ANNEX BULLETIN

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IBM CORPORATE

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Analysis of IBM System p and System i Market and Product Strategies

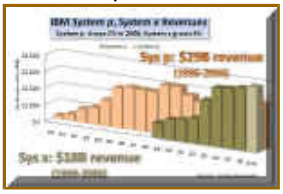
The Value of pi (π)

p + i = pi (π) = A-Z in SMB

System p: High Performance Midmarket SMB; *System i*: Industry-oriented, Integrated Low-end SMB; *IBM Software*: Essential Glue That Ties It All Together

SCOTTSDALE, Mar 14 - What is the value of pi? Over the last 3,657 years since the ratio of the circumference of a circle to its diameter was first calculated by an Egyptian scribe, mathematicians have been trying to answer that question. Perhaps no other number has been more pondered, examined and calculated than pi. The commonly used abbreviation is 3.14. In 1949, the ENIAC took 70 hours to stretch that to 2,037 digits. In 1997, a Hitachi mainframe took 29 hours to extend pi to 51.5 billion digits. (Then it stopped. Exhausted. No end in sight...).

To IBM, the value of pi is also in billions... of revenue dollars, not decimal points. Over the last 10 years (1996-2006), we estimate that the combined value the System p and System i contributed to the Big Blue top line is about $57 billion (see the charts). In 2006 alone, we figure the System p and System i combined revenues were over $4 billion. And although each of the two IBM servers are also embraced by large corporate enterprises, they excel at covering the SMB market. From A to Z, as you will see.



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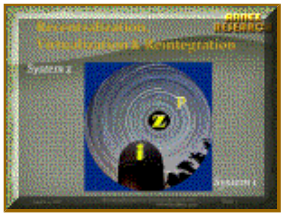
IBM Stock Passes Century Mark *(Analysis of Big Blue's*

And why is that important to Big Blue? Because "SMB growth is expected to outpace (that of) the large enterprise market" over the next several years, said Peter Small, director of System i business partner and ISV (Independent Software Vendor) sales, speaking at an analyst teleconference yesterday (Mar 13). (As it has been doing every year ever since we first predicted it in 1996).

And finding new sources of growth has been and is IBM's biggest market challenge. Making sure that its many products don't overlap or trip over each other on their way to market is the second most important issue. The way we see it, IBM has now got it when it comes to the market positioning of its "pi factor" (System p and System i). They are complementing rather than competing with each other.

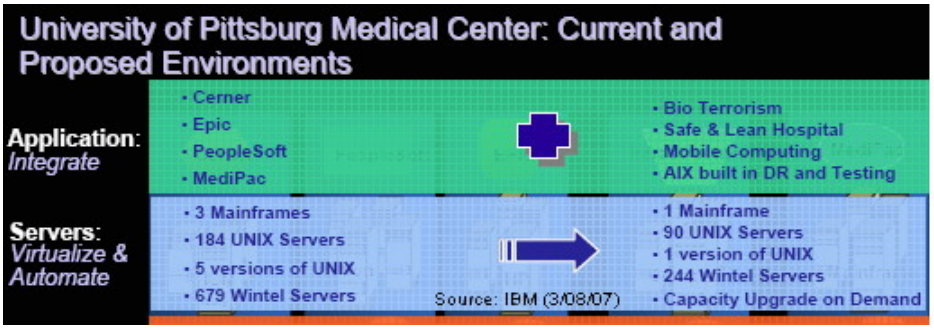
The high-performance System p (Unix) is ideally suited for the "M" (midmarket) and the high-end part of SMB. The simplicity resulting from the integrated nature of the System i makes it best for entry and low-end SMB accounts.

But it is the IBM software that provides the glue and defining features for both of these IBM server lines. Such as WebSphere, for example, that has proven to be much more robust and popular than most of its competition (right chart).



Or virtualization, a new (two-year old) global IT trend that makes server consolidations possible, another relatively new industry development (see the left chart as well as "Hardware Revival," Nov 2005, "Poughkeepsie Spring," Apr 2005 and "An iSeries Revival," Feb 2005).

