META FACTs: 16 June 2003

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Strategy and Stocks
The Tech Tape - PreAnnouncements and Window Dressing Begin
META/FACTs Technology Strategy
Gerard Hallaren

All prices and graphs in this section are based on closing reports as of Thursday June 12, 2003; data is sourced from Market Guide. The selection of best and worst performing IT stocks is based on stocks selling for more than $1.00 from the META Group IT Supplier Universe (copies available on request). Segment performance is based on the total universe.

Summary:
The next few weeks will bring countervailing trends - earnings disappointments and end-of-quarter window dressing - that may cause a pause in the ongoing rally. We expect any pause or stall to be short-lived. Second-quarter earnings and future guidance will likely be helped by the Euro/dollar relationship and better enterprise demand. Now is a good time to clean the portfolio of uncertainty and upgrade holdings, in our view.

We liked this market for a while but this advance appears more powerful than we had expected. Money flows into small cap funds, the absence of supply, and the invisible hand's winnowing of many small tech companies have driven prices farther than we thought. Despite stronger fundamentals, large cap technology has been slower. Times like these argue for a bottoms-up strategy. From our perch at META Group, it is easier to identify the winners and losers across a number of sectors and a spectrum of capitalization than it is to implement a sector-based strategy.

Over the next few weeks, there will likely be two countervailing forces. First is earnings preannouncement season. Companies are obliged to tell investors if they have fallen short of expectations. This week saw MOT, NOK and TXN announce problems with cell phone demand in Asia, due to SARS. To anyone reading First Albany's research by semiconductor analyst Gus Richard, this was not much of a surprise. The next couple of weeks will likely bring a few negative surprises. We would be wary of applications software, EAI, and development tools. The other factor is end-of-quarter portfolio window dressing. This will likely bid up some of the better-performing names during the quarter. Exhibit 4 lists the top 50 performing IT stocks selling for more than $1.00 from META Group's IT Supplier Universe for the three months ended June 12.

Then earnings season will begin. Because of preannouncements, earnings season is usually fairly benign, as companies make or slightly beat estimates. Our mission at META/FACTs is to translate the business patterns we see for investors. Part of this is to identify and anticipate which companies and sectors are doing better or worse than expectations. Three solid sectors are analytics, content management, and the storage (including management) that analytic and content systems require. Our best reads on business usually comes from end-of-quarter pricing. So far, pricing has been fairly stable; we are only halfway through the month so please stay tuned.

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AROUND THE TABLE:
Around the table is META/FACTs Research's collection and, sometimes, interpretation of comments from META Group's weekly research meeting and short research briefs (METAbits). These comments are selected by META/FACTS Research personnel to provide bearing upon or analytical texture to securities analysis. None of these statements should be considered a recommendation to buy or sell an individual security, nor are they substitutes for a comprehensive analysis of a company or its stock performance.

Table Comments

Sarbanes-Oxley (SOX) and IT Spending
Findings from a recent META Group Webinar (882 telephone participants - varying counts per question): 70% of the respondents are working toward Election 404 compliance; 37% are presently researching and developing solutions (55% of these expect to begin spending within six months); 34% are already implementing; 15% expect to spend on better analytics; 46% have allocated funds for SOX; and 40% expect to make changes to existing systems. More than a few are using SOX as an excuse for other spending.

ADBE
ADBE management may be sandbagging. The company had positive EPS, but poor guidance makes little sense as Acrobat 6 is out and doing well.

VIGN
We have characterized this company as the dark horse in content management and recent indications make it look a little darker. It has 12 years of cash to burn, but the analyst event in NYC was poorly attended. Management addressed the Epicentric acquisition/portal business, but the answers were not clear how it will move forward. No real acceptance or improvement is yet evident among META Group customers.

ORCL and Application Servers
ORCL was very visible at the Java 1 show. Have not yet seen much impact on deals from the BEA focused SWAP and SAVE program, although customer awareness is increasing. One of the key reasons ORCL has gained share in application servers is the middle market. ORCL forms and database are the market share champions among small ISVs, and the application server is doing well there. In Europe, ORCL is pulling ahead of Sun One. Most big enterprises have already picked their application server vendor; IBM is the only one winning major new business.

EMC/LGTO
EMC and LGTO merger speculation again resurfaced. Some question the fit by asking why industry leader EMC would want to buy the fourth or fifth player in a one- or two-horse race.

Carrier Spending
META Group analysts at Supercom saw some large telcos starting to spend on MPLS.

FFIV
Insider selling and the resignation of its CTO prompt a check in. The product is solid. The market has boiled down to FFIV and CSCO. Customers no longer need much advice. The load balancing market is healthy, but of less focus and import than in the past.

MSFT on Antivirus
Good first step; will likely take a few more releases to be truly competitive. MSFT is telling everyone that it is concerned about destroying the AV ecosystem. This product seems to target consumers, and small and medium-size enterprises. The company could integrate the scanner into the OS and let customers subscribe to definitions from other vendors. This might hurt SYMC and NET, but probably not have a lot of impact on TMIC or CA. This will take 12-18 moths to have a major market impact, ino ur view.

HPQ
Is reducing the number of European distributors. As a result of some short term issues around this, IBM and Fujitsu may do better this quarter than expected.

CSCO-NSCN
Heard that CSCO beat NSCN at a major brokerage firm. This may not be as significant as thought. CSCO cut prices dramatically and the customer was a big CSCO user. CSCO ought to win a few shoot outs with NSCN. More significant is that NSCN is number two and that CHKP is not there.

MERQ - Kintana Acquisition
The product lines are complementary, with Kintana bringing elements of change management, portfolio management, and workflow management that, when integrated with the existing Mercury lines (testing and monitoring), bring a differentiating value proposition. It can fit into the governance stuff, but that will just be a struggle for MERQ to sell for a while. Competitively, META Group does not see pressure on Opsware, with the recent HP deal. BMC, Niku, and Serena will probably feel some heat. BMC also lacks any provisioning capability or process execution capability (remedy is purely process watching or governing). IBM is not worried because it has PWC, which puts the company in a different league.

RFID: WMT's order may be too tall
By 2005, WMT wants its 100 largest suppliers to be RFID enabled. Starts with pallets then goes to individual items. Food is an issue; foil wrapping is a problem for cheap tags. Shampoo liquid slows down signals. Curtain rods act like antennas or interference devices for some tags. This is a big issue, as it involves about 1.0 billion tags for WMT alone. Most of the focus is on $0.05 per tag, with a passive three-foot range. Other tags with longer range cost more, but would solve the problem. For example active tags on beer kegs work and are reusable - they track freshness and time in channel. Prime-time readiness varies by chip and application. The big concern/reaction is the perception that WMT is not segmenting or evolving the products and applications. No one tag will work for everything. Not too many suppliers are likely to make the deadline. Some think WMT is trying to drive standards by pressuring suppliers.

META Group Research
META/FACTS Partners provides end-user, enterprise IT focused research and analysis to First Albany's institutional investment clients. META Group is an independent technology assessment firm that advises the world's largest consumers of IT products, often referred to as the Global 2000. This META Group research was selected and often edited for relevance to issues that may affect securities prices. Please note, however, that this information is not a substitute for a comprehensive analysis of a company or its stock performance.

Applications
Oracle's Tender Offer for PeopleSoft Creates ERP Uncertainty
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41366
6 June 2003
META/FACTs Comment
Beginning June 6 and running through June 11, META Group took a poll on its Web site to gauge customer reaction to the unusual ERP merger activity. The graphs below are from that survey.

News Item: Early Friday morning (June 6), Oracle Corp. shook up what had been a fairly friendly takeover of ERP ERP vendor JD Edwards by rival ERP supplier PeopleSoft. The result of Oracle's unsolicited initial cash tender of a little more than $16 per share for PeopleSoft (amounting to a $5.1B offer) has been consternation among PeopleSoft users and a general concern that near-term uncertainty will drive away PeopleSoft customers.

While the offer represents a premium over PSFT's share price on June 5, shareholders "voted with their feet" after the offer was announced, pushing the PSFT share price over $18/share, suggesting a better offer to come and/or that PSFT+JDEC is inherently worth more.

Another interesting aspect of the offer is that Oracle president Larry Ellison was clear during his announcement of the takeover attempt to analysts on Friday morning that completion of the pending PeopleSoft acquisition of JD Edwards was not a condition of his company's acquisition of PeopleSoft. Ellison stated that, after PeopleSoft was acquired, Oracle would reevaluate the JD Edwards deal.

