# The role of Ethics in the process of Technology Transfer and Development of 206 Peugeot

Aliakbar Mazlomi[1], Rosnah bt. Mohd. Yusuff[1],
Universiti Putra Malaysia (UPM), MALAYSIA
[1]Department of Mechanical and Manufacturing Engineering, Universiti Putra Malaysia 43400 UPM, Serdang
MALAYSIA,

**Abstract.**
**Looking at the past history we find that the first phenomenon of technology transfer was taught by people who were traveling to another community and bring their technology, they move. After the industrialization, transfer of knowledge from individuals to maintain their importance. However, now the situation for developing countries is controversial because it denied people with technical skills from developed countries to developing countries do not migrate, but the reverse is the professionals that are developing countries to developed countries loan go. Until developing countries can train your human resources specialist, they powerful companies overseas are the means of technology transfer, whether through direct investment, and whether through the sale of licenses and other means. (Noble, p. 105 - 106, 1367)**

**Technology transfer is an important issue that should be given the capacity of countries to assess the possibility of application, absorption and its compatibility with local conditions to increase. Ie the transfer of technology and gain access to technology for its effective use for economic development and growth of countries relatively backward technology provides. (Archibugi, 2003)**

**Today, the role of ethics in technology transfer and development is of great importance. The meaning of ethics and technology than are harvested, ethical values that have roles in the formation of modern technology. Another meaning of ethics and technology than is reached, that moral people who are dealing with technology, they must observe. It also includes technology to those that exist and sets it to those who apply and who are the analysis and criticism. In this article factors and ethical factors in the process of technology transfer and development for Peugeot 206 in Iran Khodro Company has been studied. For this purpose a questionnaire to determine and evaluate factors is designed and results are analyzed.**

*Keywords. Ethics, Technology Strategy, Technology Transfer, Technology management*

## 1 INTRODUCTION

Adirect relation in the world today, technology development and economic progress, social, political, cultural and ethical issues on one hand and the other is established. Automotive industries is one of the most significant role in economic growth have believed some of the industry, the most important force driving economic development in the twentieth century has been. One of the two producer, Iran Khodro in Iran Khvrdv is great, considering the high content since the automaker has a major share in the automotive industry as well as technology transfer in the company and one of the important issues of interest and certainly impressive, not only in economy participate in the economy but also related industries and the nature of the economy is the subject of the review of selected products in line with the same content and purpose of this research article, the ethical effects of technology transfer process and its impact on the process transfer of production technology in Iran Khodro (206 sets in production during 1380 to 1385) is.

**206**: Iran Khodro and Peugeot of France contract agreed to the Peugeot 206 are jointly

produced. Based on the contract from October 1380 annual 120 thousand Peugeot 206 in Iran Khodro Company for 10 years since production will produce about 65% more than its parts would be locally manufactured. The contract was signed based on foreign exchange and balance of whatever amount of prefabricated parts import car, car production will be exported and thus can be said that the production cost of any vehicle for the exchange of government vehicles will be.

## 2 Concept and Definitions

### A. *Globalization and Technology*

We exposed various developments including the rise of globalization, the global communications industry, the growth of multinational corporations, financial markets impact global warming planet and the actions of international human rights've been. Above factors important to the global community Bkhshydhand idea. It knows the limitations of human geography and less every day the world becomes a single location. Gradually into the concept of globalization is scientific Mha Fl. The concept of early 1980 had little scientific validity but since then, the use of the concept is quite universal. Most aspects of globalization is in fact reflective of the commitment and include business planning to increase marketing in the world and measures that are fans of the environmental movement to protect the planet comes to action. The concept of globalization is controversial in terms of ideological uncertainty. Because the concept of modernity as before, was Tvjyhknndh idea that Western culture and expand the product of capitalist society, the forces that control human Kharjnd and act to change the world. Conceal the fact that inevitable phase of globalization is associated with these developments. Direct result of globalization through the spread of European culture, immigration, colonialism, and cultural imitation is around the Earth. This phenomenon is also inherently political and cultural activities through a pattern of capitalist development is associated. But this does not mean to say that across the planet must be Western or capitalist, but also means that any social system, their status should be compared to the capitalist West or to organize their relationship and compared it to know. Globalization is a process that existed from the beginning of human history and development of modernity and capitalism, and simultaneously from the same time, its influence is growing, but recently the sudden acceleration has emerged. Globalization is a process that later with other social processes such as industrial or infrastructure to break Franvgrayy capitalism and is associated with. Technology in the current globalization plays a major role and many believe that the role of technology integrating world and is responsible Kvchkkrdn world. Good things technology brings to our lives.

This is only part of the flow. Another part is integrating. Economic and political systems, how people live in different parts of the world is made distinct. Due to technological progress in recent periods, we see that this has been associated with the communication revolution. Optic and wireless technologies transform communication technologies built. Calls made and costs cheaper.

