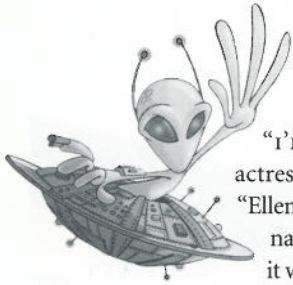


# Dr. E-mail Will See You Now

BY DEBORAH SHAPLEY



"I'M GAY!" THIS ANNOUNCEMENT BY TV actress Ellen DeGeneres during her prime time "Ellen" show might not, on the face of it, seem a signal event in the history of online commerce. But it was. Ellen's "outing" on the April 30, 1997, ABC

broadcast fueled a nationwide controversy that spilled over to the show's corporate sponsors. One, the venerable JCPenney department store chain of Plano, Texas, found its fledgling presence on the World Wide Web inundated with e-mail of a kind and quantity it had never seen before. Anti-gay critics flamed DeGeneres and belted JCPenney for supporting her show. Supporters were just as vehement. Not exactly cardigans and cookware.

For technologists, though, the real news was how JCPenney's e-mail system handled the fuss. At the time, Middle America's favorite apparel retailer was experimenting with a pilot version of EchoMail, a new type of automated e-mail classification and response system from General Interactive, a young Cambridge, Mass., software firm. Not only did EchoMail go on routing and replying to regular queries about orders and returns, but it recognized that the "Ellen" messages didn't fall into a preset category.

It also recognized that some of these people were mad.

Of course, humans staffing JCPenney's stores and catalog call centers were also getting calls about "Ellen." But the volume of complaints to any one site couldn't compare with the power, and immediacy, of the signal received by JCPenney's e-mail department. The EchoMail program was reporting a sudden spike in the number of angry incomings, and headquarters knew it had a major customer relations problem. Right away the PR department drafted a statement for the company to use in reply to the ornery Ellen-mail.

The "Ellen" brouhaha caused the show to lose JCPenney as a sponsor, as the retailer declined to renew for the next season. EchoMail, however, fared better. As recounted by V.A. Shiva, aka "Dr. E-mail," General Interactive's founder and CEO, and the inventor of EchoMail, the system's early alert over "Ellen" during the testing period helped convince JCPenney to sign up for the service—adding it to the blue chip list of companies, including Nike and Citibank, that have bought Dr. E-mail's prescription.

EchoMail, says Shiva, is a combination of pattern recognition techniques that, by decoding, routing and in many cases answering e-mail, lends his customers the "sensory and cognitive ability" needed to win

customers online and keep their loyalty. "Our goal is to become a company's central nervous system," says Shiva, one


**Is software that replies to customers automatically the key to success in e-commerce? Ask the doctor.**

that uses e-mail to provide clients not only the "capacity for quick response" but also the "look and feel" they want.

Today, traditional retailers are realizing that they need a virtual presence on the Internet as clear and compelling as a Gap storefront. After all, as commerce goes online, so does the business-consumer relationship. And, Shiva argues, "e-mail is the ultimate relationship builder."

Ninety-three million Americans sent a total of 335 million e-mails per day in 1999, according to Jupiter Communications. Personal e-mail has grown 50 percent per year, a surging tsunami of messages that's outstripping even the Web, whose users have grown just 21 percent per year, says Jupiter. And 23 million Americans used e-mail to order goods from corporate Web sites, accounting for much of the \$20 billion consumers spent online in 1998. That figure's set to top \$140

PHOTOGRAPHS BY JOHN SOARES



**Relationship medicine:**  
General Interactive CEO V.A. Shiva  
helps retailers manage customer  
relationships—electronically.

billion by 2003, according to Forrester Research, while business to business online sales grow from \$109 billion to \$1.3 trillion.

If the medium for e-commerce is e-mail, small wonder that General Interactive (which, at 4 years old, is already the granddaddy of intelligent e-mail response) is now feeling heat from competitors who share Shiva's belief that the key to the future

## Americans sent 335 million e-mails per day in

of online retailing lies in electronic "customer relationship management." Rivals include other startups such as Brightware and Kana Communications, and also titans of the 1-800 call business such as Lucent Technologies. The field of intelligent e-mail response did \$75 million in sales in 1998, and is expected to grow to \$340 million by 2003 according to International Data Corp.

