INVESTIGATION OF THE PREDICTIONS AND DECISIONS ABOUT INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE DEVELOPMENT PLANS IN TURKEY

Assoc. Prof. Dr. Sevgi GEREK
Department of Economics
Anadolu University, Turkey

ABSTRACT
Conscious and balanced use of information and communication technologies (ICT) is one of the main foundations of the concept put forward as new economy. Studies on the forming process of new economy in Turkey are conducted, but failures are also experienced in forming an accurate policy in terms of information, technology and innovation. The aim of this study is to investigate the predictions and decisions with regard to information and communication technologies (ICT) in the development plans of Turkey and make an investigation in parallel to this. For this purpose, document analysis technique was employed in the research, and content analysis was used for the data analysis. Themes emerging from the data analysis were analyzed in terms of problem, purpose and application policies in the development plans. In this context, the results of the study revealed that problem, purpose and application policies with regard to technology production, technology development, technology policy, technology plan, and information and communication technologies were not included at all in the 1st and 2nd development plans. Moreover, it was found out that technology policies were first emphasized in the 3rd Development Plan in terms of purpose and application, and a technology plan was first emphasized in the 5th Development Plan as purpose. As for the information and communication technologies, it was first involved in the 8th Development Plan. Therefore, it was concluded that Turkey has latched on to the policies still valid today in the Information, Technology and Research field from the very beginning; however, failed to practice them in real life. The findings of the study are discussed with their causes and effects in Turkey.
Keywords: New economy, information and communication technologies, development plans, information and technology policy, technology production, technology development.

1. INTRODUCTION

Fast advances and developments experienced in the information and communication technologies lie behind the globalization phenomenon. (Odyakmaz, 2000). Information and communication technologies deeply affect the economic and social lives of societies and take them out of the routines they have got used to. Therefore, it is very difficult for the individuals or societies to stay out of technology in today's world.

Sociologists have suggested two opposite views while researching the effects of technology on society: Technologic Optimism and Technologic Pessimism. What lies behind it may be not accepting or rejecting technology without questioning it (Kabakçı & Odabaşı, 2004). In March of 1998, a group of technology writers who have reached a new and more balanced consensus with regard to technology started technorealism movement (Bennahum, Biggs and et al., 1998). In time, technorealism movement has put forward eight principles which suggest that technology is not a neutral phenomenon, internet is revolutionary but not utopian, governments have important rights and responsibilities in limiting electronic frontier, information is not knowledge, educational institutions cannot totally eradicate the education problems by wiring, information should be protected, airwaves belong to the public, so frequency spectrums should be used in favor of the public, and understanding technology is an essential component of global citizenship (Kabakçı & Odabaşı, 2004).

Nowadays, technology has entered our lives so much; therefore, it is of great importance to use it consciously and balanced. Actually, what is suggested as new economy today is a concept indentified with new communication and information technologies (Barışık & Yirmibeşcik, 2006).

While a group of people view the dissolution of Union of Soviet Socialist Republics and east block, and the ending of cold war as a fact causing this process, another group claim that the radical change in information and communication technologies caused this formation (Pak, 2001).In all over the world, information economy, net economy, knowledge economy, digital economy and new economy have been used interchangeably (Smith, 2002).

With the concept of new economy, information and communication technologies has started to take place as the main variable in the economic and social progresses of the countries.

Information and Communications in Development Plans

Turkey, a developing country, started planned development in 1963, and prepared eight development plans. It started to practice the Ninth Development Plan which covers the years from 2007 to 2013 two years ago.

In today's world, benefiting from science, technology, and innovation is very essential in reaching economic and social goals. Creating, generalizing, and evaluating scientific and technologic information have been key determiners in international competition.

It can be claimed that dealing with science and technology within a specific policy started with the Development Period Plans in Turkey, which is a heavily agricultural developing country. Goals, realization numbers, and policies with regard to these are found under the heading of science, technology and research development in Turkey's development plans. Further, determining inclusion and realization levels of decisions with regard to information and communication technologies (ICT) in the development plans of Turkey will contribute to making predictions about the future periods.

This being the case, the aim of this study is to explore the predictions and decisions with regard to information and communication technologies (ICT) in the development plans of Turkey, in terms of purpose and application policies, and make a situation analysis.

