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ACM STUDY CITES EDUCATION, R&D INVESTMENT TO ASSURE GLOBAL COMPETITIVENESS

Detailed Offshoring Study Assesses Rapid Changes Driven by Information Technology

New York, February 23, 2006 – In a study released today by ACM, the Association for Computing Machinery, a team of internationally recognized computer scientists, industry leaders, labor economists and social scientists cited educational policy and investment in research and development as critical elements for countries to stay competitive in today’s global environment for Information Technology. The study acknowledged that global competition in higher-end technology-based skills, such as research, is increasing. It concluded that policies designed to improve a country’s ability to attract, educate and retain the best IT talent are necessary to foster innovation and remain competitive in the global environment.

The study, entitled “Globalization and Offshoring of Software,” noted that globalization trends in the software industry have been fueled by rapid advances in information technology itself as well as government action and economic factors. “We changed the world,” said Moshe Y. Vardi, co-chair of the study group, and director of the Computer and Information Technology Institute at Rice University, “and now it is changing us.” He cited the wide availability of low-cost, high-bandwidth telecommunications and standardized software platforms and applications as well as digitalization of work processes as driving factors. “But we also have identified the keys to continued innovation and invention, which will sustain competitiveness in this global environment,” he added. The report is available at <http://www.acm.org/globalizationreport>

With a comprehensive approach, the study considered nearly a dozen case studies of diverse firms facing offshoring challenges. The study team members conducted an extensive review of available data and literature on offshoring and outsourcing, and heard in-person accounts from many international experts.

IT Jobs Outlook Brightens

The study found that, despite intensifying competition, offshoring between developed and developing countries can benefit both parties. The study cited data from the U.S. Bureau of Labor Statistics (BLS) which indicates that more IT jobs are available today in the U.S. than at the height of the dot com

boom. This trend is evident despite a significant increase in offshoring over the past five years. In fact, U.S. IT employment in 2004 was 17% higher than in 1999, and the BLS data reveals that IT jobs are predicted to be among the fastest-growing occupations over the next decade.

The report found that IT workers and students can improve their chances of long-term employment in IT occupations by acquiring a strong educational foundation, learning the technologies used in global software, and keeping skills up to date throughout their careers. Other steps the report deemed necessary for fostering the next generation of innovation include:

- Sustaining or strengthening technical training and education systems
- Sustaining or increasing investment in research and development
- Establishing governmental policies that eliminate barriers to the free flow of talent

William A. Wulf, president of the National Academy of Engineering, noted the unique international perspective provided by the ACM report. "It provides a deeper understanding of the trends and forces driving globalization and offshore outsourcing of software. It also offers significant value for those shaping the policies, priorities, and investments of countries that intend to be part of the global software-systems-services industry," said Wulf, who is vice chair of the National Research Council, the principal operating arm of the National Academy of Sciences and Engineering.

The study also found that global competition in higher-end skills, such as research, is increasing. Many companies, the study reports, have established research centers in multiple countries, although most retain strong research operations in their home country. The report also pointed to an increase in total worldwide investment in research and wider distribution of research activities around the world.

The ACM study cited many reasons for locating certain operations in specific countries, from political to linguistic and cultural to economic. In some cases, the study notes, creating collaborations outside the U.S. is often facilitated by offshore operations, but offshoring does not always result in downsizing one part of a company and building another. Offshoring can result in growing business worldwide, working globally, and creating a climate of innovation that can produce a substantial number of new jobs, including many that are high on the value chain.

Daniel T. Ling, corporate vice president for Microsoft Research, cited the report's confirmation that the U.S. faces long-term challenges from falling interest and skills in math and science programs in its primary education system. "The perception that employment opportunities in software and related technologies are vanishing has led to a significant drop in enrollment in IT educational programs, which will in turn lead to shortages in highly trained and qualified professionals in the future. This report helps to raise awareness of the realities that face industry, students, educators and policy makers, and is important

reading to advance the discussion of these issues."

The ACM report concluded that the future depends on the nation's commitment to acknowledging the challenges of the global environment. The brightness of the future for individuals, companies, or countries, rests on their ability to invest in building the foundations that foster innovation and invention, the report said.

The complete Globalization and Offshoring of Software Report as well as the Executive Summary and Findings, Overview, Bibliography and Task Force Member list are available at <http://www.acm.org/globalizationreport>.

About ACM

ACM, the Association for Computing Machinery <http://www.acm.org>, is an educational and scientific society uniting the world's computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

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