



A shift from uncoordinated point applications to more automated, process-driven systems will help you

Scale Up TO ENTERPRISE CLASS

EVERY BUSINESS WANTS TO GROW. BUT IF A budding enterprise expects to scale effectively, its IT systems must be able to scale as well. That means taking control of your organization's technical infrastructure early on to be ready for the inevitable expanded roster of customers, suppliers, and employees that growth brings.

The size of an organization shouldn't determine functionality. In fact, smaller

BY GALEN GRUMAN

ILLUSTRATION BY BEN BARBANTE

“What happens ... down the road when the customers decide they need something more complex?”

— Bob Locke, AMR Research

businesses often require enterprise-class hardware, software, and services in many areas — particularly in networking, security, and Web provisioning, and sometimes in accounting and order management. Yet despite their oversize needs, smaller businesses are typically outfitted with an uncoordinated collection of point applications and systems managed by their individual expert users, notes AMR Research analyst Bob Locke.

Similarly, midsize enterprises often have departmental systems managed by IT experts, but lack a companywide IT infrastructure to tie the systems together. This approach can spell trouble when business takes off.

To increase the odds of success, enterprises of all sizes should adopt and implement a process-driven, automated approach, rather than relying on in-house experts to keep different parts of the company running. “As you grow, you need to put in real processes to manage the system,” says Michael DiPaolo, a consultant at Hitachi Consulting. “No one individual can handle this complexity.”

The emergence of the Internet as a standard wide area network bolstered through standardized interfaces and application platforms such as XML and Java has lowered the bar for linking applications and data systems, even in distributed environments. This development has provided more traditional enterprise-class capability at a smaller scale and lower cost. At the same time, technology providers that once served only the largest enterprises are steadily moving down the food chain. “It’s been creeping down for years,” says Chris Ogburn, sales development director at Hewlett-Packard.

Most vendor attention is being placed on midsize enterprises, or

companies with 500 to 5,000 employees that have scale, complexity, and integration needs mirroring the large enterprise’s IT profile. But even small enterprises — those with 100 to 500 employees — now have access to traditional enterprise-class technology in critical areas such as networking and database management.

When crafting an IT strategy and platform for growth, small and midsize enterprises face critical technology choices in three areas: front-office applications such as ERP, database and storage management, and networking and security. In each area, the choices and issues vary.

Front Office: Three Main Choices

ERP is the latest area to see enterprise-class functionality move into small and

midsize enterprises, as Oracle and SAP have all but consolidated the large-enterprise market and have set their sights on new customers. Today, for front-office needs such as accounting and sales, smaller companies have limited basic options.

First, they can look to big-system providers such as Oracle and SAP, Locke says, as Oracle’s Small Business Edition and SAP’s All-in-One suites can be cost-effective at a small scale and then grow with the business. Second, they can adopt Microsoft’s suite of business tools. Third, they can outsource these services to avoid having to build the needed expertise in-house — Salesforce.com, RightNow, and Net-Suite have shown this to be a popular model for CRM deployment. Another option, and previously the only one, is

CASE STUDY

Seeding Le Nature’s Infrastructure

IN 2000, TEA, WATER, AND JUICE maker Le Nature had just a couple users running its DOS-based Real World Software financial, inventory, and sales applications on one server, and e-mail was handled by an outside provider. Because the business plan called for significant growth, IT Director Ron Clark engineered a scalable infrastructure within the company. He started with four servers, one each for e-mail (Microsoft Exchange), files, security (firewall and McAfee anti-virus), and ERP.

For ERP, Clark chose Microsoft’s Navision mid-level suite because of its ease of implementation, which was a key concern for a company that

had just one other IT staffer. He’s not sure how far it can scale, but he likes the fact that even though it has its own proprietary database it also supports SQL Server, which would ensure easier scalability and migration later. Clark envisions eventually adopting an SAP or Siebel ERP system if Navision hits a growth ceiling, but he foresees no need at this point to go beyond Exchange.