METHODOLOGY

The research was carried out with document analysis technique which is a qualitative research method. In qualitative research, documents enable to work on text based rich data, and contribute to understanding and evaluating the main phenomenon investigated (Creswell, 2005; Patton, 2002).

The Documents of the Research

The documents of the research were development plans thus the research was carried out on the text based rich data which is thought to contribute to understanding and evaluating the main phenomenon investigated. The documents taken into account in parallel with the purpose of the research are:

- 9th Five Year Development Plan (2007-2013)
- 8th Five Year Development Plan (2001-2005)
- 7th Five Year Development Plan (1996-2000)
- 6th Five Year Development Plan (1990-1994)
- 5th Five Year Development Plan (1985-1989)
- 4th Five Year Development Plan (1979-1983)
- 3rd Five Year Development Plan (1973-1977)
- 2nd Five Year Development Plan (1968-1972)
- 1st Five Year Development Plan (1963-1967)

Data Analysis

Content analysis technique was employed in the data analysis of the documents stated. First, the documents were read by the researcher, the expressions thought to be concerned with the information and communication technologies were identified, then a theme expression was formed for these expressions and coding was performed. After analyzing all the documents, the themes under the same dimension were grouped, and new themes were formed. These codes were re-examined after the reading part, the ones related to each other were grouped, and a theme list based on coding was created. In this stage, two experts with qualitative research and field knowledge were consulted for the reliability of the themes and codes formed. The markings of the researchers and experts were compared, the similarities and differences were identified, and the reliability of the research was calculated to be 85%. As this value is over 80%, it was concluded that the reliability condition was met. The thematic framework formed as a result of validity and reliability endeavor was retouched and the themes were defined. The themes were supported with direct quotations from the raw data of the documents and the findings were formed.

FINDINGS AND RESULTS

As a result of the data analysis, the themes "technology production", "technology development", "technology policy", "information and communication technology", and "technology plan" were obtained. Since the themes "information and communication technology" and "technology plan" were included only in one development plan, they were explained under the heading of miscellaneous themes. The themes were analyzed in terms of problem, purpose and application by taking into consideration the content of the development plans.

Findings of the theme "Technology Production"

Table 1 shows the frequencies related to the theme "technology production" with problem, purpose and application policies dimensions in the development plans.

Table 1. Frequencies related to involving the theme "technology production" in the development plans

Development plans	Frequencies related to the theme "technology production"		
	Problem	Purpose	Application Policies
1. Five Year Development Plan (1963-1967)	-	-	-
2. Five Year Development Plan (1968-1972)	-	-	-
3. Five Year Development Plan (1973-1977)	4	7	12
4. Five Year Development Plan (1979-1983)	3	2	4
5. Five Year Development Plan (1985-1989)	-	-	1
6. Five Year Development Plan (1990-1994)	1	1	1
7. Five Year Development Plan (1996-2000)	5	-	3
8. Five Year Development Plan (2001-2005)	1	3	4
9. Five Year Development Plan (2007-2013)	4	-	1

As shown in Table 1, it was found out that the theme "technology production" was not stated in terms of problem, purpose and application policies in the first and second development plans. In the 3rd Development Plan, the theme "technology production" was stated in 4 expressions as problem in 7 as purpose and in 12 as application policy. In this period's development plan, especially the expression "pushy and incentive quality in technology production" emphasizes "the necessities of transfer to a technology producing society". Moreover, in the period of 3rd Development Plan, "Higher education system is far from a flexible structure which will train the sufficient number of technical workforce that will produce technology in the long run according to the development conditions of our country." expression is given as an example for the problem dimension of the theme while "It is fundamental that the 3rd Development Plan period is a period when the first step will be taken for reaching the long term progress goals and long term technology production" expression can be given as an example for the application policy. In the 4th Development Plan, there are 3 expressions as problem, 2 as purpose and 4 as application policy with regard to the theme "technology production". As for the 5th Development Plan, there is only one expression in the application policies dimension related to the theme "technology production". In the 6th Development Plan, there is 1 expression as problem, 1 as purpose and 1 as application policy related to the theme "technology production". It is seen that the expression "The centers established for producing and spreading information and technology have fallen short." is given as problem related to the theme "technology production while "…..transferring to technology production and spreading the information and technology obtained will be the basic principle." is given as purpose. It was seen that there are 5 expressions as problem and 3 as application policy with regard to the theme "technology production" in the 7th Development Plan, but no expression about purpose. In this period, "not being able to reach a level producing technology in industry" expression is emphasized in the problem dimension of the theme "technology production" and "technology production and training man force by increasing the quality and number of Higher Technology Institutions in order to provide technology production" expression is stated as application policy. When we look at the 8th Development Plan period, there is 1 expression as problem, 3 as purpose and 4 as application policy with regard to the theme "technology production". In this period, "to train highly skilled, productive and creative science-age human who is likely to produce science and technology" expression is given as an example for purpose dimension of the theme "technology production" while "Transfer to technology production stage will be achieved through following the stage of choosing, developing and transforming the appropriate technology." expression is given as an example for application policy dimension. Last, in the 9th Development Plan, there are 4 expressions as problem and 1 expression as application policy related to the theme "technology production", but there is not any expression of purpose. In this period, the expression "work force inclined to technology production and research and development through education programs will be trained" is stated in the application dimension with regard to the theme "technology production".