Situation Analysis: The first question concerning the Oracle offer is how determined it is. The answer will become apparent in the next few days, depending on whether Oracle increases its offer to match the jump in PeopleSoft stock price. However, Oracle benefits - and PeopleSoft loses - even if the offer does not succeed. Just by announcing this tender offer, Oracle:

- Creates a huge amount of uncertainty and doubt among PeopleSoft users, prospects, and employees
- Potentially "freezes" the ERP market (i.e., stops the sales cycle for current sales), which would hurt PeopleSoft and JD Edwards more than Oracle
- Harms PeopleSoft sales by making prospects re-evaluate it as their ERP vendor
- Leaves itself a back door - Oracle can simply say that it does not regard PeopleSoft as worth the extra cost of increasing its offer and walk away from the deal
- If Oracle does acquire PeopleSoft, it will gain significant benefits:
- It gains a large potential new customer base for its own ERP products. PeopleSoft's customer base is approximately the same size as Oracle's. Ellison stated in his Friday morning call that Oracle would support PeopleSoft products for an indefinite time while preparing a migration path to Oracle, but it would immediately stop new sales of PeopleSoft.
- Oracle would double its maintenance income.
- Oracle would double its development staff, enabling it to cull weaker developers from both companies while while strengthening the development organization.
- Oracle can put its new developers to work immediately in duplicating the strongest PeopleSoft functionality in the next version of the Oracle ERP product, thus creating a much stronger product.
- It would eliminate one of its major competitors.
- The new Oracle would also gain about $80M in "synergy" savings, according to Ellison, by eliminating duplicate operations between itself and PeopleSoft.

On the other hand, Oracle would face major challenges in combining with PeopleSoft. The technical architectures of the two technologies have many differences, making it more difficult to create a realistic upgrade path that will actually capture PeopleSoft users for Oracle. Additionally, the two companies have strikingly different business cultures - ranging from management style through business strategies, sales organization, and their approach to relationships with customers and value propositions for prospects. Effectively combining these organizations will be difficult, as shown by the many similarly ambitious mergers that have failed.

For PeopleSoft customers, an Oracle takeover followed by an eventual forced migration to Oracle would be bad news. This is confirmed by META Group's online polling, with preliminary results showing that two-thirds of respondents believe a successful Oracle tender would be unfavorable for PeopleSoft users. Despite what Oracle may say, migrating from PeopleSoft to Oracle would require about 80% of the work and effort of a wholly new ERP installation. The migration from PeopleSoft V. 7 to V. 8 was difficult because of the major changes in technology. Moving to Oracle would involve a much greater change in technology, including (potentially) infrastructure, custom code, database, etc. It would also involve learning an entirely new approach to ERP, based on a different philosophy, and for many users a migration to the Oracle DBMS as well.

From our perspective, PeopleSoft will undoubtedly despise this takeover bid and accuse Oracle of disrupting the marketplace/ruining the JD Edwards deal (which may be abandoned if Oracle succeeds; Oracle did not require the JD Edwards acquisition to happen as a condition of the PeopleSoft acquisition). We believe PeopleSoft, through the JD Edwards acquisition, would slowly drift toward IBM infrastructure (i.e., WebSphere). The only real issue is whether PeopleSoft can stop the acquisition (which also may depend on the ultimate price of the offer,

which quickly became too low after it was made). Ultimately, the key ERP players would become SAP, Oracle, and Microsoft, with IBM likely to lose some infrastructure and services traction. We believe a world that includes SAP, Oracle, PeopleSoft, JD Edwards, and Microsoft provides better choices for our clients.

An aggressive attempt by Oracle to conclude its tender offer successfully would be good news for PeopleSoft stockholders, who would end up getting a premium price for their shares, but unfavorable for users. The best hope for PeopleSoft users may be that a white knight will appear, but the question is who? The three giants in the industry - SAP, Microsoft, and IBM - are unlikely to be interested. Siebel, which needs to acquire a back-end system, is not likely to compete with Oracle and probably does not have the resources to compete with Oracle for such a prize.

JD Edwards users are in a much less vulnerable position, since it is likely that if Oracle does buy PeopleSoft, it will not be interested in pursuing the JD Edwards acquisition. If that happens, JD Edwards users will be left where they started - with a viable vendor that can market itself to other potential buyers. If Oracle fails, presumably PeopleSoft will complete its friendly merger with JD Edwards, giving that vendor's products a stronger grip on life.

Of the other vendors, best-of-breed suppliers can expect renewed market interest as prospective customers - and eventually PeopleSoft users if Oracle succeeds - seek alternatives. SAP also stands to benefit with very little risk. Even a combined Oracle/PeopleSoft/JD Edwards would not be large enough to become a mortal threat, while SAP can expect to capture at least some of PeopleSoft's users if they are forced off their preferred platform.

IBM may face some marginal impact in its WebSphere business, assuming that Oracle infrastructure would pervade PeopleSoft (or PeopleSoft and JD Edwards). Microsoft, which plays in the low end of the ERP market, will be mostly unaffected.

User Action
Clarifying our prior posting, PeopleSoft users that have upgraded to Version 8, are in the process of an upgrade, or have plans to upgrade should continue with those efforts. Users that have not yet made firm commitments relative to upgrades, purchases, etc., who have no firm plans, and/or who are PeopleSoft prospects must continue to observe how the Oracle tender offer situation will play out (particularly over the next few days), Although Oracle's hostile takeover threat could be viewed "simply" as an attempt to impede PeopleSoft's financial progress (its fiscal year is not yet compete, while Oracle's is), the potential completion of the acquisition - and its impact on PeopleSoft implementations and customers - must be considered.

META Group analysts David Yockelson, Barry Wilderman, Elizabeth Roche, Ron Hanscome, and John Van Decker contributed to this article.

Pervasive Technologies and Enterprise Applications
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41391
Delta 2269, 6 June 2003
Jack Gold
META/FACTs Comment
Pervasive technologies, particularly RFID and its promise of better inventory control, location-based services and its promise to deliver focused information, and multimodal interfaces that span a wide array of clients from voice to PDAs to PCs are beginning to affect how applications are developed and deployed. Over time the markets for the pervasive technologies are likely to expand and ability to exploit pervasive technology will influence competition.

Radio Frequency Identification
Availability of inexpensive ($0.10-$0.50) RFID tags within the next two to three years will significantly alter the supply chain management (SCM) and enterprise resource planning (ERP) deployments of many companies. Inventory, raw materials, shipping containers, finished goods, etc. will be tracked in real time or near real time as

pervasive solutions become integrated with enterprise applications. Companies using ERP and SCM solutions should assess the viability and ROI of employing such technology and plan for integration within the next three to five years. In addition, low-cost RFID tags offered to consumers (e.g., a Mobil Speedpass keychain with an RFID tag) will enable customer loyalty through preferred customer programs in e-commerce and CRM applications, through both in-house programs and use of services from existing players (e.g., Speedpass, E-ZPass automotive toll tags) that provide preferred customer status or specialized conveniences (e.g., coupons, discounts, preferred seating).

Location-Based Services

The ability to locate end users will have a profound impact on information access and delivery to end users, both internally within the organization and for serving partners and customers. Although LBS technology is being deployed in North America by carriers to meet emergency services (E911) regulatory compliance, we expect carriers to make the information generally available (for a fee) to any business that serves mobile information.

Enterprises developing any pervasive/wireless applications should take into account LBS data to offer more targeted, location-specific information (e.g., salespeople in NY receiving pertinent information only for NY and not for Boston). Such capability will have a dramatic positive effect on the quality and amount of information transmitted by compressing the amount of data that must be sent (e.g., a sales person located in Denver receives only the information needed for that location and not for the entire western U.S.). This is especially useful for relatively slow and costly wireless connections. Enterprises engaged in mobile worker application deployments should plan on employing LBS technologies within two years, as an adjunct to sales force automation, CRM, and other information-intensive field force automation applications.

LBS Pricing

A potential stumbling block to such application enhancements will result if the wireless carriers attempt to charge too much for the services. (This is likely for the first one to two years, given current high prices for wireless data services, but we expect they will ultimately offer a cost range that is attractive to most users.) We believe carriers will offer LBS services on a per-transaction basis (i.e., each time location information is accessed about the user) and eventually (in two to four years) will achieve cost levels of $0.01-$0.10 per transaction. Enterprises should determine the cost at which LBS technology enablement becomes attractive and segment the applications into cost strata, so deployment can begin with the higher-cost services and filter downward into the more cost-sensitive applications.

Multimodal Interfaces

In an effort to make applications available to the widest number of users on all types of devices, many application vendors will make voice interface technologies available as an alternative. This is an attractive option for users who only have access via phone (mobile or fixed) and who need to access limited amounts of pertinent data in a time-critical fashion. This alternative does not replace the need for graphical user interfaces (GUIs) or Web user interfaces (WUIs), but supplements them. Vendors such as Microsoft, IBM, and SpeechWorks currently have technology available for voice-enabling applications.

Regulatory Compliance and IT Spending Trends
Impact: FILE, BE, IBM, DCTM, ORCL, PLUM, LGTO
META/FACTs Comment

There are three drivers to IT spending - the economy, regulation and demonstrable ROI. This is an improvement from a year ago when many companies would not even spend on regulation. The following articles address the number-one regulatory topic, Sarbanes-Oxley compliance, and IT portfolio management, which is a methodology for forecasting and measuring IT success and failure.

