Strategies for IT Business Leaders
March 2006
Number 65

ZIFF DAVIS CIO INSIGHT

SPECIAL ISSUE ON GLOBALIZATION

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CIO INSIGHT
March 2006 Number 65

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COVER PHOTOGRAPH BY
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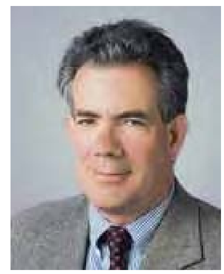
EDITORIAL

India on My Mind



OUR SECOND ANNUAL ISSUE on globalization comes at an opportune time: As I write, President George W. Bush has just completed his very first trip to India and is on his way to Pakistan. During his stay in India, Bush touted the benefits of trade with India, including the outsourcing of jobs there, IT and otherwise. While the reaction in India to his statements was predictably positive, the reaction here in the U.S. was decidedly mixed, judging from press reports. Outsourcing as a hot-button political issue pretty much died with the end of the 2004 presidential election, yet feelings still run high about fears of further job loss (especially as India's knowledge-based skills continue to move up the value chain), the continued trade imbalance between the U.S. and India, and now the nuclear technology pact signed during Bush's visit.

Are fears of outsourcing, and the accompanying lost jobs, overblown? The subject of this month's Expert Voices interview (page 45), Jagdish Bhagwati, a professor of economics at Columbia University and a fellow at the Council of Foreign Relations, believes they are. For him, outsourcing is an extension of foreign trade, but in services, rather than in goods such as semiconductors and sweaters. And trying to stem the tide of trade in services is nothing but protectionism, which, in his view, is a fast train to dire loss of competitiveness. A vibrant economy will have no trouble minting new skilled jobs, says Bhagwati; his concern is finding ways to make sure the effects of globalization do not fall unfairly on the less skilled and the aging.

This month's research survey on outsourcing (page 69) points up a number of trends that bear on this issue—for better or worse. First, the percentage of companies choosing India as an outsourcing destination has declined significantly, from 89 percent last year to 75 percent this year. Meanwhile, other destinations, including China, Canada, the Philippines and Singapore, continue to grow in popularity. Clearly, as outsourcing activity increases, U.S. corporations are finding that an increasing variety of countries are suiting their needs. Second, outsourcing activity continues to increase, despite growing dissatisfaction with outsourcing vendors and the disruptive effect it's having on domestic IT staffs. Obviously, the perceived virtues of outsourcing continue to outweigh the negatives.

The growth of IT outsourcing couldn't have happened without the vast networks created by the Information Age. As Carlota Perez notes in this month's Foreword (page 19), we are at the mid-point of that age, poised between what she calls installation and deployment. Just imagine what globalization will look like in another 20 years. —*Edward Baker*

LETTERS TO THE EDITOR

SHARE AND SHARE ALIKE

I would like to applaud the column by Larry Downes, "Why Johnny Can't Stop Sharing Files" (January 2006). The content syndicates today have realized their current business model is dying and their only hope is to sue it back into existence. Their attempt to control a free market with legislation is a fundamentally flawed approach—remember, the consumer is always right. Downes' column states the truth: The RIAA and MPAA are losing the war they are waging against file sharers. Back when Napster was the "in thing," I would have gladly paid a few pennies per MP3 file, or maybe $5 a month for unlimited usage of Napster. However, since the RIAA has taken it upon itself to assault technology and consumers, I will abstain from doing business with them. I have even e-mailed record labels affirming my support for bands such as Evanescence and informing them that, regretfully, I won't purchase their music because of the extreme acts of the RIAA and its ilk.

I am glad to see forerunners of the technological community broadcasting the true state of the RIAA and MPAA.

Chris Marisc
President and full-time student
GamingStore Network
Penn State University
Erie, Pa.

RETHINKING BOUNDARIES

Re: "Turf Wars" (January 2006). Business-intelligence projects inherently unearth political issues, such as questions about data quality, how to classify kinds of businesses, who should control the data, and how to define the business terms used in reports. All these things must be adjudicated by the most senior managers (and highly skilled ones, at that), who often need the wisdom of Solomon and the bravery of Samson. In many cases, these issues cut at the heart of the nature of the business—how and what business processes need to be implemented and supported.

Most BI projects either ignore these issues or gloss over them, rather than confronting and resolving them. BI projects don't cause these conflicts—which are often long-deferred by (sometimes spineless, sometimes clueless) executives who should know better—but they expose them. And yet political issues that stand in the way of important deliverables must be handled if there is to be any successful outcome from the millions spent on them.

The path to appropriate and rational IT systems lies in the things in which non-IT management needs to become involved. Data ownership, definitions and business rules are ultimately a set of business decisions. Don't blame the overworked IT executive completely. Management has a good deal of latent and overdue contributions to make as well.

David Selib
Senior Enterprise BI Architect
Niteo Partners, Inc. (An NEC Company)
Edison, N.J.

EVOLVING TO EXTINCTION

I am inspired to write about the binary thinking expressed in your editorial "Innovate or Get Marginalized" (January 2006): "What Darwinism says is either evolve or get marginalized." What? Evolution *is* at the margins, and so is the money!

A lot of money exists in the middle of the temporal economic curve (where most people are most of the time) in any market. There's nothing wrong with staying there forever; after all, people have been baking bread for thousands of years. You won't get rich doing it, but it won't make you poor either—bread is a commodity, and earns what everyone in that market earns. To get rich, you must leave the middle and enter a margin; you can make money on the advent of something new, or by being the only seller of something that many people want, even though it's not the newest technology. In either case, you must offer something that is wanted. It has nothing to do with differentiation per se; you merely offer what is wanted, and if you do it well you will be compensated accordingly.

Have you ever suffered from overdeveloped software? Software that has evolved beyond what the market demands is not merely in danger of becoming marginalized; it is threatened with extinction. Microsoft is dangerously close to having over-developed Microsoft Office, evolving it in a way that the company imagines everyone in the world is evolving. But just in case the world does not evolve, Microsoft must help the world evolve in the company's preferred direction. If you are the world, then the world evolves any way you want it to!

Michael Gordon
Network Engineer
and Help-desk Manager
Summit Telecom
Logan, Utah

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Free the CFO!

THIS BOOK SEEMS TO BE AIMED AT the finance department. So why should IT professionals pay attention to it? Two reasons:

The first is that Hope, in his quest to make the CFO a more valuable member of the management team, wants to eliminate a huge part of the IT budget. Hope, research director of the Beyond Budgeting Round Table, an industry trade group, contends that IT is drowning senior managers—especially the CFO—in so much unfiltered, unanalyzed data that it is hindering the way work gets done. As a result, he says, every bit of the IT budget needs to be examined, with newly proposed expenditures getting even closer scrutiny.

CFOs need to be "more wary of implementing new tools and IT systems that soak up valuable time and money but fail to provide reasonable value," Hope writes. "Context and meaning are being lost in a fog of detail and complexity."

It isn't that Hope thinks IT is worthless. "I am not arguing against centralized information systems. . . . But [IT] should be focusing on the bigger picture of patterns and trends rather than detailed variances at the unit level," he writes.

These criticisms are not particularly new, but they are worth considering because Hope is arguing that your job is going to change radically if the CFO plans to alter his.

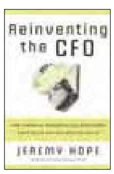
The second reason for paying attention to this book is even more intriguing. The blueprint Hope has laid out for CFOs to increase their value to the organization will work equally well for CIOs. He argues that CFOs should be:

- Streamlining the organizational structure, both to reduce costs and to allow people to respond faster to changes in the marketplace;
- Working to improve their employees' analytic skills, instead of making sure (needless) forms are being filled out correctly; and
- Focusing their department externally (on what will help the company succeed) instead of internally (on what will make sure their department is running smoothly).

Doing all of this is far more difficult than Hope makes it sound. He simply assumes that a CFO—or a CIO, for that matter—can wave a magic wand, change the job function, and eliminate all the problems that have come before. Silos, bureaucracies and long-held assumptions simply disappear somehow.

Hope devotes just one chapter to transforming the organization, and anyone who has ever read a book on change management won't find his advice particularly original. ("Make a compelling case for change; gain the support of key people; involve operating people," etc.)

But even though the individual components of the book don't break new ground, the cumulative effect strongly reinforces the argument that if a department—whether finance or IT—is not making substantial contributions to the success of the corporation, there is a good reason to question the competency of the people who run it.



Reinventing the CFO: How Financial Managers Can Transform Their Roles and Add Greater Value
By Jeremy Hope
HARVARD BUSINESS SCHOOL PRESS, MARCH 2006; 272 PAGES, $29.95

PAUL B. BROWN *is the author of numerous business books including the international best-seller* Customers for Life: How to Turn That Onetime Buyer into a Lifetime Customer *(written with Carl Sewell). Please send questions and comments on this article to* **editors@cioinsight-ziffdavis.com.**

SHORT TAKES

Smartsourcing: Driving Innovation and Growth Through Outsourcing
By Thomas M. Koulopoulos and Tom Roloff
PLATINUM PRESS, MARCH 2006
304 PAGES, $24.95

This is outsourcing, part II. Most companies that outsource simply shift existing work to a place where it can be done more cheaply. While that saves money, everything else involved in the production of the good or service remains the same, or gets worse. Here Koulopoulos, CEO of the Delphi Group, the consulting arm of Perot Systems, and Roloff, a vice president at EMC Corp., lay out a platform for fully integrating outsourced operations so that your company can actually become more efficient while lowering costs.

The Invisible Employee: Realizing the Hidden Potential in Everyone
By Adrian Gostick and Chester Elton
JOHN WILEY & SONS, MARCH 2006
176 PAGES, $19.95

The message in this business fable is simple: Employees work harder for bosses who make them feel valued and appreciated. The authors, executives at the O.C. Tanner Co., say most managers are not good at acknowledging the contributions their workers make, but that the skill can be learned in three ways: by announcing the behavior you want; by helping employees understand how to achieve that behavior; and by celebrating their actions—publicly—when they act the way you want them to. Public recognition, the authors add, also serves to send a message about what is important to the entire organization.

DATA QUALITY MANAGEMENT: BUILDING THE BUSINESS CASE

Organizations today generate an unprecedented volume of data from constant interaction with customers. This information presents tremendous opportunities for boosting revenue, enhancing customer relationships and improving business processes.

Departments including sales, customer service, marketing, product development and accounting can use customer information to enhance cross-selling, billing, credit, and other areas related to customer interaction.

The fundamental nature of customer data is that it changes continuously—essentially with every interaction—making it difficult for organizations to put the data to the best possible use and achieve benefits. Furthermore, much of the customer data within organizations resides on different systems (for example, financial, customer relationship management, accounting, order management, customer service, marketing). And it is often difficult to keep all these systems in sync. As a result, an organization could have conflicting information on the same customer.

To get the most value out of customer data and reap all the benefits of customer-related IT systems, enterprises should put in place a mechanism that coordinates and harmonizes customer data among the various systems in real time—without disrupting those systems.

One such mechanism, the Oracle Customer Data Hub, synchronizes information centrally from all systems within an enterprise to deliver a 360-degree view of the data that resides in packaged, legacy, or custom applications. By using this technology, organizations can centralize and update information such as customer buying history from any data source, creating a "master identity" that's available throughout the enterprise.

Along with using technology such as a data hub, organizations need to implement data quality processes. Customer data must be cleansed, de-duplicated, and enriched to provide maximum business insight to the organization. This requires constant data management efforts and diligence across the organization.

To be successful, an organization must have a focused corporate initiative for managing customer data quality. Ongoing management will contribute to the long-term effectiveness of technology such as a data hub. It is an important component of achieving maximum return on a quality data management investment.

Creating the Business Case

The benefits of accurate customer data are clear. They include decreased marketing and sales costs, better customer service, higher employee productivity and increased sales. However, building the business case in order to launch a data quality management initiative can be a challenge for IT executives.

Part of the difficulty is that data quality efforts are competing with other initiatives for IT budget dollars and staffing. CIOs and business executives must be able to justify the expense of the initiative and convey the value proposition effectively to senior management.

Conveying the value is not easy, because the impact of data quality on the organization might be difficult to measure. Some of the gains—such as improved customer relationships, better compliance with regulations, enhanced privacy of customer data, and more effective cross-selling and up-selling—are not always easy to present through metrics that finance executives can appreciate. Because of the difficulty of quantifying many of the benefits, it's a

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challenge to convey the downside of not pursuing a data quality management initiative and to demonstrate the ROI.

Technology executives must overcome these hurdles by building a strong business case that describes some of the key benefits. Wherever possible, they can show how improved data quality and deployment of a customer data hub results in measurable benefits.

Here's a look at some of the benefits that data quality management can enable:

Better customer relationships and service. With improved data quality management, organizations can enhance their relationships with customers and improve the products and services they provide to those customers. By having more accurate, timely and reliable information about customers, enterprises avoid problems such as sending out multiple mailings with different spellings of a customer's name or company, or sending vital information to the wrong address. With a single master copy of customer information, there's much less chance of errors that reflect poorly on the company and compromise the quality of service delivered to customers. A resource such as the Oracle Customer Data Hub combines all the data generated about customer interactions so that an organization can have a complete view of a customer's identity. It facilitates the cleansing and enrichment of customer data throughout the enterprise.

Reduced costs. By improving the quality of customer data and consolidating data into a single source, organizations can significantly cut costs. If data is fragmented by functional applications, getting accurate customer data can be high-maintenance and an expensive task. Consolidating multiple systems into a single environment can lead to savings of millions of dollars because there are fewer systems to maintain. Organizations can also decrease the costs associated with direct-mail and marketing efforts by having more accurate customer data. Mailings are more likely to reach the intended recipient. With more timely and accurate information, sales and marketing campaigns are likely to be more successful.

Better compliance, security and privacy. These are major issues for many organizations as they struggle to comply with a host of government and industry regulations and ward off security threats. If they don't have assurances that customer data is current and correct, organizations risk being non-compliant and facing steep fines. By consolidating and maintaining more accurate and secure data about customers, organizations are less likely to break regulations that are designed to improve corporate controls and integrity. For instance, Sarbanes-Oxley Section 404 requires companies to disclose material risk. If a company has the wrong address for a customer and sends bills to that address, payments could be delayed, leading to bad debts or write downs. That can cause a misstatement of profits.

Back- and front-office improvements. Data quality management initiatives can lead to substantial improvements in back-office operations including billing, revenue accounting, and credit management. By having up-to-date and accurate customer information accessible from one central location, organizations are better able to send timely and accurate contractual billings to customers and effectively manage customer credit. That can lead to more accurate revenue accounting. There are benefits in front-office operations as well. For instance, a corporate Web site can be more in sync with back-office systems, ensuring that data from all sources is consistent. The same information on customers is available to the sales force and customer service representatives.

Increased sales. Organizations can boost sales if they're better able to serve customers by having more accurate data about those customers. Also, with more reliable data, organizations can more effectively cross-market and cross-sell their products and services to customers. Customer segmentation efforts that enable organizations to develop highly customized proposals can lead to higher sales of products and services. Data quality management helps organizations ensure that their marketing and sales campaigns are optimized.

Some of these benefits result in immediate payoffs for organizations, which helps show ROI for the data quality initiative. Technologies such as the Oracle Customer Data Hub and the data quality improvements it enables can help enterprises get the maximum value out of their customer data. ■

KEY BENEFITS OF DATA QUALITY MANAGEMENT

- **Enhanced customer relationships and service.** More accurate data leads to improved customer relationships and means happier customers.
- **Reduced costs.** Having reliable data in a central location cuts costs in IT maintenance, direct-mailing and other areas.
- **Better compliance, security and privacy.** Correct, up-to-date and protected information on customers can help with growing compliance requirements.
- **Back- and front-office improvements.** Organizations can enhance operations such as billing, accounting, and credit management with higher-quality customer data.
- **Increased sales.** Improved customer relationships can lead to higher sales and more effective cross-marketing and cross-selling programs.

