

a golden anniversary

BY GREGORY C. FARRINGTON AND PETER C. PATTON

Valentine's Day 1996 marks the 50th anniversary of the ENIAC, the world's first general-purpose electronic computer, created at the Moore School of Electrical Engineering at the University of Pennsylvania. Many historians date the beginning of the information age to the hushed moment when the ENIAC's 18,000 vacuum tubes first began to glow.

The subsequent history of computing parallels the history of printing. The development of the rotary press in the early 1800s, some 300 years after Gutenberg invented moveable type, made inexpensive printing possible and gave birth to the great information age of print. Literacy rates rose dramatically, and universal education became economically feasible.

What took centuries for printing took only a few decades for the computer. By the early 1980s, miniaturization had made possible powerful, inexpensive desktop computers. Only a decade ago, computers made the transition from machines for computation to machines for communication. Desktop computers have become inexpensive telecommunications centers, transmitting data, print, sound, and video around the world.

When George Orwell created his nightmare vision, *1984*, new communications tools were feared as instruments for enslavement. Now they are more frequently seen as engines of freedom. Many argue that the Berlin Wall fell and the governments in Eastern Europe and the Soviet Union collapsed because of fax machines and PCs. With these new technologies it is no longer possible to wall out information and isolate people. Politically and economically computers have become the revolutionary artillery of the 21st century.

Now a global economy is developing, made possible by rapid, computer-based telecommunications. Similarly politics, health care delivery, and the structure of the corporation are being transformed as the information age gathers momentum.

How we educate and learn is also changing. When information can be anywhere and everywhere, instantly, and students and faculty can interact wherever they might be, not just in the classroom, the stage is set for a transformation in how students learn and how schools serve society. Technology gave us the "information society."

Humans can now create a more democratic "learning society" in which information access and a quality education will increasingly become available to all. The richest information resources from the largest libraries can be brought to the middle of the smallest town. Computers do not care if you are witty, handsome, rich or poor, black or white—or live in the center of New York or the middle of Peru. You can be connected to

the world, learn and teach, run a business, make money or lose it, or just talk to colleagues and friends around the world.

The real revolution the ENIAC created is not one of numbers and bytes, but one in which people, regardless of geography and politics, can communicate with and learn from each other. The computer has become a tool of personal liberation, and the revolution has only begun.

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