According to the findings, it was found out that the theme "technology production" is mentioned in the 3rd Five Year Development Plan the most, and "technology production" is mostly concerned with application policy and purpose dimensions. Moreover, the problem dimension of the theme "technology production" is mentioned in the 7th Five Year Development Plan.

Findings of the theme "Technology Development"

Table 2 shows the frequencies related to the theme "technology development" with problem, purpose and application policies dimensions in the development plans.

Table 2. Frequencies related to involving the theme "technology development" in the development plans

Development Plans	Frequencies related to the theme "technology development"		
	Problem	Purpose	Application Policies
1. Five Year Development Plan (1963-1967)	-	-	-
2. Five Year Development Plan (1968-1972)	-	-	-
3. Five Year Development Plan (1973-1977)	1	3	-
4. Five Year Development Plan (1979-1983)	-	1	3
5. Five Year Development Plan (1985-1989)	-	2	-
6. Five Year Development Plan (1990-1994)	2	3	-
7. Five Year Development Plan (1996-2000)	3	1	2
8. Five Year Development Plan (2001-2005)	-	2	2
9. Five Year Development Plan (2007-2013)	1	2	3

As seen in Table 2, the theme "technology development" is not mentioned in the first and second development plans in terms of problem, purpose and application policies. In the 3rd development plan, there is one expression of problem and 3 expressions of purpose related to the theme "technology development". In this period, "the most advanced technologies can not be chosen, technology can not be developed and adapted to the conditions of the country" expression stresses the problem dimension while "…endeavors of technology development in private industry will be supported." expression stresses the purpose dimension. In the 4th Development Plan, there is an expression in purpose dimension and 3 expressions in the application policies dimension. As for the 5th Development Plan, there are 2 expressions about the purpose dimension which can be exemplified with "…technology development activities will be carried out under a specific principle." expression. In the 6th Development Plan, there are 2 expressions as problem and 3 expressions as purpose with regard to the theme "technology development". The purpose dimension can be illustrated with the expression "Scientific research and technology development endeavors will be given importance." In the 7th Development Plan, there are 3 expressions as problem, 1 as purpose and 2 as application policies with regard to the theme "technology development. The 8th Development Plan includes 2 expressions as purpose and 2 expressions as application policies. In the 7th and 8th Development periods, "establishing technology development regions" is given emphasis as a purpose. Last, 9th Development Plan contains 1 expression as problem, 2 as purpose and 3 as application policy related to the theme. "Promoting technology development purposed entrepreneurships" expression stresses the "technology development" theme.

According to the findings, it is noticeable that among the development plans problem dimension is mostly mentioned in the 7th Five Year Development Plan, purpose dimension is mostly mentioned in the 3rd and 6th five Year Development Plans and application policy is mostly mentioned in the 4th and 9th Five Year Development Plans in terms of the theme "technology development". Besides, it can be claimed that the theme "technology development" is not focused on in the development plans.

Findings of the theme "Technology Policy"

Table 3 shows the frequencies related to the theme "technology policy" with problem, purpose and application policies dimensions in the development plans.

Table 3. Frequencies related to involving the theme "technology policy" in the development plans.

