Chapter IV

Global Information Infrastructure

Objectives of This Chapter

√ Identify the major components of the global information infrastructure.
√ Begin to understand how communication network technologies are bringing the world closer together.
√ Come to understand the growing dependence that societies and businesses have on this infrastructure.
√ Discover the services, major mechanisms, and protocols that are used to secure the global information infrastructure.
√ Realize that the task of securing the global information infrastructure is an evolutionary process.
Introduction

Networks come in many forms. A network is essentially the connecting of two or more entities with the ability to communicate. Utilizing a multitude of telecommunication technologies such as the public switched telephone network (PSTN), public switched data network (PSDN), cable television (CATV) network, and orbiting satellite networks (i.e., commercial and military), people from around the globe can communicate and share information virtually in an instant. The real-time services that this infrastructure provides include regular telephone calls, video conferencing, voice over Internet protocol (VOIP), and a host of other analog, digital, and multimedia communications. Connecting these networked systems and facilitating their communications are high-speed switches, routers, gateways, and data communication servers. Combined, these technologies and infrastructures comprise the global information infrastructure (GII), which is primarily used for the sharing of information and data.

This infrastructure serves communications between communities; business, industrial, and distribution interests; medical and emergency services; military access; as well as air and sea traffic control systems. It also facilitates the coordination of peoples’ activities and shared knowledge. As a result, the systems and subsystems that comprise the global information infrastructure are more often being designed and upgraded to create an interconnected, heterogeneous (i.e., consisting of dissimilar components), and distributed network of networks, which are becoming interdependent on each other (see Figure 8). While the economics of this unification may seem to be the primary motivation, it is where people’s interests are concerned that there tends to be an economic focus.

In this author’s opinion, the only rational understanding for this increased interconnectivity is that such a network of networks has incredible value in unifying peoples of different national, cultural, and ethic origins for their particular own self-interests. It serves as the foundation for a whole new level of communication between people and their specific interests. This has not gone unnoticed by terrorist organizations.

For terrorist organizations that are founded in an isolationist or minority radicalism orientation, the global information infrastructure presents an increased challenge to their ability to hold on to control of their respective territories, as well as the hearts and minds of the people they wish to preside over. They will continue to encounter more unity between nations and govern-