Many belief that a situation is the same thing that Mac Marshall Avhan it is called global village. But something else has caused technology that includes many results are intangible. These technologies have replaced the previous technology and raw materials needed to change industry trends that have reduced prices and issues of economic and social change in procedures that typically for raw material producing countries such as Africa and Latin America and the Middle East and South Asia has been . Presence of technology in the context of our lives willingly or unwillingly, many of the existing rules and mechanisms stirred new life that we have imposed before existed.

### B. What is technology?

Technology is a combination of two Greek words, Techne means art and Logie means whatever is based on reason and logic. So the technology can be interpreted this way: Law Faculty of Arts or Science Art Law. (Marilyn M. Helms D.B.A, 2006).

### C. Technology Transfer

- *Definitions of technology transfer*

Technology transfer, ie transfer of technical knowledge according to local conditions, along with attracting and promoting its effectiveness within a country, or from country to country. (Nasser Akhavan.A, 1995)

Technology transfer as "a process that define the science and technology by which a person or group from which other new knowledge to do things the way they move is Khvdbhrh." (Khalil, 138)

Technology transfer as "preparation process technology, designed for a corporate purpose, for use in other organizations, and potentially useful for other purposes" defined. (NASA, 1995)

"Technology transfer technology factors, ie the issuance of certain developed countries to developing countries, so that developing countries could create new production facilities and put to work, or expand their existing facilities." (Definition of UNCTAD)

After defining the classified technology that takes into consideration include:

| Table1 – Classification of technology Types | |
|---|---|
| **Based on the ability** | Technology Application and Exploitation<br>Assembly technology<br>Design and construction technology<br>Basic research can<br>Copy technology planning and adoption<br>New technologies abilities |
| **According to source technology** | Imported technology<br>Indigenous and traditional technologies<br>Combined Technologies |
| **Terms of complexity** | Absorbent technology<br>Non-absorbing technology |
| **Applied according to capital Bray** | Technology users<br>Technology with high capital |
| **Terms of lifetime** | Offer period or introduce technology<br>Period emissions technology<br>Saturation technology<br>Degradation and technological obsolescence |
| **Classified according to the nature of technology** | Software and hardware technology |

- *Technology Transfer category*

Technology transfer can be classified into the following types: (Khalil, Tarek, 1386, p. 514-513)

- International technology transfer, in this process, move beyond national boundaries occurs. One example of such a type of transition, transfer of technology from industrialized countries to developing countries.

- Regional technology transfer, a technology in which a country area to another area of the country, such as Alaska, Florida, is transmitted.

- Technology transfer between the company, during which the technology of a company is transferred to another company. One example of this transfer include transfer of technical

knowledge or computer aided design code (CAD) and computer production machines (CAM) of a machine tool manufacturer to a furniture manufacturer company.

- Technology transfer within the company, during which the technology within a company from one location to another is transmitted. Transfers within a company can be a department to another within a local departmental did. For example, if a sophisticated computerized technology department and other departments to be reliant on a handheld that can prevent non Tvazy company operations will then transfer the process technology is capable of providing full advantage of computer technology throughout the company, the system balanced does.

- *Classic Technology Transfer*

Some important way acquisition and technology transfer are: (Tavakoli -1382, Fallah, Ebrahimi)

1- Technology transfer through foreign direct investment capital
2- Technology transfer through joint venture investments (Joint Venture)
3- Through technology transfer license agreements
4- Technology transfer through key contracts
5- Technology transfer through imports of capital goods and machinery Instrument
6- Technology transfer through cross-selling agreements
7- Technology transfer through reverse engineering
8- Through technology transfer agreements technical assistance and engineering services
9- Technology transfer from scientific and technical personnel employed

### D. Components of Technology Transfer

Technology transfer process at any fixed elements seen. In Figure 1 these elements are considered fixed. Based on client needs technology, appropriate technology and considered it a source of technology (technology transfer) based on a partnership contract is transferred to the receiver technology. (Ekram, 1382)
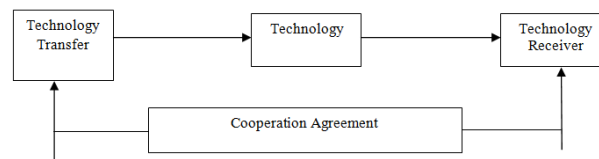


Fig. 1. Main elements of the process of technology transfer

- *Technology*

Technology today a main weapon is the competition between companies. To succeed in today's world so clearly depends on the use of technology. On the other hand has chosen Jbrannapzyry consequences of inappropriate technology. So choose a category of technology transfer of technology is essential so that decisions on the topic of strategic technology management literature, the name there is technology assessment. (Brown, 1379)

- *Technology transfer*

After identifying the selected technology, technology transfer to client resources to seek the appropriate technology. Meanwhile, according to two basic points to be seen: (Tavakoli, 1379)

1. Sometimes, certain holders of the appropriate level of technology and technology was not the dominant technologies are desired.
2. Sometimes doubts in voters motivated technology transfer is moderate because

today's technology as the element of superiority in the world and the main operating companies and competition between institutions and different countries have produced and easily superior to unilateral element from its owners is not transmitted.