Sarbanes-Oxley drives demand for integration services, analytics, and content management software, and the storage to keep all these new records. META Group's comment that "Compliance-related projects may dwarf previous Y2K efforts" underscores the importance of regulatory compliance. Portfolio management drives IT spending and represents a new generation in project management software.

Stocking the Compliance Toolbox to Meet SOX Section 404
10 June 2003
John Van Decker, Stan Lepeak
The official date for compliance with Sarbanes-Oxley Act (SOX) Section 404, requiring publicly traded U.S.

companies to document/certify financial processes, has been extended for companies whose FY04 close is June 15, 2004, or later. This gives most companies extra time to address compliance by leveraging new enterprise risk-management consulting/business applications and offerings from both enterprise (e.g., independent software vendors) and business/IT service providers.

Various compliance point solutions (e.g., from Plumtree, OpenPages, ACL, Steelpoint, and CXO Systems) include include tools to manage risk programs, document enterprise business processes, capture/store regulated communications, and track key risk-management indicators. Although some of these solutions will play a longer-term role (e.g., enterprise portals), compliance will ultimately be supported through applications such as enterprise enterprise content management (ECM) and enterprise resource planning (ERP; e.g., Documentum and Oracle have announced SOX offerings). However, it will take 1-3 years for enterprise ISVs to penetrate this market. Companies should selectively invest in point solutions to meet near-term regulatory deadlines but recognize that long-term compliance is a comprehensive enterprise-wide effort.

Tax/audit firms (e.g., Deloitte, PwC, KPMG, E&Y) and related compliance vendors (e.g., Protiviti, Jefferson Wells) have SOX service offerings and some supporting software tools. However, these firms' long-term play (except for hybrid Deloitte) will be related to process analysis and risk assessment, not software/IT services. The larger service play (2-3+ years out) will come from more traditional IT service providers (e.g., BearingPoint, IBM) deploying/customizing enterprise applications.

Bottom Line: Organizations must balance the tactical investments required to meet short-term regulatory deadlines with the long-term requirements to strategically manage overall regulatory demands while simultaneously improving business performance and efficiency. Compliance-related projects may dwarf previous Y2K efforts.

Business Process Management: "Suite" on Sarbanes-Oxley
10 June 2003
Hollis Bischoff
The Sarbanes-Oxley Act (SOX) requires executive sign off on process documentation and proof that the process executed. End users are inquiring whether business process management suites are useful tools in achieving compliance. Modeling provides self-documenting evidence of the process and the ability to embed controls; process orchestration engines automate much of the process, ensuring consistency and fewer errors; business rules ensure transactions are executed according to the expected process; monitoring and analytic tools provide audit trails for process execution and exception handling; and simulation/optimization provides a path for process improvement. Business process management implementations also include the ability to streamline and optimize business processes. Implementing a SOX compliance initiative should be done only in conjunction with input from tax and audit consultants who have deep experience with general compliance issues. Vendors with Sarbanes-Oxley offerings include FileNet, Fuego, HandySoft, and Staffware.

Bottom Line: Process efficiency and partial regulatory compliance can be gained by tactically implementing business process management tools.

E-Mail and Compliance: A Battle on Many Fronts
10 June 2003
Charlie Brett
E-mail compliance, hygiene, and policy management, which have taken a back seat to other IT issues in recent years, have become business imperatives for several reasons. Organizations, particularly in regulated industries, can expect their total costs for e-mail compliance, supervision, and long-term archival to double or even quadruple quadruple during the next several years. Spam and virus management is a problem for all organizations, not only because it clogs networks and e-mail stores, but also because spam with salacious content has triggered multiple hostile-workplace-environment suits. In addition, failure to apply effective management controls for outbound e-mail programs can expose organizations to legal and regulatory issues concerning consumer privacy requirements and preferences.

Bottom Line: Organizations need to treat e-mail as a core, vital business application. Increasing volumes of critical business data contained in e-mail, the threat level to the organization, and the relationships maintained with customers through e-mail channels now necessitate reconsideration of where e-mail fits within the organization's infrastructure.

IT Portfolio Management: Fact, Fiction, and Future
Teleconference 2019, 12 June 2003
Robert Handler
Impact: NIKU, MSFT
META/FACTs Comment
Portfolio management is enabling higher IT spending and represents a new software market. META Group has evangelized portfolio management as a way for IT management to communicate the value of IT. Portfolio management is a set of systematic metrics for managing project, infrastructure, and applications effectiveness. The core idea is to use metrics that resonate with business and IT alike. At the recent METAmorphosis conference in Chicago, the portfolio management sessions were over-subscribed

Servers & Operating Systems
IBM's z990 Redefines Mainframe Computing
Delta 2277, 9 June 2003
Carl Greiner
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41384
IBM's recent announcement of its next-generation mainframe (referred to as G8 or T-Rex) has definitely reset the server functionality and scalability bar, offering large mainframe-centric users unique alternatives for scale-up and scale-out requirements. An innovative hardware packaging approach enables flexibility in capacity planning while aligning with the on demand or adaptive organization model.

More than 70% of Global 2000 companies continue to support many business-critical applications on IBM mainframe hardware. Most of these applications are transaction/DB-based and have evolved during the past 10-30 years supporting critical business logic and processes. Many ancillary, supportive, or new business functions continue to be implemented on Unix or Windows 2000 domains, creating further dependencies on the legacy applications. Moreover, such surround strategies and increasing midtier application retirements render the mainframe's average net capacity growth at 18%-20% per year.

Industry-leading z990 capabilities for enabling effective participation in the evolving adaptive organization or on demand model and grid architectures further demonstrate the mainframe's staying power. Increasingly robust and cost-effective Linux support now moves mainframe-based Linux out of a tactical position into a strategic consolidation alternative for large Linux deployments utilizing z/VM.

By allowing only z990 deployments in LPAR (logical partitioning) mode, IBM is essentially forcing the independent software vendors (ISVs) to adopt a more flexible workload pricing model - or see their lucrative mainframe toolsets replaced by ever improving IBM tools with migration services. The introduction of capacity variability will further force ISVs to create/adopt new pricing schedules during the next four to 12 months. We believe all major ISVs (CA, BMC Software, Compuware, etc.) will have initial offerings available by 3Q03 and adjustable offerings by no later than 2H04, as adaptive requirements become more pervasive.

Big Is Beautiful

IBM's demonstrated commitment to continue innovative development for z/OS and zSeries hardware extends the platform's established characteristics of reliability, availability, clustering (Sysplex), dynamic workload management, partitioning, and virtualization. We believe the base building block for the z990 will deliver approximately 450 MIPS/5,060 MIPS 16-way (9,060 MIPS 32-way), as compared to 288/3,288 for the respective z900-2 models. z990 extensions in hardware packaging allow for more dynamic (both on and off) capacity provisioning, and the platform now includes extended HiperSockets (internal LANs), expanded cryptographic options, Parallel Sysplex, and GDPS (Geographically Dispersed Parallel Sysplex) improvements. With Unix and Win2000 vendors continuing to frame their high-end offerings as mainframe-like and closing the functionality gap with the zSeries, the T-Rex presents a whole new set of requirements on their only slightly diminished list of features/functions required to truly reach mainframe parity.

Will the Mainframe Regain Data Center Dominance?

Although the z990 remains impressive for most all measures, a number of impediments continue to impact renewed 30%-35% net annual capacity growth, which was the norm in the 1980s and 1990s. Perhaps most important is the Intel effect, or the commoditization of Intel server hardware technology with ongoing 35%-40% annual price improvements, processor speed doubling approximately every two years, and large shipment volumes that easily support major R&D expenditures. We believe the Intel effect will increasingly render both CISC (zSeries) and RISC (Unix) technology to legacy status. Intel virtualization and adaptive management developments continue at impressive rates, with good-enough mainframe capabilities attainable by 2006-07. We believe Intel, in conjunction with Microsoft and Linux, is quickly becoming the primary ISV development target for all applications and new functions, further eroding the legacy domains.

Perhaps the most telling aspect of the mainframe environment is its inability to provide cost-effective solutions when compared to Intel or even RISC domains, except for the largest z/OS installations (more than 5,000 MIPS). The platform's 15%-20% price performance improvements pale in comparison to the other domains at 35%-40% - plus, the ability to attract qualified z/OS system support personnel is becoming increasingly problematic. In addition, the high cost of system software continues to be an anchor for this environment, no matter how robust it is. The 4x+ software pricing differential cannot be adequately addressed due to the financial implications for ISVs as well as IBM. We believe the promise of more granular workload-based pricing will have little or no effect on this delta.

The Future

The mainframe will continue to play an important role within most large enterprises, but it represents increasingly less of the overall computing capacity. We believe it will continue to attract limited new development and Linux traction for very large deployments, but Intel will become the data center mainframe by 2007-08. As with any legacy environment, it hardly ever goes away entirely, and there are always potential new technologies or requirements that can cause a resurgence - much like z/VM for Linux.

