

trendlines

EDITED BY ELANA VARON

NEW * HOT * UNEXPECTED

How the Flu Migrates



COMPUTER SIMULATION Public health experts preparing for a feared avian flu pandemic are using computer models to get a glimpse of how the disease might spread if the bird virus were to start passing between people.

Based on their first models—of an outbreak in Southeast Asia—researchers affiliated with the Models of Infectious Disease Agent Study (Midas) research network have concluded that immediate treatment with vaccines and antiviral drugs, in combination with quarantines and other public health measures, could contain a pandemic.

“In the past, there hasn’t been much effort to work out predictions of how a disease might spread,” says Irene Eckstrand, scientific director at Midas. “These models have shown that if you’re going to contain the flu, you’ve got to do it really fast.”

Midas is funded by the National Institute of General Medical Sciences. Midas researchers in the United States

and Britain are working along with other U.S. government agencies and the World Health Organization to outline how best to control a nascent flu epidemic.

The flu models are based in part on models developed in England in the 1990s to deal with an outbreak of foot-and-mouth disease among livestock. To model the avian flu, researchers used a cluster of 32 processors to simulate how 500,000 individuals in Thailand move and interact during a given period of time. The models simulate where each person is likely to go each day and how many people he or she will come in contact with. The model showed that a virus would spread “like ink blots all over the place,” Eckstrand says. The data revealed that an outbreak could take off quickly and would be difficult to contain unless health-care professionals and public health officials took action immediately.

Now the researchers are using super- *Continued on Page 22*

Are the Laptop's Days Numbered?

MOBILE TECHNOLOGY

IT analysts have predicted the end of the desktop, when laptops would become the computing standard for mobile workers and cube-dwellers alike. But with advancements in converged devices (which combine wireless phone, PDA and applications such as e-mail), it’s not a stretch to imagine the death of the laptop as well.

“In three years, more people are going to be using smart phone devices than laptops in some cases,” says

Richard LeVine, an expert in mobile device security with Accenture.

In the 1990s, laptops were a status symbol for executives. But CIOs report they are replacing laptops for executives and salespeople with converged devices. While vacationing, Joe Kraus, senior VP and CIO of Intelsat, talks on his Treo 600. Kraus can also send and receive e-mail, and manage his calendar without needing a hardwired connection for a laptop.

But the small devices do have limitations. “Did you ever try to type a long mes-

sage on one of these?!” Kraus writes in an e-mail. Many heavy-duty applications will always require a laptop’s functionality.

Laptop makers say they’re not worried. “Notebooks and handhelds are optimized to do different things,” says Carol Hess-Nickels, Hewlett-Packard’s director of business notebook marketing.

Meanwhile, technology marches on. To learn about how to manage mobile devices, turn to “Mastering Mobile Madness,” on Page 74.

—Thomas Wailgum

Wal-Mart's RFID Crusade

Why RFIDs Are No Good

IT and business leaders cite these obstacles to deploying RFID technology

Can't justify ROI **28%**

Cost of hardware/integration **26%**

Lack of standards **14%**

Products not optimal to RFID **9%**

Lack of customer demand **9%**

SOURCE: AMR Research

RETAIL Wal-Mart's quest to use radio frequency identification (RFID) technology to track shipments will reach a new milestone in January: The company is requiring 200 of its second-tier suppliers to begin tagging cases and pallets with the chips.

Last year, Wal-Mart pushed its 100 largest suppliers to attach RFID tags to some of their shipments. At the time, the technology was immature, standards half-baked and projects lacked ROI. (See "Tag, You're Late," www.cio.com/120105.) Not much has changed, but Wal-Mart contends—without revealing any metrics—that the experiment has been successful.

William Terrill, a senior analyst with the Burton Group, says the next 200 suppliers could benefit even more from RFIDs than the large suppliers. He says the smaller suppliers are more apt to run out of inventory in Wal-Mart's warehouses when items sell more quickly than planned, and there's no good way for them to track that now. However, the ROI remains uncertain. Terrill says tag prices are still too high to make economic sense for use with high-volume, low-value items.