Development Plans	Frequencies related to the theme "technology policy"		
	Problem	Purpose	Application Policies
1. Five Year Development Plan (1963-1967)	-	-	-
2. Five Year Development Plan (1968-1972)	-	-	-
3. Five Year Development Plan (1973-1977)	-	3	2
4. Five Year Development Plan (1979-1983)	5	1	1
5. Five Year Development Plan (1985-1989)	-	-	2
6. Five Year Development Plan (1990-1994)	-	-	-
7. Five Year Development Plan (1996-2000)	2	1	-
8. Five Year Development Plan (2001-2005)	2	-	1
9. Five Year Development Plan (2007-2013)	-	1	2

As seen in Table 3, the first, second and sixth development plans do not include the theme "technology policy" in terms of problem, purpose and application policies. In the 3rd development plan, there are 3 expressions as purpose and 3 expressions as application policy related to "technology policy" theme. This period do not cover the theme "technology policies" as problem, and it is found out that technology policies are mentioned within investment policies in terms of purpose and application policy. There are 5 expressions as problem, 1 as purpose and 1 as application policy about the theme "technology policies" in the 4th Development Plan. The expressions "…not being able to do the necessary regulations for the policy of creating and internalizing technology…"and "…there is need for designing new technology policies." can be given as an example for the problem dimension of the "technology policies" theme in this development period. As for the 5th Development Plan, it includes only 2 expressions in the application policies dimension of the "technology policies" theme. This can be exemplified with the expression "Varying technology policy according to the economy policies, sectors, production branches of the country and the market addressed, and integrating them into the incentive system." There are 2 expressions as problem, 1 expression as purpose and no expression of application policy in the 7th Development Policy. The expression "…radical changes will be made in science and technology policies and economical and social structure." can be given as example for the purpose dimension in this period. While 8th Development Plan covers 2 expressions as problem and 1 expression as application policy, 9th Development Plan covers 1 expression as purpose and 2 expressions as application policy. The problem dimension of the 8th Development Plan can be illustrated with the expression "There is still need for facilitating harmony between science-technology-industry policies and education and research and development policies."

According to the findings, it is obvious that 4th Five Year Development plan includes the theme "technology policies" the most, and it deals mainly with the problem dimension of the theme. In addition to this, the purpose dimension of the theme "technology policies" is mostly mentioned in the 3rd Five Year Development Plan.

Findings of the miscellaneous themes

The miscellaneous themes obtained in the data analysis are "technology plan" and "information and communication technology".

Table 4 shows the frequencies related to the theme "technology plan" with problem, purpose and application policies dimensions in the development plans.

Table 4. Frequencies related to involving the theme "technology plan" in the development plans.

Development Plans	Frequencies related to the theme "technology plan"		
	Problem	Purpose	Application Policies
5. Five Year Development Plan (1985-1989)	-	2	-

Only the 5th Five Year Development Plan includes the "technology plan" theme among the development plans. It is seen that the expression "A science and technology main plan appropriate for the long term plan goals and strategies and economic, industrial and social goals of the country will be prepared" is emphasized as purpose within the scope of the development plan of this period.

Table 5 shows the frequencies related to the theme "information and communication technology" with problem, purpose and application policies dimensions in the development plans.

Table 5. Frequencies related to involving the theme "information and communication technology" in the development plans.

Development Plans	Frequencies related to the theme "information and communication technology"		
	Problem	Purpose	Application Policies
8. Five Year Development Plan (2001-2005)	1	8	7
9. Five Year Development Plan (2007-2013)	1	3	11

Only the 8th and 9th Development Plans dealt with the theme "information and communication technology" among the development plans. There is 1 expression as problem, 8 as purpose and 7 as application policies in the 8th development plan. "It will be aimed to make a fast progress in the information and communication technologies fields which have gained a key quality in terms of economical and social aspects all over the

world." expression can be given as an example for purpose, and application policy can be exemplified with the expression "The necessary legal and institutional regulations will be made and the infrastructure of information and communication technologies will be rapidly developed in order to ease the access to information in national and international level and to spread the use of information. ". As for the 9th Development Plan, it includes 1 expression as problem, 3 as purpose, and 11 as application policies with regard to the theme "information and communication technologies". In this development plan, the expression "…especially benefiting from the information and communication technologies in the highest level will be given importance and priority." can be given as an example for the purpose dimension of the theme.