- *Receiver Technology Transfer*

The generally higher level of technology recipient, the cost of technology transfer and absorption of the reduced form is done more effectively. Important point for those involved in technology transfer is that the recipient technology capabilities should be appropriate levels                          of                        technology                        transfer.

- *Cooperation Agreement*

One of the most important elements of technology transfer contracts, the parties are cooperating. The other pillar is the pillar link. If selected as a technology, appropriate technology, technology transfer and motivated enough to dominate and Antqalgyrndh technology is also appropriate technology level but weak contract parties working set of acceptable results is no such thing as technology transfer. (Text Co., 1382)

*E. Development and dissemination of technology*

The final step in the process of transmission, stages of development, expansion and technology obtained generalize and create innovation and innovation based on it. The purpose of the development of technology is that the technology of the acquired technology, the creation and operation of industrial units were used, and absorption of technology in its various dimensions were performed on the full extent of the total experience gained to create Gvnagvntr newer technologies within the country, should be used. (Ministry of Economic Affairs and Finance, the process of technology transfer in the Iranian style)
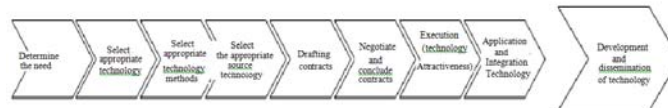


Fig. 2. Development and dissemination of technology

True purpose technology transfer, science and technology capabilities to create tailor developing countries, not just the transfer of equipment from industrialized countries to countries. This not only introduces the knowledge and production techniques but also includes the development of scientific and theoretical knowledge about the desired technology is also on. Assistance that industrialized countries can complete scanning processes in order to conduct technology transfer should be through studies of the effects of differences between public and private sector aid these countries receive. (Horoscope - Q. M, 1372)

*F. Technology development and its principles*

Until late 1950 decade was thus assume that technology is the science of derivatives. Thus, the outcome of technology development as the development of scientific thought. This theory called        the        theory        developed        technology        called        linear. In late 1950, Little by little this technology being adopted that are almost independent of science or at least it has a nonlinear relationship. At that time, extensive studies showed that many of the technologies before they are needed for scientific progress occurs, are formed. This is due to the development of technology to the development of science than they need, the economic and social conditions require that certain investments in technology and applying it makes Tvjyhpzyr and economical development also sometimes preemptive

technology, its development led to some of Sciences creates. Technology component in different parts of the country's economic reconstruction and development needs, and without it the country's economic objectives such as economic self-sufficiency, national development and improved living standards is impossible. Direct relation in the world today, technology development and economic progress, social, political and cultural a country has established

*G. A new attitude developing new technology:*

- *Deepening attitude*

This approach bridges and using old technology, too, and will be replaced with new technology over the technology leads to deeper levels. (Example: developing technologies to semiconductor and vacuum tube replacement CD or phonograph instead of pages) Integrated approach

Technology development synergy in combining two or more separate old and new technologies, creates products that make profound changes in the market is. (Example: Aptv Electronics Optics and Electronics products combine technology, and mechatronics combines mechanical and electronic products)

- *Injection and absorption of technology*

Technology innovation, offering new ideas or provide a new system when the user is able to reach consumers in the community to be published. Injection and publishing is a process by which a technology innovation over time through specific channels to find Antql community. Technology absorption efficiency depends on a type of technology to solve a problem and the exact amount Jamhpzyry it depends on the following factors:

1-Create advantages over previous situation.
2-Degree of matching values and needs of users.
3-Complexity and difficulty degree of application technology.
4-Possible to supply samples for operational users in real user trust. Ability to view technology and its effects on the results and the actual user.

*H. Overview of the Principles of Ethics and History*

- *Ethics*

Ethics is a branch of Science that the issue value (true or false) nature and human behavior. One of the first books that are independently addressed the ethics of Aristotle's Ethics is Nykvmakhvs.

- *Ethics in Science Glossary:*

Technical language and stereotypes from the perspective of ethics used three means:
1. Create the temperament, character, habits [3], and the sum is ethics.
2. Moral trait: operating a moral act in specific situations, and unconsciously conditioned [4] such as generosity and lying
3. Moral action: the action that can be good or bad about the judge. Be conscious or involuntary and spontaneous (in effect a creation) is. Like one time up and lying.

- *What is ethics?*

 "Ethics" in Persian language in front of two so-called «Ethics» and «Morality» is used. Therefore, this concept also refers to moral values and norms and the scientific meaning that speaks about the norms and ethics refers to the philosophy that puts its subject. Meanwhile,

the English language knowledge Ethics as more ethical (ie, ethics and philosophy, ethics) and more Morality as norms and moral values is used. Therefore, for comparison with measured between ethics and other areas including the areas of technology, should be the ethics of these meanings, ie, we consider the mean of Moral and ethical norms or education that talks about these norms. When considering the moral education we should have considered that the knowledge, ethics is the scientific meaning of the act right and wrong and good and bad questions or philosophy takes into account that in our ethics and the rise and fall of speaking. Separate these three levels of analysis, to evaluate our work with technology than it does ease.