Although intelligent e-mail response is a small industry, observers believe its innovations could have a far greater impact by helping to determine winners and losers in e-commerce's frenzied grab for market share. The swift emergence of giants such as Amazon.com and eBay has sounded the drumroll for big brick-and-mortar firms now venturing online. "In three years there won't be that many giant consumer retailers online. There will be lots of consolidations and shakeouts," believes Shelley Taylor, president of the consulting firm Shelley Taylor & Associates. And after surveying the 1,000 largest companies' online prospects, Taylor believes those who succeed "will win due to the quality of their communication."

So far, about 25 of the biggest names in corporate America—including Allstate, IBM and Procter & Gamble—have delivered at least part of their online persona to the care of Dr. E-mail.

### The Eureka Moment

ON A RECENT SATURDAY MORNING, DR.

E-mail could be found bustling around General Interactive's spare offices at the top of steep stairs over Sage's grocery store in

Harvard Square, across from the landmark Brattle Theater movie house. Shiva's full-cheeked face makes him look younger than his 36 years. His

shoulder-length loose-hanging black hair and tobacco-hued skin give away his birth in Bombay, as Vellayappa Ayyadurai Shiva.

Outgoing, voluble and distracted, Shiva is a tumbleweed of ideas at once entrepreneurial, intellectual and artistic. He is the author of the 1996 book *Arts and the Internet: A Guide to the Revolution*, and holds master's degrees in both visual studies and

## 1999, and spent more than \$20 billion online.

mechanical engineering from MIT. He's still working to get his PhD in information theory and cybernetics, however. For now, the "Dr." of his self-assumed persona is pure marketing.

Shiva's initial encounter with e-mail came in 1979. A bored high school junior then living in Livingston, N.J., Shiva was asked by a Rutgers professor to help with a computer network linking three hospitals. When he first heard someone say "electronic mail," Shiva recalls, "I thought it meant current flowing through paper."

His networking project became a science fair winner, a semifinalist in the Westinghouse Science Talent Search and earned Shiva a ticket to MIT in 1981. During his work for a degree in computer science, what came to fascinate Shiva most was pattern recognition, a field of mathematics that looks to draw meaningful information from noisy data, and which is closely allied with artificial intelligence research.

For instance, Shiva helped another Rutgers professor scan brain wave data from 600 sleeping babies for patterns that could show which were at greatest risk of Sudden Infant Death Syndrome. At MIT, Shiva analyzed the touch patterns sensed by deaf-blind people who use Tadoma, a language in which the listener spreads her hand lightly across the face of the speaker to recognize words.

After receiving a master's degree from the MIT Media Lab, Shiva was recruited by MIT instructor Frederick Foreman to study patterns in ultrasonic waves sent through materials to map their internal structures. Foreman recalls they spent "12 hours a day" on the project during the late 1980s—but Shiva's thoughts were on the digital world as

much as the physical one. "He had this idea he could use the same techniques for information. He kept saying, 'I can manipulate information as if it's a wave.' And he kept talking about how waves of information and e-mails and graphics going all over the place were going to be the next big thing," Foreman recalls.

By then, Shiva's Eureka moment was close at hand. After getting his second master's in 1990, he helped to critique early

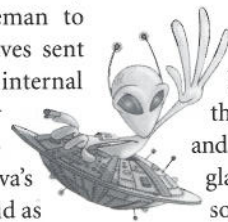
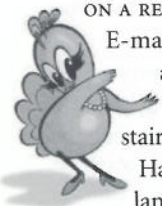
Web search engines for the National Institute of Standards and Technology. In 1993, he participated in a White House contest for routing e-mail. "I was reading thousands and thousands of e-mail, and realized they are not all that different," Shiva says. In fact, looking below the surface, e-mail tended to be almost robotically repetitious. "So I said: 'Maybe they have fundamental properties which could be recognized, like physical matter.'"

