

The background of the entire page is a vibrant blue with a complex circuit board pattern. On the left side, there is a white wireframe model of a human head in profile, facing right. The head is composed of a grid of lines, and a bright light emanates from the eye area. Various technical terms and labels are scattered throughout the background, including "CM45", "CM46", "CM47", "CM55", "CM52", "CM51", "CM50", "CM49", "CM48", "CM47", "CM46", "CM45", "CM44", "CM43", "CM42", "CM41", "CM40", "CM39", "CM38", "CM37", "CM36", "CM35", "CM34", "CM33", "CM32", "CM31", "CM30", "CM29", "CM28", "CM27", "CM26", "CM25", "CM24", "CM23", "CM22", "CM21", "CM20", "CM19", "CM18", "CM17", "CM16", "CM15", "CM14", "CM13", "CM12", "CM11", "CM10", "CM9", "CM8", "CM7", "CM6", "CM5", "CM4", "CM3", "CM2", "CM1", "CM0", "CM-1", "CM-2", "CM-3", "CM-4", "CM-5", "CM-6", "CM-7", "CM-8", "CM-9", "CM-10", "CM-11", "CM-12", "CM-13", "CM-14", "CM-15", "CM-16", "CM-17", "CM-18", "CM-19", "CM-20", "CM-21", "CM-22", "CM-23", "CM-24", "CM-25", "CM-26", "CM-27", "CM-28", "CM-29", "CM-30", "CM-31", "CM-32", "CM-33", "CM-34", "CM-35", "CM-36", "CM-37", "CM-38", "CM-39", "CM-40", "CM-41", "CM-42", "CM-43", "CM-44", "CM-45", "CM-46", "CM-47", "CM-48", "CM-49", "CM-50", "CM-51", "CM-52", "CM-53", "CM-54", "CM-55", "CM-56", "CM-57", "CM-58", "CM-59", "CM-60", "CM-61", "CM-62", "CM-63", "CM-64", "CM-65", "CM-66", "CM-67", "CM-68", "CM-69", "CM-70", "CM-71", "CM-72", "CM-73", "CM-74", "CM-75", "CM-76", "CM-77", "CM-78", "CM-79", "CM-80", "CM-81", "CM-82", "CM-83", "CM-84", "CM-85", "CM-86", "CM-87", "CM-88", "CM-89", "CM-90", "CM-91", "CM-92", "CM-93", "CM-94", "CM-95", "CM-96", "CM-97", "CM-98", "CM-99", "CM-100".

The Power of **SOCIAL MEDIA** to Promote
Assistive and Learning Technologies

SOCIAL MEDIA:

a broad spectrum of technologies
that allow users to serve as active participants on the Internet.

The National Center for Technology Innovation (NCTI) at the American Institutes for Research, funded by the U.S. Office of Special Education Programs (OSEP), advances learning opportunities for individuals with disabilities by fostering technology innovation. We seek to broaden and enrich the field by providing resources and promoting partnerships for the development of tools and applications by developers, manufacturers, producers, publishers and researchers.

January 2008

The world is

CHANGING rapidly.

Just a few years ago, social media—blogging, text messaging, wikis, Facebook—were not on the radar screen. They were largely the domain of early adopters. Today, they’ve gone mainstream. Colleges and universities are posting lectures on YouTube and establishing alumni social networking sites. General Motors Vice Chairman Bob Lutz has been blogging for several years, finding it “a way for GM to be culturally relevant” and allowing the company to “be on the leading edge of technology while getting our strong views out there.”¹ Michael Dell, CEO of Dell, is using blogs to turn around slipping customer satisfaction. What these traditional economy executives well understand is that their customers are in the blogosphere and they need to be there as well.

We are witnessing a fundamental shift in how people communicate, connect, and engage with one another. Fueling this profound shift are emerging technologies that have led to an explosion of online communication and collaboration tools—from text messaging to blogging to social networking sites like Facebook and LinkedIn—that help online “communities of interest” grow.

What does this mean for young people with disabilities, the educators who teach them, and the developers of technologies for this market? It is an exciting new world of opportunities. For young people with disabilities, social media offer new ways to learn about and connect with the world. For the assistive technology field, social media offer opportunities to make better products and to get those products to the marketplace more easily and on a global scale. As social media and the underlying technologies continue to grow, the market will also expand. Innovative developers can build accessible applications that reach a wider audience while promoting the need to make the underlying code and authoring tools accessible to developers and users with disabilities.

