At your e-service!

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HARDWARE manufacturers, especially those who specialize in servers, finally seem to be on their way to recovery. Customers are being wooed with new ranges, features and capacities.

IBM, the world leader, has, as usual, taken the lead to fulfil the escalating needs of e-commerce, by unveiling its e-server range that would "offer new tools, new openness and new servers for the new economy". HP, too, has recently announced the launch of a high-end server called Superdome.

As new enterprises begin to reinvent themselves, the complexity of computing architecture and the sophistication of solutions to be put up at high speed are also increasing. Thus, there arises the need to provide products that suit the enterprise's requirements from time to time, which can only happen using a service approach.

HP is trying to position its entire range of products in line with its concept of 'pervasive computing', which it invented in its labs nearly 15 years ago. This would encompass internet infrastructure, internet appliances, digital printing and imaging markets.

In the server segment, however, HP is still way behind, with Sun going aggressively at garnering the dotcom and e-business markets. Recent reports say that Sun had a marketshare of 43 percent last quarter and shipped two-and-a-half times as many Unix servers as HP, and nearly twice as many as IBM.

Life-long customers

HP's service strategy aims at owning the customer and ensuring a constant revenue stream over the lifetime of the customer. The key area of concentration, in order to achieve this, seems to be its ability to assume responsibility for the efficient working of its products at client sites, even if it means acting as an attached IT support department for that company. This, according to officials in HP, would effectively ward off complaints of bad experiences from clients about its products even though the problem actually lies elsewhere.

Thus, it effectually means that HP is identifying itself as a sort of application service provider (ASP) that continuously fulfils the changing needs of the customer. Further, it implies that HP needs to take care of the scalability, manageability and performance of its products not from a feature-centric angle but from a life-long technical support angle.

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Both IBM and Sun have reconfigured their businesses around services. A lot of this change is being driven by two factors. The first being that many companies running sophisticated computers have no clue about how to handle them. So the company that offers solutions should be responsible for making sure that they work. Secondly, the open standard revolution makes it inevitable for companies to concentrate more on service to differentiate themselves from the rest of the crowd.

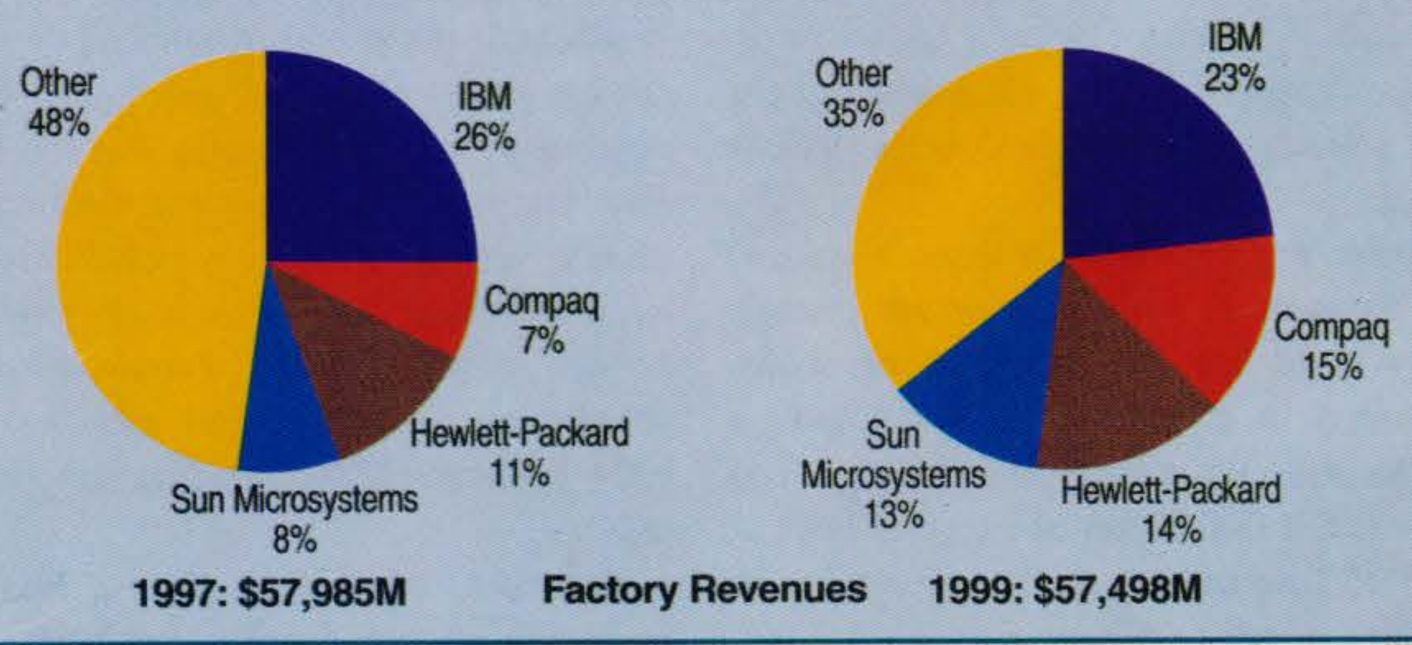
This open revolution is what has made IBM promise a new openness through its e-servers that can build an e-business infrastructure on an open, standards-based, scalable and pervasive and flexible software platform. It's capacity advantage feature enables clients to plan for unpredictable capacity growth with approaches that are aligned with their expenditures and individual needs and increase capacity without disrupting operations.

