A *z*Series Renaissance

POUGHKEEPSIE SPRING

By Bob Djurdjevic

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(Cover art – a detail from La Primavera [Spring] by *Sandro Botticelli, c. 1478*)

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Spring is in the air in Mid-Hudson Valley and Polaris is again the guiding light for wayward IT travelers…

A *z*Series Renaissance

Led by mainframe's resurgence, IBM servers are experiencing a renaissance.

What are the reasons for it?

Customers are realizing the ***z*Series** *offers a* ***low total cost of ownership*** *with* ***superior reliability*** *and* ***security*** *relative to other platforms. So they are* ***recentralizing, reintegrating*** *and* ***virtualizing*** *their servers. The* ***z*Series'** *new* ***openness****, as epitomized by* ***Linux on zSeries,*** *is also helping the mainframe demand.*

To find out more about this new industry trend, read on…

A Prologue to… Poughkeepsie Spring

On Spring (La Primavera)…

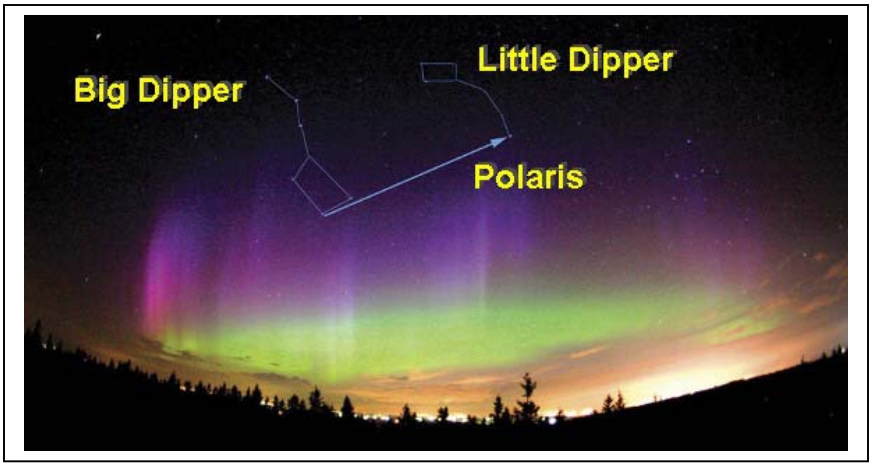
Mindful of you the sodden earth in spring,
And all the flowers that in the springtime grow,
And dusty roads, and thistles, and the slow
Rising of the round moon, all throats that sing
The summer through, and each departing wing,
And all the nests that the bared branches show,
And all winds that in any weather blow,
And all the storms that the four seasons bring.

Edna St. Vincent Millay
Sonnet 03 (1917)

Spring has arrived again at the "reed-covered lodge by the little water place" – the meaning of the Wappinger Indian term Poughkeepsie. A Poughkeepsie Spring has arrived literally and figuratively. The Hudson Valley city that has become synonymous with IBM mainframe business in the last four decades has good reasons to rejoice and dance, just as the fantastic Florentine citizens are doing in Botticelli's famous *La Primavera* (Spring) painting from which we borrowed a detail for this report's cover. Their hometown favorite – the IBM eServer ***zSeries*** – is thriving once again, leading an IBM server renaissance.

What is the reason for it? What goes around comes around. And nowhere is that more self-evident than with Polaris, the North Star.

Because it lies nearly in a direct line with the axis of the Earth 's rotation "above" the North Pole - the north celestial pole - Polaris appears to be the *center* of the universe. All stars of the northern sky appear to rotate around it.



Polaris also connotes *permanence*. It has been around for millions of years, and it will be for millions more. Which implies *dependability*. Because it appears centered and motionless, it has been used for centuries by travelers for navigational purposes, pointing the way home or to a safe harbor.

Odysseus, 20 years away from Penelope and Ithaca, was heartened by the appearance of the star that "wheels on her axis, always fixed." Polaris led him home over the Poseidon Sea.

The steadfast appearance of this star imbues it with qualities of faith and constancy that is honored in many cultures. An ancient Hindu wedding rite honors the Pole Star, as it is also known, as a symbol of *fidelity*. Couples exchange vows in its ancient light promising to remain faithful to each other "for one hundred autumns."

In the fifth century B.C., Confucius said of Polaris: "He who rules by moral force is like the Pole Star, which remains in place while all the lesser stars do homage to it."

Well, there have been many "lesser stars" of all shapes and forms that have tried to steal the show and lessen the glow of computer industry's biggest star - the mainframe, or the ***zSeries***, as it is now known.

For a while, some of them seem to eclipse the mainframe. But just like Polaris, mainframe has now come out from behind the clouds and is shining brightly once again.

On Polaris (the North Star)…

I am constant as the northern star,
Of whose true-fix'd and resting quality
There is no fellow in the firmament.
The skies are painted with unnumber'd sparks,
They are all fire and every one doth shine,
But there's but one in all doth hold his place

Shakespeare,
Julius Caesar, Act III, Scene 1

The Two P's in a zPod

Primavera and Polaris. Springtime and Lodestar. The two P's in a zPod. One is a symbol of freshness and rebirth. The other is an icon of trust and permanence. Both epitomize the ***zSeries*** qualities. Both instill hope and lift spirits. And hope is the fuel of faith and endurance, especially when spring is preceded by harsh winters.

No one knows that better than the IBM mainframe folks and their customers. Oh, how many harsh winters hath they endured during the last decade or so! But they kept the faith the way a traveler trusts that the North Star would bring him home or to a safe harbor. And now they have

arrived - just in time for another Poughkeepsie Spring. Hope springs eternal…

Listen to the ***zSeries*** customers like springtime swallows chirping lauding melodies about their Lodestar in the Fan(fare) section.

On Hope… by Pope

Hope springs eternal in the human breast;
Man never Is, but always To be blest:
The soul, uneasy and confin'd from home,
Rests and expatiates in a life to come.

Alexander Pope,
An Essay on Man, Epistle I (1733)

Executive Summary

From a product standpoint, "we're in as good a shape as we have been in a long time," declared **Bill Zeitler**, the senior vice president who heads up the IBM Systems group. "It's been the most active year we've ever had" in terms of technology advancements.

"When we were doing it the old (proprietary) way, we lost market share in servers for 10 years, according to IDC," Zeitler said. "Now, we've regained it all in four years."

IBM servers are getting a shot in the arm from five new trends – Linux on zSeries, recentralization, reintegration, heightened security concerns and virtualization. All are a result of IT users' efforts to reign in server costs while increasing global range and reach, and IBM's willingness to listen and open up its architectures. Of the five, the Linux trend is perhaps the greatest surprise.