Server Vendors: The Linux Effect

http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41389
Delta 2268, 6 June 2003
Philip Dawson

Linux has gained acceptance as a presentation (Web) and application server and is now beginning to be accepted as a database (DBMS) server for smaller instances, thanks to the efforts of Oracle. This new momentum is forcing IT organizations (ITOs) to rank traditional server vendors with new sets of criteria when considering Linux solutions.

Through 2007, the three leading Unix RISC vendor offerings Sun Solaris, IBM AIX, and HP-UX (each with approximately 15% market share) will lose significant data center sales volume to Linux. Each will decline to approximately 5%, moving them to "legacy" status. Linux will grow significantly from less than 10% currently to approximately 30% rationalizing the fragmented Unix market and consolidating the competition against Microsoft, which will retain about 50% of enterprise server volumes.

Through 2005, Linux on Intel (Lintel) will dominate the Linux thrust, with more than 90% of the Linux market. In turn, this will relegate Linux on RISC and Linux on mainframe to niche status. Traditional RISC vendors will see their RISC processor volumes diminish, which will position RISC Unix platforms as database platforms supporting Lintel and Wintel application and Web servers. But even this DBMS niche will be threatened by Lintel/Oracle Real Application Cluster alternatives as they mature (see SIS Delta 1041). Thus, the differentiation/viability of the RISC/Unix vendors will be in how they embrace and manage the Lintel and Wintel momentum. Moreover, whether whether vendors see Linux as an evolution or a revolution determines their product portfolios and Linux positioning alongside their legacy Unix offerings.

Our research indicates that ITOs are evaluating Linux deployments with the same metrics and criteria as all server platforms. Linux has attained good-enough scalability and availability for 2- to 4-way processor Web and app servers. However, the big drive toward commodity Lintel- and Wintel-based platforms is leaving both ITOs and vendors with a conundrum how to differentiate server platforms and selection not just on price/performance, but also on manageability/support.

ITOs need to scrutinize server platform vendors for their Linux capabilities. Our research indicates that a balance between price/performance and support/management helps establish the maturity of Linux in the vendor's product portfolio (see SIS Delta 1055). In turn, ITOs must reflect the real costs and maturity in Linux project evaluations.

Key metrics against which ITOs should assess Linux platform vendors include:

- ***Lintel messages:*** With more than 90% of Linux deployments being Lintel, ITOs should position Linux projects on Intel platforms. Any Linux project off Intel (e.g., RISC, mainframe) should be positioned as niche, with potential independent software vendor (ISV) application issues and increased management or future integration/migration costs.
- ***Red Hat/SuSE?*** Red Hat has approximately a one-year marketing lead over SuSE (United Linux) especially with the hardware vendors. SuSE has approximately a one-year technology/maturity lead over Red Hat. Red Hat dominates in the U.S. and SuSE in Europe. Therefore, server vendors with a worldwide Lintel campaign need to partner with both to act in the worldwide Linux theater.
- Linux marketing: Server vendors need to invest in Linux marketing programs to be seen as the leaders in a fledging marketplace. This includes driving the community and the channel for ISV development, migrating legacy RISC Unix applications to the Lintel platforms.
- ***Linux and Windows***: ITOs should push Intel server vendors with Windows and Linux substitutability. As platforms become more modular, the state of a server blade's operating system may migrate back and forth from Unix to Windows and/or Linux. This change needs to be in a managed framework (see SIS Delta 982).
- ***Linux services***: To help mature Linux in the commercial marketplace, server platform vendors need to offer first- and second-level support for their Linux solutions as well as strong engineering relations with the open source community, or Red Hat and SuSE. Likewise, pre-sales and professional services efforts must reflect the efforts needed to migrate server platforms to a Lintel base.
- ***Successes/references***: How established a vendor's Linux solution is can be reflected by its maturity of references and successes in sales campaigns. As Linux is accepted for app server and increasingly more for DBMS, these references need checking to position leading-edge deployments while avoiding the bleeding edge.
- ***Linux management***: As with any group of 2- to 4-way servers (Lintel/Wintel or RISC), the server management framework for the platform is key. Deploying tools such as HP's Insight Manager or IBM's Director will help migrations to Linux servers and potentially double server system administrator ratios from

an average of 18 to 30 (see SIS Delta 968).

Having understood the relevant metrics, an ITO can then assess the capabilities of the Linux server platform vendors. Our research indicates a diverse range across all these metrics, with no clear leader in every metric. We position the server vendors for Linux platforms as follows:

IBM
Although not an outright leader in every category, IBM is in the forefront with Linux marketing, references, services, and management. IBM does not clearly position Lintel with Wintel, and few references exist with AIX/pSeries and Wintel/Lintel application and Web servers. We believe this mixed support is key to Linux maturity as it encroaches on the DBMS back end, which IBM wants to keep as AIX/pSeries to defend margins.

Hewlett Packard
Alternately, HP has strong Lintel and Wintel messages transitioning to HP-UX from PA-RISC to Intel's Itanium Processor Family. HP's marketing and messaging from the HP-classic, Compaq-classic heritage is inconsistent; we believe HP will put more effort in Linux marketing through 2005.

Sun
Sun is new to both Linux and Intel platforms an about-face (or embrace) that will be a make-or-break move for Sun (see Delta 2025). Moreover, Sun's success in the Lintel space is new, with few references. We expect strong Sun shops to consider Sun in the Lintel space, where Sun can manage SPARC/Solaris and Lintel as one. However, new greenfield Lintel opportunities will be a challenge for Sun, competing with Dell on price and HP/IBM on features/functions.

Dell
The commoditization of platforms and operating systems (which Linux represents) fits Dell's model well. As Linux matures, we expect more messages from Dell on Lintel success. However, Dell needs to invest in Linux services for support and migration/management alongside Red Hat and SuSE.

FSC: Fujitsu/Fujitsu Siemens
Fujitsu Siemens is a new entrant in all our rankings. This is due to the fact that we are seeing increased presence in sales situations and ITO projects in America, Canada, the U.K., and Nordic regions, as well as traditional strong fulfillment inside Germany and Japan. Fujitsu has a balance of strong solutions, Lintel/Wintel, and RISC platforms on sound EMC-based storage. However, such success must be repeated commercially in these new geographies for Fujitsu and other markets worldwide.

Microsoft Serves Up a New Windows
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41403
Delta 2278, 9 June 2003
Steve Kleynhans
With the release of Windows Server 2003, Microsoft has laid the foundation for its Windows Server System, which ultimately includes updates to all its server products. Although we do not expect mass migrations to the new platform, we believe most organizations will need to adopt Win2003 for portions of their environment within the next two years.

Windows Server 2003 was initially positioned as a minor update to the Windows 2000 Server product, bringing the server in line with Windows XP on the desktop and delivering minor functional enhancements missing from the initial release. However, as the product suffered delays, it picked up greater importance and became an essential component for many of Microsoft's Information Worker, application, and infrastructure initiatives.

Although the technical enhancements are incremental refinements on the already solid Win2000 Server (e.g., including significant security, availability, and administration enhancements), many new services (Media Server,

Real-Time Communications [RTC] Server, Windows Rights Management Services, SharePoint Portal Server) require the new platform. By 2006, we expect all the products in Microsoft's newly branded Windows Server System to have dependencies on the Win2003 Server platform. We do not expect the next major server OS release (code-named "Blackcomb") before 2007, though it is likely that a more minor update will be released in the late 2005-06 time frame to add support for new features in the Longhorn client OS.

For the most part, the improvements in Win2003 are worthwhile and do increase the value proposition for enterprise customers.

Win2003 Server is the base platform for Microsoft's Windows Server System and is necessary for several upcoming products. Win2003 is the first OS to contain the underlying components needed for rolling out .Net-based applications, including an embedded common language runtime, UDDI support, and IPv6, as well as an updated version of the Web Server (Internet Information Services 6.0) with full XML support. In 3Q03, we expect Microsoft to introduce the RTC Server and an add-on to the Win2003 product. This will enable secure instant messaging and presence information (see WCS Delta 1062 and Delta 2017). Included in the OS is the new Windows Rights Management Service, which is required for Office 2003's document securing facility. Win2003 is one of the first major products to be impacted by Microsoft's Trustworthy Computing initiative and it shows several improvements in security.

Infrastructure & Security
The Ins and Outs(ourcing) of Application Management
http://www.metagroup.com/metaview/mv0681/mv0681.html
Teleconference 2017, 9 June 2003
Kip Martin

From IT Security to Information Security
12 June 2003
Carsten Casper
Europe is a diverse landscape when it comes to securing information assets. Although some leading organizations are starting to transition from isolated technology projects to a holistic, programmatic approach (2003-06), others are still getting their security organization and security policy right. Once information security policies have made the transition from a monolithic document to an adaptive policy framework, organizations need to focus on defining strategic and operational processes for information security. However, there is the danger that historically federated European security organizations will be unable to maintain the momentum, making ongoing management attention and an increased emphasis on awareness programs mandatory.