As the company opens a new distribution center in Phoenix this year, Clark sees Navision and Exchange as fully able to support the new multisite environment. That’s because their Web-services orientation minimizes the need for custom development, he says. After all, he still has a small staff: up from two in 2000 to five today. — G.G.



RON CLARK

to buy from a niche vendor, one aimed at vertical industries and typically small companies therein. But that route is increasingly becoming unviable because niche providers have typically fallen too far behind the technology curve, says Hitachi's DiPaolo.

Adopting Big-Provider ERP Adopting a database, ERP, or CRM technology originally developed for large enterprises can trip up a smaller enterprise, warns Eliot Colon, vice president at Miro Consulting, which helps clients negotiate and monitor Oracle licenses. Smaller firms must take care to buy what they need for the moment but have the flexibility to add modules or capacity as they go along; they must balance initially overspending to avoid later getting caught with their pants down.

In some cases, unwary enterprises use noncommercial or trial licenses from vendors such as Oracle, PeopleSoft, SAP, and Sun as part of a larger software license.

This can prove dangerous, as some companies have been known to get hooked, rolling out applications to more and more users — even to customers and suppliers — over the Web, Colon notes. Then they get a call from someone saying that they are violating their software license and must pay a lot of money for their noncommercial use, both internally and externally. They're also told that they must license additional software as specified in the original license that no one really bothered to study.

Hitachi's DiPaolo says some small enterprises fall into this trap, while others avoid it by being savvy up front. Another pitfall for such companies is not thinking through all the license implications when they grow through acquisition, he adds.

Adopting Microsoft ERP Growing enterprises that sign up for Microsoft's emerging enterprise business tools should note that the extent of how far these platforms may be able to scale isn't yet known, AMR's Locke cautions. He's unsure that they can scale once a company has a few thousand employees. Microsoft is in a multiyear effort to integrate and

enhance these tools, so future versions may scale into the large enterprise, he notes.

The current generation of Microsoft's ERP tools — cobbled together from the acquisitions of Great Plains Software, Navision, and Solomon — can scale only to the low thousands, says Paul Hernacki, director of IT at the consultancy Definition 6.

CASE STUDY

John Laing Homes Lays Groundwork

HOUSING DEVELOPER JOHN LAING Homes saw its size increase as home building took off in the western United States and the company completed the integration of what had been three separate firms. That meant developing a common IT architecture that would accommodate growth. The company also found itself falling behind other builders when it came to IT systems, says IT Vice President Steven Scardina.

So Scardina began a multiyear effort to rework the IT strategy. This past year, he focused on upgrading the network and e-mail servers from Windows NT 4 to Active Directory 2003 and from Exchange 5.5 to Exchange 2003. But Scardina was able to keep his existing firewall. A bigger shift was adopting a Caymas remote access server to have real security for its remote offices in California and Colorado.

This year, Scardina is focused on his front-office applications. He has implemented a TSC Solutions TrueLine financial package designed for the construction industry as well as some SAP mySAP components for

sales, even though SAP has little experience with deployments specific to home building. Although he considered JD Edwards, which does have experience in the home-building industry, the company's uncertain future after its acquisition by Oracle persuaded Scardina to choose SAP, now that it has the mySAP modules for smaller enterprises.

Scardina continues to rely on SQL Server as the database engine, and expects it to support continued growth. But he expects a significant increase in storage costs as the company continues down the SAP ERP path. He has already implemented a SAN to speed backup and expects next to focus on using it to ease disaster recovery.

During the rearchitecting of the IT environment, John Laing Homes has gone from two servers to 16, using mainly IBM blade centers. Initially, the blade center was overkill, because Scardina deployed just four blades, even though the break-even point is six blades compared with using standard rack servers.

However, because he knew his growth would require more servers later, Scardina was fine with that. Today, he has 11 blades in place. — G.G.



STEVEN SCARDINA

Outsourcing ERP The outsourced model is easy initially, because there is no need to pay up front for the infrastructure and expertise, says Yankee Group analyst Sanjeev Aggarwal. “You can pay just \$500 per month for five users, versus investing several million dollars up front.”