Linux on zSeries

Big Blue now commands a 37% share of Linux server revenues, according to industry market research, equaling the combined total of the next two largest competitors – HP and Dell.

The Linux-driven server revenue growth continues to outpace that of the rest of the IT industry. And IBM servers are the key beneficiaries. IBM is already taking market share away from the giant Microsoft and some IBM competitors in the server business.

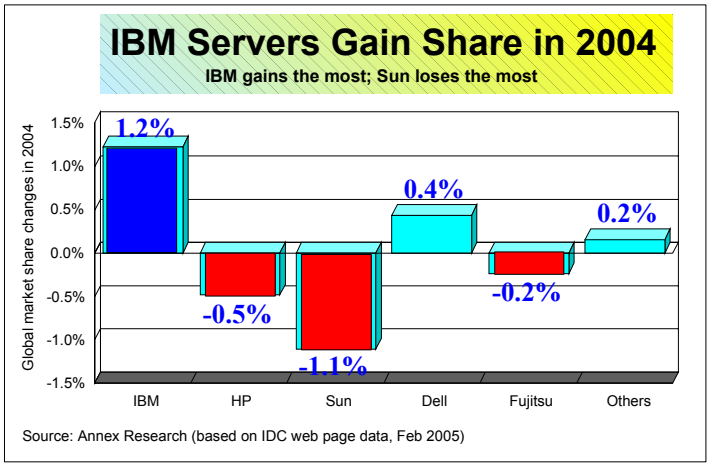
Recentralization & Reintegration

IBM servers are getting a shot in the arm from two customer-driven trends. One is **recentralization**. Another is **reintegration**. The ***zSeries*** is the main beneficiary of the former trend. The iSeries will profit the most from the latter.

What are these two trends about?

Customers are increasingly going through "server consolidations" projects in an effort to lower their cost of ownership while increasing the global reach.

The final result is a recentralization of IT resources. Since the ***zSeries*** offers a unique single image view of the world, it is a natural winner in situations like that.



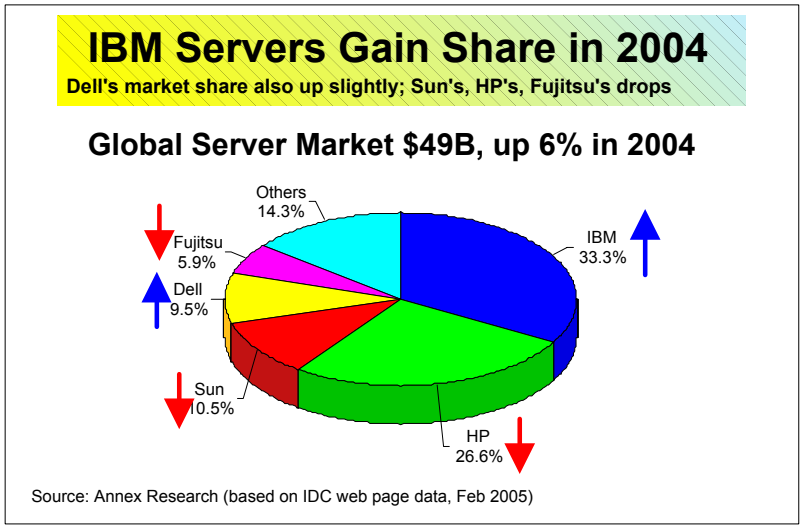
Midsize customers are also going through "server consolidations" for much the same reasons. Since the iSeries, thanks to its integrated nature, offers by far the lowest cost of ownership, according to our market research, especially compared to the popular Windows/Intel-based servers, it stands the reap the benefit the most from this reintegration trend.

The Windows/Intel-based servers (xSeries in IBM's case), are basically rising on the coat tails of Microsoft's marketing power. In most organizations they tend to "just happen" because some user somewhere in the company found a solution he/she liked. They will keep on growing until such time that the CEO or CFO of such a user company puts his/her foot down, and demands that the IT function reign in the runaway server costs.

Enter the recentralization and reintegration trends.

Heightened Security Concerns

The security concerns have heightened as governments and private enterprises sought to protect themselves from accidental or deliberate outages. And in a 24/7 operating world, the mainframe shines. It is, after all, the system some of the world's largest banks bank on. Now, other industries, including governments, are coming to realize that the ***zSeries*** is the "Fort Knox of the IT world" when it comes to security.



Virtualization

Virtualization is another trend that's driving the mainframe demand.

A Panasonic IT executive said that server virtualization is very important to them. "The advantage of that is to be able to deploy quickly and share resources better," he explained. Virtualization can improve the utilization rates of the IT resources Panasonic already has in place. So it can save the company money it would have had to spend on new hardware and software.

In IBM's case, the ***zSeries*** server design adds a level of intelligence and automation to the virtualized resources that allows them to be directed to the enterprise's most important transaction "on the fly," as needed.

Education

One of the challenges that IBM and large enterprises face is a relative dearth of mainframe skills.

"The people who know those disciplines and understand the mainframe structures are in their 50s," said **Kevin Sharkie**, **Aviva Australia's** CIO. "And that is a problem; that is a global problem."

IBM understands that. In Australia, for example, the central government and IBM are working on setting up courses at various universities that would reintroduce the mainframe skills lost in the last several decades.

In China, IBM just announced (March 2005) the "IBM zSeries University Program" that will be offered at seven universities in that country (see the photo from the March 18, 2005 press conference).

IBM expects that opening the courses on mainframe technology will uplift the academic levels of selected universities. It also hopes teaching and using the mainframe technology skills will provide the universities with capabilities to implement large scale IT programs.

IBM China's Peter Jen (left), with president of Huazhong University of Science and Technology (Mar 18, 2005)

Summary

So the new IBM openness, as evidenced by Linux on zSeries; recentralization and reintegration; heightened security concerns; and

virtualization… all relatively new mainframe demand drivers that are helping the ***zSeries*** grow once again, and reclaim its position at the center of the IT world around which everything turns. Or at least appears to. ***zSeries*** meet ***Polaris***.