Microsoft and Public Key Infrastructure
http://www.metagroup.com/metaview/mv0681/mv0681.html
Running Time: 7min 23sec
Release Date: 6/9/2003
With Microsoft embedding PKI functionality in Windows 2000, and enhancing the offering with Windows XP and .Net Server, it is time for organizations to give the Microsoft PKI a serious examination to uncover its possible uses as well as lingering drawbacks.

Speakers:

David Yockelson
Executive Vice President
& Director, Technology Research Services
David Thompson
Senior Research Analyst

Web Services Security: Don't Shoot the Messenger
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41383
Global Networking Strategies
Security & Risk Strategies
Delta 2267, 6 June 2003
Earl Perkins
Although Web services security standards are evolving rapidly, they are still inadequate for forays outside enterprises that lack proprietary protection.

Recent releases of additional Web services security standards specifications and the proliferation of products known as Web services firewalls or gateways are focusing attention on significant questions: What is the current reality of Web services security? What kind of security should IT organizations expect in early deployment phases of Web services?

- ***Web services security standards are important, but comprehensive standards in product form are at least two years away.*** This is a fact of life when installing standards into real products. Most standards efforts require at least two iterations before they are truly useful from an interoperability point of view, and Web services security standards are no exception. Each iteration usually takes at least one year to appear in products, though it seems that Web services may move slightly faster. It still means that real interoperability at the product level with "official" Web services security standards will take some time.

- ***Most Web services security standards are actually older XML security standards aggregated beneath vendor-carried banners and are in danger of having too many vested interests***. The World Wide Web Consortium, OASIS spin-off groups involved with Web Services Security (WS-Security) and Web Services Interoperability (WS-I), vendor-specific groups, and user groups ensure that politics and capitalism will play important roles in deriving effective standards, ultimately slowing the process.

- ***Securing Web services effectively means implementing new infrastructure requirements beyond those for securing Web applications***. For example, while network-centric firewalls are effective at creating network-centric security boundaries, Web services require application-centric, message-level inspection. Products (i.e., Web services firewalls or gateways) are beginning to appear that support initial standards specifications, but are still evaluated more often than purchased.

- ***Web services security will have a significant negative effect on network performance and must be accommodated prior to extensive implementation.*** Web services architecture itself is inherently inefficient from a network perspective, having some of the same characteristics as early client/server and Web-centric application architectures (and, hence, infrastructure impacts). Adding the level of dynamic security required for a Web service application that may have multiple handoffs among the services it interacts with will place strains on an already bloated infrastructure.

- ***Web services security will come no closer to solving fundamental security architecture and process issues than previous waves of application standards, since it is not about technology anyway.*** Web services represent a fundamental shift in the way applications are delivered. For example, applications that are "disassembled" and delivered over a network have security concerns that are evident and required at the "seams" of that application. The processes used to develop and maintain application architecture and engineer adaptive infrastructure will undergo significant rethinking. The organization that delivers and supports old-style applications will require new skill sets and structure to accommodate the

changing nature of security in such an environment.

Are Private Networks at Risk?
10 June 2003
Global Networking Strategies, Infrastructure Strategies
David Willis
Even as regulatory pressures for privacy and security increase, enterprise networks continue to trend more toward public-service usage. Fortunately, most organizations have taken adequate measures to ensure the security of corporate data over public services (e.g., Internet-based dial-up, broadband, public access) and other vulnerable infrastructures (e.g., wireless LANs). Yet traditional carrier offerings are increasingly risky. Services such as private line, private data, and voice, formerly delivered over dedicated channels, are being migrated over a common packet infrastructure. In addition, many data services, including frame relay, Multiprotocol Label Switching (MPLS), and Ethernet, may share common nodes with the carrier's Internet services. This consolidation will create additional risks for security and business continuity within the enterprise.

Database
Is Oracle's RAC Still a Stretch? Part 1
Delta 2282, 11 June 2003
Charlie Garry
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41456
Although it has been almost two years since the release of Oracle9i, adoption of Oracle's Real Application Clusters (RAC) is slow, while interest remains high. Organizations must continue to weigh the value of this pillar of of Oracle's "Unbreakable" campaign.

By YE04, we expect adoption of Oracle9i to finally hit widespread production use. Its adoption has likely been slowed somewhat by both the economy, which reduced budget dollars, and the workforce required to upgrade many organizations' databases to the 9i release. As of last year, our research indicated that a sizable number of META Group clients had just reached the most recent version of Oracle8i (8.1.7.4) and had no plans to start testing Oracle9i until 1H03.

Real Application Clusters (RAC) was a central focus of Oracle's marketing when 9i was first released in June 2001 and remains as such. This option enables organizations to scale Oracle database instances by clustering several servers together that share a common disk subsystem (see SIS Delta 918). The promise is that, by scaling out and using inexpensive commodity (Intel) servers running Linux, organizations could lower infrastructure costs (relative to larger RISC servers) and attain the higher availability provided by near-instantaneous failover in the event of server failure. META Group recently spoke to a number of companies that tested RAC to gain insight as to the progress of RAC to date and the types of issues users will likely face.

Failover Suitability
It is clear that interest remains high concerning RAC. Most users we spoke with consider high availability to be the number-one reason for considering RAC.

Quality of References
IT Organizations considering use of RAC should investigate Oracle's references thoroughly; as with any new technology, risk is involved. Several prospective RAC users reported that many of the reference customers that Oracle provided were old Oracle Parallel Server (OPS) customers. OPS is actually the predecessor to RAC and was plagued with numerous performance and availability issues. Oracle claims to have 400 production implementations of RAC, with only a small percentage being old OPS customers. If this is true, Oracle should have no trouble finding appropriate reference customers for prospective users to speak with.

Network Equipment
2003 Campus-LAN Equipment METAspectrum: Nortel and Enterasys
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41325
Delta 2260, 5 June 2003
Chris Kozup

META/FACTs Comment
META Group advises customers to consider both Nortel and Enterasys as alternatives to Cisco. This is a big improvement from last year's spectrum that hoped Enterasys would get better and cautioned enterprises about Nortel.

Nortel and Enterasys have stabilized their enterprise-focused businesses and remain challengers to Cisco in the enterprise data networking market. As both companies continue to execute, users may consider these providers as alternatives to Cisco.

The campus-LAN equipment market is crowded with suppliers; however, only a few vendors have the potential to break away from the followers and represent a strong alternative to Cisco. Although Cisco will continue to dominate the market, we see a subset of customers interested in dual-sourcing or pursuing lower-priced providers. In light of the premiums often commanded by Cisco for both hardware and services, a few enterprises are looking for alternatives and are either exploring the option of opening their network to a second manufacturer or single-sourcing from a different vendor. We expect this phenomenon to continue given economic pressures, potentially moving some clients to steer clear of Cisco altogether. Our research indicates enterprises place a high value on the credibility of strategic providers. The enterprise focus has shifted from technical elements (speeds and feeds) to suppliers that emphasize solutions and business process improvement. Nortel and Enterasys have succeeded in providing a complete portfolio of networking solutions to span the breadth of enterprise requirements. Although not all enterprises will choose to single-source all components (e.g., switching, routing, firewall, VPN, voice), they generally view these vendors as more credible, given their broader exposure and ability to integrate multiple piece-parts.

Through 2003-04, Nortel will continue to be the most viable alternative to Cisco. Enterasys will focus on sales and product execution, in hopes of calming viability concerns. Neither vendor will dominate the market as Cisco currently does. However, by 2005, Nortel will regain much of its credibility among the large enterprise customer base. By 2007-08, vendors such as Enterasys, Extreme, and Foundry will be forced to develop partnerships with leading enterprise-outsourcing vendors (e.g., Siemens, IBM, EDS) to maintain viability in the enterprise networking market.

Nortel
Key strengths
Since the 2002 Campus-LAN Equipment METAspectrum^{SM}, Nortel has succeeded in rationalizing its business and has recently returned to profitability. Nortel must now refocus on the key areas of product development, sales execution, and customer retention, as well as service and support. Although holes still remain in its product portfolio, Nortel has introduced major improvements in its enterprise networking product portfolio. Nortel's awareness and reputation are second only to Cisco, with both vendors succeeding in developing a credible strategy to effectively target the enterprise CxO. Although not as complete or developed as the Cisco approach, Nortel's vision of the "Engaged Enterprise" is a feather in the cap for a company that previously spoke only the language of the technical evaluator. The success of this approach is already evident: META Group continues to see Nortel consistently making the LAN RFP shortlist of Global 2000 (G2000) enterprises. Moreover, Nortel's successful partnerships in Europe, the Middle East, Africa, Latin America, and Asia give it a strong global sales presence. From a technical perspective, Nortel is able to leverage its strength in the carrier markets to port additional features and functionality into its enterprise-class products.