Most providers will customize their services for businesses with specialized processes, so the businesses don’t have to force-fit truly critical business processes into a plain-vanilla model, Aggarwal says. Plus there’s no six- to nine-month deployment period as there is with an Oracle, SAP, or Siebel ERP system, he notes.

Another advantage: Many smaller enterprises run older hardware platforms such as IBM’s AS/400 that don’t support ERP systems well. Oracle, for example, doesn’t support them at all, while SAP on the AS/400 can’t support much transaction growth, says Hitachi’s DiPaolo.

Taking the outsourced approach avoids a big investment in the infrastructure and talent to handle security, backup, patch and upgrade management, and integration, Aggarwal says. But he urges small enterprises to reject the typical five-year contract and instead insist on two-year maximum contracts for their managed service providers, and to get price caps suited for their planned growth.

The risk with outsourcing is loss of control. “What happens one, three, or four years down the road when the customers decide they need something more complex?” Locke asks. If the providers don’t have a good solution for that new scale, the business must take everything back and build a new system from scratch.

Although the outsourced ERP model is attractive, it’s still rare for a

company to outsource its ERP unless it is also outsourcing its manufacturing, notes HP’s Ogburn. One reason is that the industry is new; another is loss of control.

Database and Storage Management: Good Technology, Bargain Prices

Although small companies typically rely on local consultants supporting Microsoft Excel, Access, and FoxPro for their databases, as they grow into enterprises they quickly realize they need a scalable database architecture, Definition 6’s Hernacki says. Typically, most choose to adopt Microsoft SQL Server, because “it’s hard to beat its price and performance.”

Oracle is less common in the smaller enterprise, Hitachi’s DiPaolo adds, because Oracle (like SAP) has focused its expansion on midsize enterprises.

A business of 50 or fewer people tends to be comfortable having its data hosted by an outside provider, but “if you’re bigger than that, you want the data in-house,” HP’s Ogburn says. He also warns that companies that off-load their data will find it increasingly difficult to bring it in-house, because the amount of data accumulated over time will require an ever-larger infrastructure investment. Growing the infrastructure over time stretches that cost out.

Growing enterprises should expect to see high growth in storage

CASE STUDY

Wetherill Associates Revs Up Growth

AS AUTOMOTIVE ELECTRICAL COMPONENTS supplier Wetherill Associates saw its staff grow and sales boom, IT Director Ralph Presciutti wanted to reduce complexity to balance growth.

The company already had a Baan Solutions’ ERP system in place and was using an Oracle database on three Sun systems bought in 1999 to ensure Y2K compliance. But that meant supporting a Unix-server and Windows-client infrastructure, and adding two or three Sun-specific IT staff to the two already dedicated to that platform. Overriding consultants’ advice to stay on that path and to get more powerful servers, Presciutti decided to move entirely to Windows, simplifying the skills needed in the IT department and eliminating the need for additional staff. Although

the Windows servers cost 30 percent less and had a cheaper maintenance contract, the real savings was in not hiring the additional IT staff.

Outside of ERP, Wetherill’s growth required strengthening the network and security architecture, especially as more remote sites were opened. But its Cisco equipment and management tools have largely scaled to the network growth, requiring little additional hardware. The bigger change was altering the topology of the connections among the sites to ensure redundancy if any one link went down in the Qwest-managed data pipelines.

As Wetherill acquires small distributors, it replaces its systems — typically JD Edwards front-office apps running on older IBM servers — with its Windows-based Baan and Oracle systems to ensure consistency. — G.G.



RALPH PRESCIUTTI

“If you’re bigger than [50 people], you want the data in-house.”

— Chris Ogburn, Hewlett-Packard

hardware, as well as significant investments in compliance and data-recovery software, as they have several hundred or more employees, Ogburn says. That’s because the data storage “grows exponentially, especially in legal, financial, and medical industries,” as they serve more customers with more product or service offerings and begin to share data with partners.

Fortunately, not only do storage devices continue to drop in price, but SANs have also become much more affordable, notes Deric Scott, enterprise architect at the consultancy Optimus Solutions.