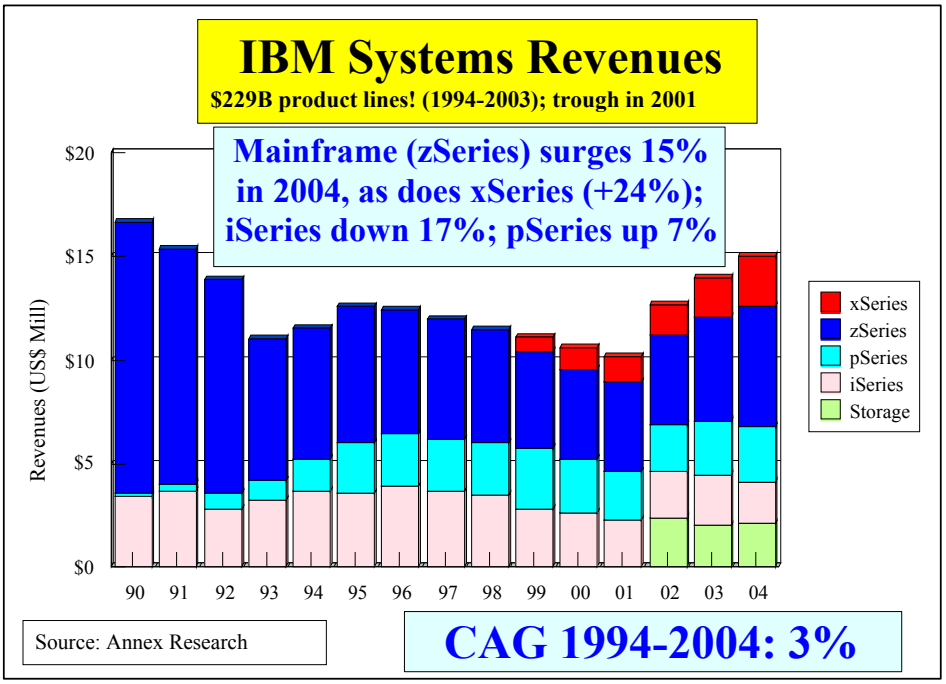
To some loyal IBM ***zSeries*** customers that comes as no surprise.

Asked how happy he was now in hindsight with results of his server consolidation project, **Dr. Claudio Podesta**, **Iside SpA's** Assistant General Manager of Operations, replied, "happiness is in the numbers."

"Four years ago, we had 70 banks as clients; now we have 160 banks," he said. "Four years ago, our clients had 450 branches; now they have over 1,200 branches. So the market place is saying it has been a success."

"I backed a sure winner," Dr. Podesta said of the IBM ***zSeries***.

He is not alone. Many other customers are realizing that, too.



zSeries Renaissance

"I know 50% to 60% of my business – *personally*!" stressed **Erich Clementi**, the ***zSeries*** general manager, speaking at an IBM conference. That's because customers are giving Big Blue an earful. They are calling Poughkeepsie now when they have a problem. Unlike the IBM of the old, this new IBM likes it. In fact, loves it. Instead of pontificating, the Big Blue is lapping up customer ideas and turning them into cash "Complexity is good for mainframe business," mused Clementi. It gives the ***zSeries*** a chance to shine.

The Big Blue servers are experiencing a renaissance. And nowhere is that more apparent than in the ***zSeries*** market.

That's the take-home message from a two-day conference IBM staged for consultants in late November 2004

From a product standpoint, "we're in as good a shape as we have been in a long time," declared Bill Zeitler, the senior vice president who heads up the IBM Systems group. "It's been the most active year we've ever had" in terms of technology advancements.

Zeitler pointed out that, as a result, IBM has been gaining share of the server and storage markets, along with Dell, according to IDC. In the server market, IBM's share is up about 15 points since 2001, the year IBM servers started to bottom out'

The main reason is IBM's openness and willingness to embrace within the Big Blue architectures. the "not invented here"-products and ideas. And then drive hard to differentiate itself from the competition by innovation and best-of-breed technology. In other words, IBM finally accepted and welcomed the multivendor world in which its customers live.

The process started about four years ago with the top-of-the-line ***zSeries*** mainframe servers. It spread across other product lines when IBM put all of its servers under one roof, and appointed Zeitler to head up the groups. Big Blue never looked back.

"When we were doing it the old (proprietary) way, we lost market share in servers for 10 years," Zeitler said. "Now, we've regained it all in four years."

zSeries: From Dinosaur to Springbok

The greatest turnaround story belongs to the ***zSeries***. Dubbed "z" for its "zero downtime" virtue, the mainframe descendent showed its new resilience earlier this year when the former dinosaur suddenly

exhibited the virtues of a springbok ("swift and agile"). Here's an excerpt from our April 2004 Annex Bulletin on the upsurge of the ***zSeries***'s revenues and profits, "Going Retro with Mainframes:"

"...Big Blue customers seem to be "going retro." They are once again gaga over mainframes. That's as if "Beatlemania" were back, and "I Wanna Be Your Man" were once again climbing the pop charts.

At least that's the impression one would get from a 34% surge in IBM's first quarter mainframe revenues. The ***zSeries*** business, as the mainframes are called nowadays, was up 28% in constant currency. Not bad for a 40-year old (see "Mainframe at 40!", Apr 2).

Since then, the ***zSeries*** has gone on to grow by 44% in the second quarter, and by 12% in the third. That's five quarters in a row of double-digit growth, after 12 years (!) of declining revenues. We estimate that by the end of 2004, the ***zSeries*** will have grown at 17% compounded annually (2003-2004). That's the highest level the 40-year old has achieved since 1996.

The ***zSeries*** did it by opening up - 20% of ***zSeries*** mainframes are running Linux now. And also by listening to its customers.

"I know 50% to 60% of my business – *personally*!" stressed Erich Clementi, the ***zSeries*** general manager, speaking at the IBM conference. That's because customers are giving Big Blue an earful. They call Poughkeepsie now when they have a problem. Unlike the IBM of the old, this new IBM likes it. In fact, loves it. Instead of pontificating, the Big Blue is lapping up customer ideas. And turning them into cash.


Erich Clementi

"Complexity is good for mainframe business," mused Clementi. It gives the ***zSeries*** a chance to shine. And nothing is more complex than integrating thousands of disparate servers and tens of thousands of applications that IBM's biggest customers run on them.

IBM has been also aggressive with pricing of the new ***zSeries***. Which helped generate a huge increase in demand.

A quest for increased security is a new global trend that has also helped drive the demand for the ***zSeries*** servers, according to IBM's Clementi. With its single image approach and a highly scalable architecture, the ***zSeries*** has a unique advantage in the marketplace, he says. "At no point do the customer applications ever touch the hardware anymore," he said.

zSeries Fan(Fare) – Highlights

(based on interviews with customers and/or their public statements)

"There are probably smaller companies out there that say, 'Well, I can afford to keep developing server worlds'," said **Kevin Sharkie**, **Aviva Australia**'s CIO. "From my perspective, what I can ill-afford to do is to continue to grow my application and my data farms independent of each other."

