# Forecast 2009: What's on the Horizon

The second half of 2008 was a chapter for the history books. More budget tightening followed a series of industry M&As, all before Wall Street began weathering its highs and lows amid global economic unrest. With continued shifts in power, allegiances, and ranking still making headline news in the business world, the information technology industry is more than a little interested in what it can expect to experience in the coming year. A few industry notables offered *Information Today* their assessments of what lies ahead; here are some insights from each of them.



Elizabeth Satin    Anthea Stratigos    John Blossom    Jeff Kalwerisky

## Elizabeth Satin, Managing Director of The Jordan, Edmiston Group, Inc.

While the economic slowdown and credit crunch have impacted transactions in the media and information industry, 2008 has largely been a tale of two markets.

On the one hand, the banking and debt market upheaval and an incipient pullback in advertising spending have led to an overall slowdown in M&As. Nonetheless, mid-size and smaller transactions, particularly in growth sectors such as online media, interactive marketing services, and database information, have still kept pace with 2007. As a result, while aggregate transaction value is down nearly 70%, the total of 619 M&A transactions announced for the first 9 months of 2008 is within a few percentage points of the total number for the same period

# The Mouse Turns 40

by **RICHARD HAMMOND**

We tend to view history as a once-familiar path that is no longer well-maintained. But along that path, specific mileposts occasionally arise that are so profound that they remain clearly visible across the spans of time.

Backtrack to 1968 for a moment. The hit TV show *Star Trek* was in its third season, the emergency 911 number system was just introduced in New York City, and the U.S. was getting ready to launch *Apollo 8*, which would orbit the moon 10 times before coming home. The world was getting primed for the 21st century.

# Taking the Byte Out of Cybercrime

by **PHILLIP BRITT**

The growth of spam, malware, phishing, and other cyberattacks on the internet has given rise to a new cross-disciplinary group designed to help combat the problem.

The Center for Applied Identity Management Research (CAIMR) held its first meeting in October just after *BusinessWeek* published an article on a Government Accountability Office Report. The report accused the federal government's own efforts to prevent government and corporate cyberattacks as limited by bureaucratic challenges and an inability to find an adequate number of qualified workers.

## Inside



**Thomas Hogan remembers the first days of *IT*, beginning on page 22.**

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specific intervals, usually once a minute. The server in the cloud also generates a six-digit number at the same interval. Both the device and the server are synchronized to a common clock, and generate the same secret number every minute.

To access their cloud-based data, users enter their password, plus the six-digit token that appears in the authenticator device's display. For example, if a user's password is "Dogbert" and the token displayed is "123456," the user would enter "Dogbert123456" as the login.

Only a user with an authentication device would be able to provide a password with a token that matched the token the server also generated. This higher bar of authentication is necessary in the cloud, because regular name/password combinations are very easy to crack.

**Availability** is the third dimension of CIA. Obviously, your computing resources must be available to users when they need them. But they must also be accessible in the event the data center in the cloud experiences a problem or catastrophe (e.g., an earthquake, fire, or other disaster).

The cloud-computing vendor must have a system in place to ensure business continuity and disaster recovery. This usually includes a redundant (i.e., backup) data center physically located in a different region of the country. It must be far enough away from the principal data center to avoid being affected by the similar environmental conditions.

With that done, the vendor must have a system in place that ensures data at the primary facility is continuously cloned to the backup data center. That data center must also be capable of instantly assuming control of all cloud services in the event the primary data center goes down.

Before you take off for the cloud, be absolutely certain you bake CIA into your contract with the vendor. Cloud computing might be the technology of the future, but without strict standards of security and service, the risks are sky-high. Protect your company and customers' data, and your reputation, by making security your No. 1 priority.

## The Mouse Turns 40

But another milestone happened at the San Francisco Convention Center at 3:45 p.m. on Dec. 9, 1968. That is the date best known for the Mother of All Computer Demos. If you are too young to remember that date, it may be difficult to appreciate how precise this moment is.

Douglas Engelbart and Bill English, along with their team 30 miles away at Stanford University's Stanford Research Institute (SRI), spent 90 minutes at the Fall Joint Computer Conference publicly introducing and demonstrating the computer mouse, hypertext, email, video conferencing, word processing, and cut-and-paste.

Bam! In one 90-minute period, the entire human race shook hands with the power of the computer network for the very first time.