So even smaller enterprises are beginning to adopt them. SANs are already common in enterprises with 1,500 or more employees, Hitachi’s DiPaolo says.

Network Management and Security: Enterprise-Class for Almost All

When it comes to server, storage, client, and networking hardware, what used to be the province of the large enterprise is now broadly available to enterprises of all sizes, HP’s Ogburn says. “Small companies will ... go to Best Buy for a \$50 router,” Optimus’ Scott says. “But as they grow, it doesn’t scale.” That’s when they migrate to enterprise-class systems.

Fortunately, enterprise-class networking has gotten much cheaper. For example, the popularity of Linux, combined with cheap but fast server PCs from Dell Computer and Hewlett-Packard’s Compaq group, or with unused CPU cycles in an IBM AS/400 system, means “you get the same performance that cost five times as much a few years ago,” Scott says. Basic networking is one area where’s is relatively safe to loosen the purse strings because

the fear factor of obsolete equipment is low. Protocols are established enough to allow for heavy-duty hardware purchases that will last at least five years. And now, blade servers are bringing even more capacity at an affordable cost and manageable overhead, Yankee Group’s Aggarwal notes.

The trend is even more apparent with new technologies such as wireless LANs and IP telephony, which are

available with the same core capabilities for both small and larger enterprises, Yankee Group analyst Christine Liebert says. The difference in products aimed at smaller enterprises is their greater simplification, which reduces management overhead, she says.

That shift to core capabilities in key technologies for enterprises of all sizes gives smaller enterprises a new edge — and a new way to think about IT. ➤

CASE STUDY

Bennett’s Buys In to Salesforce.com

BENNETT’S BUSINESS SYSTEMS PROVIDES and services imaging equipment, such as copiers, to other businesses. It took a bet that it could get a leap in sales by moving from a small-business IT operation to an enterprise-class one. CEO and CIO Wes Benwick was unhappy with the proprietary OMD accounting package (a Cobol program recently ported to Windows) widely used in the copier/printer industry and was concerned about diminishing availability of integration tools and experts to tie them into other systems. Moreover, Bennett’s had already tried to build its own telesales-management application, but it didn’t scale past three users.

So Benwick decided to outsource his financial and sales applications to Salesforce.com, which would instantly provide an enterprise architecture and let his staff of four developers and three support technicians focus on aiding the 25 sales staff members directly, including custom development within Salesforce.com’s

applications and of MySQL database queries and reports. Benwick says sales rose 46 percent in the year after the company moved to enterprise-level tools, even though the size of the sales staff didn’t change. Sales had been consistent at the lower levels for at least five years, he notes. However, IT staff has grown from two to five as Benwick has added more developers to work on tools and reports for the sales staff.

But the IT support staff has stayed at one person. “We don’t believe our expertise is in managing hardware,” so it was easy to rely on someone else to host its systems. Initially, Benwick used a Microsoft Exchange server to manage e-mail, but quickly outsourced that, as well as the spam filtering, which runs on an on-site server administered by another company.

“Administering it is a major pain in the butt,” especially for a company with fewer than 100 employees, Benwick says. In the same vein, Benwick outsourced the company’s datacenter and e-commerce site, both of which reside at the provider.

“I’m hoping I never have to own my own no matter how big I get,” Benwick says. — G.G.



WES BENWICK

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1. Over the course of one year, do you buy, specify, recommend, or approve the purchase of the following products or services worth:

Please include amounts for all locations of your organization. Consultants: please include what you recommend for your clients as well as what you buy for your own business.