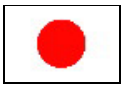
That's an entirely new and different point of view from that in the 1990s. And it's rooted in simple economics. Mainframes have proven to be a cheaper solution than the once thought "cheaper" distributed computing.

"We thought the cost of 300 servers was too much," Sharkie said. "So we started to decommission servers; we've gone into server virtualization with IBM, and today we're down to about 110."

"A big new trend (in the IT industry) is that people are more willing to consider it (mainframe) than they were maybe five years ago," said **Gary Weckwerth**, **Aurora Health Care's** Director of Technical Services & Operations. "Five years ago, most people thought that the mainframe isn't going to be around. That's totally changed now. Everybody knows it will be around, so they are wondering 'how can we best utilize it'?"

"I have always been a big fan of server consolidation," said **Frank Snyder**, **Lawson Product's** Director of IT Operations. "I don't like building server farms. Even though I get forced into it, I try to minimize it as much as possible." So in late 2001, he set up their first pilot production environment under **Linux** on mainframe. They never looked back.

"Consolidation is a major trend," said the Lead Architect and Project Manager at a **major U.S. government agency**. "Some people think 'mainframe is a dead animal and never want to go back there again.' But they don't understand how current its capabilities are."



Panasonic switched from Unix to Linux on ***zSeries*** "because we thought the mainframe was the most reliable and the most scalable platform to run that type of an application where the workload is extremely unpredictable," said **Christopher Tooman**, the company's Senior Manager of Technical Services. The Panasonic B2C web site currently supports 6-7 million "pageviews" per week which it processes with a "very favorable" response time. Tooman described the overall IBM ***zSeries*** experience as "very positive."

Asked how happy he was now in hindsight with results of his server consolidation project, **Dr. Claudio Podesta**, **Iside SpA's** Assistant General Manager of Operations, replied, "happiness is in the numbers."

"Four years ago, we had 70 banks as clients; now we have 165 banks," he said. "Four years ago, our clients had 450 branches; now they have over 1,000 branches. So the market place is saying it has been a success."

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Aviva (Australia)

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Kevin Sharkie, **Aviva Australia**'s CIO, is a 36-year veteran of the IT industry. "I grew up in an IBM world," he said. "I've been in it here in Melbourne all of my IT life."

Naturally, Sharkie has seen many changes during his long IT career within, what he calls, the Melbourne "IT fraternity." Some "trends" turned out be fads; others snuck up on IT executives unexpectedly. And now, Sharkie is witnessing and participating in a rebirth of a once nearly extinguished species. The mainframe is coming back…

Server Consolidation

"In the 1990s, people bought end-to-end solutions," Sharkie said. "Which meant you put it on this operating system, and this database, and they were turnkey solutions," he explained. That's what Aviva also did, and how it got to set up and grow its "server farms."

That's all changed now. Recentralization of applications and data is driving the new server consolidations.

Aviva's life insurance business was the first business application to run on the new z800 mainframe, installed in October 2003. The rest of Aviva's financial products were supported by applications running on various "server farms." Altogether, Aviva had some 300 servers, including Sun's Solaris-based servers with a front-end called Forte; Windows 2000 servers, etc.

"There are probably smaller companies out there that say, 'Well, I can afford to keep developing server worlds'," Sharkie said. "From my perspective, what I can ill-afford to do is to continue to grow my application and my data farms independent of each other."

"To me, there is little sense in spending the millions and millions of dollars that we are spending here, and keeping all those systems apart," he added.

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Merger and Rebranding

Prior to 2002, Aviva consisted of CGU (a general insurance company) and Norwich Union (a life insurance company). Sharkie worked for CGU which had the mainframe mission for both companies.

The British parent company decided to rebrand itself globally in 2002. So Norwich Union became Aviva in 2003.

Prior to that, however, CGU (the general insurance company) was sold to the largest general insurer in Australia – IAG. Sharkie had 12 months to transfer the mainframe operation back to Norwich Union.

About Aviva

Aviva (www.aviva.com) is one of Australia's top 10 life insurance companies. **Navigator**, a master trust fund, is one of the largest investment administration businesses in Australia. **Portfolio Partners**, the Australian fund management arm of Morley Fund Management, is a sister company of Aviva Australia.

Together, these three constitute the Aviva Australia Group of companies, and employ about 700 staff. They manage or administer about £6.5 billion (US$12 billion) in funds, and provide wealth creation, wealth management and wealth protection products and services for 300,000 customers throughout Australia.

The Aviva Australia Group has over 100 years of continuous operation in Australia. Formerly known as Norwich Union Australia, it changed its name to Aviva on October 1, 2003. The company is a subsidiary of the U.K.-based Aviva Plc, Great Britain's largest insurance and finance companies with £273 billion (US$511 billion) of assets under management.

Aviva provides a range of financial protection products for personal, family and business needs, distributed through some 3,000 independent financial advisers. These products include life insurance, critical illness and income protection. Aviva also provides retail investment, superannuation and retirement income products.

Aviva Australia Group is headquartered in Melbourne, Australia.

"By that stage, they had effectively decommissioned the Hitachi Data Systems mainframes," Sharkie said. "And that gave me an

opportunity to work with IBM and look at their z800 mainframe."

"I remember going to an IBM luncheon function back in 2000, when they introduced the whole concept of the zSeries and what they were trying to achieve," Sharkie said. "So with that knowledge, I had no hesitation whatsoever in inviting IBM to tender for a new mainframe. Which was effectively installed and commissioned in October 2003."

Sharkie never looked back.

Data Consolidation and Linux

Now he is also consolidating Aviva's data, not just its servers. They are currently converting from Sybase database to Oracle, and intend running its master trust system in a z/Linux partition on the zSeries.

When this conversion is done, the company is planning to get rid of its Sun/Solaris servers. "The intention is open up a number of partitions on the z800 and aggressively merge our 'server farm' into the mainframe," he summed it up.

The company is also looking at consolidating all the front-end and back-end processes of all of its products. "When you look at the process of investments, the back end office applications are essentially the same," Sharkie said. "So the intention is to have one batch across of all of the businesses. And we're already planning only one front-end for both, the adviser desktop (N-LINK), and for our internal administration. So from an application perspective, they will all move to the mainframe, the z800."

And what's the end goal line?

"I want to use the z800 as an open architecture system where I can have multiple partitions running various operating systems," he summed it up.

Security Concerns

And does that mean that Aviva will get rid of its 'server farms' completely?

