

## Working Together

# Power Users of Technology

*Who are they?*

*Where are they going?*

*Why does it matter?*

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*“The Power Users Initiative deals with what people can learn about children who have developed sophisticated technology skills. It is just one example of changing patterns of learning, challenging schools. It raises important questions on behalf of educators. The challenge of the Power Users Initiative will be how to translate the long-term research into a continuous flow of information to inform education ministries for purposes of developing education policy.”*

—Dr. Ulf Lundin  
Executive Director of European Schoolnet  
at WSIS, Geneva, 2003

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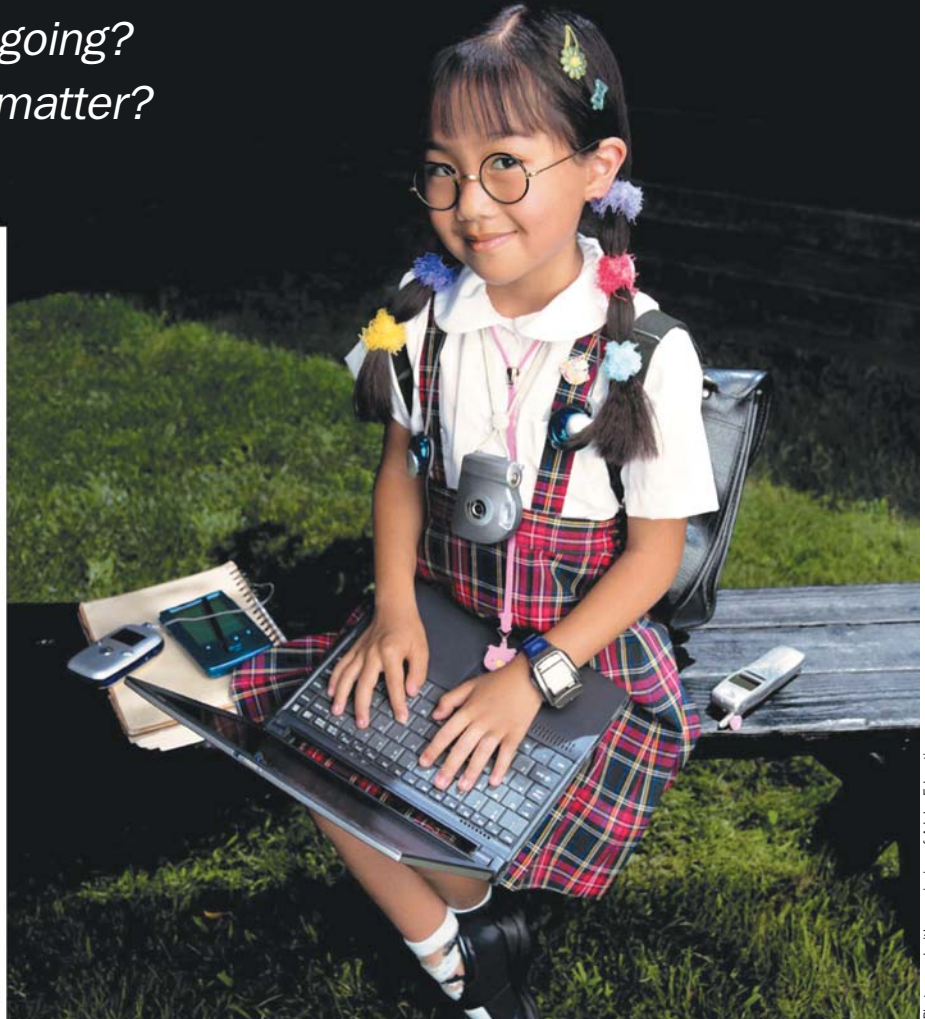


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By Joyce Malyn-Smith

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**W**ho are the “power users of technology”? We see them in the developing and developed world, among youth with access to technology, at home, in school, telecentres, community technology centres and cyber-net cafes. They play video games, use instant messaging, listen to music and do homework, all at the same time—multi-tasking, shifting focus from one task to another seamlessly, without effort. They seek information and learn what they want to know and when to satisfy their needs and interests, on a just-in-time basis. We call upon them at home to programme video recorders, troubleshoot software and hardware problems, and advise us on specifications for technology purchases. They are our technology advisors.

**A**fter a decade of work focusing on building the capacity of youth and adults to use technology as a tool for living, learning and working, the Education, Employment and Community programmes at the Education Development Center, Inc. (EDC) launched a long-term research initiative to learn from and with children who are the power users of technology. This initiative asks the central questions: What happens to youth when their technology capacity is highly developed? How does this capacity shape thinking and reasoning, educational and career decisions, family and social interactions? How do youth translate their technology skills and interests into “currency” in a global information society?