Today we see an unprecedented opportunity to broaden the reach of the field of assistive and learning technologies. We also see numerous barriers. Educators and leaders from the assistive and learning technologies field must come together to address these barriers and to take advantage of all that social media offer. The time is now.

Overview of This Brief

The National Center for Technology Innovation (NCTI) advances learning opportunities for all students by fostering technology innovation. NCTI promotes collaboration among researchers, developers, and innovators of the assistive and learning technologies that reach into the lives of children with disabilities to improve their chances for academic success. In a landmark 2005 study, NCTI held discussions with more than 100 key thought leaders in the United States about technology innovation and the future of technology in education for all students.² In all those extensive discussions, the subject of social media and other collaborative tools barely surfaced, indicating that the application of these tools to assistive technology was under the radar.

Fast forward three years to the explosive growth of online communities, blogs, and wikis. Social media are very much on people’s minds. The evolution of this new, collaborative online environment has been rapid and pervasive, and people are struggling to understand and keep abreast of new developments. As a result, NCTI developed this brief to (1) provide a primer on social media and how they work; (2) highlight the benefits of the new social media to promote using assistive and learning technologies for all students and especially for youth with disabilities; and (3) explore the barriers to using social media and the ways that vendors, developers, and educators can overcome them. This document is not an exhaustive report on social media and the implications for the field. Instead, it brings the issues to the field to spark further discussion, research, and action.

What are Social Media and What are People Doing with Them?

Social media refers to a broad spectrum of technologies that allow users to be active participants on the Internet: blogs, social networking sites, discussion boards, vlogs, news aggregation, photo sharing, social book marking, video sharing sites, virtual reality, and gaming (see the Glossary). Users of social media tools are able to create, contribute to, and edit content; participate in online communities; and create and participate in collaborative projects. This explosion in online content creation and distribution by millions of people has led some to call our times “The Golden Era of Participation” or “The Conversational Era.”³ In 2006, the Pew Internet & American Life Project found that large numbers of Americans go online not just to get content by downloading music or reading information but also to interact with other people by reading and creating blogs, sharing their own creations such as original content, creating Web pages, and remixing and sharing files.⁴

If the vehicle is social media, the highway is higher-speed broadband connections and mobile Web applications. Broadband allows more powerful uses of the Internet, such as uploading and downloading pictures and music tracks and streaming audio, videos, and movies—simultaneously. In 2007, nearly one-half of all Americans had broadband access at home. Nearly 71 million households—over 67 percent—in the United States are expected to have broadband access by 2010. Table 1 illustrates the power of broadband for online activities.

Along with this rise in broadband access is the rapid expansion of digital content into the mobile, wireless arena. The cellphone is now the device of choice for Internet access—creating “the connected age.” More than 34.6 million people used their wireless devices to access the Internet in June 2006. By 2009, every U.S. mobile subscriber will be able to send and receive short text messages, and nearly all cellphones will be Web-enabled. With the growth of the mobile Web, the developers of assistive and learning technologies, as well as other NCTI stakeholders, must recognize that products and technologies without a mobile interface will quickly become obsolete.

TABLE 1

Percent of internet users who ever engage in the following online activities (from any location)

	All Internet Users	Home Dialup	Home Broadband
Send or receive email	91%	90%	95%
Look for information about a hobby or interest	83	78	89
Get news	72	61	79
Do any type of research for your job	51	42	57
Look for information on Wikipedia	36	26	42
Look for religious or spiritual information	35	34	37
Read someone else's journal or blog	29	21	34
Take material you find online and remix it into your own artistic creation	17	11	19
Create or work on your own online journal or blog	12	12	13
Make a phone call online	9	3	11
Create an avatar or online graphic representation of yourself	9	5	11

Source: Pew Internet Project February–March 2007 survey of 2,200 adults; 966 were home broadband users.

Communication Has Moved Online

For professionals in all fields, including educators, new social media technologies are emerging so quickly that it is hard to stay ahead of the full range of online communication and collaborative tools. Even the developers of these technologies find it difficult to keep up with new applications. As a prominent researcher observed, “The pace of change in the technology marketplace challenges scholars and practitioners to maintain their currency in the discipline of special education technology.” He identifies the central challenge of “managing the information explosion.”⁵

Most relevant to youth with disabilities and the educational community is the reality that the Web is now a participatory environment that can engage all youth in community building without the limits imposed by geographical boundaries. Using the Internet has become the norm in American life. Today, an overwhelming number of youth and adults are online, and the Internet is a vast communications exchange that is dominated by social media used by youth, adults, and seniors. As noted in Text Box 1, online social networking sites where users can create profiles and build personal networks have “rocketed from being a niche activity into a phenomenon that engages tens of millions of Internet users.”