FOREWORD

▸ BUSINESS ▸ TECHNOLOGY ▸ MANAGEMENT

Q&A: CARLOTA PEREZ

Talkin' 'bout Revolutions

CARLOTA PEREZ KNOWS A THING OR TWO ABOUT BUBBLES. IN FACT, THE Venezuelan scholar has studied all five technological revolutions over the past two centuries, and she's found a series of similarities among them. According to her, we've still got a ways to go until the information revolution runs its course.

Perez is a research fellow at the University of Sussex and the University of Cambridge, and her book, *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages* (Edward Elgar, 2002), is widely studied by the academic and business communities.

CIO INSIGHT: What are the five technological revolutions you have identified?

PEREZ: Before our current information revolution made us all wonder how anybody survived without mobile phones and e-mail, we had the mass production revolution, which was the age of the automobile, cheap oil and synthetic materials, with universal electricity, telephones, airways and a highway network. That one was preceded, in the 1870s, by the age of steel and heavy engineering (including civil, naval, electrical and chemical). It set up powerful cross-continental systems of railways, steamships and world telegraph. The revolution before that, which took place in the 1830s, was the age of steam and iron railways. And preceding that was the original Industrial Revolution, which introduced machines moved by water power and the construction of a canal network.

Each of these revolutions had a new central transport network for goods, people, energy and information. But perhaps the most useful feature, in terms of being able to use the past to say something about possible futures, is the regularity in the sequence of periods of each of these great surges of development.

What are the phases of these technological surges?

Basically there are two main periods—installation and deployment—of about two or three decades each, with a financial crash in the middle. The NASDAQ collapse divided the current surge into two halves, just as the crash of 1929 cut the mass-production surge, and the "canal panic" and ▸

PHOTOGRAPH BY TREVOR RAY HART

the "railway panic" (both in England) did during the other surges.

The installation period begins with what I call a Big Bang—a new universe of opportunities. In our case that would have been Intel's microprocessor in 1971 and, in the previous period, it was the Ford Model T. The early decades of installation include an "irruption phase," with all the new technologies happening amidst an old and declining economy. The later decades include the frenzy phase, when the new paradigm rejuvenates all the existing industries and flourishes fully. The problem is that the euphoria tends to create a financial bubble that inevitably ends in a collapse.

The deployment period is the Golden Age. That is when all the wealth-creating potential of each revolution can really spread across the economy and benefit a wider cross-section of society. The deployment period ends when the new technologies and their applications reach maturity, innovation opportunities are exhausted, and productivity increases dwindle. That creates the conditions for the next revolution.

What phase are we in today?

Actually, we are smack in the middle. Between the two periods there is what I call the turning point, which is a time of institutional recomposition. It lasts anywhere from two to 13 years (as was the case in the last one, in the 1930s). This is the period in which perverse trends have to be reversed: The income polarization and the madness of the bubble years have to be overcome, but also the decision-making power has to move (or be moved) out of the hands of financial capital into those of production capital. Today, long-term investment is almost impossible, because the quarterly pressure for profits coming from the financial markets ties the hands of CEOs and every other top manager. Under these conditions, cost-cutting can become more important than innovation, and lots of human capital can be wasted.

Thoughts on what the next revolution may focus on?

I expect the next one to be structured around biotechnology, bioelectronics, nanotechnology and new materials, which in the next decades are all likely to make significant strides and have many isolated successes within the logic of the current paradigm. That is how it has always been. No revolution emerges from thin air; the future components must have been in gestation for some time before irrupting as a constellation. —*Dan Briody*

PIRACY

Steal This Software

THESE ARE TOUGH TIMES FOR CONVENTIONAL WISDOM. Steven Johnson's book, *Everything Bad Is Good for You*, argues that popular culture is making us smarter. A decisive, long-term study reports that low-fat diets don't make people healthier. And now there's a paper by a pair of business-school professors who say that effective campaigns to stamp out software piracy can actually hurt the vendors they are meant to protect.

An analysis of six years' worth of sales and piracy data from 50 countries, conducted by professors Bin Gu and Vijay Mahajan of the Red McCombs School of Business at the University of Texas at Austin, showed that preventing people from stealing software in competitive and highly price-sensitive markets may make those markets less profitable for software vendors. The study, "How Much Anti-Piracy Effort is Too Much? A Study of the Global Software Industry," concludes that many users of pirated software are unlikely to pay for it under any circumstance, so companies are merely limiting the popularity and mindshare of their products by going after unlicensed users.

"If a company like Microsoft faces a lot of competition in a country, they should not push governments too hard to enforce piracy laws," says Professor Bin Gu. "It makes more sense to focus on large corporations and not small players. The pirates are not going to convert and become your customers." The optimal strategy for enforcement depends on the wealth gap between rich and poor in a given country, he says; in countries where that gap is large, strict enforcement lowered vendor profitability.

The researchers suggest a country-by-country approach to piracy enforcement, rather than the blanket methods used today. The same logic holds true for other industries, including music and movies, concludes the study. Winning over users, then converting them to paying customers and maintaining pricing power in the marketplace, is more effective than going after the little guy who uses your product without a license. Counterintuitive, perhaps, but these days that's the trend. —*Edward Cone*

GLOBAL RECRUITING

Star Search

In general, growth is a good thing. And growing globally can be a great thing. But as more companies expand operations overseas, global recruitment is becoming a vexing problem. Manpower Inc., the Milwaukee-based recruiting firm, surveyed 33,000 employers in 23 countries, and found that 40 percent of respondents are having trouble finding qualified people—particularly salespeople, engineers and technicians.

It's a common problem, says Jo-Anne Kruse, executive vice president of human resources at Travel Distribution Services, a division of the $18.2 billion travel-services giant Cendant Corp. And it's an issue that no company can afford to ignore, especially if, like TDS, your customers are increasingly international. As one of the world's largest online travel-booking companies, TDS employs 8,300 workers, manages 24 brands (including CheapTickets, Orbitz and Galileo International), and generates nearly 60 percent of its revenue internationally. "We may be based in America, but our future is outside the U.S.," Kruse says. As a result, TDS is actively recruiting overseas in its search for qualified employees to fill international positions.

But how to find them? "There aren't boatloads of people who do online travel outside the U.S.," or who are willing to relocate, she says. And while online job recruitment sites such as Monster.com have become the norm in the U.S., the only way to identify potential international candidates has been "to run an advertisement in every newspaper in every market for every job that was available, and then wait for people to respond," Kruse says. Or hire a recruiter in each city, an expensive option.

That's where technology enters the picture. New applications from software vendors such as Taleo Corp., BrassRing LLC and others promise to locate and recruit qualified workers around the world, and help companies manage their ever-growing pool of talent. These programs let companies post job listings to multiple international Web sites, and create a database of responding candidates that can then be sorted by skill sets. This allows a company such as TDS to track the résumé submissions for a particular job, and match applicants' résumés to other positions for which the candidate may be qualified. TDS began working with Taleo in 2004, and the results have been tangible. "It broadens the search in ways you could never do in the off-line world," Kruse says.

Sounds good, but how can Kruse tell if the system is identifying the right people? "We have a very strong retention rate," she says. In 2005, TDS's retention rate was at 99.5 percent after 30 days, and 98.4 percent after 180 days. Those numbers are consistent with TDS's previous retention rates, "which means that even though we've reduced the time it takes to recruit people, it has

ILLUSTRATION BY FERNAND ZACOT/IMAGES.COM/CORBIS

FOREWORD

no impact on how long we hold on to them. We're placing candidates faster and cheaper, and they're still a good fit." Kruse adds that recruitment costs have come down by 25 percent as a result of the Taleo rollout. "Two years ago, about 40 percent of our hires came from recruitment agencies," she says. "Now that figure is at 15 percent."

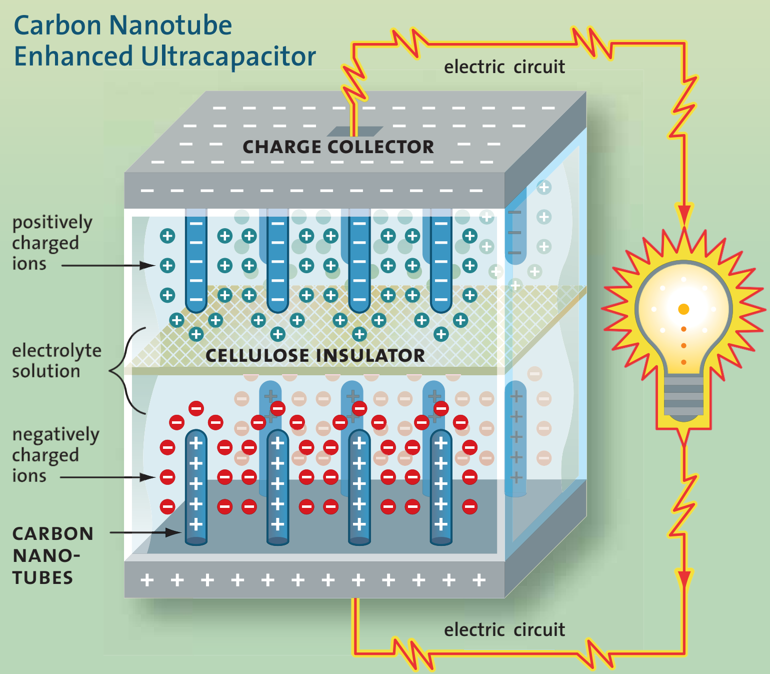
Of course, the software isn't a cure-all. Not every potential employee has Internet access, and "there are definitely markets where Internet use for recruitment is still nonexistent," Kruse says. "So you have to adjust your strategy in those areas and run an ad in the paper." And there's often another obstacle—your own people. Kruse admits that some HR staffers were skeptical about the new system when it launched. "People thought it would take too long or be too hard to use," she says. "But now no one wants to do it the old way."

—Debra D'Agostino

ALTERNATIVE ENERGY

The New Battery

Traditional batteries are long overdue for a makeover. Scientists at MIT have a proven concept for a Nanotube Enhanced Ultracapacitor, which stores energy as an electrical field, rather than using a chemical reaction. The ultracapacitors, many years from commercial production, would be more efficient, recharge faster and last longer.



SOURCE: MIT LABORATORY FOR ELECTROMAGNETIC AND ELECTRONIC SYSTEMS

INFOGRAPHIC BY JEAN TUTTLE

TECH TV

IT on the Small Screen

THEY'RE ILL-DRESSED, CLOISTERED in a dank basement, and incapable of talking to women—they're your IT department, as portrayed in the British comedy *The IT Crowd*. Moss and Roy, the two computer geeks charged with IT support at the fictitious Reynholm Industries, are hardly aligned with their glamorous business counterparts. The IT/business relationship becomes downright adversarial when one female staffer—tired of being told to switch her computer off and then on again—gives Roy a savage beating with one of her Manolo Blahnik heels.

Whether or not the show depicts a realistic IT department, much of the humor in *The IT Crowd* rings true with its most-likely fan base—computer geeks. From Roy's "RTFM" T-shirt, to the piles of aged PCs that adorn their basement office, the show looks to capture authentic IT culture. "I've waited all my life for a truly geeky comedy, and I think that this is it," writes Cory Doctorow on the popular blog, BoingBoing.net.

Channel 4, the U.K. network that carries the series, offered the first two episodes online before the initial broadcast, but encoded each download with digital-rights-management restrictions. This caused a minor flap with eager fans on both sides of the Atlantic, until the episodes became readily available on BitTorrent.com. Channel 4 finally relented on its own site, lifting the restrictions in February.

Channel 4 has no plans to bring the sitcom to the U.S., but its online following could help make it *The Office* for tech workers. *—Sheena Mohan*

ARAB I.T.

When Wells Run Dry

THERE'S A NEW SOURCE OF wealth bubbling up in the Middle East, and it has nothing to do with oil. Countries such as Oman, the United Arab Emirates and Jordan are building up their IT capabilities, and human capital, to prepare themselves for when those rivers of black gold slow to a trickle.

From the expansive Technology Park in Muscat, Oman, to Internet City in Dubai, to Egypt's fledgling call centers, the Arab world is hoping there's life after oil. Some countries, such as Egypt and Jordan, rely on a combination of foreign investment and government support. Microsoft Corp., for example, has invested heavily in Egyptian technology-outsourcing facilities, while Intel Corp. has established a $50 million venture capital fund in the Middle East and Turkey, according to Sam Hamdan, chairman of the Global Leadership Team, a Birmingham, Mich., consultancy working with the United Nations to put on the World Summit on Innovation and Entrepreneurship, to be held in Muscat in April of this year.

The IT growth in India and China has been a huge eye-opener for the Arab world, Hamdan says. "Arabs brought modern science, mathematics and many technologies to the West, and now they're lacking in all of these sectors."

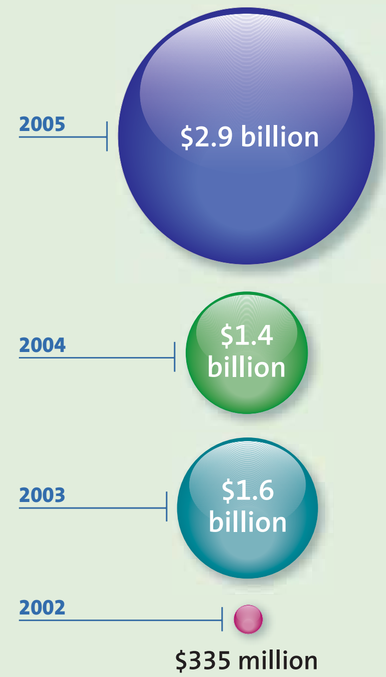
Arab nations are likely to encounter some stiff competition, however. According to Robert Brown, a research director at Gartner Inc., language issues will be a major, though not the only, stumbling block. "Arab nations are not the 'next big thing,'" he says. "Some will benefit as global sourcing floats all boats, but there are potential security concerns, either in perception or reality."

Regardless, oil-rich nations such as Oman are pouring petroleum profits back into technology education for women and youth. Such efforts, however, have as much to do with staving off an enormous employment pitfall as with entering the global economy. About 50 percent of the population in the Arab world is under the age of 15. According to the U.N., these nations will have to create 84 million jobs by 2020 in order to employ their own citizens. The United Nations Development Program also sees IT education as an opportunity to empower Arab youth and so move them beyond disenfranchised poverty—which can lead to religious extremism. "We are using the language of economics to bridge these cultural gaps," says Hamdan. —*Sheena Mohan*

THE NUMBERS

How Do You Say "Bubble" in Chinese?

Venture capital investments in China have more than doubled in the past year. Haven't we seen this somewhere before?



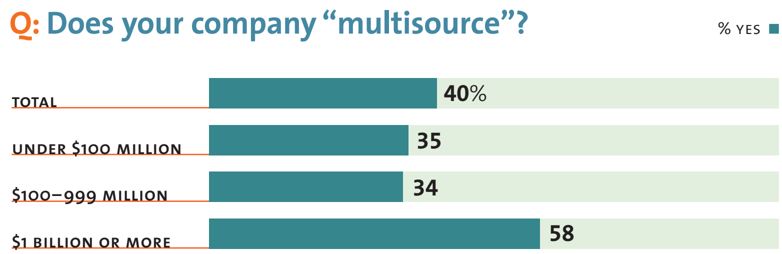
SOURCE: ASIAN VENTURE CAPITAL JOURNAL

CIO INSIGHT ASKS

Multiple Choice

Multisourcing is gaining steam as a strategic approach to outsourcing: Nearly 60 percent of companies with over $1 billion in revenues, and a third of companies below $1 billion, are now doing it.

