Digital Nations:

A New Research Consortium at the MIT Media Laboratory

Despite the incredible technological advances of the past decade, the digital revolution has yet to touch the lives of most people in most parts of the world. Even where new technologies are available, they have had only minimal impact on the great social needs of our times: improving education, reducing poverty, enhancing health care, supporting community development.

The MIT Media Laboratory is establishing a new research consortium, called Digital Nations, that focuses explicitly on these major social challenges. Researchers at the Media Lab are collaborating with people around the world, aiming to catalyze social changes that are dramatic but also humanistic, sustainable, and resonant with local needs.

The Center for International Development (CID) at Harvard University acts as a collaborating partner in the Digital Nations consortium. The Media Lab collaboration with the CID brings together a world-class collection of researchers and practitioners combining expertise in digital technologies, learning, and international development.

The Digital Nations consortium does not aim to impose solutions but rather to empower people in all walks of life to invent their own solutions. The consortium develops a new generation of technologies and applications that enable people to design, create, and learn in new ways, helping them become more active participants in their societies.

The consortium focuses especially on populations with the greatest needs — children and the elderly, underserved communities, and developing nations. The consortium tests out ideas and technologies in pilot projects around the world, helping individuals and communities develop innovative strategies in domains ranging from commerce to agriculture to health care — and, more broadly, transform the ways they learn and develop.

The consortium's ultimate goal is a world full of creative people who are constantly exploring, experimenting, and inventing new opportunities for themselves and their societies.

Research Themes

The research agenda for Digital Nations is developed in collaboration with consortium members. Here are a few of the themes that guide the agenda:

- **Transforming Learning and Education.** Today's approaches to learning and education are woefully outmoded. Digital technologies provide an historic opportunity to transform how and what people learn — in schools, in workplaces, and in their everyday lives. We develop new technologies and new strategies to support a "constructionist" approach to learning, helping people take charge of their own learning throughout the day and throughout their lives.

- **e-Development e-Commerce.** We examine how new technologies can empower local communities to create new, sustainable economic organizations. For example, we are developing technologies that allow rural workers to better participate in regional marketplaces, new e-commerce strategies that enable remote communities to reach global markets, and new forms of economic collaboration.

- **Multicultural Computing.** Most technologies today were designed for a very narrow set of users. With global connectedness comes a need for pluralism. We work on multilingual approaches to computing, enabling people to communicate across linguistic boundaries. We also develop multimodal approaches, extending computers to understand and produce speech and gestures (not just text and graphics). These new technologies will open up computing to a broader range of ages, cultural traditions, and literacy levels.

- **Learning Communities.** We develop tools and practices that enable people of all ages to take more active roles in the development of their communities — and to develop new ideas about learning and communities in the process. As community members work together on projects, the community as a whole can develop new knowledge beyond what any individual could on their own.

- **Ubiquitous Access.** Our aim is to develop ultra-low-cost technologies so that computing and communications become accessible to everyone on the planet. We expect to develop computers that cost just a fraction of the price of today's machines and that open up new opportunities of interaction away from the traditional desktop. New wireless technologies will enable communities to leapfrog to the digital world, avoiding the high expense of traditional telecommunications infrastructures.

- **New Economies and New Strategies.** In order for technologies to enable positive change, nations, companies, and communities must adopt new strategies. Through rigorous monitoring and assessment, we will devise

policies and practices that better ensure successful introduction of digital technologies into diverse economic, political, and social contexts.

- **Rethinking Health Care**. Just as new technologies will enable people to take more control of their own learning, so too with health care. We are developing low-cost diagnostic technologies and online medical resources that will help people monitor and plan for their own health, rather than relying solely on treatment from medical experts.

Action Projects

As part of the Digital Nations initiative, the Media Laboratory is organizing and coordinating a set of Action Projects that make use of Media Lab ideas and technologies in real-world settings. The Media Lab is helping Digital Nations members create similar projects in their own communities and countries. The Action Projects include:

- **Computer Clubhouses**. A network of after-school learning centers where youth from underserved communities explore their own interests and become confident learners through the use of new technologies.
- **e-Government: Public Ends by Digital Means**. Reinventing the diverse relationships among governments, citizens, and the private sector to create public value using digital means.
- **Health Nets**. Low-cost tools and strategies that enable people to take more control of their own health care, especially in preventing illness before it occurs.
- **Learning Hubs**. A worldwide network of organizations committed to deep change in learning and education that will serve as working models of "out-of-the-box" learning.
- **Learning Independence Network**. Facilitating a "true transfer of technology" by enabling people and organizations in the developing world to design and create their own technological tools and solutions to community challenges, fostering a greater sense of independence and self-sufficiency.
- **Lincos: Little Intelligent Communities**. A flexible, economically-sustainable learning community center that empowers community members with technology and connectivity to take care of their own learning, health care, government services, soil and environmental testing, and entertainment in one site.
- **PIE Museum Network**. A network of museums that are developing a new generation of hands-on workshops in which participants use new technologies to invent and explore, bringing together art, science, and engineering.

- **SARI: Sustainable Access in Rural India**. Creating viable markets for information and communication services in rural poor areas by inventing and deploying innovative technologies, applications, and business models, and rigorously evaluating their effects.
- **Silver Stringers**. Providing seniors (and other community groups) with new digital tools, enabling them to act as reporters, photographers, illustrators, editors, and designers of online publications.
- **ThinkCycle Collaborative Design Platform**. A collaborative online community working on global design challenges, creating an evolving database of problems and solutions contributed by individuals and organizations around the world.

