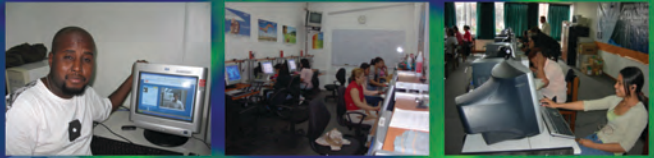




**EXECUTIVE SUMMARY**

**ICT Training, Employment and Youth:  
The Case of Brazil, Colombia and Mexico**



**W**  
**TECHNOLOGY &  
SOCIAL CHANGE GROUP**

UNIVERSITY *of* WASHINGTON  
Information School

**We've changed our name!**

In October 2009, CIS became the  
Technology & Social Change Group  
(TASCHA), a center within the  
University of Washington Information  
School. Learn more at **[tascha.uw.edu](http://tascha.uw.edu)**.

The University of Washington's Center for Information & Society (CIS) studies the design, use and impact of information and communication technologies (ICTs) on individuals and communities around the world. Our research focuses on disadvantaged and underrepresented populations, and on four main areas of inquiry: access, development, culture, and policy. CIS is a leader in the global network of ICT researchers, drawing on contributions from a wide variety of disciplines. Our goal is to produce work that empowers decisionmakers at all levels to improve lives by developing and deploying more effective, sustainable, and accessible ICT products, programs and services. For more information, please visit our website at [www.cis.washington.edu](http://www.cis.washington.edu).

# ICT Training, Employment and Youth:

## The Case of Brazil, Colombia and Mexico

Judith Mariscal  
Centro de Investigación y Docencia Económicas (CIDE)  
México

Antonio Botelho  
Pontifícia Universidade Católica do Rio de Janeiro  
Brasil

Luis Gutiérrez  
Universidad del Rosario  
Colombia

June 2008



**CIS**

CENTER FOR INFORMATION & SOCIETY

UNIVERSITY *of* WASHINGTON  
The Information School

Seattle, Washington USA

The full version of this report was produced by the University of Washington's Center for Information & Society (CIS) as part of its Research Paper Series. The views expressed in the report and in this executive summary are those of the authors and do not necessarily reflect the views of the University, CIS, or this study's sponsor.

The use of this document is permitted in accordance with this study's creative commons license. You are free to copy, transmit and adapt this work under the following conditions: You must properly attribute this work; you may not use this work for commercial purposes; if you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

For questions, please contact CIS at [cininfo@u.washington.edu](mailto:cininfo@u.washington.edu).

**W**

**TECHNOLOGY &  
SOCIAL CHANGE GROUP**

UNIVERSITY *of* WASHINGTON  
Information School

**We've changed our name!**

In October 2009, CIS became the Technology & Social Change Group (TASCHA), a center within the University of Washington Information School. Learn more at **[tascha.uw.edu](http://tascha.uw.edu)**.

## Executive Summary

### Issue background

According to UN data, young people aged 15-24 account for around one-quarter of the world's working-age population but half of the unemployed. Young people also account for nearly a quarter of the world's working poor, unable to lift themselves and their families out of poverty. They often struggle to survive, performing work under unsatisfactory conditions in the informal economy.

Policymakers readily realize that a skilled workforce is a pivotal component for spurring economic innovation, growth and competitiveness, and that ICT (information and communication technology) skills are a key ingredient in this equation. When looking at youth in particular, ICT training is also fundamentally important for the following reasons:

- This training is a valuable tool for improving the youth underemployment situation—for creating opportunities for higher-paying jobs.
- For disadvantaged youth, ICT training can also help expand employment opportunities. These youth often face obstacles such as a poor education, a lack of basic ICT skills, good social networks for finding jobs, and financial support for starting businesses.
- ICT training and skills are important catalysts for developing other social and creative skills.

The relative disadvantage of youth is more pronounced in developing economies where youth make up a much higher proportion of the labor force than in industrialized economies. According to UN data, global youth unemployment stood at 14.4% in 2003 (up 27% from 1993), with the highest rates in the Middle East and North Africa (25.6%), followed by Sub-Saharan Africa (21%), transition

economies (18.6%), Latin America and the Caribbean (16.6%), Southeast Asia (16.4%), South Asia (13.9%), industrialized economies (13.4%), and East Asia (7%). Industrialized economies were the only region where youth unemployment dropped between 1993 and 2003, down 15.4 percent.