- *Branches of ethics*

Morality is divided into three branches quite distinct:

1. Moral Philosophy or Fraakhlaq: the branch of philosophy and its duty to answer questions such as the theoretical basis of ethics:
  - What is good and bad?
  - What is the nature and reality of moral concepts?
  - Theorems have predictive or Anshayy ethics?
  - Universal and eternal moral issues (absolute) are temporary or territory and (relative)?
  - Measure of a generally good and evil characters, or what moral behavior?
  - What conditions and areas of moral responsibility? ...

2. Moral theory: that the task of studying the traits and actions are ethical and respond to expectations such as:
  - Identification, classification and definition of traits and ethical practices in public
- Identification of roots and their consequences
- Good or bad judgments about major characters (traits limited to the specific areas of life are not.) This part of the ethics of a technology or method, or the law or should and should not, not a science. Ie to what should not which is.
- Identify specific areas of ethics.
- Reasoning about giving good or bad deeds and moral traits in specific areas of learning.

3. Practical ethics or moral education: technical reach of a nonexistent ideal situation unfavorable situation in ethics. In this sense, spirituality is the basis of ethics and morality that is more human, more spiritual as well. Also, this sort of morality is a fan. The most important issues in this area can be cited as follows:
- Understanding and using principles of behavior
- How to create and destroy the moral traits

I. *Relationship between ethics and technology*

*Technologies and different approaches*

Many conflicts in the definition and levels of technology exist. Certainly, one of the main themes in the philosophy and basic technology is considered, this definition is technology. One of the approaches in defining technology, based on Wittgenstein look is defined as public. Unlike Wittgenstein St. Jvhrandysh history of philosophy that the essence of the concept or object and defines Mahytsh, believed Soda comprehensive definition based on the nature of the barrier should be abandoned and the application of concepts to be considered. Therefore, if you want to know, What are technology or art, should come in different languages in the language go and see what these concepts are applied and how are used.

After all, what definitions and what definitions Mahytgra Ghyrmahytgra in technology and sometimes soft, sometimes hard Afzaranh are Afzaranh. Afzaranh considered difficult in

technology, the trends of tools is seen that life makes us more efficient and easier. Software defined Afzaranh more theoretical and focuses on the idea behind these tools are. Technology in the history of philosophy, perspective view hard to soft Afzaranh Afzaranh precedence. In fact, vision problems caused Afzaranh hardware technology thinkers thought and approach to the existence of technological tools sets, the special show. However, soft Afzaranh view of the problem is not empty. One of the problems that this can not view the role of institutions and administrative mechanisms, legal and moral order in which technologies are involved, consider. The damage caused was defined according to the definition Nhadafzaranh technology is known, ie a set of institutions that Afzaranh hard bodies, soft Afzaranh and other institutions that are involved in defining technology. Nhadafzaranh defined time due to weak human being in that role, led to another definition in which humans define Afzaranh say. In this approach, institutions and technology than humans is highly regarded.

Another look at the definition technology into micro and macro definitions it is. Any macro definition of computational tools and the technology he called rational. For example, many tools to work in sports better that they exist in the macro definition, called technology. Many tools in the old world to organize personal and social life went to work, but the extent and development of new technologies are not common and technology are considered. In fact, here is a better differentiation between technique and technology was defined and separated. Technique could lead to technology, but must distinguish between the two was. Even many of the techniques do not lead to technology. For example, speech techniques and habits and customs dating to see tools and techniques, although useful, but naming them a range of macro technology creates situations in which some of our goals Myafknd darkness and confusion. However, a grand vision to technology, all of these considers the technology.

A moderate approach to the definition of technology, modern technologies before the world does not strike out of the category and the technologies they will also consider technology. This approach to philosophical anthropology and the large size of most forms of material culture to understand technology. This approach also does not cover this kind assume that any technology should definitely be built man. According to this perspective, one can not know the culture in which the technology was not available, whether the culture is old or new. With all these technologies from the old world were followed very different principles and finding common principles between the unit and the old and new technologies, work very hard.

Narrow approach to defining technology and fine, the only new technology, the world knows and believes in the technology essential difference between these two types of technology. The rule is that new technology and its various effects comparable to other technologies do not see and believe this technology should be completely separate and independent must be examined. With this assumption, the following definitions for defining technology of modern technology and considered entirely new and the rest of reflection makes the technological tools and approaches are out of the circle makes its order.

Of course, what we said are only part of the frequency of disputes concerning the definition of the concept of technology are available, however, could perhaps inconclusive general outlook that many parts are available in the philosophy of technology, to cover.