Organization

The MIT Media Lab is uniquely positioned to undertake the Digital Nations initiative. Since opening its doors in 1985, the Media Lab has established itself as an international leader in the design and study of innovative digital technologies, helping to create now-familiar areas such as digital video and multimedia. In recent years, the Lab has focused increasingly on the integration of bits and atoms: merging electronic information with the everyday physical world. The Laboratory has been a pioneer in the collaboration between academia and industry, and provides a unique environment to explore basic research and applications, without regard to traditional divisions among disciplines.

The Media Lab has a long tradition of developing technologies for learning and community development. Media Lab researchers have developed educational technologies used by millions of people (especially children) around the world, and have implemented pilot projects in diverse geographical, economic, and cultural settings. In Thailand and Costa Rica, for example, Media Lab researchers have worked with remote villages, helping people learn to use new technologies to address local needs and support community development.

The Harvard Center for International Development is a global leader in the field of international development, and has fostered positive change throughout the developing world. The CID's research and policy expertise include economics, health, governance, and the environment, with a major focus on the role of information technologies in economic and social development.

Membership Benefits

During the past decade, the MIT Media Laboratory has organized several very successful consortia (Things That Think, News in the Future, and Digital Life), in which groups of companies jointly support an area of research at the Media Lab. In each case, member companies help guide the consortium's research agenda,

gain special access to Media Lab research and researchers, and participate in collaborative research projects.

Digital Nations is similar in structure to the existing consortia, but its membership includes not only companies but also governments, international agencies, and non-profit institutions.

There are seven primary benefits of membership in Digital Nations:

- **Collaboration on Research Projects**. Members interact closely with Media Lab researchers, gaining valuable insights into emerging technologies and a head start in planning for early implementation. Through these interactions, members also ensure that their special needs and concerns (e.g., needs of rural communities in the developing world) are factored into the design and planning of Media Lab projects. Existing sponsors have found that close interaction with Media Lab researchers generates a flow of ideas and creative options that have an impact far beyond the immediate research projects, helping to stimulate and inform their own efforts to develop solutions.
- **Consultation Visits to the Media Laboratory**. Members have rights to visit all research labs at the Media Laboratory, see demonstrations of research projects, meet with researchers, and discuss the implications and applications of Media Lab research. Such visits are a good way to educate senior policy makers and senior researchers about new technologies and new methodologies.
- **Sharing of Best Practices on Action Projects**. Digital Nations will help organize and coordinate a collection of Action Projects (described above). Existing Media Lab Action Projects (such as Lincos, Computer Clubhouse Network, and Silver Stringers) have been recognized as ‘best practice’ organizations within their fields. The Media Lab will help Digital Nations members understand the technologies and practices of these Action Projects so that they can create similar projects within their own countries.
- **e-Readiness and e-Development Plans**. Combining the policy and analysis expertise of Harvard’s Center for International Development with the technical insight of the MIT Media Laboratory, the Digital Nations consortium will produce e-readiness assessments and interactive computer tools that aid creation of e-development plans. In addition, the consortium will conduct an annual survey of each member’s IT sector, including not only connectivity, but also topics such as latent demand for IT services, educational and community readiness, regulatory readiness, investment opportunities, and effectiveness of current development initiatives. This e-readiness information and the associated computer tools can provide the factual basis for approaching international development banks for funding of development programs. Digital Nations researchers will further aid member countries by serving an advisory and advocacy

role in obtaining financing for strategies suggested by the e-readiness survey and strategy tools.

- **In-Country Visits and Videoconferences**. Digital Nations researchers will visit member countries to gain a better understanding of local projects and issues, provide advice on projects of joint interest, and raise awareness of Digital Nations ideas and projects within the member countries. Representatives of the sponsoring members can also set up videoconferences with Digital Nations researchers, to discuss ongoing projects or policy issues.
- **Industrial Relationships**. The Media Laboratory will help Digital Nations members identify and cultivate appropriate industrial partners for technology-based projects within their countries. The Media Lab is very well suited to this task: more than 150 major companies from around the world are members of Media Lab consortia, and many of them have expressed a strong interest in collaborating with Digital Nations members.
- **Media Laboratory Fellows**. Non-corporate members of Digital Nations will each have an existing Media Lab graduate student designated as a Fellow, named after the sponsoring member. This graduate student Fellow will receive full-scholarship tuition and stipend, will work on research projects of special interest to the sponsoring member, and will serve as a point of contact for personal interactions between the Media Lab and the member. The Media Lab can not guarantee that the Fellow will come from the member country. But the Media Lab will practice “affirmative access”: advising members on how to identify qualified graduate-student applicants from their own countries.

Membership Levels

There are two levels of membership in Digital Nations:

Basic members receive all of the benefits described in the preceding section. Corporate members will receive intellectual property rights to Media Lab research. In lieu of these rights, other members (such as governments) may each have a Media Lab graduate student designated as a Fellow.

- Cost for corporate members: $200,000 per year for five years.
- Cost for other members: $200,000 per year for five years, with one fellow, or $150,000 per year for five years without a fellow.

Strategic research partners gain all rights of basic members, plus: the right to send a full-time visitor-in-residence to the Media Lab; full membership in all Media Lab consortia and special interest groups; participation on the Digital Nations Executive Committee; increased opportunities to collaborate with Media Lab researchers on pilot projects and field studies. Cost: $750,000 per year for five years.

Funding

The Digital Nations consortium is particularly interested in collaborating with governments that represent developing regions of the world. But these governments generally do not have the resources to pay the Digital Nations membership fees. To address the problem, the Media Lab actively encourages corporations, foundations, institutions, and individual patrons to support the membership of developing nations in the Digital Nations consortium.

For more information, please contact:
Eleonora Badilla-Saxe
eleonora@media.mit.edu