But a deadline is a deadline. And, notes Kara Romanow, a research director with AMR Research, mandates such as Wal-Mart's encourage vendors to develop RFID applications—no matter the costs for everyone else.

—Thomas Wailgum



Flu Migration

Continued from Page 19

computers to create a similar model for the much larger U.S. population, says Ira Longini, a professor of biostatistics at Emory University and the leader of the Emory research group affiliated with the Midas project. The U.S. model requires supercomputers because it will simulate the movements of many more individuals than the original model, Longini says.

Public health experts agree that there will be another global flu epidemic, although they are not sure when or how severe it will be. They are also not sure whether the bird flu strain—known as H5N1—will be the origin of such a pandemic, although experts fear that the virus could mutate and start spreading among humans.

In the past, the spread of infectious disease was usually limited because people lived in smaller towns, and they didn't travel much. "Now, with planes flying between major capitals, everyone is connected to everyone else," Eckstrand says. "That's why it's potentially so important to create computer models that show how people are connected."

—Susannah Patton

Federal CIOs vs. Corporate CIOs

CIO ROLE Discussions about public-sector CIOs often revolve around how their role differs from that of their private-sector IT peers—for example, the frustrations of working within government bureaucracies. But a recent study by the Government Accountability Office found that federal CIOs have much in common with their corporate brethren.

The GAO asked 27 federal

and 20 corporate CIOs (from companies including Wal-Mart, PepsiCo and Lands' End) about their responsibilities with regard to a dozen IT functions. Nearly every respondent said he is responsible for information security, managing IT investments, managing staff, and acquiring, developing and integrating systems, though some share these duties with other business leaders.

CIOs in both groups were similarly less likely to be in charge of privacy, records management, statistical policy, or information dissemination and disclosure.

There were, however, two notable differences. Every federal CIO has responsibility for enterprise architecture, but only 15 out of 20 corporate CIOs said they do—a sign, according to David Powner, GAO director of IT

management issues, that enterprise architecture is still maturing as a planning activity and that some corporate CIOs are driven largely by shorter-term tactical plans. In addition, all 27 federal CIOs—but only 17 of 20 corporate CIOs—said they are responsible for IT strategic planning. Powner says that at many of the companies surveyed, technology was part of a broader business plan. —Elana Varon



Battle of the DVD Distributors

E-COMMERCE The coming year could witness the decisive battle for market share in the online DVD rental business, with IT providing the competitive advantage.

In one corner, with 3.5 million customers and 36 distribution centers: Netflix. In the other, with 1 million online subscribers and 5,700 retail stores: Blockbuster.

For Netflix, a crucial weapon for maintaining its market share (estimated at two-thirds of online DVD rentals) is new, homegrown software that improves upon the Oracle database the company uses to automate the DVD distribution process.

The software consults the database to match customer requests with the movies in inventory. Based on algorithms devised to maximize delivery time by mail, the application decides which distribution center will fulfill each movie. The program then generates a "pull list" for workers at each center to fulfill the orders and ship them out. "The whole idea of this system is to get discs in and out faster and to lower cost," says Tom Dillon, Netflix vice president and COO.

Blockbuster is attacking with similar technology to orchestrate DVD delivery by mail from the chain's stores. Central to the Blockbuster strategy is the integration of 28 systems into one that feeds data about online orders to retail locations quickly. Shane Evangelist, senior vice president and general manager for Blockbuster Online, says he expects the rollout of this system to be completed by the end of 2006. "The hard part was getting the data to the stores," he says.

Critics are skeptical Blockbuster can win. Tom Adams, president of Adams Media Research, notes that inventory at retail stores is small in comparison to inventory at distribution centers. Therefore, when one Blockbuster store doesn't have a video in stock, the system will pull the video from another store, which could prolong the delivery time. "Even with the best technology on Earth, it's difficult to play catch-up," Adams says. —*Matt Villano*

Don't Be a Hero

MANAGEMENT REPORT Face it, you don't know everything. And your first step as a leader should be to admit it and then surround yourself with people who will know what to do when you, inevitably, don't.