According to the findings, it is found out that only the 5th Development plan includes the theme "technology plan" in terms of just the purpose level. Apart from this, the theme "technology plan" is not included in any of the periods. In other words, "technology plan" first appeared in the 5th Development Plan in the purpose dimension. Another theme, "information and communication technologies", was first included in the 8th Development Plan in terms of problem, purpose and application policies This theme is also included in the 9th Development Plan especially in terms of application policies. Moreover, it can be alleged that both development plans emphasize the widespread use of information and communication technologies in the purpose dimension.

CONCLUSION AND SUGGESTIONS

This research which was conducted to explore the predictions and decisions with regard to the information and communication technologies (ICT) in the development plans of Turkey in terms of problem, purpose and application policies, and make a situation analysis found out that the 1st and 2nd Five Year Development Plans did not include the themes "technology production", "technology development", "technology policy", "information and communication technology" and "technology plan" in terms of problem, purpose and application policies. Moreover, in the 1st plan (1963-1967), use of high technology, and necessity and importance of increasing the level of research and technical information are mentioned roughly, but no policy with regard to it was proposed (Tigrel, 1990).

The most important step for preparing policies for technology use and research and development activities, and practicing them was taken in 1963 with the foundation of The Scientific and Technological Research Council of Turkey (TUBITAK), the first institutional structure apart from universities. In the second plan (1968-1972), regulations with regard to the maintenance of the goals in the first plan were done, and a unique section was devoted to the science and research issue. In 1972, Marmara Scientific and Industrial Research Center was founded within the body of TUBITAK (Tigrel, 1990). The main policy followed in the field of science and technology in 1960s and 1970s was supporting the basic and applied research in natural sciences without getting any national priority with regard to obtaining an economic and social benefit (Goker, 2002).

In the 3rd Plan, mostly "technology production" was emphasized in terms of application policy while "technology development" and "technology policies" were stressed especially in the purpose dimension. Besides, in the third plan (1973-1977), although Science and Technology Chamber was founded in Ministry of Industry and Technology to practice the Technology Policy in parallel with the plan's goals, it was not a great success at all (Tigrel, 1990).

As for 4th Development Plan, it included "technology production" in terms of problem, purpose and application policies, but "technology development" and "technology policies" were mentioned only in terms of purpose and application policies. Although "technology production" was emphasized especially in terms of application policies in 3rd Development Plan, it can be asserted that adequate success was not achieved and application policies did not do well enough in 4th Development plan.

In the 4th plan (1979-1983), important diagnoses about the insufficient success of Technology Policies were performed, and a report titled "Turkish Science Policy: 1983-2003" and prepared with the urge of M. Nimet Ozdas, the minister of state responsible from TUBITAK and TAEK (Turkish Atomic Energy Authority) that time, cooperation of State Planning Organization (DPT) and TUBITAK, and the participation of about 300 scientists and experts was submitted to the prime ministry due to the problems caused by the structural features of the country (Ministry of State, 1983; Göker, 2002). This report was followed by "Preliminary Report of Turkish Advanced Technologies Incentive Project" prepared by ITU in 1985, and "Science and Technology Policy" submitted by that time's minister of state, Tinaz Titiz in 1987. The goals proposed in these reports were also not realized (Özdas, 1990). Within the scope of the fourth plan, TURDOK (Turkish Scientific & Technical Documentation Centre) under the body of TUBITAK was founded in order to develop national information delivery system and the Supreme Council for Science and Technology (BTYK) was formed on October 4, 1983 with the legislative decree.

It was found out that 5th Development Plan included "technology development" as purpose, and "technology production" and "technology policies" only in terms of application policies. Further, 5th Development Plan was the first plan to deal with "technology plan" as purpose.

It can be said that in the 5th Development Plan (1985-1989), the priority sectors and fields in terms of research-development, adaptation of technology and use of advanced technologies were identified, the opportunities focused on these, and policies were determined to apply the policies and precautions about encouraging private sector organizations for technology adaptation in order to adapt the new and advanced technologies according to the conditions of the country in technology production rapidly. When we look at this period, we see some positive progresses; for example, some KITs (state economic enterprises) and private sector organizations started to found research and development centers, and the Network of Universities and Research Institutions (TUVEKA) joined European Universities and Research Institutions Network (EARN). In this plan period, we witness an important progress which is the establishment of "Science-Research-Technology Main Plan Specialization Commission" under the body of DPT. The commission has made important diagnoses and suggestions about the science and technology policy of Turkey in its studies. However, it can be claimed that the economic and political problems Turkish economy faced in 1990 and after hindered the desired level of success in science and technology policies. As known, 1980s were the years when Turkish economy got far from the planned growth. In these years which witnessed an economic structuring from importing to exporting, important and striking developments were seen in the fields of transportation, communication and energy infrastructure. However, this positive change did not bring together the desired success in topics such as encouraging and widening of research and development activities, and taking precautions about technical education and the cooperation of university and industry.

