

Lawrence K. (Larry) Grossman is co-chair of the Digital Promise Project with former FCC Chairman Newton N. Minow of “TV is a vast wasteland” fame. Mr. Grossman is former president of NBC News and PBS. Before that he founded an advertising agency to serve media and not-for-profit public service clients and was vice president of advertising at NBC. After leaving NBC News, Mr. Grossman held the Frank Stanton First Amendment Chair at the Kennedy School of Government, and was senior fellow and visiting scholar at Columbia University. He serves on the boards of various educational, science, public broadcasting, and health organizations and is author of The Electronic Republic: Reshaping Democracy in the Information Age.

IMS Global Learning Consortium recently talked with Mr. Grossman about Digital Promise and the need for federal legislation to support research and development of advanced information technologies to serve the public interest, particularly in education, skills training, and lifelong learning and to help bring museums and libraries and the nation’s public institutions into the digital age.

IMS: Perhaps a good place to start is to define for us what is the Digital Promise Project? What exactly do you hope to achieve?

LG: Digital Promise began in 1999, before the nation had any public policy or serious discussion about how to exploit the great potential of the new information technologies to serve the public interest, especially in education, skills training, and lifelong learning. A group of major foundations, including Carnegie, Century, Knight, MacArthur and Open Society, was concerned that in the approaching digital age, the rapid advance of new information technologies was revolutionizing the commercial segments of our society – in communications, business, banking, finance, entertainment, and manufacturing, to name a few. But the nation’s nonprofit and civic institutions – our schools, libraries, museums, universities, and other public institutions that serve the crucial centers of our society were being left behind in the emerging digital age. The foundations asked Mr. Minow and me to direct a project that would develop recommendations for what should be done. We agreed to take on the job on a *pro bono* basis. After extensive research and interviews throughout the nation, we concluded that the U.S. had an overwhelming need to launch a new, federally financed R&D trust fund that would do for education, lifelong learning, and skills training in the digital age what the National Science Foundation does for science, NIH for health, and DARPA for the military. We called our proposed trust fund the Digital Opportunity Investment Trust, or DO IT, and urged that it grow eventually into a billion dollar a year fund to transform the nation’s learning and training through intelligent use of advanced information technologies .

IMS: Is the Digital Divide in this country growing wider?

LG: The term Digital Divide usually refers to the disparity of access to computers and the Internet by the affluent and by inner city, rural and economically deprived segments of our population. That disparity continues, although in most parts of the nation it is diminishing. Increasingly schools are encouraging and subsidizing the use of computers by students. The great majority of today’s students, even in poor communities are

“digital natives,” at least when it comes to the hardware. According to the most recent Department of Education report, 97% of high school students today have access to computers. Most have some experience using the Internet. The real deficit we see today is not in the hardware as much as it is in the development of educational and training software and content. The real opportunity and need is to transform education, lifelong learning and training for the digital age by the application of the remarkable new advanced information technologies that are being developed every day.

The federal government funds substantial R&D that translates into advancements in key U.S. industries, and those investments pay off handsomely in improved productivity. Unfortunately there is no such R&D model for education. U.S. taxpayers invest nearly \$1 trillion per year on K-12, higher education, and skills training, yet we invest relatively little to explore the application of technology for learning. And what little is spent goes to the Defense Department, which is making extraordinary advances in training troops through information technologies. But what they’re learning is not available to the general population. Most formal teaching and learning still use 19th century methods: reading texts, listening to lectures, blackboard exercises, and the like. Firms and industries with higher IT intensity have higher levels of productivity growth. In education today, low IT intensity yields low, in fact diminishing productivity. A recent Commerce Department study of 55 industries found that the education and training services industry has the lowest IT-intensity of the industries studied, even though education is arguably one of the most knowledge intensive industries of all.

As the Federation of American Scientist’s Kay Howell has written recently in *e-learn*, “When we talk about technology for learning, we’re talking about much more than using email to communicate with students, Google for doing homework research, and Powerpoint slides to support distance learning. We’re talking about sophisticated information technologies tightly integrated into daily learning activities. We know that such software tools are possible because of the way information technology has been used in other service sector industries: powerful simulations and visualization tools used in computer games and movies; sophisticated help systems to provide accurate answers to questions; websites to undertake continuous evaluations of the individuals who use them, often tailoring offerings to interests and preferences revealed by the user. These technologies can be adapted to learning and will make it practical to adopt approaches to education that learning scientists have been advocating for years. New communication tools could enable learners to collaborate in complex projects and ask for help from teachers and experts from around the world. Learning systems could adapt to differences in student interests, backgrounds, learning styles and aptitudes. They could provide continuous measures of competence, integral to the learning process that can help teachers work more effectively with individuals and leave a record of competence that is compelling to students and to employers. And new tools could allow continuous evaluation and improvement of the learning systems themselves.”