That's advice from André Martin, an enterprise associate at the Center for Creative Leadership (CCL), who studies what it takes to be an effective leader. "The age of the hero leader is ending," says Martin. "The whole idea that a leader can solve and manage and get through [today's] challenges by him or herself is no longer the case."

A recent CCL study found that **decisiveness and a willingness to "do whatever it takes" to lead are no longer enough to succeed.**

Skills such as building relationships and the ability to manage change have risen in importance as the challenges companies face become more complex.

CCL surveyed 128 senior and middle managers. Sixty percent said they face challenges that go beyond their individual capabilities. As a result, the study concludes, **managers must view their role as someone who facilitates the work of their employees.** They can do this by providing their staff with the necessary resources and by making it possible for them to work collaboratively with people in different parts of the organization as they adapt to changing business needs.

The Changing Nature of Leadership

What managers said about their role

84% Said the definition of effective leadership has changed in the past five years.

60% Of leaders face challenges that go beyond their individual capabilities.

58% Said interdependent work is the foundation of effective leadership.

SOURCE: Center for Creative Leadership

The new findings contrast with a 2002 survey by CCL, which ranked resourcefulness and straightforwardness among the skills that were most important for leaders to possess. Today, these skills have been supplanted in importance by the ability to build relationships and to manage change. Consistent with these responses, 84 percent of those surveyed said the definition of leadership has changed in the past five years.

Martin says **new leadership challenges stem from a more competitive business climate and abrupt changes in the way companies do business.**

"Technological change, new ideas—really any societal improvement—used to take decades to happen," says Martin. "Now, we're finding those changes can happen over a single 24-hour period."

—C.G. Lynch

The GREENING of a CIO

E-WASTE As VP and CIO at United Technologies Corp. (UTC), John Doucette thought he had heard every complaint. But getting blamed for trash, as he was during a PC refresh four years ago, was something new. “At every business review, the guy who managed waste would say that he was over target,” Doucette remembers, “and he’d blame me.” Hardly surprising, considering that every computer arrives in a box, wrapped in plastic or packed with styrofoam peanuts, among other packaging. “You don’t realize how much trash is left behind,” he says.

So Doucette vowed that the next technology refresh would be boxless. He’s in the process of deploying 33,000 computers at 700 sites, and three-quarters of them will be shipped box-free. He’ll use the rest of the boxes to send old computers back to his vendor, CSC.

Here’s how the process works: Computer maker Dell ships the computers to a middleman, who removes and reuses the packaging. The middleman installs about 60 percent of the hard drive’s image on the UTC systems and puts them in specially designed

crates, then ships them to UTC. UTC completes the software installation.

The process isn’t waste-free yet. Keyboards and mice are too delicate to be shipped in their birthday suits. But still, Doucette’s efforts have saved significant time, money and resources. (CSC has incorporated the savings into UTC’s contract.) “Smaller and less is better from everyone’s perspective. From a waste standpoint, a cost standpoint, with the cost of raw materials going up, our focus is on making this process less wasteful.” —*Scott Berinato*



Waste Not

By eliminating packaging from the PCs it buys, United Technologies eliminates **132,000** pounds of waste.

SOURCE: UTC, Southern Illinois University

What It Takes to Get Promoted

ON THE MOVE

CIOs who want to move up the ladder into another senior executive role within their company need to be recognized as businesspeople, not technologists.

According to Rich Brennen, global leader in the CIO practice of executive recruiting firm Spencer Stuart, a new assignment depends on whether the CIO is viewed as a contributor to the business—that is, participating in strategic business decisions, speaking up during the CEO’s staff meetings, and generally being recognized by the CEO and his executive peers as an equal partner. Based on the credentials of CIOs who have been given new titles or responsibilities recently, an IT executive must also oversee at least one major technology initiative that has a positive



JOHN DEANE



RAJ DATT

impact on the business.