Shiva worked up algorithms to detect what he concluded were an e-mail's essential features. He named the software Xiva, and founded a company called Millennium Cybernetics to commercialize the idea. That was in 1994, a time when e-mail was still small potatoes, and no major retailer had made a commitment to the Internet. Even Jeff Bezos was an unknown working from a 25-square-meter office in Seattle; he would not flip the switch to light up Amazon.com until July of the next year.

But when a friend told Shiva that AT&T was spending \$10,000 on a Web presence, and needed help with its surprising volume of e-mail, Shiva sought an introduction. No matter how Web commerce unfolded, he figured, big, mainline firms would have to go online and get lots of e-mail. After a pilot demonstration of Xiva—now trademarked EchoMail—AT&T signed in 1996.

### Essence of Message

WHEN WE WRITE E-MAIL, WE can be thoroughly, emotionally human. It is, after all, a medium that allows for creativity, opinion and bad grammar. On a visit to Nike's glamorous Web site, for example, someone might start typing a



message about how their sneakers fit, then go on about Nike's girls' soccer club and the company's labor policy. Yet despite what can be a clutter of ideas and emotions, Shiva says the foundation for decoding e-mail is that "human communication is not as diverse as we think it is." EchoMail, which handles Nike's customer e-mail, scans these free-form messages for key words and phrases that characterize what Shiva has found are "five fundamental properties" of interest to a company in any e-mail.

"One is the *issue*," he explains. "Is the e-mail about a billing problem or merchandise return, or a legal problem?" A second fundamental is the *request* the writer is making—say the location of the nearest outlet—and a third is which *products* are involved.

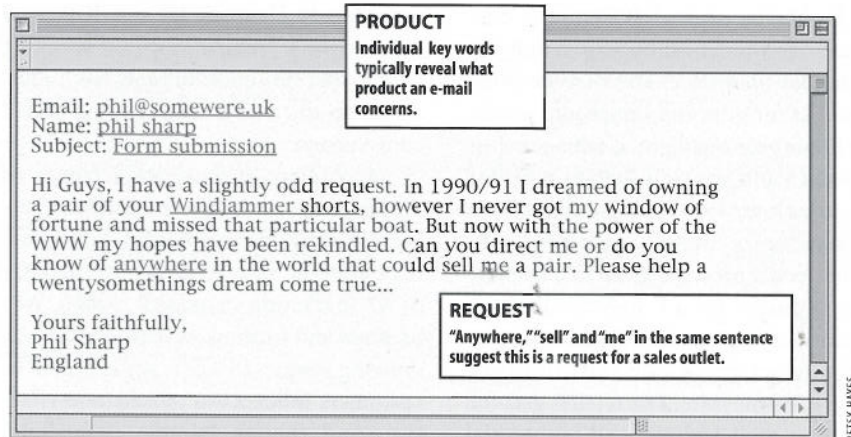
EchoMail's job is to score every e-mail in each fundamental dimension. According to General Interactive's director of semantic research Roland Westgate, EchoMail does this by applying a dictionary of key words and word relationships known as a "semantic network." For instance, "if the program finds the word 'Web site' and 'problem' in close proximity, it might conclude that the e-mail's issue is an online ordering problem." Depending on how an e-mail gets classified, EchoMail can choose either to reply from a selection of prewritten responses (Westgate says most companies maintain a stable of 10-50 canned replies to common requests and complaints) or forward the e-mail to one or more departments for humans to address.

A fourth basic property is *customer type*. E-mail writers often give away such information as whether they own a boat; they may provide their home address and zip code. EchoMail can scoop up and add this information to the client's customer databases.

The last of Shiva's e-mail fundamentals is *attitude*. EchoMail can classify the writer as either negative, neutral or positive by honing in on key words such as "terrible" or "superb." Shiva recalls that one client's messages included the words "da bomb." "EchoMail initially classified it as negative," Shiva says. "Then we learned 'da bomb' means 'you're cool' and we changed the classification." At JCPenney, supervisor of Internet customer relations Christine Thomas says all e-mail with a negative attitude rating get checked by a person to ensure that replies going out to upset customers are appropriate.