ICT training programs targeting youth are particularly relevant for Latin America where youth unemployment was already high and has trended even higher in recent years. In Mexico, 14-29 year-olds account for 60% of the unemployed. In Brazil, youth unemployment has nearly doubled over the last ten years to 19%, which is 3.5 times higher than for adults. In Colombia, one-quarter of the country's 12-24 year-olds are unemployed.

### Youth and Unemployment in Several Countries

	Unemployed youth as a percentage of the total unemployed population (%)		Unemployment rate among youth ages 15-24 (%)		Ratio of youth (15-24) and adult unemployment	
	2000	2005	2000	2005	2000	2005
Brazil	43.8	46.6	18	19	3	3.5
Mexico	51.4	40.4	4	7	3.1	2.4
Argentina	33.8	39.6	26	24	2.1	3.1
UK	32.1	38.6	12	12	2.7	3.6
Sweden	21.8	33.3	12	22	2.3	3.8
USA	37	33.2	9	11	3.1	2.8

Source: IPEA

Despite this focus on ICT training, it is important to also note that ICT skills are almost never the missing link that miraculously transforms employment prospects. Lower wage, lower skill workers typically face multiple barriers, many of which are more complex than unfamiliarity with email or word processing. ICT literacy cannot be isolated from the larger social and personal contexts. Soft skills as well as solutions to challenges such as childcare, transportation, time, and appropriate attire are important. Homeless and immigrant populations operate under additional constraints. The hurdles are diverse and individualized and ICT must be integrated into this larger context of needs in order to credibly advance employability and economic opportunities for low-income groups.

## Study background

This study analyzed the contribution of ICT training to improving the employment and economic opportunities for disadvantaged youth. Training programs at centers run by NGOs in three countries were studied—Brazil, Colombia and Mexico—with the goal of determining whether these programs had an impact on labor participation in terms of job searching, employment, and businesses starts (or improvements to existing businesses).

This study was designed to address the following research questions:

- What types of ICT skills are taught in these programs?
- How effective are they at creating employment opportunities?
- How do NGOs train youth for entrepreneurial and business activities?
- What partnerships are NGOs building to support economic and social development?
- Why NGOs? What is their role and why is it important to develop a better understanding of their work?
- Do the students of these programs perceive that ICTs can improve their quality of life?

The ICT training programs and beneficiaries included in this study had the following profile:

- One hundred respondents were sampled as part of this study
- Between 24% and 43% (varying by country) were already working full-time while taking this ICT training
- Most were women
- Most were from low-income households
- Most were already familiar with a wide range of computer applications, particularly web browsers and email
- Most were active users of mobile phones—85% in Brazil and Colombia

- Over three-fourths had at least a high-school education; an additional 9-14% possessed a college degree
- The popularity of specific training courses varied by region.

This report was produced by the Center for Information & Society (CIS) at the University of Washington as part of its Research Paper Series. The views expressed are those of the authors and not necessarily those of CIS, the University of Washington or study sponsors.

Financial support for this study was provided by a grant from Microsoft Community Affairs under the Unlimited Potential Community Technology Skills Program (CTSP). This program broadens digital inclusion and global workforce development by providing technology skills through community technology centers.

## Summary of findings

The three countries studied in this report—Brazil, Colombia, and Mexico—produced similar research findings:

- Program graduates believed that the ICT training they received helped them overcome economic and social constraints (that is, it offered them more opportunities).
- The ICT skills that graduates acquired made them feel empowered and gave them new opportunities to teach others and seek employment.
- Training helped build self-esteem and gave graduates a sense of satisfaction because they had expanded their opportunities.
- The positive perceptions and high expectations of graduates did not always translate into employment.
- Around half (varying by region) of graduates studied looked for work after taking these courses, but less than one-quarter found work; only 2-9% started a business.
- The percentage of graduates able to apply their new computer skills in their new jobs varied widely by region.
- Training center leadership was key for both the effective fulfillment of training objectives and the building of partnerships for center sustainability and the employment of its graduates.



Public policies played a key role in the success of training centers. There are several public, private and NGO initiatives designed to promote access to ICT in underserved areas. However, the lack of coordination between these often led to duplicated, ineffective efforts.