IMS: The R&D that is being conducted in other countries – is that being subsidized by their governments?

LG: Substantially. Other nations, ranging from Great Britain, to India, Singapore, and Italy are setting aside substantial amounts of money to bring their students up to speed. And we, alarmingly, and ironically, are falling way behind in comparison with just about all developed nations in how our students are progressing in math, science, reading and other basics.

And keep in mind that when we talk about the need for DO IT to invest in technology, we're not talking about buying computers and hardware as much as we are focusing on content and software. We have great precedents in American history for farsighted, transformative legislation that improved and expanded public education and higher education. One of the very first actions of Congress, the Northwest Ordinance of 1787, required every new state to reserve public land to pay for public education, which started public education in the young nation, and indeed, in the world. In 1862, in the midst of the Civil War, Congress passed and Lincoln signed the Land Grant Colleges Act, called by historian Alan Nevins the most farsighted legislation in the nation's history. That act also required public land to be set aside in every state to help finance public higher education that would increase our nation's competitiveness with Europe by developing more productive agriculture and advanced manufacturing. The result is today's remarkable network of 105 outstanding public research universities serving every state. That act did provide no funds for buildings; it was assumed that the states would pay for that. The money from the federal legislation was to pay for teacher salaries, textbooks, and content. And in the 20th century, Congress passed the GI Bill of 1944, which opened higher education to millions of veterans and helped bring unprecedented post-war prosperity to the nation. In that spirit, we believe America needs once again to act and to provide a transformative education initiative for the 21st century

IMS: The Digital Promise Project is seeking to establish the Digital Opportunity Investment Trust (DO IT), the proceeds from which would be used to provide this type of research. How would the trust be funded? And how much money is needed to adequately support the type of R&D that is needed?

LG: There is no more publicly owned frontier land to help pay for this initiative, but today's equivalent is the publicly owned telecommunications spectrum, the radio and television frequencies that Congress has mandated be auctioned off for commercial uses such as cell telephones and digital transmissions. We said that eventually the interest earned on just 20 percent of the revenues received from those auctions of this publicly owned resource would amount to over a billion dollars a year. That trust fund money should be spent, at the direction of Congress, on critically needed R&D to help bring our schools and universities, our libraries and museums, our essential nonprofit civic and scientific organizations into the digital age. The trust fund would be overseen by a blue ribbon board of directors, recommended by those in the disciplines it serves, nominated by the President and confirmed by both houses of Congress. DO IT would be modeled on the National Science Foundation. We need that kind of decision-making authority so that the best ideas in education and learning can be funded, and partnerships can be established with the private sector, with states and local school districts, as well as with

libraries and museums and similar public institutions. DO IT would start in a modest way, and build up its funding just as NSF has done since its launching in 1950.

IMS: Who would own this trust fund?

LG: The federal treasury would hold the auction revenues, which would be treated as an asset of the federal government. The interest from those revenues would be spent by DO IT under the direction of its independent board, with annual oversight by Congress.

IMS: What kind of support are you getting for this proposed legislation?

LG: We have strong bipartisan sponsorship of the bills in both the Senate and the House (The Digital Opportunity Investment Trust Act, S 1023 and HR 2512). Of course, given what Congress is up against these days with the budget deficit and the war, our goal now is to get this proposal started and its operations tested in a modest way. Given the pace of technological change, and the essential need to transform the quality and modernize our systems of education, we want to see a modest fund established as soon as possible, the board of directors appointed, and the priorities set by the DO IT board.

IMS: The IMS Global Learning Consortium recently came out and publicly endorsed this initiative. What kind of response are you getting from the other nonprofit and for-profit organizations?

LG: Just about every major national organization representing our nation's museums, libraries, universities, schools and teachers have strongly supported the DO IT effort. The National Council of Mayors has given its endorsement. The former chair of the National Governors Association has supported it. High tech companies, in particular, like Google, E-Bay and Hewlett-Packard are on board. And we have on the DO IT leadership council prominent people in many fields ranging from former Senator Warren Rudman to Internet pioneer and Presidential Medal of Freedom honoree Vinton Cerg to former National Science Board Chair Eamon Kelly.

IMS: How can individuals, organizations, and companies get involved?