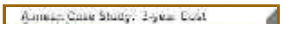
Virtualization and Server Consolidations



The University of Pittsburgh Medical Center (UPMC) epitomizes this trend. This prominent U.S. customer that has gone through an enormous reduction in servers, especially the Wintel (x86) type), due to an IBM virtualization software implementation. Staggering statistics in the blue box (above) speak for themselves.

UPMC went from 679 Wintel (x86) servers down to to 244; from 184 Unix servers, down to 90 (but more powerful ones); from three mainframes to one (also more powerful), according to a chart the head of IBM System p product line, Ross Mauri, showed at an analyst meeting in New York last week.

Nor is this an isolated case or is limited to large accounts. According to an Alinean case study, for example, an unnamed (midsize) insurance company consolidated 47 IBM, HP



Stock Performance)

Happy Days Are Here Again *(Analysis of Top 20 IT leaders' latest stock market and business performances)*

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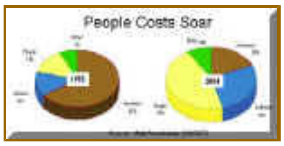
IBM: From Little Acorns Mighty Oaks Grow *(Analysis of IBM's "State of the Union")*

Capgemini: By Leaps and Bounds *(Analysis of Capgemini's preliminary third quarter business results)*

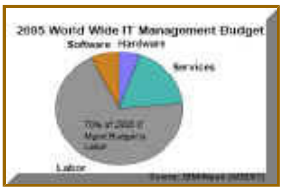
Fujitsu: Good Performance Gets Better, More Global *(Analysis of Fujitsu's first half FY2007 business results)*

IBM: A Slam Dunk Quarter *(Analysis of IBM third quarter business results)*

and Sun servers into two IBM System p 590 servers. And the result was a 56% reduction in "total cost of ownership" (TCO - see the right chart).



Indeed, server consolidations and virtualization are trends driven in part by soaring operational costs of IT shops. Big Blue estimates that they have gone from 14% to 43% of total IT budgets in the last 10 years (see the left chart).



IBM's Mauri put that figure to as high as 70% in 2005 (see the right chart). Whatever the percentage, operational nightmares and soaring costs are driving customer IT executives to look for relief in new hardware and software solutions.

Enter virtualization.

IBM's (and other vendors') virtualization software (see the left chart) is the new white knight that's saving the day (and the hides) of many CIOs (Chief Information Officers) around the world. In its wake, there are several winners and one loser. The winners are the IBM platforms (mainframe, System z) that are powerful enough to run hundreds of virtual servers. The losers are the individual "Wintel" (x86) servers, as a recent Wall Street Journal also noted (see "Virtualization Pumping Up Servers," Mar 6).

"We really have a hot box here," said Steve Mills, the head of IBM software, also speaking in New York last week, in reference to the POWER (chip)-driven power of the System p.

System i: "Rooted in SMB" Goes VIP

At the other end of the SMB spectrum, we find the small businesses' darling - the System i (a.k.a. iSeries, AS/400, S/38/36/34/32 and ultimately S/3). SMB is in its DNA. And its owners love it to death (see "An iSeries Revival," Feb 2005). The original S/3, which premiered in 1969, was IBM's first product aimed at small and medium size companies. All other mutations of this family of products have also excelled in the SMB marketplace.

"The System i is rooted in SMB," IBM's Small (right) also said at yesterday's

teleconference. Small has led a team of IBM marketing people who have worked in the last six months to come up with a new road map that would return the struggling product line to its roots. And what they came up with is a marketing program dubbed VIP - Vertical Industry Program - a set of industry-colored solutions.

"The most important thing I've learned (in over two years as head of the System i division) is that how we go to market is as important as the product itself," said Mark Shearer, in his opening remarks. "And our primary business initiative is to reestablish (our) industry vertical solution capability."