The NGOs in this study were doing strong work in the ICT access and training phases of their programs but not on the bridge to the labor market phase (see recommendations).

The international entities that support NGOs also played a key role. International entities have traditionally supported NGOs in Latin America by providing start-up financing. Although this type of funding is valuable for launching programs, these programs require ongoing support in terms of funding and monitoring of training.

## Recommendations

- NGOs are important bridges into the labor market and are often better positioned to seek relations to employers than the beneficiaries. These partnerships can take different forms, such as jobs databases, on-the-job training programs, training programs which tailored to meet the needs of the local labor market, local company contributions to center sustainability, and more.
- NGOs need to strengthen their organizational and strategic capacities for designing and implementing programs with employment goals, with an emphasis on monitoring and learning from the experiences of other programs and program graduates. Specifically, NGOs need to improve their capacity to partner with employers and to improve and expand their job placement services.
- Leadership is a key variable for both the effective fulfillment of training objectives and the building of partnerships for center sustainability and employment of graduates. Training center leaders must have a thorough knowledge of the center, a clear vision, capacity for innovation and a network of potential contacts.

- Regional governments can provide the needed leadership and coordination for public policy efforts by publicizing the experiences of and promoting partnerships between NGOs and/or between NGOs and private businesses.
- Beneficiaries who complete basic courses should also be able to receive additional training in more specialized courses, and business training.
- Pre-training objectives need to be better defined. For instance, are students looking for ICT training in order to improve their business contacts, to get a particular job with a particular company, or to start their own business?
- More follow-up on trainees is needed in order to track their progress in the labor market. To this end, a database should be built to track students attending these courses.

## CENTER FOR INFORMATION & SOCIETY (CIS)

The Center for Information & Society (CIS) at the University of Washington studies the design, use and impact of information and communication technologies (ICTs) on individuals and communities around the world. Our research focuses on disadvantaged and underrepresented populations, and on four main areas of inquiry: access, development, culture, and policy. CIS is a leader in the global network of ICT researchers, drawing on contributions from a wide variety of disciplines. Our goal is to produce work that empowers decisionmakers at all levels to improve lives by developing and deploying more effective, sustainable, and accessible ICT products, programs and services.

### RESEARCH PAPER SERIES

This report was produced by CIS as part of its Research Paper Series. The views and opinions of the authors expressed herein do not necessarily state or reflect those of CIS or the University of Washington.

### STUDY FINANCING

This study was supported by a grant from Microsoft Community Affairs under the Unlimited Potential Community Technology Skills Program. This program broadens digital inclusion and global workforce development by providing technology skills through community technology centers. The views and opinions of the authors expressed herein do not necessarily state or reflect those of Microsoft.

### COPYRIGHT

The use and dissemination of this document is permitted in accordance with this study's creative commons license (see inside front cover).

### TRANSLATIONS

Translations of this report are available in English, Spanish, and Portuguese.

### ADDITIONAL COPIES

Center for Information & Society  
4311 11th Avenue NE, Suite 400  
Box 354985  
Seattle, WA 98195  
Tel: (206) 616-9101  
Email: [cisinfo@u.washington.edu](mailto:cisinfo@u.washington.edu)

## DOWNLOADS

To download copies of this study or other CIS publications, visit [www.cis.washington.edu](http://www.cis.washington.edu).

## ABOUT THE AUTHORS

**Judith Mariscal** is a research professor and chair of the Division of Public Administration Studies at the Centro de Investigación y Docencia Económicas (CIDE) in Mexico. Her current research deals with public policy and regulatory issues, with special emphasis on projects dealing with teledensity, digital divide, and universal service. She has written numerous articles and books on telecommunications policy and regulation. She holds a doctorate in public policy from the LBJ School of Public Affairs at the University of Texas, Austin.

**Antonio Botelho** is an assistant professor at the Pontifical Catholic University of Rio de Janeiro. His current research deals with the political economy of the IT industry; entrepreneurs and venture capital; SMEs, international trade, IT and regional integration governance and the social impacts of Internet; and more. Dr. Botelho holds a PhD in Political Science from MIT, graduate degrees from Cornell University (MPA) and the Université Paris IV (DEA) and was an NSF Postdoctoral Minority Fellow at the Johns Hopkins University.

