International Computing and the International Regime

Edward M. Roche
Seton Hall University
and
New York University

Most observers would agree that information technology represents an innovation of historic proportions. Yet, diffusion of information technology through the system of international organizations set up under the auspices of the United Nations to replace the failed League of Nations, has been slow. The International Telecommunications Union, the United Nations Educational, Scientific and Culture Organization (UNESCO), the Intergovernmental Bureau for Informatics (IBI), and the International Bank for Reconstruction and Development (World Bank), have all worked to adjust their respective programs to the challenge of the information society. The result has been mixed, however, as we find a continued gap between “information rich” and “information poor.” International organizations might work harder at defining the role of computerization in the priorities of international development programs.

Most observers would agree that information technology represents an innovation of historic proportions and that its miniaturization is easing its proliferation and diffusion around the world, even to developing countries. Diffusion is either active or passive — it happens naturally on its own, through the hands of thousands of uncoordinated actions of petty merchants, or it happens through government policy either at the national or international level. It is abundantly clear that international organizations have a critical role to play, particularly in cases where the other forces of diffusion fail to operate. This article examines the role played in the post-war period by various international organizations in helping to promote the diffusion of information technology. It argues that in spite of many efforts, a clear record of success has not yet been demonstrated, and sets forth a framework for how organizations can better use information technology and promote its use around the world.

World history is full of stories of technological innovation in specific locations and subsequent diffusion of the technology to other parts of the world. This process of diffusion is not always favored by the innovator, but it appears to be an inevitable development which can be slowed, but not stopped altogether. The Venetian silk guilds, for example, resorted to some very nasty actions to prevent their dying and weaving technology from escaping from their control. Today we see companies such as Intel and other semiconductor manufacturers fighting just as hard to ensure their secrets do not slip away, although today an army of lawyers is used rather than the traditional gang of mercenaries so popular in the 15th century. (Roover, 1963) But fight as they will, companies as well as governments are unable to control the diffusion of technology over the long term.

The international diffusion of information technol-
ogy, like that of other technologies, is made possible in great part by the nature of the international regime (King & Sethi, 1992) which provides the great context and system of conduits through which innovation trickles away from the technological center towards the periphery of the world system. Just as the great wave of industrialization spread through Europe shielded under the international balance of power set up by the Congress of Vienna in 1715, a system which broke down only 200 years later in the Balkans, so too has information technology spread throughout the world in the latter half of the twentieth century, shielded by the post World War II regime. An important part of that regime is represented by the United Nations system.

In San Francisco in 1945, the world’s leaders envisioned a world system in which states would cooperate through a complex machinery of international organizations held together under the umbrella of the United Nations. The only notable failure in setting up this system of institutions was seen when the U.S. Senate vetoed American participation in the International Trade Organization. (Diebold, 1952)

When the United Nations system was created, there were no computers except on a few experimental drawing boards. It was a paper-based world, and the senior diplomats involved could not possibly have imagined the development of the digital computer, telecommunications networking, or the microprocessor which we now take for granted. This paper argues that the international system in which we live today is founded on the technological assumptions of a different age and that as the computer has become a major force of change in global society, it has forced many of the key international institutions set up as a part of the United Nations system to go through substantial adjustments in their philosophy, way of working, and assumptions about its social and even political effects. These changes are highlighted in the discussion of many key international organizations.

The founding fathers of the post war system did not entirely neglect technology in setting up their international organizations. A great deal of attention was of necessity given to management of telegraphy, telephony and the radio spectrum through the International Telecommunications Union (ITU) which was to continue the work begun by its predecessor, Committee VII in the League of Nations.

The League of Nations — which had been organized to prevent forever the types of slaughter experienced during the first world war — had seen what chaos and tragedy could result from sloppy radio spectrum management when the sinking Lusitania was unable to communicate its emergency message because crowded airwaves prevented the signal from getting through. As a result the League had worked on the first program to register and control the use of frequencies. It also created and had accepted the famous “SOS” distress signal. The predecessor to the ITU had engineered an improvement in the transparency of the international telegraph network through adoption of standard codes, and the gradual replacement of relay stations at national borders with direct pass-through arrangements. Finally, it had adjusted to the emergence of radio on the same frequencies used previously only by radio-telegraph operators.

This early culture of adaptation to technological change has helped its descendant the ITU continually adopt to new technologies and practices as their worth was proven. The development of computer communication systems, study, clarification and adoption of many technical standards, and even more rigorous management of the radio spectrum required by the adoption of communication satellites have been some of the major successes of the ITU. Its complex system of advisory personnel operating in cooperation with organizations such as the IEEE and various national standards committees, has served it well in the management of what it viewed as being a series of “politically neutral” issues. However, it is the political dimension, in which the ITU has faced its most serious challenge.

For the first twenty years or so of its existence, the ITU managed to operate on a “non-political” basis, carefully fulfilling its mission of improving the world’s telecommunications systems. In terms of standards and optimization of international networks, the major issues which rose to the surface could be successfully managed by a trained corps of engineers working quietly in well-structured teams. Much of the standardization taking place in the world’s telecommunications networks was handled through the “Club” of national monopoly carriers well-organized into a global cartel.

**UNESCO**

The founding fathers also set up the United Nations Educational, Scientific and Culture Organization (UNESCO) to serve as a major force in promoting world development of education and research in a wide variety of fields. UNESCO was charged with an extraordinarily
Related Content

Enhancing Negotiators’ Performance with Computer Support for Pre-Negotiation Preparation and Negotiation: An Experimental Investigation in an East Asian Context
[www.igi-global.com/article/enhancing-negotiators-performance-computer-support/3647?camid=4v1a](http://www.igi-global.com/article/enhancing-negotiators-performance-computer-support/3647?camid=4v1a)

A Digital (R)evolution to the Information Age
[www.igi-global.com/chapter/digital-revolution-information-age/62871?camid=4v1a](http://www.igi-global.com/chapter/digital-revolution-information-age/62871?camid=4v1a)

Performance of Secured and Robust Watermarking Using Evolutionary Computing Technique
[www.igi-global.com/article/performance-of-secured-and-robust-watermarking-using-evolutionary-computing-technique/186813?camid=4v1a](http://www.igi-global.com/article/performance-of-secured-and-robust-watermarking-using-evolutionary-computing-technique/186813?camid=4v1a)

THE EXPERT’S OPINION
[www.igi-global.com/article/expert-opinion/51254?camid=4v1a](http://www.igi-global.com/article/expert-opinion/51254?camid=4v1a)