*J. Ratios of technology and ethics*

The definition and division, space to talk about ethics and technology than are better prepared. According to this classification there is the concept, we can make a lot of ratios between technology and ethics here, we identified four of these ratios than we mentioned:

1) Sometimes the purpose of this comparison is that to see what technology has ethical consequences. Often than those who consider technology and ethics are of the different

technologies than ethics Impacts considered adults. Some researchers believe that, following this study, a school can "influence" also revealed that the effects of cultural, social, economic, psychological and speaking knowledge of new technologies. Here, for example, can be said, what the computer does and how human relationships of his influences; Internet on the traditional relations of man and his personality is what effect or effects and suppression technology world how we have influenced the culture of their social classes and relations has affected. In this regard, two approaches are positive and negative. Some aspects of these technologies and the positive effects and others are mentioned on the points they put that technology, human society and the blossoming of originality is dropped. Meanwhile, the effect of technology on ethical values to accurately track time is Some believe, technology, communication expanded, and leisure opportunities for the man who provides for more serious work pay and provide his material welfare, but Some Moreover, the points against the disadvantages and weaknesses highlighted do not know much technology. To the people, technology in general, so it sparked consumer ethics, human relations and avert the exploitation of space to the rich and noble human values such as modesty, dignity, honor, nobility and ... Is damaged. To the people, technology and totally modern world, the spiritual values of the family made less, and people just have no basis and ultimately moral and ethical problems it has created many.

2) Another meaning of technology and ethics can be compared was the effect on the theories of science and technology affect moral philosophy. Here, the norms and moral values, not ethics, but moral knowledge is considered and the distinction is based on the means that we mentioned. Here, speaking on the effects of technology on ethical theories rather than left. Meanwhile, Some believe, in the heart of these changes and the effect Tuesday normative ethics, ie the "tendency of virtue," "task orientation" and "utilitarianism" development are significant. Others believe that while we must seek new concepts and viewpoints be more. This seems to some, for example the concept of action in cyberspace, his agency and ... Nature are subject to change and should seek conceptual and analytical devices for expanding these issues were new.

3) The third meaning of ethics and technology than are harvested, the moral values in shaping modern technology had a role. In other words, if the clause "a" we mentioned, the goal is to determine what technology has no effect on ethics, the intention here is to understand what moral values in the creation and development of new technologies have played a role. New world, new vision and discourse of human face pulled height. Of course, this new approach, based on the values and norms. Some thinkers have asserted, instead of cash sitting understanding, interpretation rather than changing the world, instead of considering the future past, according to instead of the right to rule the rest instead of considering individual collectors, some new variations, human values are seen to is. In this regard, not the origins of the technology value without receiving value variations. Structuralism school of social values involved in technology even the first step to making a decision considers technology. Researchers in this field do it for technologies such as bicycles, automobiles, power plants and ... Have done to do. However, here we can see different looks, but one of the ratios between ethics and technology, origins and moral values are among technologies.

4) The fourth meaning of ethics and technology than is reached, that moral people who are dealing with technology, they must observe. It also includes technology to those that exist and sets it to those who apply and who are the analysis and criticism. For example, engineers as those dealing with production technologies have to be principled, because loyalty to their respective companies or trying to build high-security technologies to consider. On the other hand, the use of technology to specific needs and ethics in both areas, the ethical codes can be noted, as many have tried to provide the moral code. In addition, any cash cash

technologies like other ethical needs. However, in this respect, all things that could follow as they learn are critique of ethics for ethics review of the technologies considered.

This study evaluated the effects Musical to the ethical development in the process of transferring technology in 206 vehicles and ethical issues influence the amount of optimal technology transfer and development deal. Since the role of ethics in this process is very important, therefore, factors can be measured according to the ethical aspects of restrictions in the transfer of technology is assessed.

**Case Study**

*K.  Descriptions of activities conducted*

Group of companies as "contractors primarily" are determined that by definition, are those that the group instead of detached pieces, sets are delivered ready to assembly line. The first category contractors are companies capable of designing, engineering, prototyping and mass production are able to set and typically may be the only car manufacturer to a company also refused service. In the design process to mass production, part of the process there is usually a competitive advantage among its parts and the "First Contractor category" Companies designing and installing machinery production line is. So these sections are usually outsourced. This means that the outsourcing sector, usually a prototype design and manufacture the product and technical information to be given to machinery production line to produce the product they design and installation. Of course, these builders often as your general contractor companies that are themselves associated with other component contractors. Global common procedure is that not only "the first category contractors" are independent collections of his expertise but because of work over a car maker to give service. For example, a German company for a large number of companies or company to produce automotive transmission parts Chrysler in housing production capacities "contractors' first category" Mitsubishi uses.

Or currently the world's top six manufacturers, including Chrysler, Mercedes Benz, Ford, Jay M., Nissan, Renault through a vast network, its suppliers to put together and share these activities by establishing a company named provider will do SAPCO said.

*L.  206 Technology Transfer Project*

For this first project steering committee has been formed. Has tried to project all the stages be documented. Level of transmission and methods for the parties is clear. The Project Control Project has been fairly accurate. This paper has tried principles and ethical aspects in the process of technology transfer and development will be investigated.

M.  Determination of ethical factors in the process of technology transfer 206

*Sampling*

In this research, according to research topic and purpose and research questions for data collection and management professionals and qualified experts as possible and is available for use and enjoyment. 19 patients completed the questionnaire and analysis on this questionnaire was 19.

