

TECHNOLOGY AND COMMUNITY DEVELOPMENT BCD 216

LECTURE 2

TECHNOLOGY AND INNOVATION (CONTINUED)

The development and improvement of technology has greatly improved lives in many ways. It has led to a far better, easier and very comfortable life for the people. There are various ways through which technology has changed our lives and this includes the following;

The rise of the internet technology has improved our daily lives in very many ways. The world business and trade has become very fast, easier and more reliable. You can now transact business with a person who is very far from you without any difficulties. It has become easier to book railway tickets, bus tickets and even flights at the comforts of your home without having to move. The payment of bills and other accounts related jobs of every business entity are easily managed by the available online facilities. Financial institutions and banks have introduced online internet systems which makes life easier. The introduction of ATMs has made it very possible to withdraw money at anytime of the day. Also it has become easy to advertise through the internet and thereby promoting the business in a faster way.

Banks and other financial institutions are now filling data in the computer instead of doing it manually as they used to do in the old days. This makes it easier to find the name of the customer, address, email address, birth date, phone numbers and even the location. Also the clients can get a very quick access at their account balances by logging in to the bank website. With the rise of computer technology, credit cards and other plastic money which are very useful especially when one do not have cash at hand or when one is ordering online products and or services have manufactured.

The impact of information technology is a very good classical example of the way our lives has improved due to technology. The ancient people did not get the chance to learn in interactive classrooms with projectors and even 3D images. Computers, PowerPoint presentations and also the internet technology has brought about teaching in a very different dimension. The education system has become computer dominated and has gone beyond notebooks and blackboards. Nowadays it is more possible for audience and students who are located in very different geographical areas to get access to lectures which are being conducted through video conferencing. Also many websites are promoting the online tutoring which means you do not have to attend to a classroom to get education, you can do it at the comfort of your home. Social networking websites are the order of the day nowadays. Websites like twitter and Face book

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have given birth to the new concept of social media marketing. The business networking and personal online dating have greatly been improved. Meeting new people online has given way to the rise of the billion dollar industry of dating. Communication has been made easier for example the internet has brought email and chatting facilities. Instead of sending letters to respective destinations, it is very easy to send an email which will be received instantly.

However, it should be noted that in the drive toward development, the adverse effects of technology may be ignored, with potentially harmful consequences for the environment and human health. Technology may be used to achieve economic growth, but sustainable development for the whole population requires the correct decisions on suitable technology and economic development.

Sustainable Development

Sustainable development ties together concern for the carrying capacity of natural systems with the social, political, and economic challenges faced by humanity. The United Nations World Commission on Environment and Development (WCED) in its 1987 report *Our Common Future* defines sustainable development: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development implies minimizing the use of exhaustible resources, or at least, ensuring that revenues obtained from them are used to create a constant flow of income across generations, and making an appropriate use of renewable resources. This applies to energy (oil and oil products in particular) but also to fish stock, wildlife, forests, water, land and air.

The achievement of sustainable development requires careful use of sustainable technology so as to avoid the damaging effects to health and the environment that accompanied the introduction of technology and economic development in Europe and North America. Sustainable development requires the use of green technologies and careful planning for employee welfare to avoid detrimental effects to the standard of living and the inequality between rich and poor. Conventional economic measures such as gross domestic product (GDP) do not take into account these adverse consequences of growth, and countries may prefer to use a measure such as the United Nations Development Programme's Human Development Index (HDI). The HDI takes into account life expectancy, access to education and the standard of living of the population. These may be brought about by the use of technology and pursuit of economic growth, though care is typically necessary to ensure the technology doesn't do more harm than good.

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Debates on how best to promote sustainable and inclusive development are incomplete without a full consideration of issues of science, technology and innovation. Access to new and appropriate technologies promote steady improvements in living conditions, which can be lifesaving for the most vulnerable populations, and drive productivity gains which ensure rising incomes.

The fundamental contribution of technology and innovation to economic growth is therefore fully recognized, yet the consequences may not always be consistent with the goals of sustainable development. However, technology and innovation are key drivers of sustainable development. Achieving significant reductions in energy and materials use and polluting emissions requires technological advances and these technologies can contribute to improved industrial competitiveness. Global environmental concerns – including climate change, ozone layer depletion and desertification – will require the best scientific and technical insights for assessment and solution.

New technologies such as information and communication technology (ICT) and biotechnology, hold the potential to increase resource efficiency and facilitate the move towards sustainable development. The growth of the ICT sector and the shift to a more service-oriented economy may result in a net reduction in energy and resource inputs in the industry sector. ICT has the potential to make industrial processes and products cleaner, diffuse technologies more effectively and enable more accurate and cheaper monitoring of the environment.

The potential contribution of biotechnology to sustainable development is vast and diverse. Industrial processes using biotechnology operate at lower temperatures and produce fewer and less toxic, wastes. Biotechnology-based cleaner processes have been introduced in a number of industrial sectors, including chemicals, pulp and paper, textiles and leather, food and feed, metals and minerals, and energy. The development and diffusion of these technologies, however, are not directly driven by the profit motive since the benefits of environmental improvement are largely public. This results in inadequate private investment, making environmental innovations a typical case of market failure. Because of the complex and interdisciplinary nature of environmental innovations, they are also prone to systemic failure. Public policy has an important role to play in addressing these market and systemic failures in order to match demand and supply of appropriate innovations and embed environmental sustainability in the economic and the research system.

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Environmentally Sound Technologies (ESTs) are technologies that have the potential for significantly improved environmental performance, relative to other technologies. ESTs protect the environment, are less polluting, use resources in a sustainable manner, recycle more of their wastes and products, and handle all residual wastes in a more environmentally acceptable way than the technologies for which they are substitutes.