Not quite. There are some applications that just can't be converted to run under Linux. "But they'll be isolated," Sharkie said, making it seem like a "server quarantine." "And they'll be (only) 10% of my systems," he added.

"Whether I get rid of all of the Wintel world, well… it's just going to take time and money to convert all of that," he said.

"The reason I am doing it is that I am absolutely paranoid about Microsoft and its (lack of) ability to control the amount of hacking that happens. Microsoft haven't solved their problem. And I think it's just a tip of the iceberg. It's going to get worse and worse and worse."

And then there's also the cost and time of implementing Microsoft's service pack solutions. Sharkie said Aviva runs a program that includes all the security patches

that Microsoft puts out. "But, it takes me nearly an entire weekend to do that once a month, just to catch up with the patching requirements," he lamented.

"So security is another reason I want to move from the Wintel environment to the z/Linux environment," he summed it up.

Linux in China

Another is the growth opportunity that the biggest market in Australia's global "neighborhood" represents.

"China and the Chinese market is the greatest marketing opportunity in the world today," Sharkie opined. "All indications are that it is going to be probably entirely Linux. Which is why all the major players, such as Oracle etc., are looking down that path. Because they see China, India and other Asian countries as new markets. They are the new frontier."

Rejuvenating Lost Skills

Asked what advice he would have for IBM, Sharkie replied, "I was 'born' a 'mainframer.' I've seen the emergence of midrange; I've seen the emergence of the PC world… Sadly, I've seen mainframe skills disappear (over time). I don't think that the education has kept in tune" (with the industry trends).

And the quality of IT education these days is just not the same as it used to be.

"I don't think that the people today in the midrange and the 'server farm' worlds are trained the way I was," he said. "Some of the rigid disciplines that were there in the 1960s and 1970s have been lost."

That's partly Big Blue's fault, Sharkie thinks. "IBM thought that the mainframe was dead in the early 1980s," he said.

As a result, now that a mainframe revival trend is under way, there is a dearth of young talent. "The people who know those disciplines and understand the mainframe structures are in their 50s," Sharkie said. "And that is a problem; that is a global problem."

Sharkie added that he has expressed his concern to many visiting IBM dignitaries.

And is anything being done about resurrecting and rejuvenating the mainframe skills?

Aviva's CIO replied that the Australian government and IBM are working on setting up courses at various universities that would reintroduce the mainframe skills lost in the last several decades.

Sounds like a cue for some American and European colleges, too (also see the Chinese University Education section).

Aurora Health Care

"A big new trend (in the IT industry) is that people are more willing to consider it (mainframe) than they were maybe five years ago," said **Gary Weckwerth**, **Aurora Health Care's** Director of Technical Services & Operations. "Five years ago, most people thought that the mainframe isn't going to be around. That's totally changed now. Everybody knows it will be around, so they are wondering 'how can we best utilize it'?"

Aurora Health Care serves Milwaukee and other communities of Eastern Wisconsin (see the map). As a non-profit organization, Aurora re-invests all of its net income in the communities it serves, rather than distributing it to individual owners or shareholders. Aurora's 25,000 employees work out of 14 hospitals and over 100 clinics. The organization has over 3,200 physicians and over 4,300 nurses on staff. They provided over 435,000 inpatient days in 2003, the last full year for which the statistics are available, along with over 1.1 million outpatient services.

Aurora is a national leader in developing and implementing best practices in clinical improvement and disease management. Aurora also provides a large amount of charity care for people who are uninsured or are otherwise unable to pay for the care they need. In 2003, Aurora provided a total of $70.5 million in such charity care.

History

Aurora Health Care was formed in 1984 by a merger of two Milwaukee hospitals - St. Luke's Medical Center and Good Samaritan Medical Center. It adopted the name Aurora Health Care in 1987, after a merger between Mount Sinai Medical Center and nearby Good Samaritan Medical Center.

In the years that followed, other health care organizations joined Aurora as their leaders sought better ways to provide care. Although an IBM mainframe shop right from the beginning, Aurora has had to assimilate and adapt many disparate systems and applications as the merger expanded its operations over the years. Having the skilled (MVS or z/OS-trained)

staff of about 400 was an important factor in keeping the mainframe as one of its mission critical platforms for over two decades now. But keeping the faith wasn't always easy.

Mainframe Revival

"A big new trend (in the IT industry) is that people are more willing to consider it (mainframe) than they were maybe five years ago," said **Gary Weckwerth**, Aurora's Director of Technical Services & Operations. "Five years ago, most people thought that the mainframe isn't going to be around. That's totally changed now. Everybody knows it will be around, so they are wondering 'how can we best utilize it'?"

Weckwerth should know. His company has quite a variety of servers of all sizes and shapes. They have the iSeries, AIX (Unix), Open VMS and Microsoft platforms in addition to the mainframe.

They use the iSeries for Lotus Notes and a payroll front-end system, for example. At the time (4-5 years ago), Lotus Notes weren't available on IBM mainframes. "So it wasn't an option," Weckwerth explained.

As it turns out, the iSeries has performed very well for Aurora as an e-mail server, so they decided to keep the application on it even after IBM also started offering the Notes on mainframes. Its scalability was an important reason.

Mainframe More Cost Effective Than Unix

They've also considered AIX (Unix) for some applications, but have found the mainframe to more cost effective. "We probably wouldn't have thought that 10 years ago, but the last five years, the (mainframe) cost has been very competitive," he said. "We didn't want to get into having 40 servers banded together."

In 2000, Aurora started modernizing its "homegrown" legacy applications. They considered buying the ERP (Enterprise Resource Planning) software, but found it to be "too costly." Plus it did not meet all of their function/features needs. So they decided to rewrite their own applications to run Java under WebSphere on their mainframes. Which is what they are doing now.

At the present time, Aurora has a Model z890 and a Model z900 installed in a Sysplex environment. Since December 2004, they have been running a "zAAP engine" (which IBM specifically designed for Java) on the Model z890, while the Model z900 handles mostly the patient accounting systems.

They've also just installed Linux to run the IBM Portal under it. Cost (savings) was the main reason.

Excellent Support

"It has turned out pretty well for us," Weckwerth summed it up. "The changes they (IBM) are making have helped us save some money running on a very reliable platform. Our reliability has been outstanding, as far as the hardware is concerned. I don't think we've had an outage."

But Aurora has experienced some software glitches and occasional outages. Primarily, the outages were caused by "a systems software bugaboo or something in an application," Weckwerth explained.