*Questionnaire*

After reviewing models and processes of technology transfer to a comprehensive model of technology transfer process in which the process is divided into nine steps. In so doing, to review existing models in the field of technology transfer between the models discussed by famous scientists and specialists in the field of technology transfer was offered 14 models selected and extracted 37 factors, some factors have some overlapping models, then This

factor by several experts and specialists in this area and confirmed two other factors Khvrdv After review Iran experts and to offer them added. Research is based on the following questionnaire to the question "moral evaluation factors selected on the technology transfer process, what was the 206?" Answer. Purpose of moral factors must be evaluated on the following aspects.

1) Moral factors to determine the need
2) Moral factors to select appropriate technology
3) Moral factors to select the appropriate method of transfer
4) Moral factors to select the appropriate source
5) Ethical factors related to drafting contract
6) Ethical factors related to contract negotiations and
7) Ethical factors related to implementation (Business) Technology
8) Factors related to the ethical use of technology and attract
9) Ethical factors related to the development and dissemination of technology

| Question) moral evaluation factors selected on the technology transfer process 206 is how? |
|---|
| **Step 1) moral factors to determine the need** |
| 1. The role of ethics in determining the technology needed |
| **Step 2) moral factors to select appropriate technology** |
| 2. Observance of ethical aspects in regard to performance, flexibility and life technology |
| 3. Observance of ethical aspects in regard to economic factors including; cost, profit, productivity, talent market and create much credit |
| 4. Observance of ethical aspects in the role of ethics in regard to such resources; financial resources, skilled manpower, the tacit knowledge, and energy best experience |
| 5. Observance of ethical aspects in regard to demographic factors, including; rate of population growth, illiteracy levels, unemployment levels |
| 6. Observance of ethical aspects in regard to environmental factors including; water, air and soil |
| 7. Observance of ethical aspects in regard to social and cultural factors, including; compatibility with the culture and values |
| 8. Observance of ethical aspects in regard to political and legal factors, including; compatibility with institutions, policies |
| **Step 3) moral factors to select the appropriate method of transfer** |
| 9. Observance of ethical aspects in regard to environmental factors such as; risk level, the country of reference (cultural) |
| 10. Observance of ethical aspects in regard to the nature of such technology; Life technologies, experience quality, amount of credit creation and tacit |
| 11. Observance of ethical aspects in regard to the transition process (purpose of collaboration, sharing investment capabilities, formalized contract, flexibility, time horizon and ....) |
| 12. Observance of ethical aspects in regard to source technology (power source on how to use technology, the role of source familiar with the market ,....) |
| 13. Observance of ethical aspects in regard to client technologies |
| 14. Observance of ethical aspects in regard to the amount of familiarity with the market and technology |
| **Step 4) moral factors to select the appropriate source** |
| 15. Upholding the principles of political morality |
| 16. Ethical principles of cultural respect |
| 17. Upholding the principles of moral evaluation capacity level technology provider |
| **Step 5) ethical factors related to drafting contract** |
| 18. And methods to identify different stages in terms of technology transfer and absorption of the moral principles |
| 19. Noted in all cases, especially related to the transfer of technical knowledge with the five dimensions in terms of moral principles |
| 20. Determine a schedule for each of the stages of the transition in terms of moral principles |
| 21. To determine the domain of Consulting and monitoring their activities in terms of moral principles |
| 22. Regulations in the country and the rules and regulations about foreign countries and international technology transfer in terms of moral principles |
| **Step 6) ethical factors related to contract negotiations and** |
| 23. Respect ethical principles in selected team of experienced and skilled people for negotiations |
| 24. Respect ethical principles in creating the necessary conditions for the visit of the team negotiating the same domestic and foreign companies |
| 25. Respect ethical principles in the necessary training to negotiating team |

| 26. Upholding the principles of ethical leadership in supervising the negotiations team |
| --- |
| **Step 7) ethical factors related to implementation (Business) Technology** |
| 27. Respect ethical principles in learning |
| 28. Respect ethical principles in the document |
| 29. Respect ethical principles in the formation of teams with expertise in different technology transfer |
| **Step 8) factors related to the ethical use of technology and attract** |
| 30. Respect ethical principles in the construction machinery and equipment for the factory in |
| 31. Respect ethical principles in the design and deployment of machinery |
| 32. Respect ethical principles in the development of production methods by local contractors |
| 33. Respect ethical principles in the organization and proper management |
| 34. Respect ethical principles in the planning and production control |
| 35. Respect ethical principles in the repair and maintenance machinery and equipments |
| **Step 9) ethical factors related to the development and dissemination of technology** |
| 36. Respect ethical principles in research and development unit launched |
| 37. Respect ethical principles in localizing |
| 38. Respect ethical principles in innovation and new product design |

