there are many at such levels) who loath having to 'be trained' on a new system. Indeed, even a company like Microsoft was reported to be running AS/400s in the late 1990s.

IBM's Approach: Adapt and Stay Tuned to Change

Though sales are tapering off, the AS/400 is also believed to be still profitable for IBM, which renews a bundled package of support and services with the system. Meanwhile, IBM has taken a Darwinian approach to RPG– and adapted it continuously, in order to stay relevant and survive. The current RPG IV can be edited via PC using IBM's Websphere Development Studio, although the success of the latter has been less than IBM hoped (principally because it is viewed as being complex and cumbersome).

Most importantly, from a strategic point of view, IBM provides tools to link to Java objects, write CGI programmes and other Web-enabled packages. There also are options for users who wish to maintain their RPG code (especially to handle business rules), but seek new GUIs to replace the green screens. In addition, new interface extension products assist developers in writing new XML or HTML interfaces, while new interfaces to RPG

programmes can also be developed with Microsoft Visual Studio .NET.

For many of its proponents, however, the key advantage of an AS/400 machine running RPG is that it is not only robust but retains backward compatibility. In the healthcare area, within the fast-shifting sands of the evolving e-Health framework, the AS/400 can therefore still be counted on.

The Sceptics

Sceptics, however, believe RPG's medium- term outlook is at best clouded. They point firstly to a lack of genuinely new true-blue applications for the AS/400 RPG environment, over the past 5-6 years, and RPG is rarely (if ever) used in new projects. This is of course a consequence of the shift in programming to the Web browser (with the myriad possibilities offered to access an application on to a PC screen and bring up data).

Meanwhile, the frequency of releases for RPG has begun to wither, accompanied by a decline in IBM's own training programmes. This has itself coincided with a shift in the IT curriculum at computer science schools, given preferences by IT aspirants for Microsoft Visual Basic, C++, and Java, rather than RPG or even COBOL (although there are some recent exceptions in the latter case). Meanwhile, adding further pressure is the fact that the average RPG developer today is close to retirement age.

Indeed, a search on the Internet finds no more than a handful of RPG training courses and programmes. They are not prohibitively expensive. Britain's Sand line Learning (www.sandline-learning.co.uk), for instance, offers a 13-module online program on RPG IV for GBP 149.

Programmes in the US are similarly priced. However, digging a little deeper yields evidence of some truth behind the claims of the sceptics. Missouri-based Staffk it (www.staffkit.com), for example, has RPG courses on offer, but none of its news releases over the years mentions the course.

Those who have chosen to move off the AS/400 environment have usually done this as part of a mission-critical application modernisation project. Others – especially in high-customer sensitivity areas, have faced pressure from users to modernise their user interfaces.

For example, HITM learned about a hospital website, which had to be written four years ago in PHP, but could not at the time be hosted on their AS/400, necessitating a move to another server. Finally, there are cases of difficulties in deploying and integration with other custom products.

Paying the Proprietors Price

The hospital IT manager interviewed by HITM said that much of the reason for a grim outlook for the AS/400 is that it took off in the years when IBM was at the peak of its 'Daddy knows best' mindset.

In the early 1990s, he said IBM did not even imagine the need to make RPG an open standard, like was the case with other procedural languages like COBOL, which claims hundreds of different compilers. Though the AS/400 has a strong user community, it lacks a strong community of independent vendors, like COBOL – whose roots also go back as far as RPG, he explained. As a result, there are few (if any) RPG applications on non- IBM platforms.

This kind of approach, he said, has not really changed much. Since 2004, IBM has sought to compel buyers of the AS/400 (at the time the iSeries) to also purchase Web Sphere Development Studio (which permits PC users to edit RPG).

A more serious error at the time was to force buyers to move applications from 5250 'green screen' terminals to a graphical user interface, or pay more for their iSeries machines (which critics attacked as the '5250 tax'). These were not mere allegations. It was published in IBM's pricing manual.

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