Q: Does your company "multisource"?



SOURCE: *CIO INSIGHT*, JANUARY 2006 N=349

THE LEGAL JUNGLE

By Larry Downes

The Other Information Revolution

Efforts to police the Internet are on the rise. Why doesn't anyone care anymore?

TEN YEARS AGO, TWO DEFINING EVENTS OCCURRED THAT altered the course of evolution—specifically, the evolution of the Internet from an academic experiment to the global infrastructure it has become.

First, President Clinton signed into law the Telecommunications Act of 1996, which, on paper, radically deregulated the provisioning of telephone, data and other information services. A few days later, while attending the annual World Economic Forum in Davos, Switzerland, John Perry Barlow—a lyricist for the Grateful Dead and the cofounder of the Electronic Frontier Foundation, among other things—dispatched a revolutionary document into the ether, a "Declaration of the Independence of Cyberspace."

Barlow's declaration launched the struggle to maintain the political independence of the Internet.

The two events were related. Added at the last minute, and tucked away in the 1996 Act was a provision titled the "Communications Decency Act," which made it a crime to use the Internet to transmit "indecent" materials to minors. The Congress that wrote the CDA and the President who signed it almost certainly knew this provision was unconstitutional, a violation of long-settled principles of First Amendment law. But telecom reform had been years in the making, and everyone was tired of negotiating. The CDA became law.

Barlow's declaration, addressed to the "Governments of the Industrial World, you weary giants of flesh and steel," represented one man's disgust with politicians who were trying not so much to legislate a new medium (about which they knew nothing), but rather to *appear* to be legislating. Barlow, paying homage to the ideals of Thomas Jefferson and the other Founding Fathers, declared the Internet off-limits to the governments of the physical world, and promised not a violent revolution but a war of attrition. "You have no moral right to rule us," Barlow wrote, "nor do you possess any methods of enforcement we have true reason to fear."

This last observation has proven prescient. In the ten years since the CDA was enacted (and, as expected, declared unconstitutional by the U.S. Supreme Court a year later), governments at all levels and across geographies have tried with more or less effort, and more or less sincerity, to define, regulate, tax, constrain, ban, encourage or disparage (or all of the above) the thousands of new applications for transmitting information that have been released into the roiling waters of the Internet. In nearly every instance, those efforts have failed.

One thing all this legislating has succeeded in doing has been to solidify resistance among the increasingly numerous, wealthy and powerful residents of what Barlow called the "civilization of the Mind." The declaration, or rather the CDA, launched what we might think of as the *other* Information Revolution—the one that struggles to maintain the political independence of the internet.

Today's revolutionaries lobby against bad laws and bad judicial decisions through not-for-profit organizations including the EFF, the Electronic Privacy Information Center and the ACLU. They define and operate their own quasi-governments—the governments of

ILLUSTRATION BY JOHN KASCHT

THE LEGAL JUNGLE

open source, of peer-to-peer, of Creative Commons and the blogosphere. They stage acts of civil disobedience and sometimes outright revolt, ignoring threats of enforcement made against them by private and public enforcers from the world of "flesh and steel."

The information revolutionaries can't always hide in the bits, and when captured, many have been dealt with severely. Companies such as MP3.com, Napster and Netscape are either gone or unrecognizable. Identity thieves, spammers, hackers and copyright pirates are picked off individually by governments and corporations. But even before their bodies are carried from the field, ten replacements, even more resistant to the antiviral agents of the physical world, appear, spread and take hold.

Well, here we go again. A few weeks ago, President Bush signed into law a reauthorization of the innocently named Violence Against Women Act, which, like the Telecommunications Act exactly ten years earlier, has hidden inside it an explosive device aimed at the First Amendment. Section 113 of VAWA, which claims to deal with the new crime of "cyberstalking," modifies the exact same section of U.S. telecommunications law, 47 U.S.C. § 223, the CDA tried and failed to change.

Where the CDA outlawed "indecency," the cyberstalking provision has made it a crime to use the Internet to communicate without disclosing your identity and with the "intent to annoy." Think of it as CDA II.

CDA II is one of the worst statutes I've ever read. It applies to any "device or software" that is capable of communicating over the Internet, but not necessarily one that is being used in that way. As one of my more devious students has pointed out, CDA II, in theory, would apply if he threw his PDA at me from the back row of class. Even if he missed me—even if I didn't realize he'd thrown it—he could be looking at two years in a federal prison.

And what does it mean to disclose one's identity in an electronic communication? (CDA II grafts itself onto an earlier provision that applies to obscene phone calls where the caller doesn't give his or her name.) Does my e-mail address identify me? My chat-profile name? Or, to avoid liability, do I need to include my name and address in every reply I post to your (dumb) blog?

The definition of "Internet" the new law uses may also have unintended consequences. It references an older law that limits "the Internet" to software and devices that use the TCP/IP protocol, or its successors or predecessors. Much of what today passes through electronic communications, and which the drafters probably intended to regulate, is arguably outside that definition.

It's important to understand what CDA II does not try to do. It does not criminalize communications that some recipient finds annoying, or which might annoy some hypothetical thin-skinned reader. The sender must intend to annoy (even if she fails), and as a criminal sanction that intent must be proven beyond a reasonable doubt. And so long as you identify yourself in the process, you may annoy with complete abandon.

CDA II, poorly drafted and full of ambiguities, attempts to criminalize what is almost assuredly protected speech.

Popular and trade media reports of CDA II have made some embarrassing mistakes of legal interpretation, but their basic message is right—this provision, poorly drafted and full of ambiguities as to its meaning, application and enforcement, attempts to criminalize what is almost assuredly protected speech. Just like the CDA.

But aside from some ranting on Web sites (some of it potentially violating the new law!), the revolutionaries have said almost nothing about CDA II. Ten years after "dumping some tea in the virtual harbor," Barlow hasn't issued a statement on the cyberstalking provision. When I asked him why, he told me, sounding a little weary himself, "All I can say is that some things never change."

Or maybe there's no need to rally the troops. No doubt lawsuits to void CDA II are already being drafted. More to the point, the "weary giants of flesh and steel" aren't the real threat anymore. The real threat to the Internet comes from within, from viruses and malicious hacking, and from foolish and greedy individuals and companies whose efforts to exploit the value-generating engine of the Internet sometimes distract and sometimes stall the machinery, though so far, at least, they haven't stopped it.

Congress, meanwhile, grows increasingly shrill and increasingly incoherent in its efforts to police the new world. It's the madness of King George.

LARRY DOWNES *is Associate Dean of the UC-Berkeley School of Information Management and Systems. He is the author of* Unleashing the Killer App *and* The Strategy Machine. *His next column will appear in May. Please send comments on this column to* **editors@cioinsight-ziffdavis.com.**

Scott Griffin, vice president and CIO, Boeing Co.

CASE STUDY | BOEING CO.

Flying in Formation

The massive global collaboration effort behind Boeing's 787 reflects the changing nature of its business. **By Edward Cone**

ALMOST EVERYTHING ABOUT THE NEW Boeing 787 is different—from the cutting-edge materials and electronics used to build the plane, to the technology used during the design and assembly process. It is so different, in fact, that even the Boeing Co. itself—a fixture in the global economy for nearly a century—is undergoing a radical transformation as it builds this next-generation jet.

The design and production strategy employed by the $55 billion, Chicago-based aerospace giant to get the 787 built as quickly and economically as possible involves an unprecedented degree of collaboration between Boeing and its partners around the world—partners who are participating in the actual design of the plane. All of which marks a shift in the way Boeing defines itself: The company is no longer just a manufacturer, but also a high-end systems integrator. "We are a technology company," says Scott Griffin, Boeing vice president and CIO.

The reasons Boeing is making the shift go beyond the savings it hopes to enjoy by making the planes faster and cheaper. The company is also spreading the costs of design and development throughout its partner network, and building global relationships that may, in turn, help the company sell its planes overseas.

The previous state of the art in aviation manufacturing was to have global partners work from a common blueprint to produce parts—actually, whole sections of the airplane—that were then physically shipped to a Boeing assembly plant near Seattle to

PHOTOGRAPHY BY BOB FERGUSON/BOEING

see if they fit together. There, successive iterations of the planes were built and refined with onsite teams from around the world.

On the 787, that process has gone the way of the biplane. Instead, parts are designed concurrently by partners, and virtually "assembled" in a computer model maintained by Boeing outside its corporate firewall. "We have different people building different pieces by creating data that is assembled and checked in real time," says Griffin, who is responsible for the computer systems that make this process possible. Ultimately, completed sections of the plane will be picked up by three specially fitted 747s and carried to a Boeing facility in Everett, Wash. Thanks to the online modeling, Boeing can now trust its global partners with the process of creating entire sections of the plane, from concept to production.

"The design is occurring in Japan, Russia, Italy, the U.S.," Griffin says. "This is not merely a PowerPoint or SharePoint collaboration, or looking at two-dimensional drawings to see if a company can bid on a contract. This is big companies like the Japanese heavies, and our Russian design center, and Boeing in Everett working together. This is something that creates competitive advantage.

"This kind of collaboration has taken a huge amount of time out of the process," he adds. "It's where the big savings are."

The competitive advantage is critical to Boeing, which is locked in a global battle for market leadership with Airbus S.A.S., the Toulouse, France-based aerospace manufacturer that has emerged as its most potent competitor for civil aviation business in the modern era. Boeing has 291 firm orders, and 88 commitments, from 27 airlines for the new 787, nicknamed the "Dreamliner," which will seat from 250 to 330 passengers in varying configurations. List price: around $150 million per plane.

"The importance of the 787 to Boeing's success in the coming years simply cannot be overstated," says Bill Dane, senior aviation analyst at Forecast International Inc., an aerospace industry research firm in Newtown, Conn. "It is no hype to say that the 787 is the company's future." In an industry characterized by epic bets and enormous risks, says Howard Rubel, a managing director and aerospace analyst at Jefferies & Co., in New York City, "The 787 is a defining program for Boeing."

And a defining element of that program is a new level of global collaboration.

COMPANY PROFILE

Company
The Boeing Co.

Corporate Headquarters
Chicago

CIO
Scott Griffin

Revenues (2005)
$54.8 billion
(trailing 12 months)

Stock Price
$73.39 (Mar. 3, 2006)

52 week high-low
$74.89–$56.22

From Manufacturer to Integrator

Though Boeing still makes pieces of the planes they sell, the recent shift in their business model is undeniable. "We still do manufacturing, but we are moving up the value stream to become a large-scale systems integrator," Griffin says.

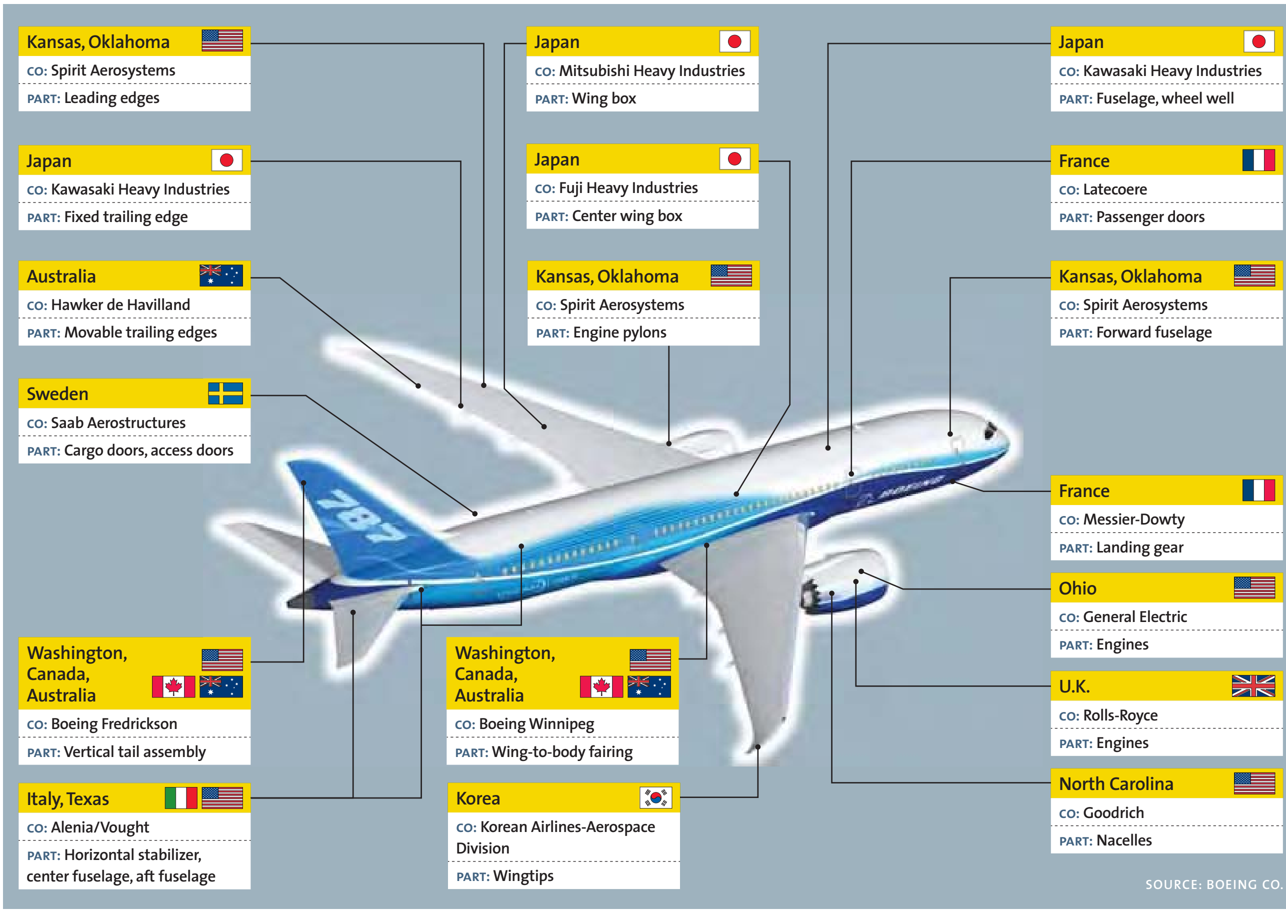
The fabled company, founded in 1916, didn't change overnight, and not all of the changes have been visible from the outside. In 2004, for example, Boeing's IT organization was consolidated under Griffin. Last September, it was moved into the Boeing Technology Group, so that the CIO reports to Chief Technology Officer James Jamieson. "We pulled all of our systems people out of the business units, because IT is not a back-office function here," says Griffin. "It is too important to our business model."

Previous development programs for planes such as the 757, built in the early 1980s, brought increasing levels of collaboration with global partners. "The original breakthrough came in the 1980s, when we started inviting people from around the world to Everett," Griffin says. Until recently, Boeing's worldwide partners kept teams onsite in Washington; some companies still maintain a physical presence near Seattle, but it is no longer required.

One longtime Boeing partner is Vought Aircraft Industries Inc., of Dallas, which is building two sections of the 787 fuselage and is partnering with an Italian firm, Alenia Aeronautica S.p.A., to integrate pieces of the fuselage being built in South Carolina and Italy. "We've never done a project before where the roles and responsibilities are as clear and consistent as they are

Running the Global Gamut

Boeing's forthcoming 787 "Dreamliner" is being designed and assembled through an unprecedented global effort. Here's a look at just some of Boeing's partners and their contributions.



on this one," says Vern Broomall, vice president for quality, engineering and technology at Vought.

"There is a real difference in the business approach, with Boeing taking the role of integrator and the interface to the airlines, and the partners taking responsibility for the major pieces, including their design," Broomall says. "We work directly with the Japanese and the Italians, and have an excellent working relationship with them, while Boeing facilitates the work for all of us."
As mandated by Boeing, all the partners use the same design and collaboration software from French vendor Dassault Systemes S.A.