Enter VIP, a new marketing initiative aimed at companies with less than 1,000

Accenture's Emphatic Year-end Accents *(Analysis of Accenture's fourth quarter results) [Annex clients click here]*

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Strong Comeback by IT Stocks in Third Quarter *(Analysis of top 20 IT companies' market and business trends)*

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Capgemini: Growth Continues *(Revenues, net profit up in double digits, margins also improve)*

HP Firing on All Cylinders *(Stock sets new multi-year record following excellent third fiscal quarter results) [Annex clients click here]*

Power of Manpower *(While others move to India, Russia... AMD invests in New York, hailing "phenomenal" quality of its labor force)*

Ebb Tide Lowers Most Boats *(Analysis of EDS' and CSC's latest quarterly results)*

IBM Stock Grossly Undervalued? *(Analysis of stock market valuations of IBM and its major competitors) [adds latest Fujitsu, Capgemini results]*

IBM vs. HP: A Tale of Two Blues *(Both companies are doing well in business, but only HP is favored by Wall Street; Big Blue trying to change that now with its new "India Opus") [Annex clients click here]*

employees. One VIP subset is even targeted at firms with less than 100 people. It's not every day that such small companies get treated as VIPs by huge global corporations. :-) So they are likely to be quite fond of the name.

Still, Shearer was the first to admit that there is not much new to the idea of vertical marketing. After all, the S/3X and AS/400 made their claim to fame using this approach. But that was a long time ago. And the System i has had a spotty record in the last decade (see the first chart). Sometimes companies, like sports teams, need to go back to basics before starting to win again.

So what's really unique about this System i initiative? Well, one thing is that it is being executed *locally* at 80+ "micro-vertical" beta sites around the world.

Shearer and his team have recognized that there is no such thing as a "typical" System i customer; not when you deal with hundreds of thousands of them. So they poured over their installed base to figure out patterns in that mass of demographic data. They first identified between 300 and 400 "sub-industry" segments. And from those, they selected 80+ which are being targeted at the outset.

The chart on the right illustrates just a few of such "beta sites." Las Vegas, for example, is the base for "gaming" applications, a sub-set of the travel & entertainment industry vertical. Health care "beta site" is in New York City, aimed not at its giant hospitals and clinics, but at thousands of individual doctors' practices that are still sparsely automated, or still work "with manila folders," as Small put it.

And IBM isn't going it alone. In each of the 80+ "beta sites," it has partnered with companies that have specific solutions aimed at the local problems.

"We've learned that enabling thousands of applications isn't enough," Shearer said. "Partnering is absolutely essential in providing local support."

Semiconductor Industry Conundrum

One reason the software-driven virtualization and a "holistic" approach to IT optimization is winning the hearts and minds of so many CIOs around the world is the operational costs and issues the IT czars are facing. Another is an industry conundrum. Semiconductor industry's that is. The chip density may be close to hitting the wall. We may be nearing the end of the so-called "Moore's Law" (see the right chart).

The law, promulgated in 1965, states that the number of devices crammed into a chip of a fixed area doubles every 12 to 18 months. To the extent that the chip density is a factor in increased performance, the System p's own enviable track record in the last decade matches and even stretches Moore's Law (see the left chart).

So what's the problem? Pure physics seemed to be one of the walls. For a while. But

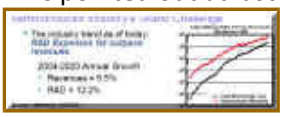
Go East, Young Man! *(A speech delivered in St. Petersburg, Russia, May 25, 2006; click here for slides)*

IBM 5-Yr Forecast: Steady As She Goes *(Emphasis on quality continued) [Annex clients click here]*

Octathlon 2006: Accenture Again Wins "Gold!" *(HP gets "Silver," IBM "bronze") [Annex clients click here]*

in recent months, IBM and Intel have announced technological breakthroughs that seemed to extend Moore's Law for at least another decade (it will be 50 in 2015).

