

# ECONOMICS SCIENCE AND TECHNOLOGY: Some Ethical Issues.

Md. Anisur Rahman  
M.S.S (Economics), MIT, LLB  
Lecturer in ICT  
Daulatpur College  
Kushtia.  
arahmankst@gmail.com

## ABSTRACT

Science is a collection of knowledge or facts about a particular subject. Technology materialize the requirements of science and meet some non-materialized requirements. Ethics directed the individuals as how he will behave with the society, and Economics studies about the allocation of resources within the society, nation and globally too.

Ethics and morality are the central theme of 21<sup>st</sup> century for the development of science and technology, which relates with the economics. The world economy is driven by technology. So, technology is not just for the technologists but for the economists also.

There is a wide technological gap between developing and developed countries. The developed countries are now using AI (Artificial Intelligence) technology, which has some overlapping with almost all fields in sense that it offer the potential for wide application. Application has already proven in the areas are Medicine, law, Manufacturing, Economics, Banking, Biology, Chemistry, Defense, Civil Engineering and Aerospace Which may create more technological gap between developing and developed nations.

In a study at The University of Johannesburg, they saw that AI has already affected some economic theory; these are, Bounded Rationality, Efficient market hypothesis and Prospect theory.

“Technological Frauds” are making “Technological Trap” for us by using “False Paradigm Model”. They are sometimes misleading us by the biased and complex technological information, which may lead us to take inappropriate policies to meet the customers demand for new technological products.

Nationally, we are using or trying to use the technologies to meet the demand of our country for globalization, where many ethical questions may arise. They can create more and more ethical debate in future like Electricity, Computer Technology Nanotechnology, Cognitive Technology, Biotechnology, Genetic Technology, Robotic, Satellite Imaging etc.

Globally, there are many ethical affects upon national security and humanity for many countries, for the use of highly advanced military and intelligence technological products, such as Nuclear Weapons Technology, Undefined Flying Objects, Unmanned Aircrafts, Lesser technology, Drones etc.

Science and technology is not capable itself to possess the ethical qualities. The ethics involved in the new development of technologies, always it cannot remember, whether it is fit for the society or not, because of its profit maximization and market competition concepts.



So, with very many recommendations from different authorities, we should emphasize upon techno-ethical concerns both in Government and Non-Government sectors cooperatively, to ensure the ethical issues for our nation in respect of technology dependent economic development of our country, which is now a demand of globalization in the 21<sup>st</sup> century.

### **“Economics, Science and Technology”–Ethical Issue.**

Science is a collection of knowledge or facts about a particular subject. Technology materializes the requirements of science and meet some non-materialized requirements. Ethics directed the individuals as how he will behave in the society, and Economics studies about the allocation of resources within the society, nation and globally too.

Ethics and morality are the central theme of 21<sup>st</sup> century for the development of science and technology, which relates with the economics. The world economy is driven by technology. So, technology is not just for the technologists but for the economists also. It is impossible to separate economics, science and technology.

Technology is now rapidly changing the economic directions of the world. The market condition is very unrest for the regular launching of new technological products to meet the customers demand. As an effect, the products we are thinking latest today, but it is going backdated tomorrow.

Technology itself has no value until it is commercialized. To commercialize the technology it should be complicated to maintain its secrecy. Technology commercialization can create several new technological sectors or sub sectors upon technology, thus one technology depends upon another and sometimes need new technologies, where the innovation and new invention take place. Technological innovation and invention is strongly related the economics.

Technological gap between developing and developed nation is very wide. As we know, the 21<sup>st</sup> century is the revolutionary century for science and technology, to maintain the superiority upon technology the developed nations are investing a large amount of money for the innovation and invention for the new technologies, which is targeted to meet the present and future technological demand. But the developing nations like us we are not strong enough to do the same.

There are two major part for the technologies, Technologies for Common use and the Military Technology. The economists can make policy according to their resource and expenditure information, but if the economists are not well informed about the military technologies and their expenditure information, economic policy making for the nation may not be targeted to achieve expected growth for the sustainable development for our nation. This may lead us towards technological gap for both military and common use technologies.



