The transformative power of the Internet is more than access to information; it is increasingly about contributing, collaborating, and participating. Metaphors based on information highways, are giving way to community visions that capture the remarkable enthusiasm for user-generated content and social media. At the same time, President Obama is calling for civic service and personal responsibility to rebuild America. Combining these ideas could promote the shift from playful, discretionary Internet usage to larger, more serious projects aligned with national priorities such as healthcare, community safety, education, and innovation.

The good news is that there are many hopeful social action networks, but these nascent explorations could be greatly accelerated by an organized research program. This program would systematically study the emerging phenomena, conduct thousands of pilot tests, understand the sources of success or failure, and disseminate best practices. The payoffs are large enough to warrant an intense national effort akin to NASA's space program or the National Institutes of Health.

Health discussion groups have long been one of the Internet's important success stories. Now, clever entrepreneurs are exploring new social participation ideas with projects like the PatientsLikeMe.com website, where users offer their medical experiences in the hope of learning about treatment outcomes from one another. At the same time these users are building a remarkable resource for medical research and discovery. Physicians have already discussed 30,000 cases at sermo.com, where they can offer insights about innovative treatments as well as detect unusual disease patterns. Large corporations also recognize the opportunities and are inviting users to store their medical histories in the Microsoft Health Vault or at Google Health.

While social networking plays only a small role in national security, community safety could be enormously improved by expanding resident reporting systems, like WatchJeffersonCounty.net, which collects reports of unusual behaviors. These reports provide important clues for civic officials to prevent crimes, control teenage gangs, or simply fix potholes. A huge success, now run by the U.S. Dept of Justice, is the Amber Alert reporting system for abducted children. Beyond the 430 cases they claim to have helped solve, the awareness generated among 7 million participants may have prevented many more abductions. Websites for reporting extreme weather effects, such as Storm Watchers typically run by local radio/TV stations, are being joined by reporting schemes for earthquake damage, influenza outbreaks, food poisoning, and other community problems. The micro-blogging tool, Twitter, is now rapidly spreading, as users from Orange County firefighters to Mumbai police post their 140-character messages about where they are and what they are doing.

Reading Wikipedia articles is now a common tactic for learners of all ages, but the stronger boost to education comes when students start writing Wikipedia articles. They become engaged in the social process of commenting on each other's work, arguing over quality criteria, and discussing what needs to be added. E. O. Wilson's dream of the Encyclopedia of Life, with a web page for all of the earth's 1.8 million species, is on its way to becoming a citizen science success story that raises environmental awareness. Even YouTube, whose success was spiked by playful videos, is becoming the go-to educational resource and the place for students to post their term projects. These and many other initiatives are based on the collect-relate-create-donate mantra that suggests education happens when students start by collecting information, then move on to working in teams to create ambitious projects for the benefit of someone outside their classroom.

Innovation itself is getting turbo-charged by going social. Open source software projects are now taken seriously by big companies who claim greater reliability for programs that have been tested and read by millions of eyes. Open innovation is gaining similar credibility as corporate research directors who post their problems on Innocentive.com get hundreds of serious solutions from diverse creative types. Bloggers are influencing every profession as these self-appointed information gatekeepers post...
hourly updates about what's new, thereby stimulating rapid progress on emerging problems and getting a jump on the news media.

The benefits of social media participation are well understood by Obama's staff -- during the campaign they engaged four million donors and volunteers. Replicating their success a thousand times might promote many of President Obama's goals. To accomplish that a National Initiative for Social Participation could stimulate effective collaborations in many professions, restore community social capital, and coordinate national service projects. The challenge is to understand what motivates participants, such as altruism, reputation, or community service. Researchers would have to develop fresh strategies that increased the conversion rates from readers to contributors from the currently typical 100 to 1 to much higher rates. Getting contributors to collaborate for ambitious efforts and become leaders or mentors are further challenges. Coping with legitimate dangers such as privacy violations, misguided rumors, malicious vandalism, and infrastructure destruction or overload all demand careful planning and testing of potential solutions.

The huge research effort required for a National Initiative for Social Participation would tap the skills of computer scientists to build scalable and reliable systems, interface designers to accommodate diverse user needs, and social scientists to study successes and failures. The risks are substantial but the payoffs could be enormous.

Ben Shneiderman is a Professor of Computer Science at the University of Maryland and Founding Director of the Human-Computer Interaction Lab (ben@cs.umd.edu). A fuller description of the research issues is in Preece, J. and Shneiderman, B., The Reader-to-Leader Framework: Motivating Technology-Mediated Social Participation, AIS Trans. on Human-Computer Interaction 1 (1), March 2009.