**Luis Gutierrez** is an associate professor in the economics department at the Universidad del Rosario in Bogotá, Colombia. His work experience includes the Colombian Central Bank from 1985 to 1998 in Barranquilla as a technical advisor, and the National Department of Planning from 1989 to 1995 as head of the industrial division. He has been a lecturer at the Universidad Nacional de Colombia, and the Universidad del Rosario, both in Bogotá, and at the Universidad Eafit in Medellín. His field studies and research are in industrial organization and regulation, corporate governance and telecommunications. Dr. Gutierrez holds a PhD from the University of Florida.

## ACKNOWLEDGEMENTS

The authors would like to thank María Garrido at CIS for her invitation to participate in this study. The support of Regina de Angoitia, Walter Lepore, Luis F. Gamboa, Fernando Ramírez and Armando Aldama in preparing this document is much appreciated. We also extend our gratitude to Cléber Lucio for his help with field research in Brazil.

## ABSTRACT

As information and communication technologies (ICT) increasingly penetrate different economic sectors, disadvantaged groups have more opportunities to participate. For disadvantaged youth, ICT training can help expand employment opportunities. This study seeks to analyze ICT training as a strategy for incorporating disadvantaged youth into the economy. To this end, we analyzed youth training programs at centers run by NGOs in three Latin American countries: Brazil, Colombia and Mexico.

## KEYWORDS

ICT, information, communication, technology, training, telecenters, skills, employability, employment, underemployment, youth, Latin America, Mexico, Brazil, Colombia, NGOs

## RECOMMENDED CITATION

Mariscal, J., A. Botelho and L. Gutiérrez. 2008. "ICT Training, Employment and Youth: The Case of Brazil, Colombia and Mexico." Seattle: University of Washington Center for Information & Society (CIS); Lima: Instituto de Estudios Peruanos (IEP).

## DESIGN

Cover by Rossy Castro and report layout by Mario Popucce at IEP (Instituto de Estudios Peruanos).

**For disadvantaged youth, training in information and communication technologies (ICTs) can help expand their employment opportunities.**

**This study analyzes the youth employment impact of selected ICT training programs in Brazil, Colombia, and Mexico.**

## CIS RESEARCH PAPER SERIES

This study was conducted by the University of Washington's Center for Information & Society (CIS) as part of its Research Paper Series. To download a copy, please visit [www.cis.washington.edu](http://www.cis.washington.edu). CIS gratefully acknowledges the support of Microsoft Community Affairs for their support of this study under a grant from the Microsoft Unlimited Potential Community Technology Skills Program.

## OTHER RECENT CIS RESEARCH PAPERS

### **Evaluation Report of the Microsoft Unlimited Potential Anti-Trafficking Program in Asia** (May 2008)

Trafficking is a major problem in Asia. Most countries in this region originate, transit, and host trafficking victims. While some have an appropriate legal structure on the books, implementation of these laws is weak, and corruption is endemic. In May 2006, Microsoft awarded Unlimited Potential grants to six NGOs totaling over \$1.45 million in cash and software as part of a regional initiative to combat human trafficking in Asia. This report evaluates the outreach and effectiveness of these grants on the NGOs and beneficiaries, and the impact on trafficking.

### **Bridging the E-skills Gap in Central and Eastern Europe: The Growth of E-skills and Employability Initiatives in the Newly Expanded European Union** (April 2008)

The European Union is facing a labor gap that threatens its goal of becoming the world leader in the knowledge economy, and brings significant challenges to social inclusion and economic modernization, especially with the recent admission of ten Central and East European countries. This study examines the relationship between basic information and communication technology (ICT) skills – or e-skills – and employability, focusing on several NGO projects in Bulgaria, the Czech Republic, Latvia, Poland and Romania. The study explores the ways that NGOs integrate employability outcomes into ICT training programs. Do these programs constitute a fragmented, patchwork approach or is there evidence of a larger, successful regional trend to build e-skills among underserved populations?



Center for Information & Society  
4311 11th Avenue NE, Suite 400  
Box 354985  
Seattle, WA 98195 USA  
[www.cis.washington.edu](http://www.cis.washington.edu)  
[cisinfo@u.washington.edu](mailto:cisinfo@u.washington.edu)