

Knowledge and Technology

- Students of International Relations today find themselves in the midst of a technological-information revolution that has political, economic and social impacts.
- Since the industrial revolution of the 19th century, scientists and engineers have made it possible for us to do things that were not just impossible a few years ago but absolutely unimaginable.
- The industrial revolution had enormous impact on the international political economy because it altered global patterns of wealth and power.
- Contemporary revolution in science and technology is broader as it affects most aspects of life globally.

- The common notion that “knowledge is power” has taken on profound significance
- Why is this so?
- Individuals, business firms, and nations that control access to knowledge in the form of scientific understanding and technological innovation can often enjoy a clear competitive advantage in the world market, allowing them to dominate political and economic processes

- With regards to knowledge and technology, three important trends have become apparent over the past 20 years:
- First, knowledge and technology have become increasingly important as determinants of wealth and power.
- Economic success and political influence increasingly require technological prowess more than just natural resources;
- Second, the pace of technological change has quickened. Computers and machines have long physical lifetimes, but very short economic lives, given the speed with which more powerful and useful replacements are produced.
- Finally, knowledge and technology are increasingly dispersed. The computer and communications revolution make it possible for complex data and ideas to move instantaneously from desk to desk within a business and from country to country around the world.

- **The International Knowledge structure**
- International knowledge structure is a set of relationships that govern access to knowledge and technology around the world.
- It is a web of rules, practices, institutions, and bargains that determine who owns and can make use of knowledge and technology, where, how, and on what terms.
- The knowledge structure establishes a set of linkages between and among states and markets.
- It is hard to overstate the importance of knowledge and technology today.
- Knowledge and technology have had impact on international security structure; international financial structure; trade and production structure.
- Nations also struggle to become or remain competitive in the new world economy.
- Power in international relations now depends in large measure on a nation's ability to generate technological innovation and wealth. Winning requires that nations develop or have access to the newest and best technology.

- The relevance of knowledge and technology brought about the issue of intellectual property rights.
- With the rapid pace of technological change, new products and new processes are especially valuable to individuals, business firms, and nations because of the wealth and power that derive from them.
- To gain the maximum advantage, however, one needs to control access to new knowledge and technology – to keep others from using the products of research and innovation without paying in full for the right.
- At the same time, the age of computer has made it harder to control access to information about new technology. This created the basis for intellectual property rights.

- Intellectual property rights (IPR) are the rights to control the use of something, such as a house, or car or a book.
- Put differently, they are the rights to control the use of intellectual property- an invention or a creative work such as a novel or poem. Patents, copyrights, trademarks, and other systems of IPRs are the mechanisms normally used to control access to new ideas