Griffin identifies three kinds of collaboration between teams and companies, although he stresses that the levels shade into each other. Basic collaboration, he says, involves useful information-flow tools such as Microsoft Office and SharePoint. "Everyone calls in, makes their changes in blue, and the team works together," he says. The next level involves suppliers working with their supply chains, and Boeing working closely with its suppliers. This is an effort that encompasses much of the aerospace industry, including Boeing's rivals and multiple tiers of suppliers.

Boeing and other aerospace companies use a product suite from Exostar LLC to share two-dimensional drawings, do forward and reverse auctions, and respond to RFPs. "We use the term 'global enterprise,' to describe it," he says. "It goes beyond talking to strategic suppliers, to having it look like the enterprise. This is a set of tools that allows you to do more than communicate."

Building a Better Airplane, Better

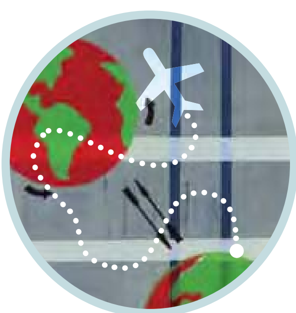
But it is the high-level, real-time collaboration with its design partners that is "the differentiator," says Griffin. It's key to how the trailing edge of the wings, and the place where the wings attach to the body, can be built halfway around the world from each other and still be parts of a safe and stable aircraft. Technology is the enabler of this kind of collaboration, which involves a significant amount of product lifecycle management across multiple countries. Boeing requires all its partners on the 787 to use an application called Catia, made by Dassault, and the plane is designed at a special online site, maintained by Boeing, called the Global Collaboration Environment.

Customers, including pilots and flight attendants, were asked to provide input before the design was handed off to design partners. The new midsize passenger jet, scheduled to begin production later this year, will have an outer shell made of carbon-fiber-reinforced plastic, known as composite, rather than the familiar aluminum skin used on previous generations of airliners. About half the plane's parts by weight will also be made of this advanced material, which will make it lighter and give the jet better fuel economy than its forebears. Passengers will notice a difference, too, because the super-strong composite exterior will allow the cabin to be pressurized at much lower altitudes than is possible with metal-skinned planes, resulting in a more comfortable ride. And key internal systems will depend on electronics, instead of on the hydraulic controls that have been used for decades.

The firm's partners got a master design that showed the general contours of the plane—they knew, for example, where the landing gear would attach, and how much space would be available for it when it folds up into the belly of the aircraft.

But Boeing didn't just turn its partners loose. "An airplane is a system of systems, with components that include thousands of parts," Griffin says. "You need tools that let you see the parts fit together. The data has to be created in the same format. You can't just tell someone to design parts and send them to us, and we'll put them together."

Actually, that's pretty much how collaboration used to be done. Prior to the 787, wood mock-ups of planes would be constructed to see if parts built by partners around the world would really fit together. Now, "clashes" between parts and whole sections show up easily on a computer screen before the part is even manufactured. "Quality is up, because the computer finds the mistakes," says Vought Aircraft's Broomall. "If there are two parts in the same space, or they don't fit together well, a big red blotch shows up on the screen. You don't have to put it together and say, 'Rats, that didn't work.'"



"The importance of the 787 to Boeing's success in the coming years simply cannot be overstated." —**Bill Dane**, senior aviation analyst, Forecast International Inc.

Finished designs are stored in another Dassault product, Enovia, which is also maintained by Boeing. "We are creating an enormous amount of digits in the descriptions of parts and engineering," Broomall says. "This is an enormous data-management task."

There have been other difficulties as well. "One of the technical challenges for collaboration has been to provide airtight information security," says Griffin. "In the

Measuring Virtual Distance

COLLABORATION ACROSS CULTURES AND TIME ZONES can raise a host of issues about the way people work together, but sometimes the more obvious problems can mask other, more insidious stumbling blocks to productivity. And some of these problems are just as likely to happen close to home.

That's the conclusion of Karen Sobel Lojeski, CEO of New York City-based consultancy Virtual Distance International. She says she can quantify the factors that impede collaboration around the world, or even around the corner. Most organizations, she says, have not adjusted their management practices to the networked, team-oriented workplace that is common today. "Formerly soft issues, like social and cultural differences, have become much more important to consider in a direct way," she says.

A veteran of almost two decades on Wall Street before going to graduate school and hanging out her consulting shingle, Lojeski says she noticed that workers seem increasingly disconnected, even as technology makes it easier for them to communicate in real time.

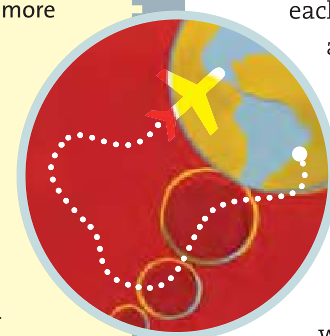
She calls the hazards inherent to collaborative work "Virtual Risk," and measures it by a system she calls "Virtual Distance." Lojeski has the particulars of nearly 400 real-life cases, and she used the concepts of Virtual Risk and Virtual Distance as the basis of her Ph.D. thesis. "It is an index that lets us calculate the extent to which these issues exist and make a difference," she says.

Companies are scored on 11 factors. Three of them involve "real" or "actual" distance, including geographic distance, time zone differences, and organizational differences between different companies. The other eight factors are softer, including cultural differences, social factors, relationships and work histories, goal and role interdependence, technical skill, amount of multitasking, team size, and mix of face-to-face interaction versus phone, video, etc.

Lojeski's research shows that differences in language and locality matter, but not as much as differences in communication style and work ethic. "Teams with high scores on Virtual Distance—more Virtual Distance—were quantifiably less successful, had relatively poor leader effectiveness and demonstrated less innovative behavior."

What surprised Lojeski as she documented this phenomenon was its prevalence among teams in the same city, or building. "I started out assuming that geography was a necessary feature, but you can have just as high a rate of Virtual Distance among colocated workers as distributed people," she says. By analyzing the metrics that predict these gaps, and training workers to communicate effectively, companies can make collaboration more productive.

"Acknowledging it is the first step, then adding skills as leaders and organizations to deal with it," she says. —*E.C.*



aerospace industry we team with a company on one project and compete with them on another. But over the last few years, security technology has matured to the point where we can be assured of keeping information secure."

And so far, Boeing has not been able to standardize its collaboration techniques across its sprawling operations. "Today, the process is different for each program," says Griffin. "As we move the company to common processes and systems we are trying to reuse as much knowledge as possible across Boeing, but the partners are different each time and therefore the issues are different as well."

Boeing maintains ten multimedia rooms at the Everett complex for the use of collaboration teams, says John La Porta, a Boeing team leader. "They are open 365 days a year, 24 hours a day," he says. "It's always daytime somewhere." On a recent afternoon, meetings were underway between one group of engineers at Boeing and their peers at Mitsubishi Heavy Industries Ltd., in Japan, while another group worked with teams at Japan's Kawasaki Heavy Industries Ltd. and Australia's Hawker de Havilland, a Boeing subsidiary. A visualization application developed by Boeing allows the teams to do real-time design reviews of complex geometry without any lag time as the models load. "The tone is cordial, it's engineers talking to engineers," says La Porta. Meetings are conducted in English, with sidebar conversations as needed in native languages around the world.

Global Imperative

Collaboration is a necessity for Boeing for several reasons. One is scale: Airplanes are enormous, and enormously complex. "There is not a building big enough to house a project like this," Griffin says. "You cannot do four million parts in the same location." Another reason is political. "We are a global company, and we sell our products globally," he adds. "One thing that helps you sell is that people in other countries are building parts of the airplane. It's not just a product built in Everett, Wash., but a global product." (Airbus, originally a multinational consortium, will soon be building some of its planes in China.)

Boeing also needs to spread the financial risk of the 787 project, says Richard Aboulafia, vice president for analysis at Teal Group Corp., an aerospace and defense research company in Fairfax, Va. "The 787 is hugely

"We still do manufacturing, but we are moving up the value stream to become a large-scale systems integrator."

—**Scott Griffin,** vice president and CIO, Boeing Co.

promising, and hugely risky, so they have to maximize their use of risk-sharing partners. This plane takes advantage of truly cutting-edge technologies, and there are aircraft in the past that have stumbled on that, like with the Lockheed L1011 that almost destroyed that company." Boeing still takes the hit if the planes fail, but the actual cost of development and manufacturing is spread across its network of collaborators.

Collaborative design that speeds the process also helps Boeing avoid expensive penalties from its customers if the plane is not delivered on time, Aboulafia says, and it gives the company more flexibility in designing the multiple versions of the 787 that are part of its wide-ranging appeal in the marketplace.

Says aerospace analyst Rubel, "On-time delivery is important to hold the customer's trust, to reinforce Boeing's leadership position, and to allow the company to make money. The customer goes through an elaborate process to have its systems and routes and markets ready for the plane and it needs an on-time arrival."

Vought's Broomall says the 787 process is delivering on those needs. "We have probably taken more than one-third to one-half of the time out, and perhaps 50 percent out of development cost versus historical methods," he says.

Meanwhile, Boeing is chasing talent and looking for cost-savings around the world. In addition to its global business partners, Boeing maintains technical research centers in Madrid and Moscow. "We want to use the best and brightest anywhere in the world, and part of our role at Boeing Technology is finding them," Griffin says. "We're seeking Indian ingenuity, or Japanese or British or Italian ingenuity. The mathematicians in Russia are fascinating to talk to, they're trained differently, they think about models and use wind tunnels differently." Different regions do some things better than others, Griffin adds. "A big problem, where there is not a lot of structure, we tend to give to the Russians," he says. "A big problem with lots of structure, and a chance for continuous improvement, we tend to give to India."

Not every job at Boeing can be done by non-U.S. nationals. Defense-related projects, which make up more than one-third of the company's current order backlog, are off-limits to workers without U.S. citizenship or work papers. But wherever possible, Boeing is bringing global talent to bear on its design and manufacturing projects.

Of course, no amount of technology can fully replace the need for face-to-face interaction, Broomall says. "When we do the next project—we are committed to doing derivative versions of this plane—there will be less human contact and more collaboration via IT," he says. "But you still have to have meetings, and maintain relationships, so that you are comfortable that you know the person behind the computer. You can build a new plane from scratch on the computer, but you have to have confidence in the people."

Please send questions and comments on this article to editors@cioinsight-ziffdavis.com.

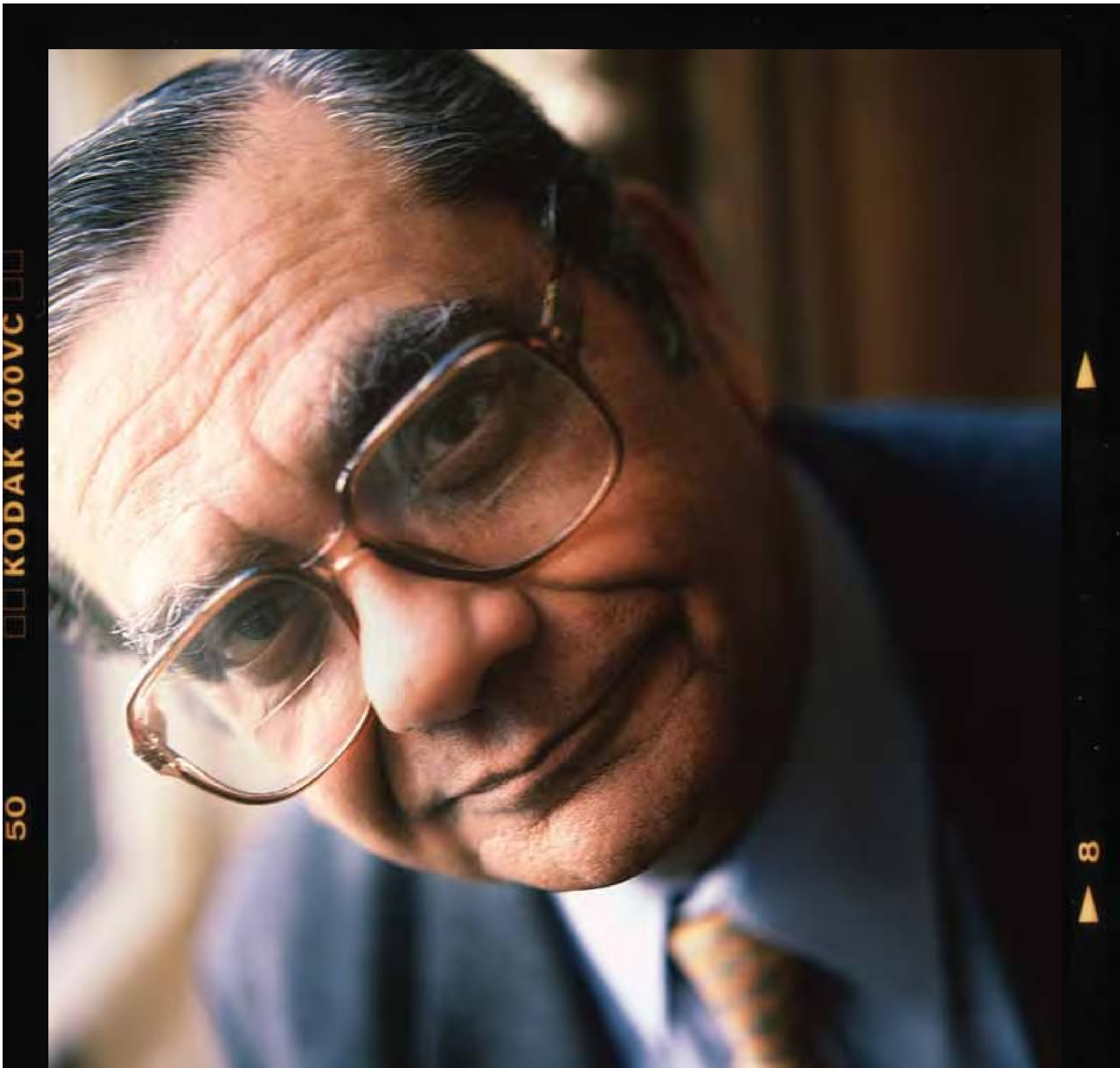
RESOURCES

Article

"How Toyota and Linux Keep Collaboration Simple"
By Philip Evans and Bob Wolf
Harvard Business Review, August 2005

Website/Project

www.thinkcycle.org
An academic, nonprofit initiative supporting distributed collaboration toward design challenges



EXPERT VOICES | JAGDISH BHAGWATI

The Age *of* Flux

It's time to rethink the whole question of **how to live in a globalized world**—and not just worry about India and China taking away jobs.

PHOTOGRAPHY BY MARC ASNIN/REDUX

IN 2004, RENOWNED economist Jagdish Bhagwati published his highly acclaimed book, *In Defense of Globalization* (Oxford University Press). As the title suggests, Bhagwati argues strongly for globalization, but he also seeks to balance his viewpoint by considering the social implications of the phenomenon. Bhagwati, who is University Professor of Economics at Columbia University and a senior fellow in international economics at the Council on Foreign Relations, recently spoke with *CIO Insight* editors Ellen Pearlman and Edward Baker about his book, and about his views on the future of globalization. "Essentially, my book is not about things like offshoring, or the strict economic debate about whether outsourcing and free trade are good for us, or our workers," Bhagwati says. "What I was really interested in was focusing more on the social implications. I wanted to address those issues and the effect on gender issues, the exercise of democracy, mainstream culture, individual culture, and a whole slew of the stuff that economists can respond to. And basically I argue that globalization can actually advance these social agendas, that the complaints and the fears are not really justified."