Key challenges
Despite promising improvements in Nortel's focus on the enterprise customer, we consider Nortel's enterprise positioning to remain slightly fragile. Nortel has not been as successful as its major competitors in consistently delivering product improvements. Some META Group customers continue to experience an inferior level of service and support - a phenomenon due to the substantial cut in employees during the past two years (from 90,000+ to 35,000). Moreover, we continue to see substantial hardware price discounting in the channel - a move that signifies Nortel's intent to capture market share. This could have an impact on profitability in the long term, which could affect its ability to pay down its debt. Despite recent profit improvements in earnings, Nortel's debt remains one of the largest of any enterprise-focused vendor.

Bottom line
META Group is encouraged by the improvements Nortel has made in its enterprise business. The separation of the enterprise business unit from the carrier-focused units enables Nortel to focus more effectively on enterprise customers. Nortel has shown a clear commitment to the full suite of products and solutions required by large enterprises, including telephony, wireless, security, VPN, and data networking. Although Nortel has not succeeded in maintaining its foothold in the WAN router market, it continues to execute in all other product categories. Enterprise customers looking for a strong alternative to Cisco should consider Nortel.

Enterasys
Key strengths
Enterasys has maintained a loyal customer base, especially during a time when the market's general malaise has limited its ability to attract new customers. The 2003 Campus-LAN Equipment METAspectrum shows Enterasys as a challenger with a slight lead over Foundry and Extreme. This lead is marginal and META Group expects these three vendors to continue battling for several years without any single company emerging stronger than the other. Enterasys offers capabilities that the other two lack, however. The company has successfully built a product product portfolio that is capable of meeting the networking requirements of the large majority of G2000 enterprises. Enterasys continues to put a good deal of resources into R&D for product development and acquisition. It has specific strengths in routing, switching, and security solutions. Enterasys continues to be fairly well represented internationally. Despite several accounting missteps (including revenue recognition issues, being forced to restate past earnings, and an exhaustive SEC investigation), Enterasys has succeeded in maintaining relatively flat revenues in a market that is generally declining.

Key challenges
Enterasys, like most vendors in this market, lacks an ability to move beyond a technical discussion and achieve credibility at a business level. As economic conditions drive infrastructure procurement decisions higher up the reporting structure, vendors that do not succeed in clearly articulating the business benefits of their product portfolio will be relegated to a niche supplier position. Although Enterasys has managed to keep revenues relatively flat, it must execute on expanding beyond its installed base of loyal customers and penetrate new accounts. Enterprises have been burned in the past by believing that Enterasys had overcome its problems; any additional turmoil in the company could kill its chances of being a top-tier supplier. Except for its partnership with Siemens, the general caliber of Enterasys partners is not on par with that of most of its competitors. Enterasys has the bulk of its exposure in the channel through small, regional VARs, which often specialize in a specific vertical or industry and lack the ability to improve market awareness on a broad basis. In 2008, leading enterprise data networking providers will be those that successfully build and maintain relationships with top-tier partners.

Bottom line
Although Enterasys is clearly not as recognized in the enterprise as Cisco or Nortel, its ability to present a comprehensive suite of enterprise solutions appeals to a subset of G2000 customers. Enterasys has not completely emerged from its darker past, and enterprises are justified in remaining slightly cautious. Longer term, we believe Enterasys will be a challenger based on its ability to grow its installed base through Tier 1 partnerships with companies such as Siemens.

Carriers: Wireless
North American Cellular Network Update
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41388
Delta 2272, 6 June 2003
Peter Firstbrook
North American cellular networks are evolving rapidly to next-generation technologies and services. IT organizations must re-evaluate corporate cellular usage to ensure it continues to satisfy business goals.

North American (NA) cellular network evolution to next-generation technologies is nearing completion. New services such as faster Internet access, mobile e-mail, Short Message System (SMS), Multimedia Message System (MMS), and location information are gradually improving to the point that they can enhance business processes for the mobile workforce. However, uncontrolled end-user adoption will simply increase costs with minimal business benefits. IT organizations (ITOs) negotiating enterprise contracts and reviewing employee plan selection must consider which cellular services are necessary and which are of marginal, if any, benefit. Some new services enable employees to side-step current IT security policies (i.e., content security and remote access). ITOs must update cellular usage policies as a first step to avoiding potential security breaches.

Nextel
Nextel is the lone U.S. carrier offering iDen service, which provides push-to-talk (P2T) walkie-talkie-like functionality. In 2003, Nextel introduced nationwide P2T, and it is evaluating 2.5G and 3G technologies, preferring to focus on its P2T differentiation. P2T stays inside the Nextel network, providing a level of redundancy when telephone networks are down. Data traffic carried over the iDen Network is IP based but limited to a steady 15 Kbps (bursting to 22 kbps). Other carriers are looking at P2T technology that can operate over CDMA and GPRS networks; however, commercial deployments are not expected until 2004 at the earliest, and quality will likely lag Nextel initially. In 2004, Nextel will focus capital spending on enhancing voice quality and improving its geographic coverage. Nextel's lack of roaming partners means it has one of the smallest footprints of U.S. carriers. Few of our clients use Nextel as a primary carrier, but a majority has some departmental usage where P2T is valuable. Nextel is the first carrier to offer a corporate (rather than consumer) location service to track handset users on a map, a valuable service for logistics.

AT&T Wireless
AT&T Wireless has a mixed deployment of GPRS/GSM, AMPS, and TDMA (see Delta 2272). It has no announced plans to phase out TDMA coverage but has a preference to move customers to GSM/GPRS. Best voice coverage will be obtained by purchasing GAIT (GSM/ANSI 136-Interoperability Team) phones. EDGE (Enhanced Data for Global Evolution) is currently 69% complete and is expected to be 100% deployed in 4Q03. Nokia is planning to have EDGE on all high-end handsets by 4Q03. Users of data services should select EDGE phones when they become available. Although only 7% of AT&T's network is analog-only (AMPS), it is a pervasive underlying technology, and no AMPS phase-out dates have been announced, regulations make it impossible to eliminate AMPS before 2008.

AT&T stopped selling CDPD in March 2003; however, it will continue to operate the network until June 2004. AT&T is providing assistance (including rebates for BlackBerry users) to help clients move off the network. Users should be migrating to GPRS or CDPD 1X. AT&T has approximately 12% of the North American market and a significant business customer base (i.e., 70% of Fortune 500). AT&T is collaborating with GoPort and Wayport for 802.11b coverage.

T-Mobile (Deutsche Telecom)
T-Mobile has fully deployed GPRS over its homogeneous GSM voice network. It will be migrating to EDGE only in a few major POPs in 2004. The balance of its capital expenses will be to grow at the fringes of existing coverage areas and improve quality within the existing footprint. A recent roaming and network sharing agreement with AT&T will significantly expand both companies' coverage area in 2H03. The T-Mobile network supports Multimedia Messaging Service (MMS) and two-way SMS, and offers a full range of personal digital assistant (PDA)-type devices (RIM, Pocket PC, Danger, Treo Palm). T-Mobile is also the most aggressive carrier in deploying Wi-Fi hot spots, with more than 22,000 sites mostly in Starbucks, Admirals Clubs, and Borders Books. T-Mobile and Boingo are co-developing software to ease access-point sign-on due out in 2H03. T-Mobile has aggressive pricing plans at most volume levels. Financially troubled German-based Deutsche Telekom owns T-Mobile and may decide to sell it if a buyer could be found. AT&T and Cingular are the obvious buyers given the shared network technology.

Sprint
Sprint has long been the digital network advocate and was one of the first to have 100% of the network upgraded to CDMA 1XRTT; however, Sprint still offers phones that can roam onto analog networks. Roaming is still an important part of a carrier's coverage, and Sprint is now offering the PSC "Free & Clear" plan, which includes free roaming to improve in-plan coverage. Sprint is the only major carrier that shunned BlackBerry in favor of Pocket PC and Palm-based PDAs for e-mail. Sprint is pursuing an aggressive alternative channel program for business customers targeting solutions partner programs and vertical market software resellers that can provide corporate data applications. Despite excellent rate plans, Sprint has suffered from poor customer service and coverage.

Addressing these issues is a core objective for Sprint in the next 12 months. Sprint does not have 802.11b hot spots, but we expect it to deploy some in 4Q03 or 1Q04.