“We are investing in this work because we know that ‘power users’ around the world offer humanity an entirely new source of talent and imagination for the future.

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*This is part of a series of articles exploring the many facets of partnerships supported by the United Nations Fund for International Partnerships (UNFIP). In the series, some of the UN private sector and foundation partners will convey their views on how partnerships with the United Nations are being built and are achieving impact on the ground.*

"But our goal is not simply to nurture these unusual and masterful young power users to create a new elite . . . but to understand better what is at the heart of their thinking and to be far more intentional in bringing this knowledge together to give all children the opportunity to take advantage of what technology can offer . . . and, most importantly, to create welcoming environments that encourage young people to be creators and inventors of new technologies that connect us and improve our world," stated Vivian Guilfooy, Senior Vice-President of EDC.

The Power Users of Technology Initiative has several short-term goals that set a foundation for long-term research. These goals include:

- ◆ Raising awareness among leaders in learning, workforce and human development that power users of technology is an emerging global phenomenon with important implications for policy and practice;
- ◆ Establishing an international research base that connects researchers in many disciplines into a global research network; and
- ◆ Engaging an international community of practice to learn from and with power users about living, learning and working with technology.

The Power Users Global Advisory Panel, formed to guide the design of the project, found broad-based interest in the Initiative and recommended holding the first International Power Users of Technology Symposium in 2005. Involving youth all over the world, the Symposium will highlight power users' interactions with adult experts from the fields of education, psychology, sociology, cultural anthropology, learning and cognition, as together they use technology tools to solve complex, real global problems. New knowledge on technology capacities, habits of mind and ways of working will be gained from this experience and shape long-term research that informs policy makers and practitioners over the long term, through publications, web activities and active utilization of the international network of partners.

Aligned with the UN Millennium Development Goals and in keeping with Secretary-General Kofi Annan's challenge to Silicon Valley, the Power Users Initiative focuses on achieving its long-term research goals through an international network of public/private partnerships. Why is this initiative important to the United Nations community?

More and more, information and communications technology (ICT) is recognized as an important tool for development in our emerging global information society. ICT for development (ICT4D) was a focal point of discussion at the World Summit on the Information Society

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***"A highly-skilled workforce is seen as the key to economic growth and prosperity, and the quest for economic growth and prosperity remains at the core of public policy. It is now more and more accepted that knowledge and skills are at the heart of the development and diffusion of new technologies and crucial to technical innovation."***

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Overarching Framework, Statistics Canada, 2002

(WSIS) in Geneva in December 2003, where approximately 40,000 persons visited the expo and engaged in thoughtful discussion with international representatives, technology companies and non-governmental organizations (NGOs). The role that ICT4D will play in our changing world will

continue to be important as WSIS plans the 2005 programme agenda.

A global sense of urgency in ensuring access to technology for all nations and peoples is emerging, along with an increasing set of questions about the impact that access will have on individuals, families and communities shaping our global information society.