Although "technology production" is not mentioned in terms of problem, purpose and application policies in 6th Development Plan, it was seen that "technology development" was included just in problem and purpose dimensions. However, in this period's development plan, "technology policies" was not included at all.

In the 6th plan (1990-1994), concrete goals were set in science and technology field. For example, for the first time in this plan, the number of researchers working in the research and development activities was aimed to be increased to 15 for each 10.000-people- employment (DPT, 1990). Moreover, in this period, Turkish Sciences Academy (TUBA) was founded, and Turkish Patent Institute's foundation and responsibilities came into force with a decree. Supreme Council for Science and Technology which was established in 1983 held its first meeting in 1989 and did not conduct a concrete study until its second meeting in 1993. In the second meeting of 1993, the document of 1983 was revised and the Turkish Science and Technology Policy turned into its 1993-2003 version. This document became the main document of Turkish Science and Technology Policy. All the indications, goals, preferences and precautions with regard to science and technology in Turkey are stated here.
It was concluded that 7th Development Plan included "technology production" especially in problem dimension while including "technology development" and "technology policies" in terms of problem, purpose and application policies.

It can be said that 7th Development Plan (1996-2000) indicated the sixth plan did not reach concrete goals especially in terms of technology development. In this period, a program called "Progress Project in Science and Technology" was put into force. This project included what could be done in the field of science and technology in Turkey and the necessary things for establishing the national innovation system. These decisions were concerned with many policy fields such as education policies, research and development policies and infrastructure investment policies. Therefore, success depended on handling the issue in a systematic unity. However, practice could not yield this unity, and this project could not succeed, too (Göker, 2002). BTYK held its third meeting on August, 1997, and accepted the report titled "Turkey's science and technology policy". Among the topics of this meeting were accelerating "National Academic Information Center" project, spreading the internet cafes, forming national research and development budget, founding "University-Industry Joint Research Centers". "National Academic Network and Information Center ULAKBIM" which is a unit of TUBITAK was founded in 1998.

In the 8th Development Plan, "technology production", "technology development", and "technology policies" were included in terms of problem, purpose and application policies. Moreover, this period's plan was the first development plan to emphasize "information and communication technologies". Further, in the 9th Development Plan, "information and communication technologies" was emphasized especially in terms of application policies. In this manner, the long term strategy and eighth five-year development plan (2001-2005) aimed at providing the technologic development which would increase Turkey's competition power and accelerate its transfer to

information society; therefore, it proposed strengthening the national innovation system, increasing the public support for research and development endeavors, encouraging the practice of risk capital in technoparks (DPT, 2000). This plan also aimed at re-regulation of TUBITAK Law according to the conditions of that time, making the legal regulations for founding Turkish Meteorology Institution, founding national aviation and space organization, and making the necessary legal and institutional regulations for forming Bio-Technology Supreme Council. The concept of national innovation system began to be used widely especially in 1990s for the development of technology and innovation policies. This concept was very efficient since it covered technology and all the institutions affecting the development, and put on the agenda the nation's international competition power and its position within the international cooperation (Göker, 2002). Moreover, in this period, TUBITAK was held responsible for preparing the document of Turkey's Science and Technology Strategies for 2003-2023 in the meeting of BTYK in 2001. In this project named "Vision 2023" it is aimed at identifying a vision for the anniversary of the republic.

In accordance with the results of "Vision 2023" study, "primary technologic activity topic" and "priority capability development technology fields" forming the basis of these activities were accepted in the 11. BTYK meeting held on March, 2005. In order to focus on these topics, a Turkish research area (TARAL) which can comply with European Research Area was defined. In the previous meeting (September 2004), the definition of Turkish research area was identified as "cooperation of all the institutions and foundations which perform research and development activities (universities, research centers, industry organizations and bases), demand results of these (private and public organizations, NGOs and bases), and provide resource for these activities (public and private sectors) in our country and all the relations it will have through strategic focusing (IX. Kalkınma Planı, 2006).