But the growth of international trade raises other issues for Bhagwati. As he points out, "You might think something is good, but somebody else thinks it's bad. There are too many different interpretations of the same international transaction." So how do you deal with all that? Bhagwati is currently thinking about and working on ways to implement some kind of government regulation, or intervention, to come up with better answers. In the edited transcript that follows, he talks about his view of a "flat world" and the questions that still concern him.

CIO INSIGHT: How do you view globalization and the concern Americans have for their jobs?

BHAGWATI: My view differs from Tom Friedman [*New York Times* foreign-affairs columnist and author of *The World is Flat: A Brief History of the Twenty-First Century*]. He basically argues that the rise of India and China is so dramatic in terms of skills that we're competing with people who have equal knowledge but lower wages. And even though he's a pro-globalization guy, by talking in these terms and saying there's a flat road, he's essentially saying that India and China are coming down that flat road, so you'd better get yourself a shield and armor. He's basically celebrating the rise of these countries, because he's not an anti-globalization guy, but he's also telling us to wake up, because otherwise our jobs are going to disappear.

I think Tom is fundamentally wrong. He listens to people like my friend Nandan Nilekani, CEO of Infosys. Nilekani is a very smart guy, but he flexes his muscles—much like Popeye, except Popeye does it on spinach and Nilekani does it on IT. Nilekani says, "We can do anything the Americans can do." Now that's true, but that's not the same thing as saying Indians *will* do everything the Americans can do. That's a separate economic proposition.

The developed countries still retain a huge comparative advantage. Let's look at outsourcing. What we now have, actually, is large numbers of low-value jobs being transacted on the Internet. Outsourcing of services is really the same thing as buying anything from outside—manufacturing components, for instance—but that's traditional trade. So if I start complaining about that, I'm really complaining about trade. And then there's the issue of protectionism—that inward-looking point of view that hurts India like hell—which is against taking advantage of trade. So that's not what we should think about.

Senator John Kerry also mixed it up when he talked during the presidential campaign about people just pulling up a plant from Nantucket and taking it to Nairobi. Well, that's part of the whole foreign-investment issue. You'd have to be really paranoid to think that the U.S. is losing from foreign investment. We attract almost as much as we send out. A lot of what we send out is to the poor countries. A lot of what we get is really high-value investments from places like Germany. If you go down Interstate 95 in South Carolina, there's a lot of German investment. That particular segment of Interstate 95, I'm told, is now called the Autobahn. The Germans have really lifted it up. And there are lots of examples like that.

The reason why outsourcing has become a big issue is because jobs that involve not just working with your brawn but also with your brains—semiskilled work such as call-center services, back-office operations, typing things up—can now be done elsewhere. Kinko's will actually take things to be typed to India. And people in India can call people in U.S. nursing homes ("Mr. Schwartz, it's time for your Lipitor") for 25 cents a call. That would cost $2.50 here. There would be no such job here. Mr. Schwartz would just not take his Lipitor and die. It's important to remember that some jobs are just gone. It's not that they've been transferred elsewhere; they're just gone because they're too expensive here.

That is where a whole lot of low-value, low-wage jobs are going, and that is adding to our consumer satisfaction in many ways. That is international trade in developing countries' favor. But against that, we have large numbers of high-value jobs being created here. There's no need to panic about the rise of India and China, because there's going to be a lot of trade, and both sides are going to win.

> "It's important to remember that some jobs are just gone. **It's not that they've been transferred elsewhere;** they're just gone because they're too expensive here."

So what *does* worry you?

I want to come now to a stark scenario, which I think is a different way of looking at globalization. I don't think that as China and India develop we have anything to worry about, just for the reasons I mentioned. But what I think we do need to worry about is simply the nature of global competition today, and it's not focused just on India and China.

Today there are so many countries in play all over the world. Multinationals can do good in many countries, and they absorb technology wherever they can get it. They'll go to your country rather than mine if they see some advantage in being there.

People are reading very similar books and have very similar know-how. Interest rates and capital markets are much more integrated than ever before. So a lot of cost elements have been leveled out, and in that sense you can actually begin to think in terms of operating in world markets, because the other guy doesn't have all that much of an advantage over you. The fact that you have cheaper labor is not particularly relevant. In fact, all the econometric studies show that labor cost is the least important thing when it comes to locating businesses.

Because of all this leveling down of interest rates, and because multinationals can locate anywhere, competition is fierce today. Talk to CEOs and executive directors, and I doubt you'll find anybody who's comfortable about the fact that the world is moving very fast. Maybe somebody's going to take your job, which is why there are protectionists.

Everybody fears that somebody might overtake them. Back in 1991, when I was at my daughter's music camp, I met a Silicon Valley father, and he said he was having big problems—international competition from the Koreans and the Far East. So I turned to the next parent and asked him what he did. He said, "I grow mushrooms." I said, "You really must be leading a quiet life." He said, "No, Taiwan is killing me." So everybody has somebody killing them. You look over your shoulder, and somebody's stealing your party.

I call it the Age of Flux. I call it "kaleidoscopic comparative advantage." It's not that comparative advantage has disappeared and that everything now goes to India and China, or to another country. It's that it has become so volatile. Given that volatility, everybody is now on edge.

So what can be done about this volatility?

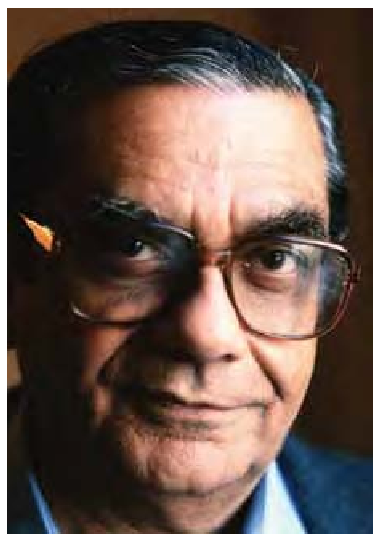
Now if that is the situation, then, of course, workers are going to be on edge, too. Therefore, you have to rethink the whole question of how to cope with living in a globalized world. It's much more complicated than just saying we're going to prevent India and China from exporting to us or taking our jobs. If it was just that, we could say, "Go to hell. We don't really need you. We can manage by ourselves." But today, if you're in the international economy, if you want to lead a happy life, you have to be continuously coping with globalization and flux.

This is really where I think we've got to rethink the kind of social-support systems we have for people. Suppose Boeing starts going downhill. Right now it's doing well again, but it could be that Airbus steals some margin from it. Then you are going to have people who lose their jobs at Boeing. But they could get jobs at Nissan or Toyota, because those companies are expanding. You could have aeronautical engineers doing auto engineering.

We have other jobs coming up, like in medicine. Aging, for example, is creating a problem, but at the same time it offers possibilities. Take the fact that almost 15 percent of our income is now being spent on healthcare of one kind or another. If you want to think of specific specializations, there are lots of age-related ailments that are going to come up. I'm 72 and I'm beginning to get them now myself—arthritis, rheumatism.

The real problem is this churning, and the fact that we're an aging society. If I lose my job as a professor of economics when I'm 45, and then you come and tell me there are jobs available for professors of physics, I'd say, "Get lost, you're really increasing my anguish by telling me that."

We don't have to worry about new skilled jobs. Skilled jobs are going to keep coming up, and technological change is also continuously creating jobs. Skilled people have nothing to worry about. What we do need in an aging society is for everybody to get together, particularly professional societies, and really work out optimal trajectories of transitions. If a radiologist is going to lose out and there are going to be jobs for plastic sur-



"If we don't do something to **facilitate coping with change,** the politicians won't be able to deliver on keeping markets open—**and forget about expanding further."**

geons, how do we minimize the cost of retooling? If the American Medical Association cannot figure out how you make transitions from declining occupations to expanding ones, then some smart guys will probably work it out.

Have you seen anybody actually work this out?

No, but I have written about this recently, and I'm going to work at it now. It's not just a matter of giving people money for two years to supplement their incomes while they're bagging groceries and stocking shelves at the local Wal-Mart. That's not enough. There are insurance plans now which we are experimenting with—not unemployment, but wage insurance. So if you go from a $70,000 job to, say, a $20,000 one at Wal-Mart, half of your wages are picked up for three years under an insurance program. A pilot insurance program like this was enacted in the U.S. several years ago.

So we're working at it, but we have to work out these trajectories of transition. And for unskilled workers, because they also lose jobs, we now have to do what the old socialists who were for workers' education used to do. We now have to improve the unskilled workers' portfolio of assets through training. I think workers have to be educated. It's the unions that should do that, because that will really protect workers against flux. And companies have some corporate social responsibility as well. Individual firms may not be able to do that, but I think employers' associations, chambers of commerce and the like can. They are obviously interested in international trade. Many of our firms are international now, and if we don't do something to facilitate coping with change, the politicians won't be able to deliver on keeping markets open, and then you can forget about expanding further.

If you really believe globalization is a source of gain, which I do, and social advancement as well, which I write about in my book, then I think these problems have to be solved. We have to look at the issues of an aging society and the lack of skilled jobs. I don't think the middle class is under that kind of threat, but we do want to be able to move from job to job. Our entire social and economic setup is attuned to conditions of stability, where you start in a firm and you expect to die in it. I remember as an undergraduate, the first question that kids asked prospective employers was, "What's your pension plan?" They expected to retire in the bloody place! Today nobody expects it—and nobody wants it either, if they're educated. I mean the last thing you want is to be at one firm forever.

> "There's no need to panic about the rise of India and China, because there's going to be a lot of trade, and **both sides are going to win.**

I think we really need a sea change, and that's what I've been lecturing about quite a bit in Germany and Denmark. I think everywhere the talk is about how to cope with the changes wrought by globalization, and what is the best way to reorganize our social-support system to meet those new needs. But if we don't do that, we're in trouble, and I think we'll fall behind. People have the vote, thank God, and they can actually vote you out if you don't do something about it.

Are you optimistic or pessimistic?

I think America is resilient. I was really pleased the other day when Hillary Clinton's chief of staff wanted me to come and talk with her about international trade. I told her, "You're the first Democratic politician who has ever wanted to talk about it." Increasingly, people are beginning to see that they have to talk about this, and that simply rolling along is not going to be very helpful. If the fears are real, that's different, but if the fears are simply based on faulty analysis and lack of appropriate responses to globalization, then it's an unnecessary contradiction we're imposing on ourselves.

I think we need to rethink a whole lot of things—trade, aid, how we want to operate in the world. I think we can do it because we're very pragmatic and solution-oriented. And I think the U.S. will do it ahead of anybody else.

Please send questions and comments on this article to editors@cioinsight-ziffdavis.com.

Think Big

Small companies looking to source offshore find the world is a lonely place.

By Dan Briody

BEING A CIO ISN'T ALWAYS AS GLAMOROUS as it sounds, particularly when you've got the top tech spot at a small company. Just ask Bruce Lehrman, the CIO at RuffaloCODY, a Cedar Rapids, Iowa-based provider of fund-raising software and consulting services to nonprofit organizations. With just 300 full-time employees, his company does less than $40 million a year in business. So when RuffaloCODY was looking to offer its software on new operating systems, Lehrman decided it was time to offshore the development. But there was no one to whom he could delegate the task of finding the right vendor. So, in the end, Lehrman himself had to schlep overseas to research vendors. "The Ukraine was the most difficult," he says. "I had to learn a lot about the culture, and the language was a big barrier. In the hotel, I wasn't sure if I was going into the business office or the ladies room."

Lehrman's adventures in offshoring are not uncommon among small and medium-size businesses looking to reap the same cost benefits their billion-dollar brethren have been enjoying for decades. For the small business, farming IT work out overseas can be a daunting, and occasionally comical, task.

The hurdles facing executives of small companies when they offshore go well beyond finding the bathroom.

ILLUSTRATION BY PETER HOEY

To begin with, very few of these companies have any knowledge of the vendor community overseas, aside from the big names they see advertised in magazines. And finding a vendor of appropriate size is crucial for companies that don't want to be swallowed up by the Tatas and Wipros of the world. In addition, small companies lack the resources to manage the relationship from start to finish. There are no procurement specialists. There is no vendor-management team. There is no in-house legal counsel.

"This market is underserved," says Eugene Goland, founder of Offshore Outsourcing Best Practices (OOBP), an association of small and medium-size businesses chartered with educating the small-business community in the art of offshoring. "There are structural difficulties that prevent smaller companies from taking advantage of offshoring, and yet these are the companies that have the most to gain."

And more and more scrappy little companies are looking to go global from the get-go. *CIO Insight's* own research indicates that 27 percent of small companies—those with less than $100 million in revenue—are planning to offshore IT work in 2006, up from 20 percent the year before. (See Research, page 69.) And some venture capital firms go so far as to require an offshoring strategy as part of a prospect's business plan.

So how are companies of limited means managing to navigate the international waters of global commerce? Very carefully. Using a combination of grass-roots vendor research, word-of-mouth, relationship building, and just plain luck, more and more small companies are taking the plunge. Some jump right in, others dip a toe in, and still others avoid it entirely. And just as the approaches to offshoring vary greatly among this group, so do the results.

Uncharted Waters

There are many reasons why small and midsize businesses feel overmatched when it comes to offshoring, some more real than others. Many of these firms struggle to find the resources to manage the kind of complex business relationships offshoring brings with it. But other, more psychological reasons also come into play.

According to Robert Brown, a research director at Gartner Inc., small businesses suffer from the mother of all inferiority complexes. "There is a perception among these companies that the size of their business is too small to justify offshoring," Brown says. "It is a deeply held notion with no basis in fact, and I just don't buy it." While it is true that the more work you offshore, the more money you're likely to save, most of the application development and call-center work is priced by headcount. So even if you offshore the work of only one employee, says Brown, you're still likely to save.

Small companies are also grappling with the fear of losing control—something most Fortune 500 companies got over years ago. "People believe that if their data is 10,000 miles away, there's a good chance something will go horribly wrong," says Brown. "They want to be able to drive down the road and kick the server if something doesn't work right. It's irrational."

But perhaps the single biggest factor holding back small firms is that no one is begging for their business. The offshore market

"This market is underserved, and yet these are the companies that have the most to gain."

—Eugene Goland, founder, Offshore Outsourcing Best Practices catering to small and midsize businesses is immature, at best. "We went to people we knew, did online searches, and did phone interviews with firms," says RuffaloCODY's Lehrman. "And many of the companies we looked at had very little experience." All that for a company that was looking to offshore a pretty sizeable job—about 100,000 development hours.

"A lot of the major offshore vendors have not been actively marketing to these businesses," says Gartner's Brown. "The offshore companies have bigger fish to fry. These guys are drinking from the fire hose right now. So between that and the hemming and hawing of the small businesses, it's like two ships passing in the night."

Lehrman gave up on the Ukrainian firm after having trouble communicating his needs to the senior executives. "If we had trouble talking to the senior team, we knew it would be worse with the team members," he said. He finally narrowed his exhaustive search to two Indian firms. He then ran what's known as a "dual pilot," in which a client gives two small projects to two different firms in order to gauge their abilities. Each project ran four weeks and had specific deliverables. "We wanted to find out if they would ask the right questions, hit the right timelines and produce quality work," Lehrman says.

After the dual pilot, Lehrman selected Lambent Technologies Pvt. Ltd., a small firm in Nagpur, India. But he has been slightly disappointed with the savings his company has realized. "We've had to spend a lot more time documenting and testing than we anticipated," he says. "And there have been some cultural difficulties. They've produced a lot of decent code, but if you depend on them to make judgment calls, you get into trouble. Overall, it's been slightly cheaper [than outsourcing in the U.S.], but not as cheap as we'd anticipated."

Not Too Big, Not Too Small

The most important single factor in choosing the right offshore vendor may be finding one of appropriate size. The obvious fear is that a small firm's project will not represent a sufficient portion of a large offshore vendor's revenues to make them stand up and take notice. In that small-fish/big-pond scenario, the small firm often ends up with the offshorer's less experienced team members assigned to their account, and gets very little access to the vendor's senior-level executives. The OOBP's Goland has a hard and fast rule for small firms evaluating offshore vendors: If your project constitutes less than 5 percent of a vendor's total revenue, walk away.