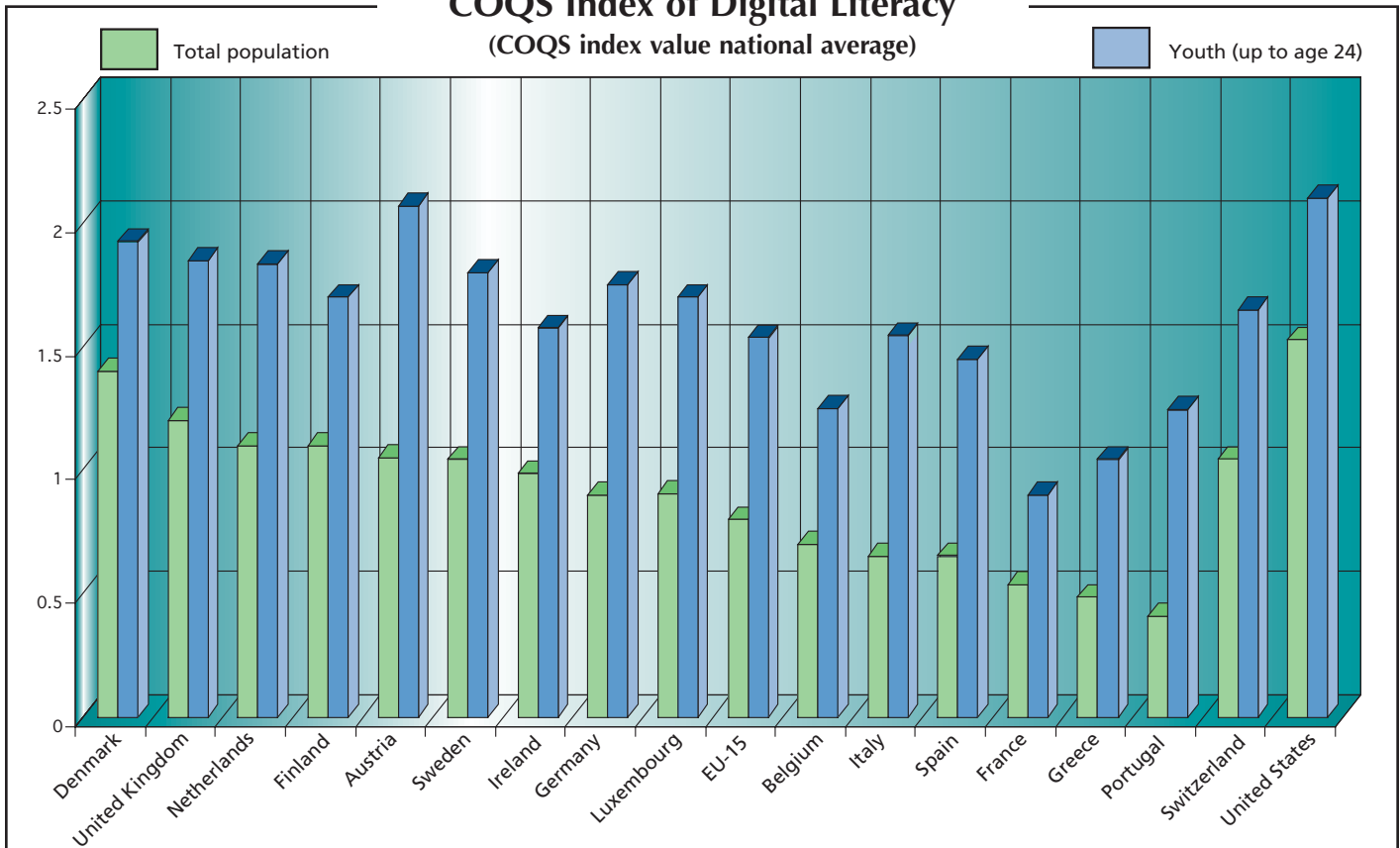
According to Amir Dossal, Executive Director of the United Nations Fund for International Partnerships (UNFIP), "power users of technology are seen to be emerging in countries around the world that have provided youth with access to technology. This is an important initiative that must include participation of youth in countries around the world—north, south, east and west." It is of special significance to developing nations that are leapfrogging into a knowledge economy.

The power of computers and the Internet is growing exponentially. "Between 1975 and 2000, the computing power per dollar has increased 66,000 times. By 2010, this figure will reach 10 million. There were 200 million Internet users in 2000, 600 million in 2002, and 1 billion by 2005. Developing countries share of Internet users was 2 per cent in 1991, 23 per cent in 2001" (*Choices*, December 2003).

Countries are working to connect education and employment activities in ICTs. These efforts can help emerging power users make a smooth transition from school to work. Examples from Estonia, Malaysia and Afghanistan were recently highlighted in *Choices*, the human development magazine of the United Nations Development Programme (UNDP). In Macedonia, EDC is working with the public and private sectors to connect technology learning in schools with technology skills needed for success in a developing economy. The USAID project Dot.Edu is helping to develop a national e-schools initiative in the country by supporting a community of practice among teachers who will integrate ICTs into curriculum. It also promotes technology learning in community settings. Next year, EDC will work in three regions to assist vocational centres of excellence to connect ICTs learned in school to the emerging economic cluster activities in the surrounding communities. Exchanges between YouthLearn and villages in the Congo guide educators in developing technology-rich learning experiences and project-based learning.

## COQS Index of Digital Literacy

(COQS index value national average)



Costa Rica Schools

The COQS Index is a measure that combines four types of skills in using the Internet into an overall "digital literacy" score. The skills include: **C**ommunicating with others (by e-mail and other online methods); **O**btaining (or downloading) and installing software on a computer; **Q**uestioning the source of information on the Internet; and **S**earching for the required information using search engines.

Source: SIBIS GPS 2002, SIBIS GPS-NAS 2003

What happens to people once they have access to technology? What do they do to produce outcomes that matter to individuals, groups and societies? Costa Rica is a good example of the growing phenomenon of youth who are becoming power users of technology. It has made a commitment to building national technology capacity in the education and economic sectors, and is the first country to offer its citizens a free national e-mail account: [costarricense.cr](mailto:costarricense.cr).

Many public schools are integrating ICTs into the curriculum beginning at the primary level. The Omar Dengo Foundation is helping to achieve this goal by guiding and supporting students and teachers to use technology as a tool for living, learning and working. It has taken only ten years for Costa Rica to develop a technology economy that,

according to economic indicators, has surpassed its centenary coffee export amount. The economic benefits of this bilateral investment are already seen through increases in its direct foreign investments (from \$162 million in 1990 to \$448 million in 2001), and the percentage (78%) of software companies in the region are based in Costa Rica (*Estrategia & Negocios Magazine*, June, 2001).