## How Smart Software Sorts E-mail

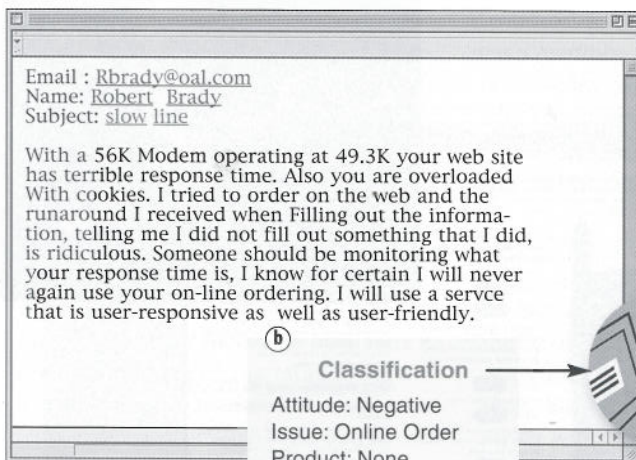
General Interactive's EchoMail software classifies e-mail by scanning for key words and word combinations. Retailers are using the software to route and automatically answer messages.



**Incoming e-mail is classified according to 5 fundamental attributes: Attitude, Issue, Product, Request, Customer.**

**a** Classification  
 Attitude: Neutral  
 Issue: None  
 Product: Shorts  
 Request: DealerLocate  
 Customer: Consumer

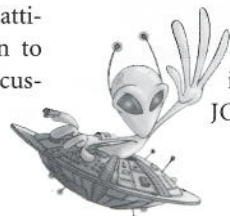
**a** Depending on the classification, Echomail selects from a number of pre-written responses. In this case, the customer is directed to a local dealer.



**b** Classification  
 Attitude: Negative  
 Issue: Online Order  
 Product: None  
 Request: None  
 Customer: Consumer

**b** This e-mail concerns online orders, but has a negative attitude. In this scenario, EchoMail has been programmed not to reply, but instead alert the company's Webmaster.

### The Message is the Medium



SENDING THE RIGHT SIGNALS to customers online is crucial to retailers such as JCPenney, a \$30 billion a

year business whose 1,148 storefronts have been struggling, but which saw better than expected online sales of nearly \$70 million in 1999. Building relationships online is key to the company's future, say

executives, and JCPenney has created one of the better retail sites on the Web. Its huge online catalog has images of 10,000 items, and gets 1 million hits per week.

Eighty percent of JCPenney's customers are women, shopping mainly for clothes for themselves and their families, as well as for gifts and household goods. The home page highlights clothing such as camisoles and pantssets, letting a visitor link to a closer view and size chart. Next to the picture of the item, visitors are invited to "Send a product-gram to a friend!" General Interactive's EchoMail also handles this feature, sending the friend a picture, product description and a link back to the JCPenney site. The retailer gets the friend's e-mail address, and a potential new customer.

The site encourages customers to interact. For instance, by clicking on a store department such as Home and Leisure, visitors can send e-mail asking advice on home decorating, which EchoMail routes to the appropriate department for a human reply. E-mail to the maternity site contain "all sorts of personal questions," according to Thomas. From the home page one can join clubs such as "Just 4 Me," where larger women can size and select clothes, or link to a Lucas-owned Star Wars page to play games and order theme merchandise.

The site's goal is to "surprise and delight" visitors, explains Ron Hanners, executive vice president of JCP Commerce Solutions, the retailer's e-commerce arm.

As the visitor moves through links, he says "the experience should become an emotional surge" that leads to a purchase. But the sale is only "the first part of the loop," according to Hanners. He says JCPenney must make a "return loop" by speaking back to that customer, "offering them additional products at a fair price and added convenience."

According to Paul Sonderegger of Forrester Research, direct e-mail marketing is shaping up as a powerful way to close the customer loop. A survey by Forrester of 47 marketing managers ranked Web banners and buttons as least effective in drawing visitors to a site, while e-mail to customers' inboxes was ranked most effective. And though "simple campaigns" with text e-mail now predominate, Forrester found doubled response rates from graphical e-mails in HTML format. With interactive e-mail, says Sonderegger, companies "are in effect initiating a conversation with the customer. When that customer responds, they are engaged in a dialogue." That dialogue can turn casual surfers into repeat customers. Hanners

confirms that the JCPenney site gets "two or three times greater" response from e-mail promotions than from online ads.