By the same token, however, signing up a small vendor has its own set of perils. The smaller the vendor, the less stable it is. Giving up control over major IT projects is hard enough without worrying if the vendor can survive downturns in the market. For that, Goland has another rule: The offshore vendor must have been in business for at least five years and have more than 100 employees.

"You must find a vendor that is small enough that the project you give him is of significant importance," Goland says. "If that's not the case, you will never get the right people to work on it. And if you cannot staff the project with the best people, it will fail. At the same time, the vendor should be strong enough to weather changes."

That all sounds good. Trouble is, offshore vendors that fit those criteria are hard to come by—a lesson Al Garcia learned the hard way. Garcia is the vice president at Comac Inc., a $30 million fulfillment house for presales marketing materials, based in Milpitas, Calif. Two and a half years ago he started looking for an outside vendor to help develop a more sophisticated warehouse-management and online-order system. "We were looking to outsource," Garcia says. "Onshore, offshore, it didn't make a difference."

Garcia researched three different options: large offshore vendors; small offshore vendors; and small onshore vendors. His research was extensive. He even attended a seminar given by the CEO of Tata, and later met him personally. But when Tata realized how small a job Comac had to of-

Offshoring 101

By now, offshoring is second nature for big, multinational corporations, but small and midsize businesses are still trying to feel their way through the global jungle. Gartner Inc.'s Robert Brown recommends the following phased approach to going offshore.

PHASE 1

Sourcing Strategy

✔ **Create and align your offshore strategy** with your overall sourcing strategy. If you haven't taken the time to craft a sourcing strategy, do so now (but first perform a benchmark to see how cost-effective your current processes are). Inertia among tactically oriented midsize businesses is a pernicious enemy. A sourcing strategy is an essential management tool that will ensure alignment between your critical IT and business strategies and the outsourcer you choose.

✔ **Assess your global sourcing readiness.** Do you have the desire, IT processes, risk tolerance, governance capability and in-house skills to manage a global sourcing deal successfully?

✔ **Create a detailed implementation plan** for proceeding with global sourcing. For businesses doing this for the first time, a consultant may be useful.

✔ **Craft a carefully formulated governance capability** for managing your global sourcing efforts. Involve the affected people in business units and IT. The involvement of senior executives from the vendor side can be beneficial.

PHASE 2

Sourcing Evaluation and Selection

✔ **Choose an offshore country to start with.** Given small businesses' affinity for proximity when dealing with their vendors, consider starting with an offshore provider in a neighboring or nearby country.

✔ **Determine the right provider for your size and needs.** Choose a Tier 2 provider (or credible niche provider) if you are concerned about being a "small fish in a big pond." Small and midsize businesses should seek out Tier 2 providers that have a country and local presence in their industry domains and a strong niche focus on the SMB marketplace. To deliver a strong value proposition, the selected provider must demonstrate an understanding of the challenges facing SMBs in their industry domains.

✔ **For true small businesses of 100 to 1,000 employees, initially look for smaller, Tier 3 local providers** that are hungry for business and receptive to specific requirements.

✔ **Execute a pilot project.** For small businesses, a pilot project with 10 to 15 full-time equivalents for six months usually works best.

PHASE 3

Negotiation and Contract Development

✔ **Engage an outsourcing attorney** to help structure the outsourcing contract.

✔ **Deal with concerns about loss of control.** Small businesses have understandable concerns about the potential loss of control, the distance from their supplier's delivery center, and challenges with intellectual property protection, data security and software piracy. These concerns are no different from those expressed by larger companies when they took their first steps toward offshore sourcing. Because the issues are the same, the answer is ultimately the same: Establish a comprehensive statement of work with clear, detailed roles and responsibilities, and train in-house staff to manage the offshore service providers.

✔ **Create a workable cost structure without worrying about getting the lowest rate possible.** In global sourcing, you usually get what you pay for. Although Tier 2 or Tier 3 providers will often have somewhat lower hourly rates than Tier 1 providers, do not reflexively look for the least-expensive provider. —*D.B.*

SOURCE: GARTNER INC.

fer, "they lost interest," Garcia says.

With Tata off the table, Garcia focused his search on vendors that would be a "good cultural fit." But he found that no two offshore vendors had the same approach to managing the relationship. Some would assign a project manager to the account but would not guarantee that this person would reside in the U.S. Others would promise a local representative that would take up residence at the client site. Garcia ultimately decided that he "wanted someone we could grab around the neck and choke, if necessary."

A company called Miracle Software Systems Inc. seemed to fit the bill. But Garcia had grave doubts that the company would be able to handle Comac's need for what he calls "agile programming." "We don't worry about specs," Garcia says. "We worry about concepts, and use programmers working together and delivering quickly, then tweaking later. We want to move fast, and we found the whole concept of agile programming was difficult to offshore."

He also had reservations about the claims that Indian companies were making in their zeal to win new business. "I couldn't do a Dun & Bradstreet or Hoover's on these companies," Garcia says. "I got some references, and of course everybody said they were wonderful, but it gave me no confidence. And when you talk to the vendors themselves, and ask them if they do this or that, they all say, 'Yeah, we do everything.' So there were some serious credibility issues with the Indian companies."

Finally, Garcia decided the risks of going offshore were just too great. He went with a company called The Refactory Inc., based in Champaign, Ill. Comac is Refactory's only client. "We're not a small fish, we're their only fish, so I know I'm getting the A-Team." He also says that when he looks at all the costs associated with managing an offshore vendor, he believes he's actually paying less to stay in the U.S.

Even if a company is lucky enough to find an offshore vendor of suitable size, things very rarely stay that way. In the worst-case scenario, a vendor struggles to survive, closes its doors, and seriously endangers the client's survival. But the opposite can also be true. Railinc Corp., based in Cary, N.C., is a provider of data-exchange services for the freight-railroad industry with about $50 million in annual revenue. Back in 1998, the company thought it had found the perfect offshore vendor.

Over the next four years, however, the vendor, Business Management Data, was acquired three different times: first by PSINet Consulting; then by SignalTree Solutions; and finally by Keane Inc., the $956 million, Boston-based global outsourcing giant. "They were small at the time," says Paul Neville, vice president of IT at Railinc. As one would expect, the team that Railinc had come to rely on dispersed when Keane bought SignalTree. "When Keane stepped in, things changed," Neville says. "Initially, we didn't see any worsening of service. But then the higher-ups moved on, and they brought in a new team." Though the transition was bumpy, Railinc worked hard to keep Keane's attention, and today is satisfied with their level of service. "There may be cheaper alternatives, but considering we're a small fish in a big pond, Keane's been quite responsive," says Neville.

"The whole concept of agile programming was difficult to offshore."

—**Al Garcia,** vice president, Comac Inc.

Baby Steps

If all this is sounding a little too scary for your company, there are some services that offer offshore training wheels. Designed to allay the fears that frequently hold back small firms, these "build-operate-transfer" services are the outsourcing equivalent of renting-to-own. And for Jeff Stenger, vice president of development at Burlington, Mass.-based St. Croix Systems Corp., it was just the right speed.

Stenger's company develops software for the healthcare industry that tracks the utilization and depreciation of medical equipment. When Stenger came onboard three years ago, he knew he wanted to get the cost savings that offshore development promised, but the company was still grappling with control issues. "We wanted our own employees, rather than contracting out, because we wanted that level of control," recalls Stenger. "This is our IP, and it's basically our company. We wanted it to be more like a company in the U.S. that is colocated, with everybody focused on the same mission. Only the programmers would be offshore. We wanted to nurture them, and be certain their loyalty was to St. Croix."

Before joining St. Croix, Stenger had worked as a project manager for a company called i-Vantage Inc., and he knew the co-founder. I-Vantage offers two offshoring models to small firms: an incubator model, in which i-Vantage provides the facility, resources, network infrastructure and team of employees, all of which are managed but not owned by the client; and a subsidiary model, in which i-Vantage provides the facility and network infrastructure but hires the client's employees and creates a legal entity in India. "If you don't want to embrace the Indian model wholeheartedly, this is a low-risk, trial way to do it," says Sandeep Kaujalgi, president and CEO of i-Vantage.

Stenger started with a group of eight developers, working as subcontractors, but quickly moved to the subsidiary model. His discomfort level with doing business in India abated almost immediately after he began working with i-Vantage. "It was almost a nondecision," he says. Stenger visits St. Croix's subsidiary in India once a year, and someone from India comes to the U.S. every year or two as well. And the arrangement has yielded the kind of unity Stenger was after. "We're all part of one company moving toward a common goal," Stenger says. "That sounds like a warm and fuzzy thing, but it's real."

What is also real are the wage increases Stenger has been absorbing at St. Croix's Indian subsidiary. Salaries have been increasing 30 percent a year. In the first year of offshoring, Stenger estimated that he was getting five times the resources in India than he could get at home. But because of the ballooning salaries, "it is getting to the point that we are starting to ask how much of a benefit we're getting," he says.

So, for the time being, offshoring for small businesses is a decidedly mixed bag. Finding vendors appears random. Negotiating with them is informal, at best. And managing the relationship is a work in progress. But as more small companies recognize offshoring as a viable sourcing option, the market of vendors will expand and mature, and best practices will be adopted. In the meantime, the offshore process will remain a rough voyage that may not meet the expectations of small companies. And despite the overwhelming hype around offshoring, even the OOBP's Goland has to admit, "Sometimes, you're just better off staying home."

Please send questions and comments on this article to editors@cioinsight-ziffdavis.com.

"We are starting to ask how much of a benefit we're getting."

—**Jeff Stenger,** vice president of development, St. Croix Systems Corp.

RESOURCES

Web Sites

www.oobp.org
Offshore Outsourcing Best Practices

www.outsourcing professional.org
International Association of Outsourcing Professionals

Book

The World Is Flat: A Brief History of the Twenty-First Century
By Thomas L. Friedman
Farrar, Straus and Giroux, 2005

STRATEGIC TECHNOLOGY

GLOBAL SUPPLY-CHAIN MANAGEMENT

TRADE WINDS

Globalization brings far-flung suppliers—and customers—right to your doorstep. Is IT prepared? **By Debra D'Agostino**

PROBLEM

Supply chains are going global, yet most firms' systems are designed solely for domestic orders. It's been a difficult time for Larry Merritt, director of global logistics at Lexington Home Brands, in Lexington, N.C. In less than three years, the $167 million home furnishings company has completely changed its business model. "We've gone from being a manufacturer to being an importer," Merritt says. The reason? Globalization. "A lot of new companies have entered the furniture industry, and they source overseas." To keep up, the company shuttered 14 manufacturing plants and support operations in North Carolina—the last cased-goods plant closed in December— shaving nearly 4,000 people from its workforce of 5,000. Profits have increased, but "it's been tough," Merritt says. "It's not what we wanted to do. But at the end of the day, it's a matter of survival."

International trade has always been big business for big companies. But in the age of globalization, it's become a must for midsize and smaller firms, too. (See "Think Big," page 52.) Part of the blame rests on the "Wal-Mart effect," which has trained consumers to be more concerned about price than brand—and forced many companies to follow suit. But there are plenty of other factors, including the growth of outsourcing, expansion of membership in the World Trade Organization, and the spread of regional trade treaties such as the North American Free Trade Agreement. According to Hau Lee, a professor at the Stanford Graduate School of Business and co-director of its global supply-chain-management forum, these factors have led U.S. companies to realize that "the world is their factory." And they have taken action: Roughly 55 percent of all raw materials for U.S. manufacturing is now imported. In fact, while U.S. exports increased by a mere 4 percent between 1999 and 2003, imports shot up 23 percent.

Yet most companies' current supply-chain management systems aren't properly equipped to deal with global anything—a fact that's costing midsize firms as much as $134 billion each year in missed savings, according to the Aberdeen Group. Sure, international orders can be logged and tracked the old-fashioned way—with spreadsheets—but the manual process of entering data and figuring tariffs, exchange rates, delivery times, profit margins and logistics is a daunting task, especially when evaluating multiple bids from suppliers in multiple countries. And having a separate system for international orders doesn't provide the systemwide visibility that's critical in creating a more flexible, leaner supply network—the key to survival in a global marketplace.

New software products that help companies manage global logistics, evaluate sourcing options, and share data between trading partners are a step in the right direction, but as usual they aren't a panacea. To compete in a global marketplace, CIOs need to rethink the entire supply chain, reevaluating policies, processes and even the architecture of the supply chain itself. The first step is to gain greater visibility into supply chains from end to end, and then to share that insight with all the stakeholders along the value chain.

TELL YOUR EXECUTIVE TEAM:

We need better systems to help us take advantage of new global sourcing opportunities.

ASK YOUR CHIEF PROCUREMENT OFFICER:

How much of our supply-chain materials are sourced from international vendors?

STRATEGY

Turn your internally designed supply chain into an outwardly focused global network.

Traditional supply chains rely on a company's own historical data to do demand forecasting and inventory planning—and they often miss the mark. To create an effective global supply chain, companies must be willing to share sometimes sensitive business data that will lead to smarter, more realistic decision-making. That's easier said than done. "Companies don't want to share critical, internal business data," says Chuck Poirier, a partner at CSC Consulting, an El Segundo, Calif.-based firm that helps companies plan global systems. But it's critical, Poirier says, to making global supply chains work. "Look at Wal-Mart," he says. "It sends cash register receipts directly to its top suppliers so they know exactly what's being consumed and what needs to be replenished." Stanford's Lee agrees that supply chains cannot operate in a vacuum. "You have to set up information systems that are outward looking," he says. "It's not your company's supply chain. It's your company's supply-chain *network*."

Few companies understand this principle better than Procter & Gamble Co., the $57 billion consumer-goods manufacturer and operator of one of the world's largest supply-chain networks, with operations in 86 countries. To better connect with global suppliers, P&G created a Web portal that lets suppliers collaborate with P&G through every step of the procurement process. "We can review materials specifications, and suppliers see our production schedules so they can plan logistics in advance," says Alfonso Cos, vice president in charge of P&G's supply network.

Because P&G operates worldwide on a single ERP platform from SAP, supply-chain executives can easily aggregate data across divisions and "make it visible in ways that are more helpful for us," Cos says. For example, P&G creates digital dashboards and alerts for employees that provide end-to-end visibility into the supply chain—including the ability to track SKUs and see where a product is in any phase of its design. "When something goes out of whack, it can be dealt with quickly," Cos says. That makes it much more likely that Charmin will always be available at your local supermarket.

But most companies don't operate on just one platform, and that can make sharing data across the network even more daunting. At Ametek Inc., a $1.2 billion, Paoli, Pa.-based manufacturer of high-end scientific instruments and electric motors that operates 18 business units and 65 manufacturing plants around the globe, divisions aren't forced to migrate to a single platform. "Our company serves a wide variety of markets," says William Lawson, Ametek vice president and CIO. "To disrupt those businesses and force them to process orders in a way that doesn't help them directly wouldn't make sense." As a result, the company has no single technology standard, operates in a dozen languages, and has more than 30 separate ERP systems.

So how does Ametek maintain visibility into its supply chain, and share that insight with suppliers? The simple answer, Lawson says, is data cleanliness—an absolute must for any company that operates on multiple platforms.

Each quarter, Ametek gathers all the spending data from its operations, updates new data with the proper codes, and compares purchases from different units to get a clear picture of the company's total expenditure. The data is then translated into a common language so that a special team of procurement and technology executives can identify abnormalities—and opportunities. This information is then shared strategically with Ametek's suppliers.

23%

The percentage increase in U.S. imports between 1999 and 2003.