Dr. Olman Segura-Bonilla, Director of the Centro Internacional de Política Económica (CINPE) at Universidad Nacional Heredia Costa Rica, describes the power users of technology emerging in Costa Rica: "We are seeing kids that have a potential, a capability of working very fast and learning very quickly from computers. They are self-directed learners, constructing new learning in virtual environments and learning more from each other and from their own use of technology than from their teachers. We are talking about young individuals who get very bored in their class because they are able to learn faster and quicker, and therefore we need to change the curriculum somehow to capture their interest." In this sense, it seems that power



users may help to close the digital divide, especially if we pay much more attention to the phenomena and develop national policies in this direction.

The COQS Index of Digital Literacy, a measure that combines four types of skills in using the Internet into an overall “digital literacy”

score, indicates that youth in European countries consistently have significantly higher levels of digital literacy compared to the general population (see chart on page 58). These trends throughout the European community raise questions of national significance. They were interpreted, along with current research at the ICT4D Power Users of Technology Roundtable at WSIS, by Dr. Lone Dirckinck-Holmfeld, Director of E-learning Lab, Aalborg University in Denmark, and Director of the Doctoral School on Human-Centered Informatics. We are in a unique situation in history where we can observe and learn from a new culture that is evolving, one in which children as early adopters of technology are learning more than their teachers within specific areas. She states: “Power users of technology are brokering new ways of learning, challenging our institutions and our society.” She also raises questions, such as: “What is the impact of Power Users on our institutions and how will the institutions be able to adapt? What is the social impact? Will some developing countries be able to skip the industrialized paradigm? Is it possible that some developing countries will be more advantaged and competitive because they move directly into a knowledge and learning society? Are our industrialized societies too slow to change, holding back progress towards the learning society? How will this impact the global balance of power?”

To help answer these questions, EDC is establishing networks of supporters and collaborators. Frans Rameckers, Director of EDC Europe, is developing partnerships within the European community, building awareness of this emerging phenomenon among institutions such as the European Schoolnet and Bertlesmann Foundation, and coordinating student interns to review relevant research and pose new questions for consideration.

Six Power Users international research centres are being established to create a global presence for the Initiative and ensure participation of all regions in the world. The Global Research Network will develop a shared research agenda. With EDC, the centres will develop partnerships, projects and research activities that contribute to the Power Users’ mission and goals.

To date, two centres have come forward: CINPE in Costa Rica, headed by Dr. Olman Segura-Bonilla, will serve as the coordinating institution in Latin America, while the Aalborg University’s E-Learning Lab will serve in Europe. The Power

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***“Power users of information and communications technology are individuals who break out of the confines of traditional learning, demographic or technological barriers by constantly using, sharing, creating, producing or changing information in creative, innovative and/or unintended ways so that they become force multipliers in their own environments.”***

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Power Users Global Advisory Panel, 2002

Users Directorate at EDC is seeking additional partner institutions to join this initiative to represent the interests of North America, Asia, Africa and Australia. The Power Users Initiative is advised and supported by a wide range of partners, including EDC Europe, Microsoft Research, the George Lucas

Educational Foundation, DigiPen Institute of Technology, CINPE-Universidad Nacional, University of Aalborg, California State University at Sacramento, KEMPSTER GROUP, PTC, and UNFIP.

There are several ways to participate in this emerging work:

- ◆ Raise awareness of the Power Users Initiative within your own networks. Link the Initiative to your web site, create new venues to share information, invite the Initiative to make presentations at conferences and author publications or articles of interest to your stakeholders;
- ◆ Join the research network. Become active in the international power users community, join our online discussion groups, respond to the “Call for Papers” to synthesize existing research on power users of technology and/or test new hypotheses;
- ◆ Provide internship opportunities for students to participate in power user research, projects and activities;
- ◆ Provide scholarships for power users in your region to participate in the International Symposium in 2005 or sponsor teams of educators/content experts to serve as participant observers;
- ◆ Join the International Council of Partners, which provides support for the Power Users Initiative and is planning the first International Symposium; and
- ◆ Support regional power users research and activities, through grants, in-kind support and partnership in your own research or programme efforts.

We welcome and challenge everyone to join us in this exploratory learning community—working together to understand the tremendous potential of young people and help the next generation take on the mantle of leadership that will make this world a better place. □

*Joyce Malyn-Smith is the Strategic Director for Workforce and Human Development of the Education, Employment and Community Programs at EDC, a non-profit research and development firm with more than 320 projects in forty countries worldwide (www.edc.org). She was a teacher and administrator in Boston public schools for more than twenty years.*