"In the WebSphere environment, it's been a little bit of a struggle," Weckwerth added. "We've been kind of on the bleeding edge of WebSphere. We're a Beta (IBM test) shop for web servers. So we've had a couple of bumps along the way. We've had WebSphere server outages. Some functions and features didn't work exactly the way we thought they would. But all along, it keeps getting better and better."

Overall, Weckwerth is a happy customer. And the quality of IBM support is an important reason.

"Reliability is extremely important, especially in the health care environment," he said. "IBM support is No. 1… it's excellent. Generally, problems are resolved fairly quickly."

Lawson Products

"I have always been a big fan of server consolidation," said **Frank Snyder**, **Lawson Product's** Director of IT Operations. "I don't like building 'server farms.' Even though I get forced into it, I try to minimize it as much as possible." So in late 2001, he set up their first pilot production environment under Linux on mainframe. They never looked back.

In many respects, Lawson Products, Inc. is an untypical mainframe customer. First, because of its relatively small size. A medium-size business with revenues of about $430 million, the 53-year old Lawson business is dwarfed by some of its peers - America's giant corporations.

But that has not stopped Lawson from taking chances as an IT pioneer. At the time when only 26 of IBM's elite customers were running Linux (in early 2002), Lawson was one of only two who were running Linux in production.

Linux Pioneer

In 2001, when Lawson started looking at moving more products through the reps, it looked like there would be lots of Windows-type servers around. That's when IBM approached **Frank Snyder**, **Lawson Product's** Director of IT Operations, and suggested he take a look at Linux running on a mainframe instead.

"The idea was relatively new back then, and I wasn't sure how well it would work," Snyder said. So he went to a class in Poughkeepsie for a week. He concluded it was a good idea. So in late 2001, they set up their first pilot production environment under Linux.

The primary motivation?

"Cost containment," was Snyder's succinct answer. "From an e-commerce standpoint, I didn't want to have a lot of Intel boxes running web sites," he added. "At that point, we were at crossroads: Do we go with Intel or AIX boxes, or do we take the path down the Linux trail and put it on the zSeries?"

"Instead of spending a lot of money on Intel servers, it seemed like a good idea to put up a pilot production system on the (***zSeries***) machine we already had," he explained.

Was it a good idea now in hindsight?

"Yes. Absolutely. My major concern was that we were so early in the (Linux) program. A lot of third-party vendors had not even heard of it yet. When you take a step off the

cliff like that, you have to worry about 'am I going to be in a supported environment, or is this a flash-in-a-pan and it's going to last three months?'"

"In February 2002, we put up our first e-commerce web site (under Linux) – www.lawsonproducts.com," Snyder said. And they never looked back.

Lawson Background

Lawson Products, Inc. is an international seller and distributor of systems, services and products to the industrial, commercial and institutional maintenance, repair and replacement marketplace with subsidiaries in Canada, Mexico and the United Kingdom. Lawson specializes in fastening systems, cutting tools, chemicals and abrasives, hydraulics and automotive products. These products are offered in conjunction with engineering consultations and inventory control solutions to satisfy all of your maintenance and repair requirements.

Since its inception in 1952, Lawson's primary focus has been to improve your company's efficiency with cost-effective solutions and expert analysis. And for the last 15 years or so, the IBM mainframes have been helping them reach that goal.

In 1997, Lawson switched from VM/VSE to MVS in the process of installing a new ERP (Baan) system.

"That's what got us started in the MVS world," he said. They have since converted most of their VSE applications to MVS. "So the VM/VSE environment should be gone by some time at the end of this year," he added.

Fan of Server Consolidation

"I have always been a big fan of server consolidation," Snyder said. "I don't like building 'server farms.' Even though I get forced into it, I try to minimize it as much as possible."

But he recognizes that the power of Microsoft marketing will make some server proliferation inevitable.

"You're going to have to do that," he reasoned. "Unless some miracle happens, Microsoft isn't going to go away. They are (still) a 400-pound gorilla, although over the last few years, Linux has made some pretty decent inroads into their market."

But when it comes to desktops, Microsoft still rules.

"Microsoft is a fact of life," Snyder said. "I have not heard of anybody yet who has converted from Microsoft Windows to a Linux desktop. But as far as the servers are concerned, Linux makes sense."

And that also means converting some applications from Windows to the ***zSeries*** server.

Lawson is a big customer of Novell print services, for example. "We're a huge Novell user," Snyder said. So now they are looking at

migrating the Intel/Novell platform to Linux.

Mainframes Less Costly Than Windows Platform

Cost containment is again the main reason. Lawson's 13 IT people support the company's 12 web sites. Snyder figures that in the Windows environment, he may need about six servers per web site. That's 72 servers altogether. At about a $10,000 outlay per machine, that's a lot of money Lawson doesn't need to spend, he reasoned.

"We already have a z890 server with enough capacity to handle the job," he said.

Nevertheless, they've just added 14 Windows servers over the last two months. Which brought up another advantage of the mainframe – the better environmentals.

"When we plugged the last one in, half the computer room came down."

Why?

"Because it blew a circuit," Snyder explained. A lot of older computer rooms were never geared to carry the circuit load that large server farms produce, he added.

The same is true of blade servers. "True, blade servers take less of a footprint, but they run hotter," he said. "So now your air-conditioning costs are going to go up."

And then there are software cost savings.

"In the old days, Microsoft wasn't all that expensive," he said. But now, "with MS Office Enterprise costing about $900, and if you have 1,000 users, that gets to be pretty expensive," he said. And then there are constant Microsoft upgrades, too.

He said some IT expert at a conference he attended worked out that the software costs in the Windows environment were $14,000 per year per user vs. less than $7,000 on the mainframe platform.

Snyder admitted he could not reproduce these numbers in his own environment, probably because he never went for the big "server farms." But the important point he was making was that the perceptions about the mainframe are changing, whatever the numbers. More and more people are realizing it is a less costly platform than Windows.

Linux Bandwagon

Asked what he thought was the most important new trend in the industry, Snyder said it was the Linux bandwagon.

"That is a big topic of conversation with my IT colleagues… you know, getting the computer room back under control, and slow down the proliferation of servers."

"Computer Assosicates (for example) have Linux initiatives moving forward now," he said, after having talked to the CA

representatives recently. "It took them a while, but they are finally getting there. We're going to see more and more third-party vendors taking their software and porting it to Linux."

"More medium size businesses are taking advantage of this. They see it as an opportunity to get out from under the price structure that Microsoft is putting into place."

Excellent Support

In part, that's because they feel comfortable that IBM would support them should they experience a hard landing.

"IBM support is excellent," Snyder said. "I have never had a problem with IBM. The uptime percentages are just phenomenal. In fact, that's why we are pretty much a one-vendor shop, as far as the hardware is concerned."