Cronbach's alpha r 92.6% is achieved. Questionnaire results are as follows:

| Question) Selected results of evaluation of moral factors on how the process of technology transfer is 206? | | | |
| --- | --- | --- | --- |
| **Question** | **Factors Evaluation Result** | **Mean** | **Standard Deviation** |
| 1 | Medium | 5.63 | 2.58 |
| 2 | Medium | 5.52 | 2.19 |
| 3 | Weak | 3.63 | 2.11 |
| 4 | Medium | 6.15 | 2.24 |
| 5 | Weak | 3.52 | 1.46 |
| 6 | Medium | 6.36 | 2.11 |
| 7 | Good | 7.10 | 1.55 |
| 8 | Good | 7.10 | 1.69 |
| 9 | Weak | 3.94 | 1.80 |
| 10 | Weak | 3.84 | 2.33 |
| 11 | Medium | 5.63 | 2.49 |
| 12 | Medium | 6.26 | 2.23 |
| 13 | Medium | 6.05 | 1.92 |
| 14 | Weak | 3.94 | 2.14 |
| 15 | Good | 7.10 | 1.82 |
| 16 | Good | 7.21 | 1.87 |
| 17 | Medium | 5.63 | 2.11 |
| 18 | Good | 7.10 | 1.55 |
| 19 | Medium | 5.94 | 2.24 |
| 20 | Weak | 3.94 | 2.14 |
| 21 | Weak | 3.94 | 2.24 |
| 22 | Medium | 5.84 | 2.69 |
| 23 | Medium | 7.21 | 1.75 |
| 24 | Medium | 3.84 | 2.14 |
| 25 | Medium | 3.84 | 2.03 |
| 26 | Good | 6.89 | 1.94 |
| 27 | Medium | 6.36 | 1.77 |
| 28 | Weak | 3.84 | 2.52 |
| 29 | Medium | 6.47 | 2.48 |
| 30 | Weak | 3.84 | 2.24 |
| 31 | Medium | 5.73 | 2.51 |
| 32 | Medium | 5.31 | 2.68 |
| 33 | Good | 7.10 | 1.55 |
| 34 | Medium | 5.84 | 2.52 |
| 35 | Good | 7.31 | 1.66 |
| 36 | Weak | 3.73 | 2.42 |
| 37 | Good | 7.42 | 1.42 |
| 38 | Medium | 5.73 | 3.07 |

## Conclusion

In this paper the role of ethics in technology development has been studied. Moral factors

and important factors in technology development have been analyzed. In general, according to the steps needed to determine the average score being indicative of the noble role of ethics in this section is. But in choosing appropriate technology for years observing cases in the country has experienced such economic and environmental factors, and generally ignored by professional ethics or social responsibility somehow been overlooked. Also, environmental factors, financial and human resources impact ethical issues affecting the average. Ie, its role is properly defined. But the social and political factors (showing that the atmosphere is prevailing industry) ethical issues were evident in the beginner level. In choosing the appropriate method of non-compliance results are ethical issues. However, in choosing the appropriate source and accountability Akhlaqybvdn signs of being there. But eventually in parts of the draft and contract negotiations and the parts that have crippled the possibility of non-compliance with steps 1 and 2 respectively. Steps in the acquisition and application of technology and attract attention to ethical issues apparently have been around since the middle indicates the sector is Bymsyvlyty. Terminal step, ie the development and dissemination of large dispersion between research and development and localization to design new products is so generally help localize the ethics and good results have been achieved, but failed to help the research and development. And concluded that the total now due to lack of system processes and model ethical and moral principles generally not significant effects on technological issues, including technology transfer and development, or may still have moral responsibility aspect of its position has not properly .

## References

[1] Sepehr Ghazinoory, Mahdieh Farazkish, 'A model of technology strategy development for Iranian nano-composite companies', Technological and economic development OF ECONOMY Baltic Journal on Sustainability

[2] Ghazinoory S., Aliahmadi A., 'Analysis of Relationship between Science & Technology Indicators and Industrial Development, A Canonical Correlation Analysis', Quarterly Journal of Resarch and Planning in H.E,2001,19,59-91, (in Farsi)

[3] Ghazinoory, S.; Divsalar, A.; Soofi, A. 2009a. A new definition and framework for the development of a national technology strategy: The case of nanotechnology for Iran, Technol. Forecast. Soc. Change 76(6): 835–848. doi:10.1016/j.techfore.2008.10.004.

[4] "Ethics." Microsoft® Encarta® 2009 [DVD]. Redmond, WA: Microsoft Corporation, 2008.

[5] Consequentialism (Stanford Encyclopedia of Philosophy(

[6] Armin Grunwald, 'Against over-estimating the role of ethics in technology development', Science and Engineering Ethics,  Volume 6, Number 2, 181-196, DOI: 10.1007/s11948-000-0046-7

[7] Sepehr Ghazinoory,'Technology management system in Iran: organization, programs, challenges',

[8] khalil, Tarek,'Management of Technology', Mc Graw Hill.

[9] Guinet, J. and Polt, W.,'New rationale and approach in technology and innovation policy' (special issue), STI Review No. OECD, Paris

[10] Ghazinoory, sepehr,'science & technology policy making and planning, case study: nanotechnology in Iran, Tehran, Iran (in Persian(

[11] Rick Wagoner,'ethics and technology: what is the relationship?', information education technology 600, section 002

[12] Bo Dahlbom and Lars Mathiassen,'Professional code of ethics', computers and society, ACM, Vol. 24, No.2, 1994.