NETWORKING: What are Our Youth Doing Online?

TEXT BOX 1

The Pew Internet & American Life Project reports that social networking services provide public and private communication tools. This feature permits users of a social networking site to send private messages and to communicate in a public way within the social networking space. For instance, users can post to one another within the system—a sort of internal email. Fully 82 percent of social networking site users have used this feature. A user can post messages to a friend's page or "wall," send a bulletin or group message to a user's network, post comments to a friend's blog, or give e-props, "pokes," or kudos by posting small icons to a friend's page. Posting a message to a friend's profile, page, or wall is the most popular way of communicating on a social networking site. More than 4 in 5 social network users (84 percent) have posted messages to a friend's profile or page. The Pew data indicate that three in four online social network users have posted a comment to a friend's blog and that more than six in ten (61 percent) have sent a bulletin or group message to all their friends in their online social network.

Source: Lenhart, A., & Madden, M. (2007). *Social networking and teens: An overview*. Washington, DC: Pew Internet & American Life Project.

Youth with Disabilities are Not Engaged with Social Media

Unfortunately, too few young people with disabilities are able to participate in social media. As Text Box 2 indicates, the millions of youth with disabilities in the United States have less access to Internet resources at home than do their peers without disabilities. The reasons for this digital divide are not well documented but clearly reflect the employment and income gap among youth and adults with disabilities and the lagging accessibility of much of the Web.

People in the field of assistive and learning technologies need to understand the power of social media in reaching young people with information, services, and products. Social media open a whole new world of increased interaction and learning for youth with disabilities. Advocacy and action by NCTI stakeholders is needed to address the disability digital divide and to get more access—accessible hardware and software—to youth with disabilities.

Educators Have Not Tapped Social Media for Learning

Even though most schools already have in place the basic technology to promote access to rich online experiences, data from the U.S. Department of Education indicate that the educational system has been reluctant to take full advantage of the trend.

A groundbreaking study conducted by Grunwald Associates, in cooperation with the National School Boards Association,⁶ observed that 96 percent of students with online access say that they have used some social networking technologies and that this use is part of their educational experience. Among those surveyed who use social networking, almost 60 percent report talking about education topics online, and more than 50 percent talk specifically about schoolwork. In addition, teachers routinely assign homework that requires using the Web. Yet, the Grunwald report finds that "school policies indicate that many are not yet convinced about the value of social networking as a useful educational tool or even as an effective communications tool." The report recommends that educators explore and find ways to harness the educational value of social networking, reexamine social networking policies, and encourage social networking companies to increase educational value by developing services that are explicitly educational.

in the UNITED STATES

According to data gathered by The Children's Partnership:

- Some 8.4 percent of youth under 15 years old have a disability, and 10.5 percent of young people ages 15 to 24 have a disability.
- Of 72.3 million families counted in Census 2000, almost one-third had at least one family member with a disability.
- Roughly 6.6 million youth, or 13.7 percent of students enrolled in public schools nationwide, are served under the Individuals with Disabilities Education Improvement Act (IDEA).
- It is estimated that almost half of all youth who receive services through IDEA have a specific learning disability.

Disabilities and Access to Technology:

According to the most recent data, of those surveyed who were 15 years of age or older:

- Only 44 percent with disabilities had a computer at home, compared with 72 percent of those without disabilities.
- Only 38 percent of those with disabilities had access to the Internet at home, compared with 64 percent of those without disabilities.
- Only 24.3 percent of those with disabilities use the Internet at home, compared with 50.5 percent of those without disabilities.

Source: KirkHart, A., & Lau, J. (2007, July). *Helping our youth with disabilities succeed: What's broadband got to do with it?* (Digital Opportunity for Youth Issue Brief No. 2). Santa Monica, CA: The Children's Partnership.

Another recent report,⁷ released by a partnership of leading educational organizations focused on achieving 21st century skills, bemoans the “dead last” performance of U.S. schools in technology use among industrialized nations. The partnership issued a call to action to use technology comprehensively to “develop proficiency in 21st century skills, support innovative teaching and learning, and create robust education support systems” that will prepare students for the technology-rich workplaces of the future. Although isolated local exemplar programs illustrate what can be done with students and new media tools, U.S. education is generally not preparing teachers or students to meet these creative, challenging, and competitive goals.