Sometimes, the IBM prescience can be almost scary.

"It freaks me out every once in a while when they (IBM technicians) show up with a part, and you're not even aware that you had a problem," Snyder said. ☺

Major U.S. Government Agency

(a source that asked not to be quoted by name)

"Consolidation is a major trend," said the Lead Architect and Project Manager at a **major U.S. government agency**. "Some people think 'mainframe is a dead animal and never want to go back there again.' But they don't understand how current its capabilities are."

Who would have thought that one of the U.S. government's oldest departments would also be among the most advanced? Yet that's exactly what we discovered one major federal government agency's use of information technology.

Not only are its IT staff on the forefront of hardware and software trends in the industry, but they are also an enterprising leading-edge IT services provider that has at times beaten private vendors in competition for government IT services contracts.

With a staff of only 170, this IT unit services 29 "in-house" departments as well as some other government branches. Together, they add up to "hundreds of thousands of users" just among the government agencies, not counting the public.

Primarily Mainframe Shop

The center that our source manages, who asked to remain anonymous, has eight IBM mainframes and 600 to 700 midrange servers. They also have a development center in another state, and a remote "hot backup site" in Virginia.

"We're primarily a mainframe shop," our source said. "Of course, over the last several years, we've got just about everybody in the industry… from the small Wintel platform up to the big enterprise-class Regatta (pSeries) servers."

Our source has been at this data center for 20 years, but the center itself had been there much longer. When he joined the operation, they were running IBM 3081 and NAS mainframes and IBM 4341 midrange systems. He later became the data center's first systems administrator for midrange servers.

"We discovered that a number of people had the servers scattered across the agency; stuck in closets here, under the desks there…," our source said.

"But government is cheap," he added. "So each year they were given less money for gas; less money for tires, less money for everything as government budget dropped every single year."

Recentralization

The recentralization trend accelerated driven by heightened concern about security.

"The big growth for (mainframe) servers for us started by pressure from Washington, (who were) trying to really get their handle on disaster recovery" our source said. "So a ton of servers came to us that way. When they (the users) needed a 24/7 environment, they (Washington) weren't allowing them to keep them."

The result was a big up-tick in mainframe usage and demand.

"We have way more MIPS on mainframes than we've ever had," he said. "And we have a huge effort under way with Linux as add on the mainframe."

Increased Complexity

Increased complexity is also driving the recentralization trend. Our source offered some war stories to support this notion.

"So the first thing they (the users) wanted to do is to get out from under having to manage them (their own autonomous servers). They found out that the distributed world doesn't work. When you have people and equipment spread out in multiple locations, it's too hard to manage; too expensive. So we got the bulk of our servers that way" (when users turned them over to the IT professionals to manage).

Power-shopping was another reason. In the mainframe world, most of the prices are going down, he said. And a big mainframe shop has more purchasing power than individual departments.

"I can buy an $18,000 Oracle license for a Wintel server, or I can buy an $18,000 Oracle license for a mainframe, which is a lot more powerful," our source said. So he can show his and other customers. "some instant savings."

Virtualization

Virtualization is another trend that's driving the mainframe demand.

"It's now come along," our source said. "We're finding we can get it on more hardware now with less pain. Virtualizing is really saving us (money) because we can just stamp out images."

"We run the agency's web portal based on IBM WebSphere software," he said. "That's become a new standard for enterprise web content management system and enterprise collaboration. And all these agencies are starting to roll in and use that technology because the government has taken money away from them" (making it more difficult to use a "go it alone" approach).

"And virtualization is saving us people dollars because of being able to just stamp out virtual servers on the mainframe," for these new customers, he added. "And they are

all very reliable. Nobody has a problem going there anymore."

Server Consolidations

Big problems require big solutions. Enter "server consolidations," transferring of work from small to big servers, a process that usually results from too much decentralization and not enough control.

"Consolidation is a major trend," Our source concurs. "Some people think 'mainframe is a dead animal and never want to go back there again.' But they don't understand how current its capabilities are."

And then there are the enlightened ones.

"And then there are other people who realize the mainframe makes sense. We have all these servers, and what other (solution) can handle the load and keep the throughput and the response time we want except the mainframe?"

None, is obviously the desired answer to this rhetorical question.

Fantastic Support

Mainframes also come with something that's fairly rare these days in the IT industry, especially at the low end.

"We get fantastic support" (from IBM), our source said. "We got some amazing prices on equipment and software and help to roll out this technology. I couldn't ask for better support."

Good support can also be a demand driver. IBM's support gave Linux the credibility I had lacked before.

"I pay IBM to have one 800-number for all my hardware and software support on the mainframe," our source explained. "Then I asked them just to add the VM partition supporting all the Linux guests. So I only had an incremental increase on my maintenance bill. And if I got a call at 3am about a problem, I could call my 800-number and say, 'okay you IBM – you own it all'."

"Once they (IBM) jumped into the Linux world with both people, they have some pretty sharp people when we need help," he said.

Strategy Change

Our source also noted that IBM now has a different business strategy that's also helping his cause.

"IBM has changed its focus," he said. "It used to be a hardware and software company. But now it stresses services. That's why we get such good deals on hardware and software because they are hoping we are going to call upon them to help us integrate applications; send some dollars to their services organization. Which we've done."

Panasonic

(A subsidiary of Matsushita Electric)

Panasonic switched from Unix to Linux on ***zSeries*** "because we thought the mainframe was the most reliable and the most scalable platform to run that type of an application where the workload is extremely unpredictable," said **Christopher Tooman**, the company's Senior Manager of Technical Services. The B2C web site currently supports 6-7 million "pageviews" per week, which it processes with a "very favorable" response time. Tooman described the overall IBM ***zSeries*** experience as "very positive."

Panasonic Corporation of North America is the principal North American subsidiary of Matsushita Electric Industrial Co., a giant Japanese developer, manufacturer and distributor of consumer electronic products. The company was founded in 1918 by Konosuke Matsushita, an einventor. His first invention was a two-socket light fixture. It eventually led to one of the world's largest electronics companies. In its fiscal year 2004, for example, Matsushita had revenues of about $72 billion and over 290,000 employees. Its North and South American operations had combined revenues of $12.8 billion.

Matsushita Electric operates and innovated globally under the brand name Panasonic. It was first to introduce recordable DVD for the PC, for example, and to launch a DVD recorder in the U.S. market. The company is also one of the largest global manufacturers of plasma TVs and other digital and high definition television products. And it wants to grow its revenues aggressively.