Although that afternoon has been recorded in multiple articles, the Stanford University website has a video clip of the presentation (http://sloan.stanford.edu/MouseSite/1968Demo.html). Engelbart addressed the crowd of more than 1,000 in the main hall of the convention center. Images of the Augmentation Research Center (ARC), where Engelbart's team
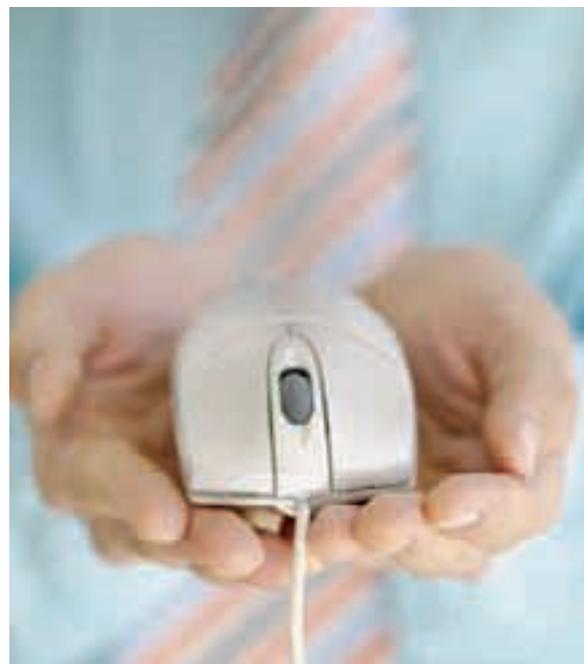
had been working since 1963, were projected on a 22' screen in glorious black and white. The crowd of sophisticated computer developers was astonished by the presentation.

### Welcome to the Network

Engelbart and his team were literally one of the first two nodes on the network that would rapidly evolve into the internet. From our standpoint, that fact alone can be difficult to contemplate. The idea that these technologies did not exist on specific dates, and then did, is still hard to grasp. There was a time when computers were used alone and isolated as giant adding machines. The entire internet revolution, including tools such as the mouse and hyperlinking to make the

internet generally available, was born on that December afternoon. Not only did Engelbart and his team provide tools that make human interaction with the computer accessible, they also created the network that allows humans to do what we enjoy the most and do the best: talk to each other.

As powerful as that demonstration was, the physical hardware and software was not the ultimate prize for Engelbart. In a recent interview, Engelbart said his true quest is to "get the world to recognize the potential and to get energized in bringing them all into flourishing action." Since establishing the Bootstrap Institute in 1988, Engelbart has concentrated his efforts toward the formation of "dynamic knowledge repositories," collections of knowledge from smaller groups that are dynamically linked to form larger and larger bodies of knowledge that "boost mankind's collective capability for coping with complex, urgent problems" (www.bootstrap.org). According to Mei Lin Fung, Engelbart's associate at the Bootstrap Institute, Engelbart's "innovations in dynamic knowledge repositories and networked improvement communities have been barely tapped. Vast economic value and expansion of civic contributions can be achieved through purposeful joyful action by groups of people working together."

### Continuing the Mission

Now fast-forward to Dec. 8–10, 2008. The Tech Museum of Innovation (www.thetech.org) in San Jose, Calif., is hosting a conference celebrating the Mother of All Computer Demos. In addition to recognizing Engelbart's long life of incredible achievements, activities include talks, a field trip to Stanford University, and the unveiling of an interactive mural that will be on tour worldwide to collect and engage people to join in fulfilling Engelbart's vision of using technology to enhance our lives. Conference participants can participate in Collective Intelligence Workshops and join action committees to implement the ideas developed during the conference. The conference also kicks off a yearlong Collective Intelligence Competition that is designed to invite individuals and groups worldwide to work together on issues surrounding global intelligence. The competition will be sponsored by The Tech Museum of Innovation and the MIT Museum in Cambridge, Mass., and will be supervised by Tom Malone, director of the MIT Center for Collective Intelligence.

For Engelbart, technology has never been an end to itself, but rather a tool to help guide humanity safely through the rough spots. His vision and inventions will continue to impact technology and,



*Douglas Engelbart conducted the Mother of All Computer Demos on Dec. 9, 1968.*

more importantly, how technology can propel humanity to new levels of communication and understanding. When asked why this celebration is so important now, Fung says, "Doug is still here to inspire us who must continue the quest he started 55 years ago. His insights that made possible the 1968 demo were far ahead of his time. He attracted my attention in 1999 when he said that we had only achieved 1% of what he saw as possible in augmenting human capability. Doug's view that technology should serve humanity has global resonance and breaks boundaries between nations, classes and religions."

Recalling his long career and the upcoming celebration, Engelbart says that in World War II, he was a radar technician responsible for safely guiding planes back to their home base. Hiroshi Ishii, associate director at the MIT Media Lab, is one of those who credits Engelbart for inspiring his career. In June 2008, Engelbart wrote: "Hiroshi describes … the planes landing in the night at the airport, showing the way for other planes. … I was touched at this description of my quest. … I have reflected many times on why this path has been so rocky. It has been a lifelong calling for me—58 years now—to put technology at the service of humankind. The 40th anniversary should point forward as well as backward—in fact, must point forward. … I appreciate your stepping forward to continue with me to pose those questions that enhance us—calling the next generation forth to answer the questions of how we can be the most we can be as humans."

Engelbart's quest to harness technology in the service of humanity continues to inspire.

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