A bigger challenge, however, seems to be economics. As IBM's Mills pointed out at last week's analyst "summit" in New York, the R&D expenses in the semiconductor industry are growing almost twice as fast as revenues (12.2%/yr vs. 6.5%/yr - right chart). Which means that the profit margins are shrinking, denying the companies the capital required to reinvest in their labs in plants.



Obviously, such a situation cannot exist for very long. Consolidations are sure to ensue in a sector which is already chocolate block full of alliances (left chart). Philips and Texas Instruments, for example, have announced plans to pull out of the existing alliances or projects. Which leaves the IBM consortium as the biggest, followed by Intel and ASPLA, an alliance of several major Japanese computer companies, in terms of capital expenditures (left chart).

Interestingly, all this trend also plays into IBM hands. And not just because the IBM consortium is the biggest. Also, as R&D expenditures become to some prohibitively expensive, they may turn to another way of skinning the cat - outsourcing them.

Enter IBM's (relatively new) Technology Collaboration Solutions unit. It is an amalgamation of several formerly separate units (E&TS, Microelectronics division and several other Systems & Technology Group parts). In 2006, TCS accounted for about $3.5 billion, or 15% of STG revenue (see the right chart and "From Little Acorns Mighty Oaks Grow," Nov 2006). It is TCS that stands to benefit the most from the semiconductor industry conundrum (R&D rising much faster than revenues).

Nor is that limited only to chip-making business. Any technologically advantaged industry sector, and nowadays it is hard to think of many global or national enterprises that are not, is straining to keep up with technological advances and the extensive capital and research investments that they require. Some of them are trying to spread the risks and share expenses by forming consortia. Others may turn to outsourcing as a more cost-effective solution than doing it in-house. The TCS growth this year and beyond will be an indication how well IBM is able to tap into this opportunity.

Summary: "By George, IBM's Got It"

"By George, she's got it," an astonished linguistics expert (played by Rex Harrison) exclaims excitedly as his pupil, a cockney-accented Eliza Doolittle (played by Audrey Hepburn), begins to speak "Queen's English" in the 1964 film version of "My Fair Lady," a musical fashioned after Bernard Shaw's "Pygmalion."

"By George, IBM's got it," we were also tempted to exclaim after seeing Big Blue deliver one-two body punches (pi) to competitors in the SMB ring. And this pi is no pie in the sky, either. :-) System p in the midmarket, and System i for in the entry and low-end SMB, are both ready to roll and spoiling for a fight.

But it's the third punch that promises to be a knockout - IBM's superior software that ties it all together. And its business partner "ecosystem" (see the chart). If IBM can manage to execute as well as it did in devising this strategy, chances are, its fans and shareholders will be smiling by the year end and beyond.

Click here for detailed IBM forecast tables and charts (Annex clients only)

Happy bargain hunting!

Bob Djurdjevic

NOTE 1: pi (**π**) is also the 16th letter of the Greek alphabet. It is used as a symbol for the ratio of the circumference of a circle to its diameter, which is 3.141592653, commonly rounded to 3.14. Perhaps no other number has been more pondered, examined and calculated than pi. Circa 1650 B.C., the ratio was computed by an Egyptian scribe, and the number was recorded as 3.16049 in the Rhind Papyrus. The writings described how to create a square area the same size as a circle.

Over the years, pi, which was named some 3,000 years later, has been calculated numerous times to the maximum decimal place that humans and calculating devices could take it. In 1596, it was calculated to 32 decimal places and up to 127 places by 1719. In 1949, the ENIAC took 70 hours to yield 2,037 digits. However, in 1997, a Hitachi mainframe computed pi to 51.5 billion digits in 29 hours. The bottom line is that the absolutely exact value of pi cannot be computed.

NOTE 2: Alinean is an IDC-affiliated Florida-based software and consulting firm that specializes in measuring IT value

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Bob Djurdjevic, Editor

e-mail: annex@djurdjevic.com

8183 E Mountain Spring Rd, Scottsdale, Arizona 85255
Tel/Fax: +1-602-532-7789