Hanners says EchoMail also saves money by "multiplying our personnel's effectiveness." At the time of the "Ellen" furor, JCPenney received about 1,200 e-mails per month. By late 1999, the number had grown to 30,000. Yet the Internet customer service staff run by Thomas still numbers just four people. Back in Cambridge, General Interactive staff have conducted time-motion studies that show the cost for humans to read and compose an answer to a single e-mail averages \$4.23. Shiva's company charges a fee of \$100,000 or more to set up and customize the system—which the client leases and runs on General Interactive's servers in Waltham, Mass. After that, General Interactive gets paid between 50 cents and \$1 for each message successfully decoded and replied to automatically. The client, according to Shiva, saves at least \$3 per message.

## Dr. E-mail's Corporate Brain

WITH AROUND 100 BILLION E-MAIL messages flashing through the ether each year, there is clearly plenty of money to be made handling them, and Dr. E-mail's practice is seeing heated competition (see "Companies Answering E-mail" on p. 47). According to International Data Corp's Mark Levitt, General Interactive now controls an estimated 22 percent of the automated e-mail response market, with revenues in the neighborhood of \$17 million. But the firm's principal rival, Brightware, has been burning up the track and is now tops in revenues. And Kana Communications, which raised \$50 million in an initial public offering (IPO) last fall, boasts the largest number of clients overall. Shiva says an IPO may also be in the offing for General Interactive.

In the long run, the most successful e-mail managers could be phone giants such as Nortel Networks, GTE and Lucent Technologies. The latter handles 150 million voice mail boxes at 150,000 locations in 90 countries, and owns 24 percent of the \$175 million world market in "unified messaging"—the ability to access phone, fax and e-mail messages from any number

The image shows a browser window with a URL of <http://www.interactive.com/sprintPCS/index.html>. The page content includes:

- A navigation bar with links: "Best of the Web", "Channel Guide", "Customer Links", "Free HTML", "Internet Start".
- A section titled "without using a password?" with a "Yes!" icon and text: "Yes! With One-Touch Access, you can skip entering your passcode every time you access Sprint PCS Voicemail. Just press a button to hear your messages."
- A section titled "To turn the One-Touch Access feature on, follow these simple steps." with a numbered list:
  1. Press [1] or [0] For about 2 seconds on your Sprint PCS Phone - enter your passcode and then go to the voicemail main menu.
  2. Press [3] (Personal Options).
  3. Press [2] (Administrative Options).
  4. Listen for the One-Touch Access prompt. Press [1] to turn One-Touch Access on or off.
- An image of a Sprint PCS phone.
- A section titled "Position your phone within easy reach. Do not take notes or look up phone numbers while driving. For a complete list of safety tips, visit your local Sprint PCS Center, or go online at: [www.sprintpcs.com](http://www.sprintpcs.com)."
- A section titled "PCS simplifies your life" with sub-sections:
  - "Who's calling... and who have you called?"
  - "Did you miss a call? Or do you want to keep track of incoming and outgoing calls? Remember, your Sprint PCS Phone has a Call History that lets you see the phone number of not only who has called, but also those who you have called. These numbers are stored in your phone's Call Log. For details and exact number of calls stored, see your User Guide."
- A section titled "Share the clarity of Sprint PCS with a friend" with text: "You and your friend will each receive a \$10 credit on your invoices. Completed referral card must be received by Sprint PCS within 90 days of activation to receive invoice credit offer. A customer may not refer him/herself. Referred person's phone purchase must..."
- A footer with "Done" and "Internet" buttons.

**Click-through commerce:** A Sprint ad and a concept piece designed by General Interactive depict the next wave in direct marketing—colorful, interactive e-mail messages.

# Companies Answering E-mail

Leaders in the electronic customer relationship management (CRM) industry are selling software to automatically read, route and reply to messages.