[13] Balazs Bitay, Dietrich Brandt, and Eva Savelsberg,'The global validity of ethics: applying ethics to engineering and technology development'

[14] Deirdre Shaw, Edward Shiu,'ethics in consumer choice: a multivariate modeling approach', European journal of Marketing, Vol. 37, No. 10, 2003, pp. 1485-1498.

[15] Thomas J. Froehlich,'Ethical considerations in Technology Transfer', Library trends, Vol. 40, No. 2, Fall 1991, pp. 275-302.

[16] J.W.Cox,'Ethical issues in technology management', EMGT 510-610

[17] Richard T. De George,'History of business ethics'

[18] Paolo Rossi,'Technology, Values, and Ethics: A framework', 1992

[19] A. Albrechtslund,'Ethics and Technology Design',

[20] Larry stapleton,'Ethical decision making in technology development: a case study of participation in a large-scale information systems development project', AI & Soc (2008) 22:405-429.

[21] Mohamed Mamdouh Awny,'social impact of technology: a perspective of developing countries', 13th international conference on Management of Technology- IAMOT 2004.

[22] Kimball P. Marshall,'Has Technology Introduced New Ethical problems?', Journal of Business Ethics, 19: 81-90, 1999.

[23] Egbert Schuurman, 'The ethics of technology: technology worldview, pictures, motives values and norms'

[24] Hamid Noori, 'productin policy and the acquisition of new technology', engineering management international, 4 (1987) 187-196

[25] David Ford, 'develop your technology strategy', Long range planning, Vol. 21, No. 5, pp. 85-95, 1988

[26] Mark T. Bohr,'Technology development strategies for the 21st century', applied surface science 100/101 (1996) 534-540

[27] Japan's technology development strategy

[28] Tariq S Durrani, Allan S Carrie, and Sheila M Forbes,'An integrated technology strategy development process', 1998

[29] The European automobile industry: escape from parochialism

[30] Abetti, P.A., Linking Technology and Business Strategy, The President Association. The Chief Executive Officers Division of American Management (New York, 1989)

[31] Archibug.D;" The globalization of technology and its implications for developing countries windows opportunity or further burden?", Technological forecasting and social change 70 ,861-883,2003

[32] Aversano, Lerina, Business process reengineering and work flow automation: a technology transfer experience, The Journal of systems and software 63, 29-44, 2002

[33] Bommer, M., Janaro, R., and Luper, D., A Manufactureing Strategy Model for International Technology Transfer, Technological Forcasting and Social Change, 39, pp377-390, 1991

[34] Canadian International Development Agency (CIDA), "TECHNOLOGY TRANSFER ASSESSMENT COMPONENT", 2004

[35] Chiesa.V. and Manzini. R., organizing for technological collaborations: a managerial perspective,Int.j.R&D Management,Vol.28,No.3,pp.199-212 , 1998

[36] Chieza, V., (2001), R&D Strategy and Organization: Managing Technical Change in Dynamic Contexts, Imperial college press

[37] Ford- David, Develop your technology strategy, Long Rang Planing 21(5), 85-95 , 1988

[38] Gilbert, A.lee, Negotiating technology acquisitions: getting the tools you need to succeed, Nanyang Technology University, 1995

[39] Hugo Amezcua, Guillermo Larios and Eduardo Santin ,"Technology Transfer Model - as seen from the point of view of a technology importer, The International Development Research Center – Science For Humanity, Conferences in LAC,1999

[40] Johnson  S.D. Foster, W.T. & Satchwell R., Sophisticated technology, the workforce, and vocational education (DAVTE No. DTI 0730).Springfield, IL: Illinois State Board of Education, (1989)

[41] Khalil,T.M., The accuisition and exploitation of technology: Management Of Technology,p.303 , 2000

[42] Louis N.Magavero;"What Every Engineer Should Know About Technology Transfer and Innovation", Marcel Dekker Inc, 1982

[43] Malik K. (2002), "Aiding the technology manager: a conceptual model for intra-firm technology transfer", Technovation, Vol. 22 No. 7, pp. 427-36

[44] Nasser Akhavan.A;"Technology Transfer to Developing Countries: The Iranian Experience"; University of Bradford (UK), 1995, p.27

[45] Roberts.E and Berry. C, Entering new business: selecting strategies for success, Sloan Management Review 26(3), 1985, 3-17]

[46] Saad, Mohammad, Technology transfer projects in developing countries-furthering the project management perspective, International of Journal of project management 20, 617-625,  2002

[47] Samli.A.C,"Technology Transfer",Quorum Books(UK),1985, pp.3-5

[48] Sharif, M. N., and Haq, A., A Time-Level Model of Technology Transfer, IEEE Transactions on Engineering Management, EM-27. No.2(May.1980). pp. 49-58

[49] Stock, Gregory N, "A typology of project level technology transfer processes, Journal of Operations Management 18", 2000, pp, 719-737

[50] T.K. Sung, D.V. Gibson, Knowledge and technology transfer: key factors and levels, Proceedings of 4th International Conference on Technology Policy and Innovation, university of Texas4.4.1–4.4.9, 2000