Before **John Deane** was promoted last spring from executive VP and CIO at Wendy’s to executive VP of the fast-food chain’s America operations, he oversaw store budgeting, store automation and electronic payment initiatives. By going paperless, Wendy’s says it saved \$1.7 million between February 2004 and February 2005.

Gerald Gluscic’s promotion at copper producer Phelps Dodge recognizes the improvements he’s made to business processes as well as his success with the company’s technology standardization and data warehouse implementation. Gluscic, formerly the VP and CIO, became VP of global supply chain management and information services in October.

Also in October, Walgreen’s **Trent Taylor** was promoted from senior VP and CIO to executive VP and CIO. CEO David Bernauer says Taylor brings “intelligence, creativity and a calm manner” to the job. Bernauer credits Taylor with building a talented staff that helps the company maintain its position as a retail IT leader.

Meanwhile, **Raj Datt**, Panasonic Automotive Systems’ CIO, became a VP of the manufacturer. Datt transformed the company’s IT department. He led the consolidation of the company’s e-mail systems, implemented a new ERP system and staffed a 24/7 help desk. Datt also introduced collaboration tools such as instant messaging and Six Sigma processes within the IT department.

—*Meridith Levinson*

On the Web

Read Meridith Levinson’s **MOVERS AND SHAKERS** blog for the latest moves. Find it at www.cio.com/blogs.

CIO.COM

High-Tech for the Holidays

Here's a little technology for everyone on your gift list, even those who have yet to master their TiVo. BY MARGARET LOCHER

TRENDLINES



Shoes That Are Smarter Than You

The athlete on your list might like the **Adidas 1**. A microprocessor in the shoe's arch analyzes a runner's speed and the surface she's running on and adjusts the cushioning inside through a motor-driven cable system in the heel to provide the ideal amount of shock absorption. In other words, the company claims the shoe "knows the difference between gravel and dirt." Watch it work at www.adidas.com. **\$250**

So He'll Never Have to Ask for Directions

For the adventurer on your list, check out **GPSMap 60CS** from Garmin. The waterproof personal GPS device can hold up to 56MB of map details. The automatic route calculator ensures the user always knows exactly where he is and where he's going. The display tracks a traveler's average speed and the distance to a destination to give an accurate estimate of arrival time. At only 7.5 ounces, it won't add weight to a briefcase or backpack. Learn more about the tracker's features at www.garmin.com. **\$482.13**



More Adventures in Convergence

The 8-inch **Archos** music/video player and digital camera has 100GB of storage—good for 400 hours of video, 55,000 songs or 1 million digital pictures. The multimedia maven on your list can transfer photos to and from the device through the USB port of a computer, as well as program it to record his favorite TV shows. The Archos's lithium battery can sustain four hours of video or 30 hours of audio play. It's available from The Sharper Image, www.thesharperimage.com. **\$799.95**

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Well-Fed Pets

For the busy household, the **Intelligent Programmable Pet Dish** insures that Fifi won't have to wait for her din-din. Fifi's mom or dad can program up to four meals into the dish's memory. The dish then serves up one of four prefilled food trays at the predetermined time, whether once a day or more often. Pet owners can also record their voices calling their furry friends to dinner. The plastic dish runs on four C batteries. Check it out at www.smarthome.com/61001.htm. **\$54.99**

The Times of Your Life

The **Ironman Datalink** watch from Timex doubles as a personal organizer. A USB link connects the watch to your PC, allowing you to upload and download data between the watch and a computer. It also syncs with

Microsoft Outlook. The watch can store 200 appointments, 200 phone numbers and notes of up to 100 characters.

Because the point of having a watch is to be on time, it also provides for 200 countdown timers—and alarms with five-minute backups—for those appointments. A bonus for frequent travelers: The watch keeps track of three different time zones. Find additional details at www.timex.com. **\$90**