These trends hold significant importance for NCTI stakeholders. Social media technologies can be great equalizers. Youth with disabilities, already at risk for being left on the educational and social sidelines, can connect with the world in ways not previously possible through the use of social media. Consider Brigadoon, an island developed in Second Life by a researcher as a haven and virtual support group for users with Asperger's syndrome (<http://braintalk.blogs.com/brigadoon/>), or the collaborative efforts to make multiplayer games accessible to gamers who are visually impaired (www.game-accessibility.com). Despite these strong signs of possibilities, the potential for youth with disabilities has yet to materialize.

Seizing the Opportunity by Overcoming Barriers

Educational technologies are under attack. Weak support and poor school system infrastructure cannot support their use, and little reliable data are available to counter negative press. A report to Congress⁸ issued by the U.S. Department of Education found that certain educational software programs used to help teach reading and math did not lead to higher test scores after a year of implementation. Although the report's authors said that it was premature to draw any conclusions from the research, the ensuing publicity created a backlash against school technology in many communities. Challenges to the effectiveness of educational technologies, a lack of champions for school technology programs, and inadequate support and funding by school systems create a range of difficulties. Vendors find it hard to locate and present relevant assistive and learning technologies to appropriate decision makers in the school system. Without guidance, teachers and administrators must evaluate and choose from a multitude of currently available applications with little evidence that their choices will enable students to access and maximize their use of online technologies.

An inadequate, “old school” model places decision making in the hands of teachers and administrators and fails to involve and engage youth—who are the most avid users and supporters of social networking technologies. The educational community has an opportunity to tap into a vast audience of students who are already invested in and motivated to use innovative technologies. Currently, there is little support from school systems and a dearth of programs to engage youth in social networking sites that will permit them to participate in local, national, and world affairs.

Technical issues range from inadequate software applications to a lack of access to innovative technologies, such as broadband, that students with disabilities need for both general educational purposes and for access to social networking services. Many Web applications are inaccessible and thus limit participation by youth with disabilities. For example, most multiplayer games are currently not compatible with assistive technology used by individuals with visual impairments, and much Web video content lacks captions for the deaf and hard of hearing. On the technology access front, the Children’s Partnership found that although technology can open new doors for youth with disabilities, these youth often lack the access and support they need to put the technologies to use. See Text Box 3 for the recommendations from this report.

“Youth with disabilities can **CONNECT** with the world in ways not previously possible.”

children’s partnership

TEXT BOX 3

Champions Broadband Access for **YOUTH** with Disabilities

Key recommendations for using broadband to improve the quality of life for young people with disabilities through the wise deployment of these technologies follow:

- Promote access to affordable broadband everywhere.
- Enforce existing laws and educate the public about them.
- Deepen the research on broadband’s value for and impact on all youth.
- Ensure access to and training with accessible and assistive technologies.

Source: KirkHart, A., & Lau, J. (2007, July). *Helping our youth with disabilities succeed: What’s broadband got to do with it?* (Digital Opportunity for Youth Issue Brief No. 2). Santa Monica, CA: The Children’s Partnership.

Achieving the Promise

Become part of the policy dialogue to make broadband widely available to youth with disabilities to ensure ease of use and accessibility. Advocate for improved access to educational technologies and social networking services on mobile devices. NCTI stakeholders should seize opportunities to educate and inform public and private funders and policymakers about technology trends and implications through public forums, dialogues, and participation in review boards and policy feedback sessions.

Seek opportunities to grow public and private partnerships that support research on, development of, and marketing of innovative technologies to youth with disabilities for educational purposes. NCTI stakeholders have a significant opportunity to approach foundations and other private sources of funding with emerging research and information about the importance of engaging youth in and giving them access to interactive online resources, including social networking tools.

Engage the education community in learning how teachers can use innovative technology tools to improve their own productivity and engage their students in learning. This task includes providing educators and support personnel with compelling and engaging sites that ensure the sustainable use of online resources and tools. For examples of sites designed for teachers to share resources, see Intellitools Teacher Exchange and the Community Learning Grids, which support Clicker5 from Cricksoft, and the Infinite Thinking Machine site. See an example of schools using new media to address a common problem—long commutes in rural districts—in the Aspirnaut Initiative that equips school buses with wi-fi, laptops, and iPods for mobile learning and networking.

Build on successful interactive experiences that have proved successful as “kid driven” technologies in appealing to the youth market. One approach is to engage youth directly in the classroom with online technologies that involve them through interactive games or active participation in the educational process. For an example of the latter, see Generation Yes: Youth and Educators Succeeding (<http://genyes.org>). This organization gives youth the opportunity to improve their education through technology by offering a model for adding students to a school’s technology plan and promoting its Generation TECH program as a way to create a sustainable student-run tech support program.