SOURCE: WTO

GLOBAL SUPPLY-CHAIN MANAGEMENT

Domestic suppliers ship parts to a firm's manufacturing plant for assembly. The product is then sent to distributors and, ultimately, retailers. Stores reorder goods via fax or e-mail and wait weeks for replenishments.

Components are bought from global suppliers, and may be preassembled at different points in the manufacturing process. Through postponement, assembly is completed at the last minute. Goods are shipped directly to customers or to retail stores based on demand forecasting and real-time sales data. Retail stores use RFID tags on stock pallets to keep watch on inventory. Replenishment takes a couple of days, ensuring stocks never run out.

SOURCE: *CIO INSIGHT*

Having that cross-system view of the supply chain allows Ametek to manage two very important variables: price and flexibility. It's a tough line to tread, says Mark Hillman, a senior analyst with AMR Research. "It makes sense to source parts where you can get them cheaper, but don't forget about logistics," he says. "An apparel company might source trousers from China because it's less expensive. But it might also want to keep some inventory in the U.S., so if a particular style becomes popular, the company can increase output to meet demand. If a hot item is stuck on a boat for 45 days, you're out of luck."

TELL YOUR IT TEAM:

We need to work with the supply-chain team and their external partners to design a system that meets their needs.

ASK YOUR SUPPLY-CHAIN MANAGER:

How often do we clean supply-chain data?

VALUE

Global supply-chain systems can help shorten cycle times and make inventories leaner.

At Ocean State Job Lot, a privately held North Kingstown, R.I.-based retail chain, globalization has hit home. Ocean State sells discounted products from excess merchandise and close-outs, and according to CIO Hisham Aharon, roughly a quarter of these items come from overseas. In the past, bids to sell Ocean State merchandise would come in by fax or e-mail. "Someone had to go through all the offers by hand and decide which ones were good," he says. Once the orders were set, the company would send shipping instructions to the vendor, "and from then on all the interaction we had was through the delivery service," Aharon says. Not the best way to do inventory planning, especially when goods could take weeks to arrive.

Using software from supply-chain vendor TradeStone Software Inc., Ocean State automated the entire process last June. Now, everything is done over the Web. "We get multiple offers from vendors all over the world, and the system compares them side-by-side. Once we place an order, the system does all the conversion for us, figures out the shipping schedule and tracks the order all the way to our doorstep," he says. The company not only benefits from better decisions on sourcing, but the ordering process is shortened as well—from three weeks to three days, on average. This has broadened product diversity and led to increased sales through-

ILLUSTRATION BY EUREKA

out Ocean State's more than 70 locations across New England, says Aharon.

Obviously, the primary goal of global sourcing is to lower manufacturing costs, but putting the necessary systems in place to enable that creates other benefits—such as streamlining logistics, says Ametek's Lawson. "We were using a shipper that was pushing for price increases, but when we started aggregating the data and realized the amount of business we did with that company, we were able to renegotiate prices." The company cut more than $250,000 from logistics costs, which nearly covered its entire global IT supply-chain investment.

But the ultimate goal for any supply chain is just-in-time delivery—meeting demand with virtually no overstocks. At P&G, the goal is to create a supply chain that produces on demand. "We plan to cut our current supply-chain cycle by one-third" in three years, says Cos, saving P&G tens of millions of dollars each year.

It's not an unattainable goal, says CSC's Poirier. In fact, he says, successful global supply-chain management can lead to profit increases of as much as 8 percent. "The first points come from better sourcing and logistics, the next from improved order management and warehousing. The last 3 require you to use technology to take advantage of improved supply-chain visibility to shorten cycle times and build new revenues."

275%

The increase in worldwide ocean container volume between 1980 and 2003.

SOURCE: FORRESTER RESEARCH INC.

ASK YOUR COO:

How could faster supply-chain cycle times help our business?

TELL YOUR CFO:

By investing in new systems, we can invest less money in overstocked inventory.

FUTURE

Supply-chain nirvana is an adaptive network that responds to demands—and new markets. Just-in-time delivery is great, but even better is a supply chain that reacts quickly to changes in demand and can customize products for end users with no hiccups in the process. This concept is known as postponement. Instead of sourcing product components from various locations, bringing them to a plant to be assembled, and then shipping them to various distribution centers, products are assembled at the last minute, based on demand. "For example," says AMR's Hillman, "it's difficult to forecast how many units of 12-ounce versus 16-ounce ketchup will be consumed in a particular region in one week, so you forecast the aggregate demand across all the retail locations but postpone the final packaging until the last minute, based on real-time demand." Postponement is particularly well suited for products such as computers and automobiles.

To take advantage of postponement, companies may need to physically re-architect their supply chains, moving manufacturing plants and reorganizing business processes. AMR's Hillman suspects that companies will begin reevaluating their supply-chain infrastructures within the next few years.

And with the eventual spread of RFID to help track shipments, companies will have even greater insight. "It's gotten a lot of hype, but it's actually working," says CSC's Poirier. Wal-Mart, for example, cites a 16 percent reduction in out-of-stocks on items that have been tagged because the company can alert suppliers when stocks dip below a certain threshold.

Global supply chains will also make entering new emerging markets less painful. "Everyone knows that consumption is increasing around the world," says Poirier. "If you aren't thinking about selling into those new markets, you're missing the bet of the century."

That may be, but it'll still be a culture shift for many firms, as Lexington's Merritt can attest. "It's been hard for us," he admits. "Everyone is signing on with the WTO, and if you want to be a part of that 300-pound gorilla, you have to compete on that level. Companies don't see how badly they are going to get burned if they think they aren't going to play in the global market."

ASK YOUR CHIEF STRATEGIST:

Are we prepared to enter new global markets?

TELL YOUR COO:

Postponement will give us greater flexibility and control over our supply chain.

Please send questions or comments on this story to **editors@cioinsight-ziffdavis.com.**

FACT SHEET

GLOBAL SUPPLY-CHAIN MANAGEMENT

To compete globally, companies will need to rethink their supply-chain systems from end to end. Start by integrating global sourcing into existing systems, and sharing data with key partners.

NEW GLOBAL SUPPLY-CHAIN SOFTWARE CAN HELP YOU:

- Identify and communicate with overseas suppliers that can deliver components at cheaper rates, lowering overhead costs.
- Gain greater visibility into the entire supply-chain network, which can lead to better forecasting and leaner overstock inventories.
- Re-architect the entire supply-chain system to meet demand better and create greater flexibility.

POTENTIAL SOURCING PITFALLS:

- **Reduced Flexibility.** Sourcing from far-flung suppliers may make it difficult to get components to their destinations quickly. Security of goods, economic stability in the country the goods come from, and quality control are other issues.
- **Vanishing Savings.** Perceived savings can fizzle if you don't consider all the hidden costs—tariffs, taxes and so on.
- **Culture Matters.** Language barriers and cultural issues still persist, which can make communication difficult.

GLOBAL SOURCING DRIVERS:

- **Cost Pressures.** Midsize enterprises report sustained pressure from competitors, customers and executives to reduce costs.
- **New regulatory requirements.** New regulations (e.g., Sarbanes-Oxley) demand that midsize companies improve visibility and control of corporate spending and supply chains.
- **Rising energy and commodities prices.** Increases in oil prices alone have added $400 billion to the cost of doing business over the past year.
- **Globalization.** Pressures to source from emerging markets such as China and Eastern Europe demand improved sourcing and supply management skills.
- **Supply market instability.** Rising energy and commodity prices, competing demand from emerging markets, changing tariffs and supplier bankruptcies require midsize firms to vigilantly source and ensure supply continuity.

SOURCE: ABERDEEN GROUP

$134 BILLION

THE AMOUNT OF MONEY MIDSIZE COMPANIES ARE MISSING IN SUPPLY-CHAIN SAVINGS OPPORTUNITIES EACH YEAR.

SOURCE: ABERDEEN GROUP

MAJOR PLAYERS

ClearOrbit Inc.
www.clearorbit.com

E2open Inc.
www.e2open.com

Optient Systems Ltd.
www.optientsystems.com

Oracle Corp.
www.oracle.com

SAP AG
www.sap.com

Sterling Commerce
www.sterlingcommerce.com

TradeBeam Inc.
www.tradebeam.com

TradeStone Software Inc.
www.tradestonesoftware.com

United Parcel Service Inc.
www.ups.com

Resources:

WEB SITES

www.wto.org
Site of the World Trade Organization

www.stanford.edu/group/scforum/Welcome
Site of the Stanford Global Supply Chain Management Forum

BOOKS

Global Supply Chain Management
Edited by M. Kotabe and M.J. Mol
Edward Elgar Publications, 2006

The Wall Street Diet: Making Your Business Lean and Healthy
By C.C. Poirier, M.J. Bauer and W.F. Houser
Berrett-Koehler, 2006

Can an Anxious IT Organization Be Productive?

When Chase-Pitkin Home and Garden outsourced part of the development work on a Web-based order-entry system two years ago, things didn't go as smoothly as the company had hoped. According to T. Christopher Dorsey, then-CIO and controller at the Rochester, N.Y.-based home-improvement division of Wegmans Food Markets Inc., "It's fair to say the internal IT staff didn't go into it with an open mind." In-house staff provided partial answers, or avoided giving answers at all, when the outsourcers asked questions about which files contained certain data or the file structure. The in-house staff also second-guessed the architecture and development techniques the outsourcing company was using.

The problems became so bad that Dorsey and an executive at the outsourcing firm came in to mediate. It turned out that IT staff members were dragging their feet because they were afraid they would lose their jobs once the new system was in place. When they learned that they, and not the outsourcer's employees, would manage the new system, and that they would be taught the new language it was written in, the tensions lessened. Ultimately, the project succeeded, says Dorsey, who left the company in November 2005 and is now vice president of IT and strategy at Rochester-based Constellation Wines U.S., part of Constellation Brands, Inc., a $4 billion wine and spirits supplier. (Unfortunately, Chase-Pitkin will close up shop this spring.)

Troublesome incidents such as this are playing out at more and more U.S. companies, judging by the results of *CIO Insight's* latest survey on IT outsourcing. As the use of outsourcing and offshoring increases, so, too, does outsourcing's toll on IT personnel and their productivity. Forty-five percent of respondents to our survey say that fear of losing jobs to outsourcing has had a disruptive effect on their IT organizations, an increase from 39 percent last year. Management consulting firm DiamondCluster International's "2005 Global Outsourcing Study" makes the same point: It found that "employee backlash" ▶

45%
of IT executives say fear of losing jobs to outsourcing has disrupted their IT organization

20%
of all IT spending went to outsourcing in 2005

33%
of IT executives have in-sourced IT activities or applications that had previously been outsourced

40%
of companies that outsource will use offshore outsourcers in 2006

was a concern at 88 percent of outsourcing customers, 21 points higher than the second most common concern, employee severance costs. On-the-job stress, excessive workloads and fear of job loss is higher among U.S. IT professionals than among other employees, according to recent surveys by International Survey Research Inc., a Chicago-based employee research firm. Sixty-three percent of their respondents agree with the statement: "I am frequently worried about the future of my department," up from 36 percent in 2001. That fear isn't likely to dissipate; estimates of the number of IT jobs to be lost to offshore outsourcing during the next few years range from 100,000 to 500,000, according to the Government Accountability Office.

How does outsourcing disrupt an IT organization? The simple answer is the FUD factor: People who are afraid of losing their jobs are less productive, either because they are feeling anxious, or because they are less motivated to put in extra effort. "Why would I bust my butt for my company if I know they are going to outsource my job and get rid of me?" asks Jay Jamrog, executive director of the Human Resource Institute, in St. Petersburg, Fla., a not-for-profit organization affiliated with the University of Tampa.

What sorts of disruptions are occurring? According to Tom Weakland, a managing partner in the global sourcing practice at DiamondCluster, low morale makes people less careful, or thorough, and that results in project delays, budget overruns, and post-implementation breaks and bugs in code. "Whereas you might have a great relationship with Joe, who sits right next to you in a cube and works on code together with you, when suddenly "Joe" is writing code in Bangalore, you are not going to call him as proactively, or get him involved as much. You will treat him differently if you are afraid of losing your job or if your friend lost his job," Weakland says.

"Why would I bust my butt for my company if I know they are going to outsource my job and get rid of me?"

—Jay Jamrog, executive director, Human Resource Institute

Marcus Courtney, president of WashTech/CWA, in Seattle (an arm of the Communications Workers of America), recalls his days as a contract worker at Microsoft Corp. Time-zone differences made collaboration difficult, Courtney says, when he tested code written by developers who were thousands of miles and several time zones away. Transferring knowledge between employees and the outsourcer is another trouble spot. "You hear about the stress of having to train your replacement," he adds, "but there are things about the product and the organization's experience that don't get transferred. You can't document every single thing that knowledge workers know about their jobs."

Open, honest communication is the first and most obvious solution to the problem. That's especially helpful when CIOs can make a convincing case to their employees that outsourcing won't eliminate their jobs, or the IT department, and that the work they enjoy won't be handed to outsiders. But sometimes what CIOs have to say—no matter how honestly, openly or thoughtfully—isn't what IT professionals want to hear.

So what else should CIOs do to keep their staffs motivated and productive when they outsource? Jay Jamrog of the Human Resource Institute says HRI's research shows that IT professionals are most likely to remain committed and motivated if the company continues to train them to do the sort of innovative, creative work that is less likely to be outsourced, offers them challenging, interesting projects to work on, and if their supervisors inspire and coach them. Says Jamrog: "They [IT professionals] will be very loyal and committed to a supervisor who treats them well, is inspiring and motivating, and communicates with them honestly and openly. In other words, a leader." —*Allan Alter*

FINDING 1 **Spending on outsourcing is picking up at large companies.** Outsourcing remains as widespread as last year, taking up about 20 percent of the IT budget. But while outsourcing spending is increasing by just 2 percent at small and midsize companies, slightly below last year's rate, it is growing at 5.4 percent at companies with over $1 billion in revenues. That's not only an increase over last year, but also a larger increase compared to most other kinds of IT spending at large companies, according to the February 2006 *CIO Insight* spending survey.

1.1 Did your company spend on IT outsourcing activities and applications in 2005 (including domestic, near-shore and offshore outsourcing)? N=379

	total	less than $100 million	$100 – $999 million	$1 billion or more
Yes	74%	66%	72%	88%
No	26	34	28	12

This compares with 73% for 2004.

1.2 What percent of your company's total IT spending in 2005 was spent on outsourcing IT activities and applications? N=270

	total	less than $100 million	$100 – $999 million	$1 billion or more
Mean	20%	18%	16%	26%

Companies with revenues over $10 billion devoted 31% of their IT spending to outsourcing.

1.3 By what percentage will your IT outsourcing spending change from the previous year? N=271

	total	less than $100 million	$100 – $999 million	$1 billion or more
Mean (2006 survey)	3.2%	2.6%	2.0%	5.4%
Mean (2005 survey)	4.9	3.5	7.7	3.2

FINDING 2 **More and more, outsourcing is a strategic play.** Saving money is still an important reason companies outsource, especially at large firms. But CIOs have wised up to the fact that outsourcing doesn't deliver all the savings vendors promise. So IT executives are just as likely to use outsourcers to innovate, improve business processes, or simply free up management time, as well as to trim costs.

2.1 Please indicate which statements apply to your company: N=259

	total	less than $100 million	$100 – $999 million	$1 billion or more
We outsource to free up people to focus on other activities	62%	62%	64%	61%
We outsource to reduce costs	60	51	53	80
We outsource to gain speed, flexibility and innovation	51	56	47	49

Only 46% of companies that have insourced did so to gain speed, flexibility and innovation, while 68% are motivated by cost.

