

The future of the Internet

January 12 2005

Elon University and the Pew Internet & American Life Project survey nearly 1,300 technology experts and scholars to forecast the next decade of network development.

The workplace, family life, education and many other foundations of society will undergo fundamental changes due to advances in [Internet](#) technology over the next decade. That is the forecast of nearly 1,300 leading technology experts and scholars who responded to a survey by the Pew Internet & American Life Project and Elon University. The survey results, released Jan. 9, provide a vision of a networked, digital future that enhances many peoples' lives, but also has some distressing implications.

The survey included many scientists and engineers who created the first Internet architecture a decade ago, along with current technology leaders in corporations, media, government and higher education. Among the respondents were people affiliated with IBM, AOL, Microsoft, Intel, Google, Internet2 and Oracle; Harvard, MIT and Yale; and the Federal Communications Commission, FBI, U.S. Census Bureau, Social Security Administration and U.S. Department of State.

The survey was developed based on a retrospective study conceived by Lee Rainie, director of the Pew Internet Project, that recorded predictions first made in the early 1990s when network technology was in its infancy. More than 4,000 of those early predictions have been chronicled and posted on a Web site (www.elon.edu/predictions) by Janna Quitney Anderson, assistant professor of communications, and students in Elon's School of Communications.

With those early predictions in mind, respondents to this survey were asked to forecast the next decade of Internet development. Among the findings are the following:

- Two-thirds of the experts predict at least one devastating attack on network information infrastructure or the country's power grid in the next 10 years. Some experts believe serious attacks will become a regular part of life.
- 59 percent of these experts predict increased government and business surveillance as computing devices are embedded in appliances, cars, phones and even clothing.
- 57 percent of these experts predict more virtual classes in formal education, with students grouped by interests and skills, rather than by age.
- 56 percent of these experts predict changes in family dynamics and a blurring of the boundaries between work and leisure as telecommuting and home-schooling expand.
- 54 percent look for a new age of creativity in which people use the Internet to collaborate with others and share music, art and literature.
- 53 percent predict that all video, audio, print and voice communications will stream to coordinating computers in homes and offices via the Internet.

The Internet experts believe the news and publishing industries will undergo the most dramatic changes over the next decade, with new "digital media titans" forming connections across media, entertainment, advertising and commerce. They also predict major changes ahead for educational institutions, workplaces and health care institutions. Fewer

changes are predicted for religious organizations.

While some experts look for the development of a "more thoughtful" Internet, others are more pessimistic, calling the increasing online data "drivel," diluting the quality of information that is available.

Rainie said respondents' answers display a conflict between their hopes for the Internet's positive potential and their reality-based opinions of what can really be accomplished in the next 10 years. "Experts are both in awe and in despair about the state of the Internet. They celebrate search technology, peer-to-peer networks, and blogs; they deplore institutions that have been slow to change."

Anderson said the predictions are valuable because they allow society to be better prepared for the future. "The big-picture Internet issues of the next decade, as foreseen by these experts, include: positive and negative changes in the family dynamic; a conflict between our desire for privacy/security and our desire for the convenience of information sharing on networked devices; and a conflict between our desire to have access to all information everywhere and our desire to simplify our lives and avoid being inundated with information."

Most survey respondents predict expansion of high-speed Internet service with vastly more people and information online. They say that will impact families in many ways.

"Many workers now are 'on duty' 24/7 - responding to emails, alerts, blackberries, and cell phones, no matter where they may be," wrote survey respondent Gary Bachula of Internet 2. "For the office, this may increase productivity. For the home and family, this adds to stress and strain. But that is because, today, this "extra" duty usually comes on top of a regular 40-to-50-hour stint in the office. In the future, it will be possible for people to do their work from home, from the beach, from

the back yard - and it will be theoretically possible to enhance home and family that way."

Michael Botein, director of the Communications Media Center at New York Law School, wrote, "Families, friends and colleagues hang together much more through the Internet than through the lost art of written communication or voice - as seen by the fact that my adult children answer e-mails immediately and phone messages in a week (if at all)."

While the experts were generally impressed with the speed and scope of change that the Internet has brought, there were some areas of disappointment. Many survey respondents said they were surprised at the slow rate of change in educational institutions, despite predictions a decade ago that schools would be quick to embrace change. Many experts also said health care is a decade behind other industries in adopting new information technology, with the greatest changes ahead in areas such as online patient records and consultation via the Internet with healthcare professionals.

Privacy remains a concern for sophisticated Internet users as new convenience technologies expand the ability to track users and their activities. Some experts predict increasing numbers of arrests based on surveillance by government, while others are concerned about "social surveillance" by businesses that track habits of their customers.

The non-scientific online Internet experts survey was conducted from Sept. 20 to Nov. 1, 2004 by Princeton Survey Research Associates. Full results of the survey, including engaging quotes from hundreds of respondents can be found on the Web at www.elon.edu/predictions.

Visitors to the site are invited to share their own visions for the future of the Internet. The site currently contains more than 500 predictions from Netizens from around the world.

Source: Elon University

Citation: The future of the Internet (2005, January 12) retrieved 2 May 2024 from
<https://phys.org/news/2005-01-future-internet.html>

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