In Turkey, the development plans are mandatory for the public and guiding for the private sector. However, it can be alleged that these plans moved away from an extensive and detailed model after 1980 and moved toward a strategic approach model. In Turkey, precautions are taken to accelerate the forming process of new economy, but some difficulties are experienced in practice in this issue.

When the development plans in Turkey are analyzed, it is remarkable that almost all of them include goals, realization numbers and policies for them under the heading of science, technology and research (Türkcan, 1981). However, an accurate policy can not be followed in science, technology and innovation topics in Turkey and public support can not be successfully taken, and these bring up some negative points at this topic in turn (Arslan, 2007).

Turkey has latched on the policies still valid today in the field of Technology and Research since the very beginning, but failed to practice them in real life. The problem is not about creating projects or making plans and programs; it is about not being able to put them into practice and not practicing properly. Science and technology issues have never been given the deserved importance in the political agenda in Turkey.

Acknowledgement: The author would like to thank to Dr. Işıl Kabakçı for her rigorous work with reliability and trustworthiness.

REFERENCES

Arslan,S. (2007). Türkiye'de bilgiye dayalı iktisadi büyümeye geçiş. Yayınlanmamış Doktora Tezi. Eskişehir: Anadolu Üniversitesi Sosyal Bilimler Enstitüsü.

Barışık, S. & Yirmibeşcik, O. (2006). Türkiye'de yeni ekonominin oluşum sürecine hızlandırmaya yönelik uyum çabaları. *Zonguldak Karaelmas Üniversitesi Sosyal Bilimler Dergisi*, 2(4), 39-62.

Bennahum, S. D., Biggs B. S. ve diğerleri. (1998). Technorealism. Nation. 266 (12), 19-23.

Creswell, J. W. (2005). *Educational Research: Planning, Conducting, and Evaluating Quantitative And Qualitative Research.* (Second Edition). New Jersey: Pearson Education, Inc.

Ministry of State (Devlet Bakanlığı), (1983). Türk Bilim Politikası 1983-2003, Ankara.

DPT (State Planning Organization) (1990). Türkiye'nin Altıncı Beş Yıllık Kalkınma Planı: 1990-1994, Ankara.

DPT (State Planning Organization) (2000). Uzun Vadeli Strateji ve Sekizinci Beş Yıllık Kalkınma Planı: 2001-2005, Ankara.

Göker, A. (2002). Türkiye'de 1960'lar ve sonrasındaki bilim ve teknoloji politikası tasarımları niçin tam uygulayamadık?. *ODTÜ Öğretim Elemanları Derneği Ulusal Bilim Politikası Paneli*, Ankara: ODTÜ.

Kabakçı, I & Odabaşı, F.(2004). Teknolojiyi kullanmak ve teknogerçekçi olabilmek. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, Anadolu Üniversitesi Yayınları, No: 1601, 4/1.

Odyakmaz , N. (2000). Bilgi teknolojileri, küreselleşme ve kalkınma. *Dış Ticaret Dergisi*, 18.

Özdaş, M.N. (1990). Dünya perspektifinde Türkiye'nin bilim ve teknoloji boyutu. Birinci Bilim ve Teknoloji Şurası, TÜBİTAK Yayını.
Pak, N.K. (2001). Bilgi Teknolojileri Ve Yeni Ekonomi. 10 Nisan 2001 TUBİTAK konuşması.
Patton, M. Q. (2002). *Qualitative research and evaluation methods*. (3rd ed.). Thousand Oaks, Calif.: Sage Publications.
Smith, K. (2002). What is the knowledge economy? Knowledge intensity and distributed knowledge bases. Discussion Papers 06, United Nations University, Institute for New Technologies, 77-86.
Tigrel, A. (1990). *Kalkınma Planlalarında Bilim Teknoloji ve Dünyadaki Gelişmeler*. Ankara: DPT Yayınları.
Türkcan, E. (1981), *Teknolojinin Ekonomik Politiği*, Ankara: Ankara İktisadi ve Ticari İlimler Akademisi.
IX. Kalkınma Planı (Development Plan) (2007-2013). (2006). Bölgesel Gelişmede Temel Araçlar ve Koordinasyon Özel İhtisas Komisyonu Raporu, Ankara.

