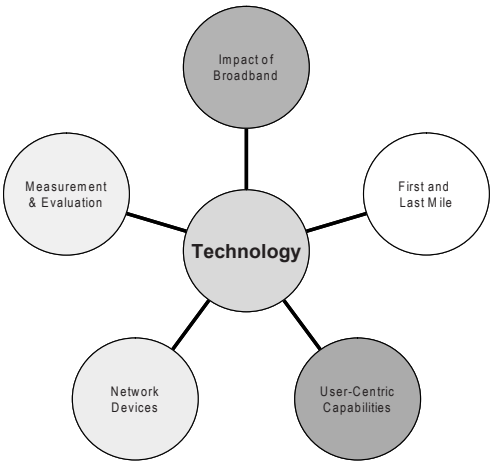
Chapter II
The Technological Basis of Networking



"Broadband is playing a crucial role in transforming countries into Information Societies." (International Telecommunications Union, 2006)

Overview: This chapter pursues the following themes:

- The extent to which telecommunications technology can serve as a platform for economic and social change;
- The role that broadband communication can play in community collaboration and networking;
- The specific technologies (networks and terminal devices) and their relative advantages and limitations;
- The community applications that offer greater user access and user control;

- The adverse and dysfunctional effects that can accompany technological change;
- Some ideas about measuring and evaluating outcomes.

COMMUNITY TECHNOLOGIES

Key Concept: *Access to technology not only shapes what communities can now do; technology shapes what communities can now dream about doing.*

Among the classic studies of sociological literature are those that have researched what happens when roads and highways are built connecting remote populations to the outside world. Roads not only brought a succession of strangers into these formerly isolated communities; they brought strange new ideas that sometimes threatened traditional ways of doing things. And those roads also became the principal means by which the rest of the world learned about and exercised influence over those communities. In today's society, roads are not the only avenues for exchanges; the "information highway" and its progeny the Internet have become essential channels for community development.

Prior to the Internet, information and communication technologies were already reshaping societies. Godwin C. Chu, Alfian, and Wilbur Schramm conducted in the 1980s a now-classic study about the effects on isolated Indonesian communities when satellite television was introduced to all parts of that vast island nation (1985). On the occasion of the launch of its Palapa satellite in 1976, the government of Indonesia declared its intention to develop all human and natural resources of the country. According to Marwah Daud Ibrahim, who wrote a dissertation about the satellite decision, "this could only be done if all the people and all parts of the country could be reached by direct means of transportation and telecommunications. For this reason, Indonesia devoted a great amount of its development budget improving and developing the country's highways, rural roads, waterways, pioneer seaports, pioneer airports, and telecommunications system" (Ibrahim, 2005).

The telecommunications infrastructure—more specifically the Palapa communications satellite—was viewed as a very important instrument for introducing via radio and television the national language "Bahasa Indonesia" to a country with more than 250 local languages and dialects. The government also hoped satellite coverage of the country would help with rural development, encourage family planning, and improve public health and education.

At the time Chu et al. (1985) were writing, modernization theory was in vogue among social science researchers. This theory assumed that technology and social change were in more direct relationship than is thought to be true today. That is, it