Experts eye Web's next generation

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The National Science Foundation's early-stage plans to build a next-generation Internet should focus on creating an environment where safety and security are the key considerations -- factors not integral to the original Web when it was conceived more than a generation ago, experts told UPI's The Web.

The new project, first discussed publicly last week during a scientific conference in Philadelphia, is dubbed the Global Environment for Networking Investigations, or GENI, and is estimated to cost at least $300 million to build. The primary idea is to focus on "pervasive computing" projects, as experts call them -- improving the performance of personal digital assistants, mobile phones and similar technologies, so millions of additional consumers can easily come online.

Experts remain cautious about the proposed project -- which has not yet received funding, or even authorization, from the relevant congressional committees.

Rob Nazzal, director of project management of Mazu Networks in Cambridge, Mass., a network-security company, said there are advantages to re-examining the Internet as a "clean slate," but trillions of dollars already have been spent all over the globe by companies and governments on the current Internet.

"As a practical matter, the existing Internet must be taken into consideration if adoption is to occur rapidly, if at all," Nazzal said, noting that the NSF traditionally funds basic research into unproven

technologies, not reconfigurations or reiterations of existing systems.

He said for him and for other IT professionals, the "ideal approach" to re-envisioning the Internet would require a number of steps, beginning with the NSF and the Internet industry examining the shortcomings of the current World Wide Web. This includes security threats -- viruses, denial-of-service attacks, spoofing and phishing, he said.

Paul Brazina, interim dean of the school of business at Philadelphia's La Salle University and founder of the school's e-commerce institute, agreed.

"Content filtering of electronic communications will be the cutting-edge technology," Brazina said.

Then NSF and the Internet community must examine the benefits of the current system -- of which there are many -- he said. This includes the capacity for "hierarchical growth."

Another advantage of the current situation is the many technologies that can interface with the Internet.

"Look at recent technology -- WiFi, connected PDAs and home media centers -- and future technologies, bio-integrated tech that leverage the network in potentially unique ways," Nazzal said.

Moreover, experts cautioned, any next-generation Internet project approved by Congress, after being formally proposed by NSF, must interoperate with the current Internet.

The NSF and industry must develop "backwards compatible standards that enable the new Internet to communicate with the current one," Nazzal said. "The solution must be one that allows organizations to have

a logically staged approach to the transition."

There is no business on the planet, he continued, "that could justify replacing all of its infrastructure for incremental gains in security or functionality. The clean slate is valuable for designing the ideal network, but the current Internet must be taken into account to build a bridge to that idea."

The private sector has been powering the innovation on the Internet for more than 10 years. The Web emerged from the Pentagon's DARPAnet, a secret network developed for government communications during the height of the Cold War in the event that a nuclear war disabled the nation's major command and control centers.

This week, Ericsson, the Swedish telecom company, introduced a new technology, the MX-ONE system, which offers telephone service across the Internet that can connect up to 7,000 users in a voice network that also can be used on the go.

The company said analog, digital, mobile and Internet phones can all be employed via the system.

The Ericsson platform "enables organizations to make a future-proof investment that will help them fully reap the cost and productivity advantages of convergent fixed, Internet-protocol mobile networks," Urban Gillstrom, president of Ericsson's enterprise unit, said in a statement.

Brazina said the idea behind any innovation for the Internet today -- government or private sector -- should be to organize information and "save time for the user." That is because the Internet itself has caused "information overload" for all facets of American society, which "will continue to grow."