- | | | |
|----------------------------------|--------------------------------|----------------------------|
| 01. \$100 million or more | 06. \$5,000,000 to \$9,999,999 | 11. \$100,000 to \$399,999 |
| 02. \$50,000,000 to \$99,999,999 | 07. \$2,500,000 to \$4,999,999 | 12. \$50,000 to \$99,999 |
| 03. \$30,000,000 to \$49,999,999 | 08. \$1,000,000 to \$2,499,999 | 13. Less than \$49,999 |
| 04. \$20,000,000 to \$29,999,999 | 09. \$600,000 to \$999,999 | 14. None |
| 05. \$10,000,000 to \$19,999,999 | 10. \$400,000 to \$599,999 | |

Product category	Write code in box
Large systems	<input type="text"/>
Client computers	<input type="text"/>
Networking / Telecom (including servers)	<input type="text"/>
Wireless	<input type="text"/>
Internet / Intranet / Extranet	<input type="text"/>
Security	<input type="text"/>
Storage	<input type="text"/>
Peripheral equipment	<input type="text"/>
Software	<input type="text"/>
Service/Support / Outsourcing	<input type="text"/>

2. What is your primary job title? (PLEASE CHECK ONE ONLY)

- | | |
|---|---|
| IT / Technology Management | <input type="checkbox"/> 10. IT Staff |
| <input type="checkbox"/> 01. CTO, CIO, CSO, Vice President | <input type="checkbox"/> 11. Other IT Professional |
| <input type="checkbox"/> 02. Director | Corporate / Business Management |
| <input type="checkbox"/> 03. Manager / Supervisor | <input type="checkbox"/> 12. CEO, COO, President, Owner, Vice President |
| <input type="checkbox"/> 04. Network Manager / Director | <input type="checkbox"/> 13. CFO, Controller, Treasurer |
| <input type="checkbox"/> 05. Engineer | <input type="checkbox"/> 14. Director |
| <input type="checkbox"/> 06. Systems Analyst / Programmer / Architect | <input type="checkbox"/> 15. Manager / Supervisor |
| <input type="checkbox"/> 07. Other IT Management | <input type="checkbox"/> 16. Other Business Management Title |
| IT / Technology Professional | |
| <input type="checkbox"/> 08. Consultant / Integrator | <input type="checkbox"/> 98. Other Title |
| <input type="checkbox"/> 09. Developer | (specify) _____ |

3. Please indicate your job function(s)? (PLEASE CHECK ALL THAT APPLY):

- | | |
|--|--|
| IT / Technology Functions | Corporate / Business Functions |
| <input type="checkbox"/> 01. Executive | <input type="checkbox"/> 09. Executive |
| <input type="checkbox"/> 02. Department Management - IT | <input type="checkbox"/> 10. Department Management - Business |
| <input type="checkbox"/> 03. Networks / Systems Management | <input type="checkbox"/> 11. Financial / Accounting Management |
| <input type="checkbox"/> 04. Applications Development | <input type="checkbox"/> 12. Research / Development Management |
| <input type="checkbox"/> 05. Management of Enterprise Applications (CRM, ERP, SCM, etc.) | <input type="checkbox"/> 13. Sales / Marketing Management |
| <input type="checkbox"/> 06. Research / Development Management | <input type="checkbox"/> 14. Other Business Functions |
| <input type="checkbox"/> 07. Consultant / Integrator | <input type="checkbox"/> 98. Other Functions |
| <input type="checkbox"/> 08. Other IT Functions | (specify) _____ |

4. Are you involved in buying, specifying, recommending or approving the following IT products / services?

(PLEASE CHECK ALL THAT APPLY):