In line with its open approach, IBM offers a Linux application development toolkit useable on all its platforms of e-servers. It is also opening 10 Linux porting centres worldwide and pledges to publish its Linux-related source code.

The bold e-move

For several years, IBM has been working on a new line of servers fit for e-business, the launch of which has seen a whole new repositioning and brand revitalising exercise for the company.

Worldwide Server Revenues, Leading Vendors, 1997 and 1999



Source: IDC

Table 1: IBM server lines (as on October 3, 2000)

Server Series	Supplants	Primary OS*	No. of New Models	Processors	Base Price ($)
zSeries	S/390	z/OS, OS/390	26	1-16	**
pSeries	RS/6000	AIX	2	1-24	13,599
iSeries	AS/400	OS/400	6	1-24	7,625
xSeries	Nefinity, NUMA-Q	Windows 2000, PTX	9	1-64	970

IBM's e-servers are actually the redesigned versions of its existing range itself. Although IBM continues to be the market leader, it has been losing share, as Figure 1 shows. And, it is this slide that IBM hopes to stop with its new offerings.

E-servers are, undoubtedly, re-christened variations of their earlier ones. Just that they have several new features that make it suitable for the emerging e-business scenario while retaining the strong points of their earlier versions. The re-branding stratifies IBM's servers into four series that correspond to its existing offerings as summarized in Table 1.

Scalability is a major new feature across the four series. The transformations of IBM's servers line up as follows:

- S/390 (Freeway) becomes zSeries
- AS/400 becomes iSeries 400
- RS/6000 Becomes pSeries
- Netfinity becomes xSeries

The Intel advantage

Intel on the other hand has developed processors to match the variable server requirements. Various factors contribute to the viable server architecture - availability, performance, price, flexibility, serviceability and support. Intel's first 8-way multiprocessing servers based on the Intel Profusion chipset architecture enables all these. Mission-critical applications, such as ERP, decision support, online transaction processing and web serving are just a few of the applications that demand the performance of 8-way servers.

A tale of two thousand servers

A mention about Intel and one can't help but talk about how Yahoo! has changed the way we use Internet during the mid 90s. In just a matter of two years, the Yahoo.com website was registering 30 million page views per day and, in less than three years after that, Yahoo! grew from being just a search engine to a destination of its own.

Yahoo! fielded more than 45 million unique visitors in February 2000, and served up nearly twice as many searches as its nearest competitor. The significant aspect about Yahoo!'s phenomenal growth has been its reliance on Intel-based servers that provided reliable, scalable and robust system for its web search and other services.

So, what constitutes Yahoo!'s back office? The company maintains about 1,500 servers at six co-location facilities around the globe. Five facilities are located in the United States, with individual facilities in Europe and Asia. Yahoo! rolls over each of its installed servers on a three-year basis, which means that about one-third of all servers are replaced each year.

Most of the machines that Yahoo! currently installs for its web search engine are single-processor servers based on the Intel Pentium III processor. Outfitted with 512KB to over 1GB of RAM and up to 30GB of disk storage apiece, each server provides many times more search capacity than did the original servers the company launched on. Servers are connected via Intel PRO/100 Ethernet Adapters at 100Mbps.

Indian scenario

In India, the server market is slowly but surely picking up. India missed a whole revolution of mainframe computers in the

Table 2: Indian computing products market by Form Factor, 1998-99 & 1999-00

	1998-99		1999-00	
	Units	Value (Rs. Crores')	Units	Value (Rs. Crores')
Desktops	806,910	3,371	1,125,235	4,825
Notebooks	20,288	294	26,709	435
Standard Intel architecture Servers	17,352	344	24,542	450
Total Personal Computers	844,550	4,009	1,176,486	5,710
Entry RISC/CISC Servers	1,857	231	2,629	360
Mid-Range RISC/CISC Servers	285	191	245	197
High End RISC/CISC Servers	0	0	5	45
Total RISC/CISC Servers	2,142	422	2,879	602
Traditional Workstations (TWS)	1,740	109	2,269	128
Total Computing Products	848,432	4,540	1,181,634	6,441
Total Hardware		6,684		9,280

Note:

> Pc Servers have been redefined as Standard Intel Architecture Servers (SIAS)

> RISC/CISC Servers are classified according to price bands:

- Entry servers are non-SIAS servers with a value less than US $ 100,000 landed cost
- Mid range servers are non SIAS servers with a value between US $ 1000,000 and US $1,000,000 landed cost
- High end servers are non SIAS servers with a value more than US $ 1,000,000 landed cost

> Traditional Workstations are RISC/Unix workstations

> Intel based Workstations are counted under Desktops

> Total Hardware includes Computing Products, Peripherals and Data Communication equipment.