Conclusion

Social media are becoming mature technologies that present NCTI stakeholders with significant opportunities to heighten the role of assistive and learning technologies in educational settings. Given the strong support of youth for technology tools and services, it is essential for leaders to address barriers by collaboratively developing technologies that will serve youth with disabilities in the classroom and in the school-based use of social media. Notably, social networking services engage students in new, rich, and interactive learning experiences and help them become active citizens and participants in local, national, and international affairs. Those who serve the educational community have a unique and historical opportunity to use new technologies to improve access by youth with disabilities to online resources and widely adopted mobile devices; to promote and create visibility for assistive and learning innovations; to equip teachers and caregivers to harness the power of kid-driven technologies; and to share knowledge and experiences with others across the nation.

The opportunities for the field of assistive and learning technologies have never been better. The challenge is to take advantage of them and seize the opportunities for the future.

About the Authors

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GLOSSARY

Social Media & Related Terminology

In this review, *social media* and *new media* refer to Internet media with interactive properties that enable users to participate directly in a wide array of online activities, such as creating, exchanging, and commenting on content.⁹ The following are definitions of common terms and examples of social media applications with widespread use.

An *aggregator* provides a consolidated view of content in a single browser display or desktop application by collecting Web content such as news headlines for easy viewing. *Examples:* Digg, Reddit, Stumbleupon, Demandline.com

Blogs are online content that provide commentary or news on subjects ranging from computer development to national politics and local initiatives; others function as more personal online diaries. To “blog” is also a verb meaning to maintain or add online commentary. *Examples:* Drudge Report, derrich.com, edublog.org, twitter.com

Online chat can refer to any kind of communication over the Internet, but it primarily refers to a direct one-on-one chat between two people or a text-based group chat using instant messaging applications and other tools. *Examples:* Yahoo Instant Messenger, AOL Instant Messenger (AIM)

Online games operate over the Internet or computer network and are typically multiplayer games. The largest involves thousands of people across the world, but many single-player Web games do exist. *Examples:* World of Warcraft, Dungeons and Dragons

Peer-to-peer video sharing is an Internet service allowing one Internet user to share a video stream, photos, or files with others. *Examples:* YouTube, Teacher Tube

Photo sharing is the publishing of digital photos online in order to share them with others (whether publicly or privately) by downloading images through Web sites and applications. *Examples:* Flickr.com, Zoomr.com

Really Simple Syndication (RSS) allows educators to subscribe to regular content “feeds” created on the Internet, whether written in a blog or in online newspapers and magazines.

Social book marking allows Internet users to store, organize, share, and search Web pages. Users save links to Web pages they want to remember and/or share, often using informal tags to organize their bookmarks. Social book marking sites allow teachers and students to build specific subject resource lists that they can easily share using RSS. *Examples:* del.icio.us, Furl.net, technorati.com

A *social network service* focuses on building and verifying online communities of people who share interests, using a software application. Most networks are primarily Web-based and provide various ways for users to interact, such as online chatting, text messaging, emailing, and blogging. *Examples:* MySpace, Facebook, LinkedIn, Ryze, Tribe.net

Text messaging, or *texting*, is the common term for sending text messages up to 169 characters from mobile phones. It is available on most digital mobile phones and some personal digital assistants (PDAs).

Virtual reality (VR) is a technology allowing users to interact with a computer-simulated environment. Currently, most are visual experiences, displayed on either a computer screen or special stereoscopic displays, but some simulations include additional sensory information, such as sound through speakers or headphones. *Example:* Second Life

A *vlog* (video log) is a blog with video. Entries are typically presented in reverse chronological order and often combine an embedded video or video link with supporting text. Vlogs may also use RSS “feeds” for distribution.

A *wiki* is computer software allowing users to create, edit, and link Web pages. Wikis are often used to create collaborative Web sites and power community Web sites. In schools, teachers and students are using password-protected wikis to create their own textbooks and resource sites. *Examples:* Wikipedia, Biz Wiki

Endnotes

- 1 Bob Lutz's post (2005, July).
Available at www.informationweek.com/story/showArticle.jhtml?articleID=165700961
- 2 National Center for Technology Innovation. (2006, January).
Moving toward solutions: Assistive and learning technology for all students. Washington, DC: American Institutes for Research.
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- 9 For a discussion of social media vs. traditional media (newspapers, magazines, books, television, radio), see Scoble, R. Scobleizer. Available at <http://scobleizer.com/2007/02/16/what-is-social-media/>

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