Cingular
The joint venture of SBC (60%) and BellSouth (40%) is a laggard in GPRS/GSM deployments (only 50% complete). By year-end 2003, it expects to be 90% complete, with the remaining 10%, mostly in rural areas, done in 2004. Cingular has no plans to phase out its TDMA, AMPS, CDPD, or Mobitex underlying networks, making its network cost structure questionable. EDGE trials are currently underway and expected to be commercially available in selected areas in 2004. Cingular offers competing BlackBerry and Good Link e-mail services on the legacy Mobitex network, but voice and data RIM 5810s and phone-browser-based e°mail services are available. For laptop users, Cingular offers data compression software to boost GPRS speeds to 56 Kbps. Despite offering converged Nokia 802.11b/GPRS PCMCIA cards, Cingular does not offer Wi-Fi hot spots but is planning on a joint program with its parent companies. Cingular supports two-way SMS and expects to offer two-way MMS in late 2003. Its recent reorganization created partially autonomous sales regions with the flexibility to create local pricing plans. Users should negotiate with Cingular from offices in the most competitive regions (i.e., Northeast and Southwest). We expect Cingular to lag the market for advanced business-grade services and network infrastructure. AT&T and Cingular share roaming agreements and network infrastructure, and we expect these two companies to tighten their ties in 2003-04.

Verizon
Verizon, the largest wireless carrier, is 85% complete with its CDMA 1XRTT rollout and expects to be complete by 3Q03. Verizon has not announced plans to discontinue CDPD coverage; however, we expect it to be phased out by YE05 at the latest. The company recently announced plans for a commercial launch of CDMA 1xEV-DO in Washington, D.C., and San Diego in 3Q04. We expect this launch to be a test only and advise business-grade customers to avoid this technology until it matures in 4Q04 and broader network coverage is implemented. Verizon offers two different data services: Mobile Web and Express Network. Business buyers should avoid the Mobile Web plan, which operates at only 14.4 Kbps and is for browser phones only. Express Network is the CDMA 1XRTT service. Verizon offers various air cards, smart phones, BlackBerry, and browser-based corporate e-mail servers. We expect Verizon to offer Wi-Fi access later in 2003 in conjunction with Wayport.

Network Changes
The majority of NA carriers have substantially completed the rollout of CDMA 1xRTT or GPRS (see Delta 2273). These new data overlay technologies provide substantially improved data bandwidth (40-80 Kbps), with faster connection times. Legacy data networks (i.e., CDPD and Mobitex) will be phased out by 2005, and ITOs using these services should be planning to migrate. We expect the GSM/GPRS carriers to begin to add EDGE (Enhanced Data Rates for GSM Evolution) in 4Q03, boosting bandwidth to 80-100+ Kbps (see Figure 1). Commercial activation will begin in 1H04 when EDGE handsets become readily available. Nokia will offer EDGE as a standard feature in most of its GPRS handsets from 2H03 onward. Users should select EDGE handsets when available. Limited trials of CDMA 1xEV DO will begin in a few cities in 3Q04, boosting CDMA speeds to more than 1 Mbps.

Most of the NA carriers have a heterogeneous voice network consisting of a mix of TDMA, AMPS, CDMA, and GPRS. Carriers will eliminate AMPS- and TDMA-only coverage areas by 2004; however, a number of carriers (Verizon, AT&T, and Cingular) have U.S. Federal Communications Commission (FCC) regulated obligations to continue to operate AMPS networks until 2008 wherever they provide digital coverage. Moreover, there are 12 small rural AMPS-only carriers that are roaming partners of the larger carriers. In 2004-05, carriers will direct their much-reduced capital spending at enhancing digital coverage in larger major metropolitan areas rather than adding coverage in rural fringes.

Mobile Internet Access.
The following are the three types of Internet access provided by North American cellular carriers:

- Phone browser (i.e., Wireless Application Protocol [WAP])
- PCMCIA card to cellular

- Wi-Fi hot spots

Although WAP's role is downplayed, WAP browsers are integrated in 75% of all new phones. Typical costs for WAP access are between $3 and $10 per month. WAP access enables cell phones to interact with any public IP address; however, Web site content must be modified to enable viewing on a WAP browser (see GNS Delta 808). Laptops and most personal digital assistants (PDAs) require a PCMCIA air card (i.e., $300-$450 from Sierra or Novatel). Airtime charges for these more voracious bandwidth users range from $20 per month for 5Mb to $100 per month for unlimited access. In addition, substantial per-minute fees may apply. Tethered access, where the cell phone acts as the modem for the laptop, has been discontinued by Sprint; other vendors will likely follow. T-mobile and AT&T also offer 802.11/Wi-Fi access for laptops, and we expect other carriers to enter the ballooning hot spot market in 2004, either directly or through aggregators such as Wayport (see GNS Delta 1004).

Messaging. SMS usage is ramping up much the same way it did in Europe (i.e., 200%+ annual growth) since telephone-number-addressed inter-carrier messaging became a reality in 2002. Inter-carrier traffic is limited to one-way SMS (i.e., 160-character limit), though several carriers support two-way SMS (500-character limit, auto reply) within the network. Most of this traffic is P2P-based. However, we increasingly see organizations looking for ways to leverage this inexpensive and ubiquitous messaging platform for internal communications and marketing.

The next generation of messaging - multimedia message systems (MMSs), which enable messages to include digital pictures, graphics, and short animation - is available only from a few carriers. This medium is expected to be primarily for consumers and marketing, though some business applications (i.e., insurance adjusting) might benefit.

E-mail remains the primary messaging application for handhelds. Carriers are primarily offering two major choices for corporate e-mail: RIM BlackBerry, or browser based e-mail emulation. RIM is the predominant choice for power users because it pushes e-mail out to users, enabling offline usage, and it is relatively secure (FIPS-compliant). However, the downside to RIM is the additional cost ($650-$1,000/user/year) as well as the corporate administration burden. Browser based e-mail is sufficient for light usage but cannot work offline. For a minimum investment ($5-$10/month), end users can open up a channel through the corporate firewall to their desktop PC to to get browser e-mail access.

Location Information. Carriers are only gradually adopting E911 Phase II location requirements, and few have externalized location information for corporate applications. Global Positioning System (GPS)-enhanced handsets are the primary means of providing accurate location information.

Number portability, planned for 3Q03, will significantly reduce switching costs, especially between carriers with the same network technology, reducing the incumbents' power and creating a new round of price cuts and other incentives. Next-generation networks are coming online; however, fewer than 18% of end users have been willing to pay for data services. We expect this number to increase to 50% by 2006 as the price for this service declines by 20% year over year. Voice airtime costs continue to decrease by as much as 20% on key plans because of increasing market saturation (now approaching 60%); however, total monthly expenses per subscriber are increasing.

Delivery-ware: Portals, Content Management
Justifying Portals With Money, Strategy, Time, Platforms, and Fear
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41402
Delta 2274, 6 June 2003
Jeffrey Mann
Many IT managers instinctively believe portals should be part of their application infrastructure, but have trouble justifying the expense and effort required to implement them.

Many IT organizations are currently going through the same process to justify enterprise portals as they did for intranet implementations in the late 1990s - and encountering the same difficulties. To build management enthusiasm for enterprise portals rather than passive acceptance, IT managers must demonstrate the everyday

value of the proposed portal solution for the short (<12 months) and long (two to five years) term. Fruitful areas to pursue in this regard include:

Cost reductions
Expected cost savings are a primary reason for implementing portals and a good place to start, because the purchasing department will focus on this aspect. The ROI and NPV calculations function as a "gatekeeper" step that must be overcome before the project can continue. However, overcoming this hurdle is usually not enough in itself to obtain sufficient buy-in for the project. Falling portal licensing fees are also having an impact. A $200-$250/seat investment in 2001 has now dropped to the $10-$70/seat range (with quantity).

Strategic considerations
Tying a portal project to existing strategic organizational goals is another tactic for winning executive support. Aligning portals as a means to implement the goals set by the CEO at the annual "state of the company" meeting will raise the portal's profile and increase the likelihood of executive approval and line-of-business (LOB) buy-in. This is particularly true when senior business executives' personal objectives are tied to these same goals, which is often the case.

Time savings
Concrete cash-flow savings can be difficult to pin down, so organizations often rely on productivity arguments. Indeed, reducing the time needed to do tasks provides an easily estimated and understood justification, but the purchasing group often ignores this category altogether. However, this factor is critical for obtaining LOB and worker buy-in (e.g., "How will this make my job or my team's job easier?"). Time is also fairly easy to translate into money, yet we caution against the overly simplistic claims of many vendors, which lead to astronomical ROI numbers with seemingly little effort. In addition, collecting detailed process information provides a good start toward implementation of the portal, because implementers will need this kind of information once the proposal receives approval.

Platform and infrastructure concerns
Enterprise portals increasingly form part of an overall application infrastructure, rather than being implemented as discrete applications (see EBS Delta 1204). The issue of portal justification largely disappears when they are considered as part of an overall platform. Portals are increasingly being used to provide lightweight front-end application integration. Many organizations end up inheriting a portal in this way, without necessarily intending to make a portal decision. When making a strategic decision for major application framework vendors such as IBM, Oracle, BEA, or SAP, the portal arrives as part of the box. These "Trojan horse" portals become either the de facto corporate standard or one of many portals in use unintentionally (see EBS Delta 1236 and WCS Delta 1208). The time and platform arguments actually reinforce each other, because portals tend to simplify application integration and user-interface development.