Source - IDC (India), June 2000

70s and so didn't have to fight the problem of obsolescence. India's lack of computerisation came as a blessing in disguise during the Y2K threat. To that extent, the growth of high-end computers has been rather slow in India. But with the advent of Internet, dotcom boom and e-commerce, there has been a tremendous demand for servers of late.

Last year, Computing Products accounted for 69 percent of the hardware segment by value and grew by 42 percent over the previous year, ahead of Peripherals and Data Communication equipment, which had growth rates of 30 percent and 35 percent respectively in the same period, according to IDC reports.

The SIAS (Standard Intel Architecture Server) market touched a new high of 24,542 units last year for a solid 41 percent year-on-year growth. New applications, such as ISPs, Web hosting and CRM besides the more established applications, such as ERP, are contributing to this explosive growth. The Entry-level RISC/CISC Server (non-SIAS) space is seeing the most activity. This part of the market grew by 42 percent in unit terms over the previous year.

Prime drivers for growth in this class were dotcom activity and revamping of Channel organisation by vendors. The relaxation of US Government-imposed sanctions in the last two quarters of 1999-00 helped revive the mid-range server class (defined as servers of value between $100,000 and $1,000,000 landed cost), which grew by three percent in value over the previous year. The year even saw the shipment of five high-end servers (defined as servers of value more than $1,000,000 landed cost). Shipments of this class indicate the Indian server market is reaching a level of maturity.

The midrange segment will also provide an engine for growth as more Intel-based products penetrate this space and RISC-based systems continue to maintain performance leadership. However, the successful introduction and deployment of IA64-based systems will begin to challenge RISC dominance by the end of the forecast period. The high-end market is expected to decline through the forecast as pricing pressures continue. Hitachi Data Systems' decision to exit the S/390 market will have an overall negative impact on the high-end space.

IBM's efforts to remake the S/390 platform to attract more ebusiness-based workloads have been met with mixed results in a difficult time for high-end systems dueto Y2K.

The high-end market will see the most dramatic impact of skills shortage as fewer people seek the necessary training.

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META recommends 10 times headroom for e-biz servers

Industry research firm META Group concludes that the unpredictable and growing demands of e-Business deployments will require companies to invest in both Web and application servers in order to avoid slowdowns, outages and site failures. The study points to factors like unpredictable Web-based traffic, demanding users, heated online competition, and growing reliance on connectivity for mission-critical services as drivers of this trend.

Specifically, META Group concludes that e-Business will require application servers to exhibit the same reliability, redundancy and performance overhead demanded of Web servers. In fact, the firm recommends that companies build in headroom for at least 10 times predicted normal workloads in the Web environment. Among the key findings:

Companies should overprovision their servers by a factor of 10 over normal usage.

Employ clustering, load-balancing, and failover technologies to create a reliable and redundant environment.

Use technologies to split processing loads across pools of resources.

META Group concludes that companies should deploy Redundant Arrays of Inexpensive Servers-called RAIS-in order to ensure scalability and reliability in unpredictable e-Business environments.

IBM unleashes ultimate Web server

IBM has introduced the most powerful commercial server in history -- theIBM pSeries 680 -- and announced it will ship the UNIX-based system to customers in volume beginning Nov. 17. Code-named "Turbo," the pSeries 680 has already captured eight major performance benchmark records using up to 24 copper microprocessors with IBM's breakthrough technology -- Silicon-on-Insulator (SOI) technology.

Building on IBM's award-winning RS/6000 S80 design, the p680 delivers superior performance with fewer processors than Sun and Hewlett-Packard systems, while at thje same time also bringing new mainframe-inspired functionality to UNIX customers.

Capacity Upgrade on Demand — IBM is extending its industry-leading mainframe Capacity Upgrade on Demand (CUoD) offering to the p680 to help UNIX customers meet unexpected growth in their businesses. Customers can quickly activate additional processors with a single command in IBM's AIX. A simple "pay as you grow" configuration option, IBM Capacity Upgrade On Demand is an alternative to competitor's expensive, complex offerings.

Built-in service processor — the service processor monitors system. operations and takes preventative or corrective actions for quick problem resolution and high system availability.

Dynamic CPU Deallocation — Automatically deallocates resources if impending CPU failures are detected so applications keep running.