LG: We'd welcome them to join the DO IT coalition. Endorse the Digital Promise initiative and the current legislation. Let others know of their support. Write, phone, and contact their legislative leaders urging them to sponsor and vote for the DO IT legislation. We'd certainly welcome any grants of financial support for the Digital Promise Project through donations to our coalition partner, the Federation of American Scientists. We are conducting public forums throughout the nation, producing our website (www.digitalpromise.org) and publications, and supporting our two staff members – our extraordinarily hard working and talented executive director and her deputy in Washington, DC, Anne G. Murphy and Rayne Guilford. For specific information, draft letters of endorsement, lists of your legislators, and further information go to the DO IT website: www.digitalpromise.org.

IMS: Private enterprise has done a pretty good job of developing and applying technology. Don't companies have a role to play here in developing technology?

LG: Certainly, they do. The job of the Digital Trust is to encourage the private sector to develop technology for public interest and public service uses by providing funds to stimulate R&D. Content is expensive to create and the marketplace does not encourage developing new and advanced software for not-for-profit uses such as in education, training, museums and libraries. Rights issues and standards for that development need to be worked out. Digital Promise has been influential in getting modest Congressional appropriations for the Federation of American Scientists, our leading coalition member in Washington, to develop prototype educational games and a learning R&D roadmap to demonstrate what can be done. You will find examples of these prototypes on our website, www.digitalpromise.org. The beauty of the new technologies is that once the software is developed, the costs of distribution through the Internet, digital public television stations, CDs and DVDs, are minimal. They can actually be made available to the entire world.

IMS: If America doesn't make this investment in developing information technologies for the sake of learning, don't we run the risk of falling behind other nations?

LG: We have already fallen behind other nations. Recent reports from the Council on Competitiveness of the corporate world, and the National Academies of Science document that fact. The influential U.S. Commission on National Security in the 21st Century warned: "The inadequacies of our systems of research and education pose a greater threat to U.S. national security over the next quarter century than any potential conventional war that we might imagine. American national leadership must understand these deficiencies as threats to national security. If we do not invest heavily and wisely in rebuilding these two core strengths, America will be incapable of maintaining its global position long into the 21st century."

IMS: What you're talking about here seems to go to the heart of DOE's commission findings on the need for assessment for accountability and accessibility.

LG: Testing, or assessment, has become central to new educational initiatives, in order to demonstrate accountability, productivity and responsible use of funds. With the new information technologies, we not only can assess how far students have come through standardized tests, but far better, can assess each person's individual strengths and weaknesses. Teachers and parents, and the students themselves, then can learn exactly what needs to be done and how it can best be achieved for each student. The best education, after all, is interactive and individually focused.

IMS: Considering your extensive background working in television, what do you believe we've learned from working in multimedia and its application to learning?

LG: The Digital Promise Project actually got its start by focusing on television, especially public television. Back in the 1990's I served on the board of Connecticut

Public Television and chaired its strategic planning committee. Congress mandated that all television stations, public and commercial, had to convert to digital from analog distribution, a much more efficient use of the publicly owned radio spectrum. Digital TV allows many more channels per frequency; makes interactivity possible, and improves the quality of sound and picture. It became clear that Connecticut public television had to redefine its role in this new digital environment. In a digital world it has the opportunity to bring into the home, school and workplace the state's libraries and museums, which contain the DNA of our civilization; the services of its schools and universities, its public health and civic centers. Our project aroused the interest of the major foundations which then broadened the inquiry to explore the ways in which the new information technologies could serve the public interest. The result of our research was a book published in 2001 called *A Digital Gift to the Nation*, which laid out our recommendations, which eventually were translated into federal legislation in the House and Senate.

IMS: Are you frustrated that this initiative is not getting as much visibility as it should? Or that it is taking so long to gain momentum?

LG: The slow pace of progress can certainly be frustrating. But look at the precedents for our effort. The farsighted Land Grant Colleges Act was vetoed twice before it was signed by President Lincoln. The GI Bill was passed out of committee by just one vote. And a Senator had to be carried from his sick bed to cast that vote. In 1950, landmark legislation establishing the National Science Foundation was ready for passage when North Korea invaded South Korea. All new programs were put on hold, given the need to build up our armed forces and prepare for war. Eventually Congress realized the critical importance of improving and expanding our nation's investment in science. And so NSF received a small appropriation to start, and now has evolved as a major national force for innovation in science with a budget of several billion dollars a year.

We are optimistic that Digital Promise will have similar long-term success, and will be voted by Congress if not in this session, then in the next. As Brooklyn Dodger fans used to chant, "Wait 'til next year."