2.2 Outsourcing is overrated as an IT cost-cutting strategy. N=261

	total	less than $100 million	$100 – $999 million	$1 billion or more
Agree	74%	68%	83%	69%
Disagree	26	32	17	31

2.3 We are willing to outsource what we consider strategic IT functions and applications. N=260

	total	less than $100 million	$100 – $999 million	$1 billion or more
Agree	44%	53%	36%	41%
Disagree	56	47	64	59

54% of manufacturers agreed.

FINDING 3 **The benefits of outsourcing still outweigh the problems.** While most respondents express some satisfaction, outsourcing customers are less satisfied with their vendors than they were a year ago. The outsourcing services that are most criticized are help desk, security, infrastructure and project management. No wonder insourcing has increased considerably. Yet outsourcing problems have put little or no dent in overall outsourcing activity.

3.1 **Which of the following IT activities is your company currently outsourcing? Of those being outsourced, please rate your satisfaction with the quality, responsiveness and value your company is receiving from your outsourcing vendors.**

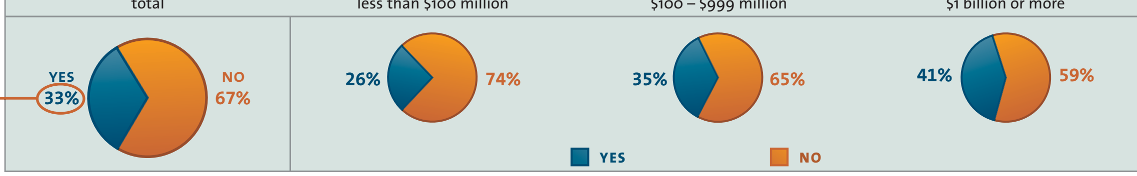
N=192

	percent who are outsourcing	satisfaction with outsourcing vendors: very satisfied	somewhat satisfied	dissatisfied
Application & Web development	59%	26%	55%	19%
Application & systems integration	43	28	52	20
Application & Web hosting (including e-mail hosting)	35	38	39	23
Help desk/end-user support	34	23	39	38
Network/telecom management	34	41	39	20
Data center	31	37	41	22
Training and education	24	30	54	15
Storage management	23	27	48	25
Infrastructure design/build-out	21	30	43	28
Security	19	33	36	31
Project management	15	25	39	36

In the 2005 outsourcing survey, the number of respondents who were very satisfied with vendors providing these outsourcing services was 10 to 30 percentage points higher.

3.2 **In the past 12 months, has your company insourced (brought back) any IT activities or applications that had previously been outsourced?**

N=261



In the 2005 survey, 25% said they had insourced in the previous 12 months.

3.3 **Which of the following business applications is your company currently using? Which is currently being developed, or integrated with, other systems by an outsourcing vendor? Which is currently being hosted, or run by, an outsourcing vendor?**

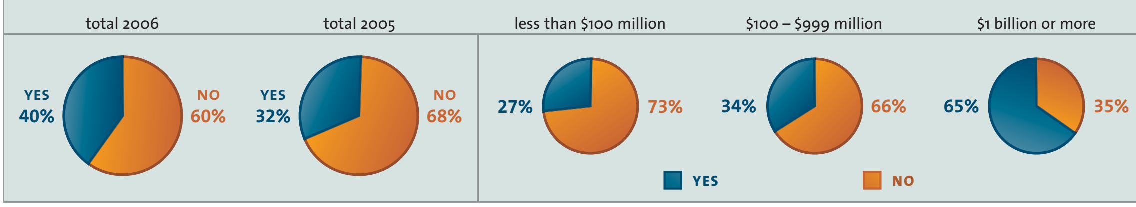
N≥261

	use in 2005	of those using application: employs outsourcers to develop or integrate it with other systems	employs outsourcers to run or host it
Accounting/finance/audit	84%	40%	21%
Document management/archiving	60	24	16
Customer relationship management	58	37	19
Business analytics	53	26	12
Enterprise resource planning	52	30	12
Engineering/product development	35	14	9
Supply-chain management	31	20	10

FINDING 4 **Offshoring is growing in popularity, but satisfaction with offshore firms lags behind domestic outsourcers.** The percentage of companies that offshore rose by about 25 percent in the past year. However, offshore outsourcers lag behind domestic outsourcers in satisfaction, value and earning their customers' trust—thanks in part to cultural and linguistic barriers. And not all offshore outsourcing ends up in India. China, the Philippines and Brazil are becoming more popular outsourcing destinations, while many large companies are near-sourcing to Canada and, to a lesser extent, Mexico. Clearly, companies are finding greater value in diversifying their outsourcing portfolios.

At companies which use offshore outsourcers, 52% of the 2006 outsourcing budget goes to domestic outsourcers, and 48% goes to offshore outsourcers.

4.1 Is your company budgeting for outsourcing any IT activities to an offshore company in 2006? N=261



4.2 Please state your level of agreement with each of the following statements: N=259, 101

		total (agree)	under $1 billion	over $1 billion
Overall, we are very satisfied with our domestic/offshore outsourcing vendors.	DOMESTIC	69%	69%	68%
	OFFSHORE	61	70	52
Our domestic/offshore outsourcing vendors are meeting our expectations for business value.	DOMESTIC	70	71	67
	OFFSHORE	63	68	58
In general, the trust between our IT organization and our offshore outsourcing providers is strong.	DOMESTIC	79	79	78
	OFFSHORE	67	72	63

4.3 Cultural and linguistic differences make it difficult to work effectively with our offshore outsourcing vendors. N=101

	total	under $1 billion	over $1 billion
Agree	56%	53%	60%
Disagree	44	47	40

4.4 In which countries have you outsourced IT activities, or plan to in the next 12 months?* (Includes countries with over 5% of respondents.) N=106

	total
India	75%
Canada	21
China	16
Philippines	11
Irish Republic	9
Brazil	8
Mexico	7
Singapore	7

This is a drop from 89% in the 2005 outsourcing survey.

* Other countries used by respondents include Australia, Belarus, Chile, Costa Rica, Hungary, Israel, Japan, Latvia, Malaysia, Pakistan, Poland, Romania, Russia, South Korea, Taiwan and Thailand.

FINDING 5 Employees' fears of losing their jobs to outsourcing is a growing problem.

In this year's survey, a higher percentage of respondents than last year report they are eliminating full-time IT positions as a result of offshoring. Not surprisingly, more IT executives also say their employees' fear of losing their own jobs is having a disruptive impact on their IT organizations. This is true even when companies are dissatisfied with their outsourcing vendors; IT staffers don't believe their company will stop outsourcing as a result. CIOs need to work harder and smarter about managing their staff when they outsource.

5.1 Has your company cut permanent, full-time IT jobs as a result of outsourcing IT to an offshore company? N=104

	total 2006	total 2005	under $1 billion	over $1 billion
Yes	56%	49%	41%	73%
No	44	51	59	27

The industry that outsourced the highest percentage of IT staff was noncomputer manufacturing, at 21%.

5.2 What percentage of your company's staff IT positions was outsourced in 2005? N=273

	total	less than $100 million	$100 – $999 million	$1 billion or more
Mean	19%	17%	15%	25%

5.3 Fear of losing jobs to outsourcing has had a disruptive effect on my company's IT organization. N=259

	total 2006	total 2005	less than $100 million	$100 – $999 million	$1 billion or more
Agree	45%	39%	35%	41%	64%
Disagree	55	61	65	59	36

Fear of outsourcing is much more likely to have a disruptive effect on IT organizations at companies that are not satisfied with their offshore (79%) and domestic (58%) outsourcing vendors.

FINDING 6 Good governance improves outsourcing success.

Half of our respondents say their companies have an effective governance process in place for outsourcing. It doesn't necessarily mean that top brass are involved, but it does mean that processes are in place to select, manage and measure the ROI and service from outsourcers, and also to follow up with further analysis when problems arise. Companies with good governance report more satisfaction with their vendors, do a better job of selecting vendors, and have IT managers who do a better job of managing relationships with vendors. Governance pays.

6.1 Our company has an effective governance process in place for deciding what, when and where to outsource. N=255

	total	less than $100 million	$100 – $999 million	$1 billion or more
Agree	52%	52%	50%	55%
Disagree	48	48	50	45

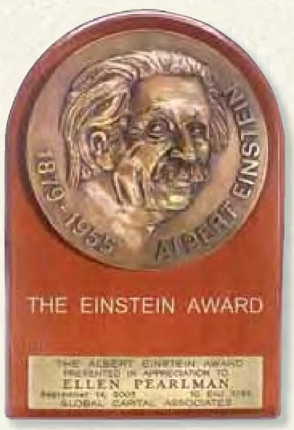
6.2 Our company has an effective process in place for the following: N=254

	total (agree)	has an effective outsourcing governance process	does not have an effective outsourcing governance process
Selecting outsourcing vendors	68%	89%	45%
Managing outsourcing vendors	69	92	45
Measuring the performance of outsourcing vendors	57	80	33

CIO INSIGHT

congratulates

THE 2005 RECIPIENTS OF THE ALBERT EINSTEIN AWARD FOR OUTSTANDING ACHIEVEMENT IN TECHNOLOGY



The Albert Einstein Award salutes trailblazing leaders in the high-tech sector who have contributed to revolutionizing the perception of the industry, helping to grow the technology market through ingenuity and leadership.

According to Global Capital Associates, the nine award winners have contributed significantly to the critical advancement of technology to the benefit of mankind. Through their entrepreneurship and willingness to take risks, they have enabled others to benefit from their cutting-edge discoveries.

THIS YEAR'S WINNERS

Alan Ganek
VP of Autonomic Computing Software Group and CTO, Tivoli, IBM

Dick LeFave
SVP and CIO of Sprint Nextel

Mitchel Lenson
Managing Director, Global Technology and Operations, Senior Advisor to the Board, Deutsche Bank

Phyllis Michaelides
CTO, Textron

Mark Minevich
Executive Director, BTM Global Leadership Council; Chief Strategy Officer, Enamics

Dr. Michael Nobel
Chairman, Nobel Family Society

Ellen Pearlman
Vice President, Editor in Chief, CIO Insight

John Strassner
Fellow of the Technical Staff and Director of Autonomic Networking, Motorola

Tom Trainer
SVP and CIO, PepsiCO

6.3 What metrics are used to measure the success of your outsourcing activities?

N=253

	total	has an effective outsourcing governance process	does not have an effective outsourcing governance process
Cost	85%	86%	83%
Meets deadlines	75	79	71
Customer service	64	70	58
Meets terms of contract	62	65	60
Trust in the vendor	47	46	48
ROI	42	53	31

6.4 Our company does a root cause analysis when a vendor fails to meet an SLA, or scores inadequately on a metric.

N=254

	total	has an effective outsourcing governance process	does not have an effective outsourcing governance process
Agree	49%	65%	31%
Disagree	51	35	69

6.5 Our company has an effective process in place for:

N=254

	domestic outsourcing: satisfied with vendors	domestic outsourcing: not very satisfied with vendors	offshore outsourcing: satisfied with vendors	offshore outsourcing: not very satisfied with vendors
Selecting outsourcing vendors	73%	57%	66%	55%
Managing outsourcing vendors	76	54	74	58
Measuring the performance of outsourcing vendors	63	44	65	58

6.6 Our company is very effective at matching outsourcing vendors to the specific outsourcing need.

N=253

	total	has an effective outsourcing governance process	does not have an effective outsourcing governance process
Agree	72%	90%	52%
Disagree	28	10	48

6.7 The staff managing our IT outsourcing relationships is highly effective at their jobs.

N=258

	total	has an effective outsourcing governance process	does not have an effective outsourcing governance process
Agree	76%	85%	68%
Disagree	24	15	32

How the survey was done: *CIO Insight* editors designed the 2006 Outsourcing Survey together with Equation Research, LLC (www.equationresearch.com), an Estes Park, Colo.-based supplier of custom research services. IT executives gathered from Ziff Davis Media publication lists were invited to participate in the study by e-mail. The questions were posted on a password-protected Web site, and 380 qualified respondents (154 from companies with revenues in calendar 2005 between $5 million and $100 million, 129 from companies with revenues between $100 million and $999 million, and 97 from companies with revenues of $1 billion or more) replied from January 5 to January 20, 2006. Of the respondents, 64% percent were the top IT executive in their company, and the rest held senior IT executive positions.

AD INDEX

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EXECUTIVE BRIEFS

OPINION: THE LEGAL JUNGLE

The Other Information Revolution

By Larry Downes, page 29

Ever since the rise of the Web, governments have tried to define, regulate, tax, constrain and ban the Internet. In nearly every instance, those efforts have failed in the face of legal challenges and storms of protest. Now comes the reauthorized Violence Against Women Act, a laudable act that contains within it yet another effort to control speech on the Internet. Where are the voices raised in protest, wonders columnist Larry Downes? Perhaps they're too busy worrying about all the other threats from viruses, malicious hackers, greedy individuals, and companies looking to take advantage of the Web's openness. It's a different Web indeed.

CASE STUDY: BOEING CO.

Flying in Formation

By Edward Cone, page 34

The art and science of building commercial aircraft has come a long way. The forthcoming Boeing 787, sheathed in a high-tech composite skin in hopes of saving weight and fuel costs, is being designed and built with the help of a wide assortment of global partners. By using the Internet and some sophisticated software and communications tools that allow the team to collaborate in real time, Boeing hopes to shave production time and costs on a project critical to the company's future financial health and competitive position. Senior Writer Edward Cone explores how this collaboration is transforming the entire company.

EXPERT VOICES: JAGDISH BHAGWATI

The Age of Flux

With Ellen Pearlman and Edward Baker, page 45

Despite its title, Jagdish Bhagwati's 2004 *In Defense of Globalization* is by no means a one-sided argument for the virtues of globalization. Instead, Bhagwati, an economics professor at Columbia University and senior fellow at the Council on Foreign Relations, openly acknowledges that there can be downsides to rapid globalization, completely free markets and powerful multinational corporations. In this lively interview with *CIO Insight* editors Ellen Pearlman and Edward Baker, Bhagwati outlines his view of what he calls "the Age of Flux."

ANALYSIS: OFFSHORING FOR SMALL COMPANIES

Think Big

By Dan Briody, page 52

In the business world, small companies have a number of advantages over their billion-dollar brethren: flexibility, aggressiveness and innovation, to name a few. But they're way behind the curve when it comes to enjoying the cost benefits of offshoring IT work. They have no procurement specialists. No vendor management teams. No in-house legal counsel. So is it even worth it for small businesses to look overseas for IT help? The answer is a resounding "maybe," says Executive Editor Dan Briody. The tales of small business forays into international waters vary from the triumphant to the futile to the comical.

STRATEGIC TECHNOLOGY: GLOBAL SUPPLY-CHAIN MANAGEMENT

Trade Winds

By Debra D'Agostino, page 63

It is no surprise that supply chains are going global. What is surprising is that most supply-chain systems are designed for domestic use. It's a problem that companies will have to remedy, says Senior Reporter Debra D'Agostino, and the solution may involve overhauling the entire system. New software can help companies gain greater visibility into the global supply-chain process, identify low-cost suppliers overseas and even sort out logistical problems. The first step requires transforming inward supply-chain systems into outward-facing networks, sharing key data with suppliers and retailers, and learning to make decisions in real time.

RESEARCH: OUTSOURCING

Can an Anxious IT Organization Be Productive?

By Allan Alter, page 69

As spending on IT outsourcing grows—by an expected 3.2 percent in 2006—offshore outsourcing is also becoming more common: Forty percent of all companies that outsource use foreign firms. Yet CIOs are experiencing more frustration with vendors and more problems inside their own IT organizations than ever before. In fact, our 380 respondents are less satisfied with their outsourcing vendors than those who took our 2004 survey. The more alarming problem: Forty-five percent of respondents say the fear of losing jobs to outsourcing has had a disruptive effect on their IT organizations, up from 39 percent in 2004.