Fear
In addition to the above positive arguments in favor of portals, there is at least one powerful negative reason in support of implementation: the fear of being left behind. Analyzing what the competition has done to provide portal-based services can provide justification that LOB managers readily understand, particularly if these portal efforts are making customers happier, partners more effective, and employees more productive.

Opening the Source of Content Management
http://www.metagroup.com/cgi-bin/inetcgi/jsp/displayArticle.do?oid=41399
Delta 2276, 9 June 2003
John Brand
META/FACTs Comment
Linux has spread like wildfire in many markets. The Asia/Pacific region has embraced Linux whole-heartedly. Now the Open Source Gospel is spreading to other categories. This report examines Open Source Content Management and finds it wanting for mission critical applications. Despite this, we see these trends further commoditizing software and amplifying the value of services.

Open source is increasingly being considered as a viable replacement for commercial operating systems as well as page and application servers. Recently, Asia/Pacific organizations also began examining open source as a way of enabling user-friendly Web publishing and content management solutions.

Unlike in North America and Europe, several factors are driving a greater interest in the Asia/Pacific region for open source content management-related technologies.

- First, poor support and usability of some commercial Web content management vendors' offerings are driving dissatisfaction among many business users.
- Second, a backlash against major vendors' licensing policies and high total cost of ownership has forced many IT departments to address immediate content-related needs with little or no additional business funding.
- Third, but less dramatically, a backlash against Microsoft continues to pervade the region.

These issues will continue to drive Asia/Pacific organizations to seek less expensive and (hopefully) more effective content management solutions. However, the demand for open source alternatives will be tempered by a lack of long-term success. Our research has shown that organizations adopting open source content management technologies will find an increase in overall development and support costs (up to ~30%) long term. This is due to users demanding better integration with legacy applications, business processes, and administration capabilities.

The belief that content management is a distinct and isolated application, or that open interfaces/APIs will inherently provide business value, is flawed. By 2005, only 5% of Asia/Pacific organizations will have adopted a comprehensive open source content management framework, with another 5% supporting a partial open source approach, based on the entrenchment of legacy applications deployed during 2003-05.

The successful utilization of open source technologies has been restricted to commoditized platforms or services (e.g., Linux, Apache, JBoss). However, even these have yet to conclusively prove their cost benefits (see SIS Delta 1035). As applications continue to be built on higher-level business services (e.g., user management, identity profiling, preference management, document profiling, content categorization), functional integration inherently becomes more complex. This reduces the value of open source solutions, because they typically focus only on improving the user interface or providing basic repository services. Failing to address users' needs beyond basic content contribution or distribution will lead to a short-term user acceptance at best. Furthermore, the gap is filled with custom code that is typically undocumented, which effectively results in another custom application. Indeed, the belief that open content management can be successfully applied to the organization is as as much of an oxymoron as the acquiring of an open source-based solution for CRM.

However, several smaller IT organizations in the region have had some limited success by internally integrating numerous loosely related content management technologies (normally based on Apache Jakarta/Struts/Cocoon projects) but usually are limited in scope and functionality or are based on the expertise of a small group of enthusiastic developers.

Furthermore, the focus only on the creation of content rather than the value of its consumption is forcing organizations to look for low-cost, but generally equally low-business-value, "analgesic" solutions. Removing users' immediate pains (due to the limitations imposed by larger commercial vendors, as previously mentioned) is seen as a better alternative, rather than risking users becoming disillusioned and, therefore, abandoning the technology.

Our research shows that organizations employing open source content management solutions have become reactive to business demands rather than those proactively helping drive them. However, many have discovered that the effort required to gain the same level of benefit delivered by commercial vendors through the use of open source solutions - even lower-end offerings (e.g., GlobalSight, Macromedia) or hosted solutions (e.g., CrownPeak, CrownPeak, Atomz, Refresh Software) - has become cost prohibitive over time. Organizations adopting an appropriate content management framework can continue to provide a range of content-authoring tools that better suit end users' needs (i.e., a combination of online HTML forms and templates, simple content contribution tools such as Microsoft's FrontPage/Word, Macromedia's Dreamweaver, or the newly released Macromedia Contribute product being evaluated by several organizations). Thus, organizations can observe fewer negative impacts, as

long as the authoring tools operate in the broader context of an enterprisewide content management framework.

PUBLIC COMPANIES MENTIONED IN THIS REPORT:
3Com Corporation (COMS - $4.86 - Not Rated)
Adobe Systems Incorporated (ADBE - $31.55 - Not Rated)
Alcatel (ADR) (ALA - $9.21 - Not Rated)
AT&T Corp. (T - $20.76 - Not Rated)
Avaya Inc. (AV - $6.83 - Not Rated)
BEA Systems, Inc. (BEAS - $11.31 - Neutral)
BearingPoint Inc. (BE - $9.90 - Not Rated)
BellSouth Corporation (BLS - $26.52 - Not Rated)
BMC Software, Inc. (BMC - $17.54 - Neutral)
Borders Group, Inc. (BGP - $16.82 - Not Rated)
Check Point Software Technologies Ltd. (CHKP - $18.84 - Neutral)
Cisco Systems, Inc. (CSCO - $17.41 - Buy)
Computer Associates International, Inc. (CA - $23.20 - Buy)
Compuware Corp. (CPWR - $6.18 - Neutral)
Dell Computer Corporation (DELL - $31.27 - Not Rated)
Deutsche Telekom AG (ADR) (DT - $14.48 - Not Rated)
Documentum, Inc. (DCTM - $21.71 - Buy)
Electronic Data Systems (EDS - $22.32 - Not Rated)
EMC Corporation (EMC - $10.42 - Neutral)
Enterasys Networks, Inc. (ETS - $3.25 - Not Rated)
Extreme Networks, Inc (EXTR - $5.47 - Neutral)
Exxon Mobil Corporation (XOM - $37.93 - Sell)
F5 Networks Inc. (FFIV - $16.79 - Neutral)
FileNET Corporation (FILE - $16.62 - Not Rated)
Foundry Networks, Inc. (FDRY - $14.07 - Buy)
Fujitsu Limited (ADR) (FJTSY - $18.12 - Not Rated)
Hewlett-Packard Company (HPQ - $20.99 - Not Rated)
Intel Corporation (INTC - $21.36 - Buy)
International Business Machines Corp. (IBM - $82.75 - Not Rated)
J.D. Edwards & Company (JDEC - $13.03 - Neutral)
Legato Systems, Inc. (LGTO - $8.08 - Buy)
Macromedia, Inc. (MACR - $20.25 - Not Rated)
Mercury Interactive Corp. (MERQ - $41.00 - Strong Buy)
Microsoft Corporation (MSFT - $24.65 - Buy)
Motorla Inc. (MOT - $8.66 - Not Rated)
NetScreen Technologies (NSCN - $21.70 - Neutral)
Network Associates, Inc. (NET - $12.92 - Neutral)
Nextel Communications (NXTL - $14.47 - Not Rated)
Niku Corporation (NIKU - $4.50 - Not Rated)
Nokia (NOK - $16.92 - Not Rated)
Nortel Networks Corp. (NT - $3.00 - Not Rated)
Novatel Wireless, Inc. (NVTL - $2.40 - Not Rated)
Opsware Inc. (OPSW - $4.55 - Not Rated)
Oracle Corporation (ORCL - $13.48 - Neutral)
Palm, Inc. (PALM - $15.81 - Not Rated)
PeopleSoft, Inc. (PSFT - $16.92 - Neutral)
Plumtree Software, Inc. (PLUM - $4.20 - Not Rated)
PMC-Sierra, Inc. (PMCS - $11.47 - Not Rated)
Red Hat, Inc. (RHAT - $8.21 - Not Rated)
Research In Motion Ltd. (RIMM - $21.36 - Not Rated)
SAP AG (ADR) (SAP - $32.06 - Not Rated)
SBC Communications Inc. (SBC - $25.32 - Not Rated)
Serena Software (SRNA - $2-.76 - Buy)
Siebel Systems, Inc. (SEBL - $10.85 - Neutral)
Siemens AG (ADR) (SI - $49.75 - Not Rated)
SpeechWorks International (SPWX - $4.94 - Not Rated)
Sprint FON Group (FON - $13.97 - Not Rated)

Starbucks Corporation (SBUX - $23.98 - Not Rated)
Sun Microsystems, Inc. (SUNW - $5.34 - Not Rated)
Symantec Corporation (SYMC - $45.22 - Buy)
Texas Instruments Inc. (TXN-$18 - Not Rated)
Trend Micro Incorporated (ADR) (TMIC - $15.91 - Not Rated)
Verizon Communications (VZ - $39.45 - Not Rated)
Vignette Corporation (VIGN - $2.28 - Not Rated)
Wal-Mart Stores, Inc. (WMT - $54.08 - Not Rated)
Stocks priced as of June 13, 2003.

META FACTs
[m] First Albany makes a market in shares of this stock.
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