What better candidate for e-commerce applications, right? Well, IBM seized on the opportunity to work with Panasonic on implementing a SUSE Linux operating environment on an IBM eServer ***zSeries*** 990 machine. Panasonic's B2C (business-to-consumer) web site went live in late 2004, running the WebSphere Commerce Business Edition. The B2B (business-to-business) web site is expected to follow soon.

This IBM web solution provides a common infrastructure for the company's on-line storefronts for B2C and B2B customers. It gives Panasonic the ability to accommodate future business growth more readily. Now, the company can sell electronics technology

effectively on the Web to drive new markets and meet its growth target.

The Panasonic B2C web site currently supports 6-7 million "pageviews" per week, which it processes with "a very favorable response time," according to **Christopher Tooman**, the company's Senior Manager of Technical Services. Tooman described the overall IBM ***zSeries*** experience as "very positive."

The ***zSeries*** server consolidated the company's previous environment to six processors, all of which are Linux on ***zSeries*** machines. The solution also includes two Linux on ***zSeries*** logical partitions (LPARs) - one for production and one for development, quality assurance and testing.

The New Jersey-based headquarters of Panasonic Corporation of North America is pretty much an "all-Blue shop," said Tooman, a 23 year-Panasonic veteran. Which means this IT operation has been through all the ups and downs that IBM mainframe business has experiences in the last two decades or so.

In 1994, for example, when gloom and doom about the mainframe's future pervaded the IT industry, Panasonic also started its migration of business critical applications from its mainframes and to the distributed environment.

It moved its order entry systems, for example, from IBM CICS to ERP (SAP) running on Unix. For a while, that involved some HP machines. But over time, they were replaced with the IBM pSeries servers.

When Panasonic started working on its e-commerce solutions in the late 1990s, it first implemented it on an Intel platform. Then it moved it to Unix (IBM pSeries) before making a decision in 2004 to go with the IBM ***zSeries*** and WebSphere software.

Why?

"Because we thought the mainframe was the most reliable and the most scalable platform to run that type of an application where the workload is extremely unpredictable," explained Tooman.

Virtualization Trend

Tooman said that server virtualization is also important to them. "The advantage of that is to be able to deploy quickly and share resources better," he explained.

In the past, an application would be sized for a server based on it peak period. "So the 364 days a year, the server would be underutilized," Tooman said. Virtualization can

improve the utilization rates of the IT resources Panasonic already has in place. So it can save the company money it would have had to spend on new hardware and software.

Tooman thinks that grid computing will be the next level that may help Panasonic improve the utilization rates of the IT resources it already has.

"What I would like to be able to do is use the computing power much the same as what we are able to do with our storage area network," Tooman said.

Which is?

"Processing power is pooled, and can be allocated when needed and where needed at the drop of a hat."

Sounds like a computing utility?

"Exactly," Tooman agreed.

Enter IBM's OnDemand idea?

Iside SpA (Italy)

Asked how happy he was now in hindsight with results of his server consolidation project, **Dr. Claudio Podesta**, **Iside SpA's** Assistant General Manager of Operations, replied, "happiness is in the numbers."

"Four years ago, we had 70 banks as clients; now we have 165 banks," he said. "Four years ago, our clients had 450 branches; now they have over 1,000 branches. So the market place is saying it has been a success."

"I backed a sure winner," Dr. Podesta said of the IBM ***zSeries***.

Iside SpA is the biggest Italian Cooperative Banks' Service Company, formed in August 2000 by a merger of Lombardy and Tuscany Federations of Cooperative Banks (also known as Credito Cooperativo or Casse Rurali in Italy, functionally reporting to their Central Institute the ICCREA Group), and the Banca di Credito Cooperativo in Roma.

Iside's purpose is to manage the IT environments of these banks, providing core banking applications, Internet access, intranet services and home banking operations. The company's 250 employees are located in Milan (the head-office), Florence, Rome and Palermo (specialized branches), as Iside serves its 165 banking clients and their 11,000 employees throughout Italy.

At the time it was formed, the foursome served 70 client banks with 450 branches across the country in very disparate IT environments. They had Bull, Hitachi and IBM equipment installed, including the IBM iSeries, pSeries and zSeries mainframes.

"We've had lots of experience in various distributed environments," said **Dr. Claudio Podesta**, **Iside SpA's** Assistant General Manager of Operations. "So we knew about their very high costs; including the hidden costs and the negative scale of economy. And we had the know-how to run the mainframe."

Iside's aim was to build up a centralized technological infrastructure, developing application systems based on innovative technologies and providing back-office services to support credit, financial and assurance operations through an IT service center.

Sixty new banks with disparate IT systems have been assimilated in about two years, thanks to effective commercially-oriented operations aimed at achieving economies of scale across the Cooperative Banks

community as a whole (there are about 500 Coops Banks within the ICCREA Group). This makes Iside one of the major technological players in the Italian banking market.

zSeries: "A Sure Winner"

Having conducted a detailed study that analyzed the total cost of ownership of the various platforms that Iside was using at the time, the company concluded that the best course of action was to merge its IT operations on IBM mainframes.

Besides the cost savings, "the other reasons were the mainframe's superior reliability and security," Dr. Podesta explained. "So I backed a sure winner."

The core banking applications were initially rewritten and converted to the mainframe, but not redesigned. That's what's happening now. Iside is redesigning its IT environment by consolidating servers and storage, by adopting Linux and centralizing control of e-mail and Internet applications. They have an IBM ***zSeries*** Model z990 installed (seven processors; 2,700 MIPS), with z/OS and IFL running Linux on ***zSeries***, INUX, and the IBM ESS 800 storage.

In the aftermath of the server consolidation project, all Bull, Hitachi and iSeries machines have disappeared from the Iside landscape. The company is still using two pSeries Models 690 (with 32 "engines") as a sort of a "safety valve" – not wanting to put all its eggs into one basket, and instead maintain some platform freedom and portability.

"With WebSphere, we have an opportunity of interoperability," said Dr. Podesta.

Happiness in Numbers

Asked how happy he was now in hindsight with results of his server consolidation project, Dr. Podesta replied, "happiness is in the numbers."

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And what about IBM's new openness?

IBM's new openness was a crucial and a welcome boost to the mainframe credibility, Dr, Podesta thought. But it was the opportunity to consolidate his workloads and the day-to-day working relationship with IBM ***zSeries*** people that convinced Dr. Podesta that the mainframe was the right choice.

Dr. Podesta summed up by saying that he credits the success of the consolidation project to two important ***zSeries*** attributes: **scalability** and the **total cost of ownership.**