Though, there are a wide technological gap between developing and developed countries. The developed countries are now using AI (Artificial Intelligence) technology, which has some overlapping with almost all fields in that it offer the potential for wide application. Application has already proven in the areas are Medicine, law, Manufacturing, Economics, Banking, Biology, Chemistry, Defense, Civil Engineering and Aerospace. This may create more technological gap between developing and developed nations. The artificial intelligence may create unemployment situation and can affect humanity.

In a study at The University of Johannesburg, they saw that AI has already affected some economic theory, these are, Bounded Rationality, Efficient market hypothesis and Prospect theory.

In the 21<sup>st</sup> century, technological development is a race and cooperation. The developed nations are advancing upon technology. On the other hand, developing nation is not likely advancing. But, to meet the demand of globalization and technology dependent economic development, developing countries like us are mainly dependent upon imported technological products. In some areas we are trying to invent and innovate the new technologies, where we should emphasize more and more to maintain the ethical issues for our humanity.

Nationally, we are using or trying to use some of the technologies to meet the demand of our nation for globalization where many ethical questions may arise. They can create more and more ethical debate in future like Electricity, Cellular Technology, Computer Technology, Nanotechnology, Biotechnology, Medical Technology, Robotic, Satellite Imaging, Lubrication Technology etc.

**Rup Pur Nuclear Power Plant:** lower cost electricity is one of the fundamental demand for industrial development. To meet the demand, our government and Russia as a joint venture project started this nuclear power plant, but the waste disposal process should be well observed, as we have an example about Chernobyl Nuclear Disaster.

**Ram Pal Power Plant:** Is a giant project for coal based electricity production as a joint venture project with India. We should revise again and again before final establishment of the project, about the future of Sunderban, which is our national pride.

**Computer Technology:** Office automation and E-business is a global environment, from where we could not hide ourselves, to adopt ourselves we are using internet technology, but before started this technology we were not efficient about its security system. As a result, we are suffering like Bangladesh Bank hacking.



Economics and Ethics can explain the reality of internet security. The security system are not always installed for their effectiveness but because of the economic pressure, which drive the companies or organizations to install them.

**Nanotechnology:** Use of Nanotechnology for the intelligence and security purpose is an advancement in this sector to prevent suspected crime preparation. But sometimes, we see that, some unauthorized Nano-technological products are coming to our country through improper channel. We are very much afraid if these products will be used as civilian use, may hamper our privacy and humanity will be threatened.

**Mobile/Cellular Technology :** The technology has a huge users in our country, though government of our country has already started the biometric SIM card registration, is a very good initiative, but many of their using social communication media software and apps for which the users donot have to pay. Through these media crimes are increasing and the teen aged population is spending maximum of their valuable time in these network. For the excessive dependency upon these technology, one may be a psychic patient, which may effect upon our society, nation and economy.

**Medical Technology:** Globally, the Medical Technology and Health Science is moving towards Genetification of medicine. Here is a worry that the role of social and environmental factors are increasingly receives insufficient attention, leading to one dimensional view of diseases and disabilities.

So, we should be well observed upon imported medical and diagnostic products, to prevent the unexpected health hazards of our people in future, which may cause economic disorder in this sector.

**Educational Technology :** In the recent years, it is seen in the Education Technology has changed students value and behavior, including access to inappropriate materials in school and colleges, online plagiarism using material copied directly from the internet, students are staying ahead from the students own works.

**Robotics:** Which is decreasing the use of manpower increasing the profits in industrial sectors. So, the owner of the high tech industries are interested to use robots and programmable machines in their production sectors. Here is a worry about that future unemployment may affect our economy in the long run.

**Satellite Imaging:** Is a very modern concept and economical also. But if we have not the fundamental control upon the technology and the authority, can affect our national security and economy.



**Lubrication Technology:** Lubrication Technology for automobile and industries is a major part of this sector to prolong machineries life. But about 80% of our national lubrication demand are meet by the imported lubricants. There are some local recycled lubricants and some imported synthetic grade lubricants can shorten the machineries life. Which is an affect upon our economy both in private and government sectors.

**Food Technology:** Excessive use of pesticides, artificial flavor in food, food additives use, and the use of preservatives in food, are making the people of our country, sick. In recent years in our country, diabetes, cancer, liver disease, heart disease are increasing remarkably. The people of our country are spending a lot of money in abroad for the better treatment which has a great effect upon our economy.