COMPANY/LOCATION/FOUNDED/STATUS	URL	HIGHLIGHT
<b>Brightware</b> (Novato, Calif.) 1995, private	www.brightware.com	Leads the intelligent e-mail field with an estimated \$18 million in revenue.
<b>eGain</b> (Sunnyvale, Calif.) 1997, public	www.egain.com	Clients include America Online, Petopia and WebMD.
<b>HNC Software</b> (San Diego, Calif.) 1986, public	www.ehnc.com	Aptex subsidiary sells SelectResponse automatic e-mail response software.
<b>General Interactive</b> (Cambridge, Mass.) 1994, private	www.interactive.com	Specializes in intelligent e-mail response and creative design for direct marketing.
<b>Kana Communications</b> (Palo Alto, Calif.) 1996, public	www.kana.com	Kana's stock market value jumps to \$170 million the day of its September 1999 IPO.
<b>Lucent Technologies</b> (Murray Hill, N.J.) 1995, public	www.lucent.com	Piloting CRM Central 2000 system for handling e-mail, voice, fax and paper mail.
<b>Mustang.com</b> (Bakersfield, Calif.) 1986, public	www.mustang.com	Software autoanswers e-mail and can prioritize message traffic.
<b>Nortel Networks</b> (Brampton, Ont.) 1895, public	www.nortelnetworks.com	Now testing Symposium Web Response Server for routing e-mail to call center agents.

of devices on any network. Donna Fluss, an analyst with the Gartner Group, says the winners in e-mail response will be those who can integrate e-mail with call centers and paper mail. From the customer's viewpoint, "if I send an e-mail and telephone, and find the channels aren't integrated, that's hard for me." To the company, "value increases exponentially as [e-mail] is integrated into the service environment," she adds.

keeping today's impatient online customers—one that tracks what they are buying and thinking, and helps a company respond to their changing needs.

When a TV monitor in the room refuses to play a video Shiva wants to show, he grabs a blue felt marker and rushes to the whiteboard, drawing and talking at once. Each company has two parts, like a human brain, he explains. The blue marker draws lobe-like shapes, a large one on

branding, but fumble the back office work. E-commerce, experienced through the medium of e-mail, Shiva argues, is so swift and volatile it will force companies to make the two sides of their brains work together as never before, in order to communicate with the world in a way that builds trust and loyalty. Hatching big blue crosses between the lobes, Shiva shows the RMOS knitting together corporate divisions just as the fibers of the corpus callosum link the hemispheres of the human brain. "We're at the convergence of a bunch

## If the reply looks and feels "human," will we mind

Although stakes for big retailers trying to gain market share online could not be higher, many have barely started to figure out the medium. Taylor's survey of 1,000 companies' online efforts found in 1999 that 60 percent did not even have e-mail addresses on their sites. Taylor believes that is because "their boards don't have people who understand the medium and their IT departments are disempowered."

In his office over Sage's grocery, Dr. E-mail tells of his own experiences educating these giant firms about how, taken together, EchoMail's capabilities to route, respond to and reach out by e-mail actually constitute an "RMOS," or Relationship Management Operating System. The RMOS is Dr. E-mail's latest pitch. Think of it, he says, as a synchronized, real-time corporate nerve center for winning and

## that we've been answered by a machine?

the right, a smaller one on the left—the brain of an Ur-company drifting through the whiteboard of 21st century cyberspace.

"Here are customers coming in from outside," says Shiva, flicking the pen to make streaks pointing at the blue brain. "They have contact with marketing, the creative people, the customer care people, PR—like the right brain over here. Here in the left brain are all the rational parts—order fulfillment, manufacturing, finance, legal—all that stuff." He sticks half of corporate America in the lobe, double outlining it.

While some companies are very good at left brain, rational tasks, they don't do outreach well. Others excel at intuitive and creative right brain tasks such as PR and

of old industrial experience, new media, art and technology, traditional sales and information technology," says Shiva. "That's the way future companies will be built."

And not just companies. He pushes across the table a clipping from *The Boston Globe* announcing that the U.S. Senate has signed up for EchoMail. "As far as the Senate is concerned, 'Dr. E-mail' is In," reads the headline. One day soon, perhaps, those bland, generic "Dear Constituent" replies will be replaced by rapid-fire e-mail as helpful and accountable as any from Citibank or JCPenney.

If those replies are good enough—that is, if they seem human in their look and feel—will we mind that we were answered by a machine? ■