- | | |
|---|--|
| Software / Products / Technologies | <input type="checkbox"/> 18. Web / Video Conferencing |
| <input type="checkbox"/> 01. Customer Relationship Management | <input type="checkbox"/> 19. Storage |
| <input type="checkbox"/> 02. Enterprise Resource Planning | <input type="checkbox"/> 20. Disaster Recovery |
| <input type="checkbox"/> 03. Business Process Management / Outsourcing | <input type="checkbox"/> 21. Security |
| <input type="checkbox"/> 04. Business Intelligence / Data Mining / Data Warehousing | <input type="checkbox"/> 22. Anti-Virus / Content Filtering |
| <input type="checkbox"/> 05. Portals | <input type="checkbox"/> 23. Firewall |
| <input type="checkbox"/> 06. Financials / Payroll / Billing | <input type="checkbox"/> 24. VPN |
| <input type="checkbox"/> 07. Performance / Application Management | <input type="checkbox"/> 25. Identity Management |
| <input type="checkbox"/> 08. .NET | <input type="checkbox"/> 26. Authentication / Authorization |
| <input type="checkbox"/> 09. Other Software | <input type="checkbox"/> 27. Intrusion Detection & Prevention |
| <input type="checkbox"/> 10. Networking | <input type="checkbox"/> 28. Encryption |
| <input type="checkbox"/> 11. Web Services | <input type="checkbox"/> 29. Other IT Products / Technologies |
| <input type="checkbox"/> 12. Content Delivery Networks | Hardware / Peripherals |
| <input type="checkbox"/> 13. Network and Systems Management | <input type="checkbox"/> 30. Servers |
| <input type="checkbox"/> 14. VoIP (Voice Over IP) | <input type="checkbox"/> 31. Notebooks / Laptops |
| <input type="checkbox"/> 15. Telecommunications | <input type="checkbox"/> 32. PDAs / Handhelds / Pocket PC / Wireless |
| <input type="checkbox"/> 16. Wireless | <input type="checkbox"/> 33. Printers |
| <input type="checkbox"/> 17. Remote Access | <input type="checkbox"/> 34. Other Hardware / Peripherals |

5. What is your organization's primary business activity at this location? (PLEASE CHECK ONE ONLY):

- | | |
|--|--|
| General Business Industries | Technology Providers |
| <input type="checkbox"/> 01. Defense Contractor / Aerospace | <input type="checkbox"/> 12. Service Provider (MSP, BSP, ISP, ASP, etc.) |
| <input type="checkbox"/> 02. Retail / Wholesale / Distribution (non-computer) | <input type="checkbox"/> 13. Computer / Network Consultant |
| <input type="checkbox"/> 03. Pharmaceutical / Medical / Dental / Healthcare | <input type="checkbox"/> 14. Systems / Network Integrator, VAR / VAD |
| <input type="checkbox"/> 04. Financial Services / Banking | <input type="checkbox"/> 15. Technology Manufacturer (hardware, software, peripherals, etc.) |
| <input type="checkbox"/> 05. Insurance / Real Estate / Legal | <input type="checkbox"/> 16. Technology - Related Retailer / Wholesaler / Distributor |
| <input type="checkbox"/> 06. Transportation / Utilities | Government / Education |
| <input type="checkbox"/> 07. Media (print / electronic) | <input type="checkbox"/> 17. Government: federal (including military) |
| <input type="checkbox"/> 08. Communication Carriers (telecomm, data comm., TV / cable) | <input type="checkbox"/> 18. Government: state or local |
| <input type="checkbox"/> 09. Construction / Architecture / Engineering | <input type="checkbox"/> 19. Education |
| <input type="checkbox"/> 10. Manufacturing & Process Industries (non-computer) | <input type="checkbox"/> 98. Other |
| <input type="checkbox"/> 11. Research / Development | (specify) _____ |

6. How many people are employed at this organization, including all of its branches, divisions and subsidiaries?

(PLEASE CHECK ONE ONLY):

- | | |
|---|--|
| <input type="checkbox"/> 1. 20,000 or more | <input type="checkbox"/> 5. 500 - 999 |
| <input type="checkbox"/> 2. 10,000 - 19,999 | <input type="checkbox"/> 6. 100 - 499 |
| <input type="checkbox"/> 3. 5,000 - 9,999 | <input type="checkbox"/> 7. 50 - 99 |
| <input type="checkbox"/> 4. 1,000 - 4,999 | <input type="checkbox"/> 8. Less than 49 |

7. Which of the following operating systems are in use or planned for use at this location?

(PLEASE CHECK ALL THAT APPLY):

- | | |
|--|---|
| <input type="checkbox"/> 01. Windows XP | <input type="checkbox"/> 04. Linux / Unix / Solaris |
| <input type="checkbox"/> 02. Other Windows | <input type="checkbox"/> 05. Other |
| <input type="checkbox"/> 03. Mac | (please specify) _____ |

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