Globally, there are many ethical affects upon national security, economy and humanity for many countries, for the use of highly advanced military and intelligence technological products, these are Nuclear Weapons Technology, Undefined Flying Objects, Unmanned Aircrafts, Lesser technology, Drones, Cognitive Technology, Hybrid Communication technology etc.

**Nuclear Weapons Technology:** As we know, the Nuclear Weapons is not a conventional weapon but the political weapons for the world leaders to line up different nations behind them for the politico-military-economic purposes.

**Undefined Flying Objects :** These technologies are very much unethical for the world , they can move through the world very fast for spying over the intended country, which is a threat for national security for those, who have not the sufficient radar capacity.

**Unmanned Aircraft:** Is a part of autonomous military technology. The autonomous weapons and the use of unmanned aircrafts in different areas of the world for bombing and spying, raising the question about ethics and law. Because these technology is controlled by cognitive computing, is not yet successful to maintain the law and ethics of war. Many civilians had died at the autonomous military operation around the world.

**Lesser Technology:** Which is now a most powerful technology for geographic, military and astronomical purposes, for sending and receiving the images and information from long distance. The inappropriate use of these technology can arise many ethical debate.

**Drones:** The unauthorized use of drone is dangerous, which can disclose confidential information of our military, commercial and industrial sectors.



**Cognitive Technology:** Artificial Intelligence and Cognitive Science has developed a model of human thinking. AI involves the study of cognitive phenomena in machines. Computational modeling uses simulations to study how human intelligence may be structured. The technology may lead the researchers towards a higher invention. But the unauthorized human target, and by diverting their intelligence, the interest group may lead them to do unlawful activities like terrorism, which has a great effect upon national humanity and economy.

**Hybrid Communication Technology:** The developed nations are using hybrid communication technology for faster communication within their nations. They can also use these technology as military communication at any moment for their nations. But if the procedure can cross the border, can affect other nations.

The unbelievable modern services of these above mentioned technology is always shown to us in many different ways to increase our demands and dependency upon these technology, and their protective technology, to buy them or to afraid of them. This is very complicated and expensive for us and for the poor countries , so that the external power can interfere in our policy to protect us. We would have to expend money as per their recommendation as they are the technology suppliers, which has a great impact upon our economy both for military and civil sectors.

“Technological Frauds” are making “Technological Trap” for us by using “False Paradigm Model”. They are sometimes misleading us by the biased and complex technological information, which may lead us to take inappropriate policies to meet the customers demand for new technological products.

Science and technology is not capable itself to possess the ethical qualities. The ethics involve in the new development of technologies, always it cannot remember, whether it is fit for the society or not, because of its profit maximization and market competition concepts.

So, with very many recommendations from different authorities, we should emphasize upon techno. Ethical concerns both in Government and Non-Government sectors cooperatively, to ensure the ethical issues for our nation in respect of technology dependent economic development of our country, which is now a demand of globalization in the 21<sup>st</sup> century.



## **Recommendations :**

1. Both Military and our civil economists and technological concerns should have a strong cooperation for our future techno. Ethical development for sustainable economic development.
2. Intelligence technology should be most sophisticated and world standard to monitor over all technological products of our country. Because, the terrorist know that modern culture how much vulnerable the because of its excessive dependency upon technology.
3. Scientist cannot always control their findings, so to make absorbable for the nation scientific journalism should be more active about to approach to the people.
4. Government should enact regulations to prevent the “Tragedy of the Commons”.
5. Both in the government and in private sectors, we should invest more in technological research and development to inspire the new inventions and innovation of technologies.
6. The purchasing authorities both in government and non-government sectors should be ethically developed to purchase technologies for our nation.
7. Unauthorized import of modern technological products should be strongly monitored to prevent crimes.
8. A conversation should be continued between Scientist, Ethicist, Policymakers, Military, Industry Leaders, Politicians and the General Public.
9. Governments of different nations should have strong cooperation regarding techno-ethical matter, for the present and future technological culture of the world.
10. United Nations should take responsibility to involve the governments of all countries to promote integrated responses to global problems.



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