

TA-INSTITUTION

Institutionalizing Technology Assessment in South Korea

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Technology assessment (TA) has been officially conducted by the government of South Korea¹ since 2001 when the Framework Act on Science and Technology was enacted. The Korea Institute of S&T Evaluation and Planning (KISTEP), a government funded agency, conducts TA on behalf of the government. Although it has been institutionalized in Korea, TA is still evolving in terms of methods and its effectiveness. In this article, I will outline the history of TA in Korea and also show the political context of its institutionalization.²

1 Prehistory of the Institutionalization of TA

For decades, science and technology has been an important driver for industrial development in Korea. In parallel with the government-driven activities relating to science and technology, non-governmental movements have been co-evolved. Compared to other countries under radical leftist movements, there was a particular context of civic movements in Korea. In the 1980s, the “science and technology movement” could be understood as an expansion of the labor movement. A scientist was understood as a laborer and science as the productive force according to the Marxist perspective. Since the late 1990s, the trend has moved towards public movement in terms of “democracy in science and technology”, “citizen science”, “participatory science and technology”, and so on (Hong 1999). However, the movement has been just a minor stream in the field of science and technology so far. The majority of scientists and engineers do not have considered themselves politically motivated. Instead, they have tried to become neutral and objective “experts”. This attitude of scientists and engineers has been well compatible with government-driven policies.

Besides the activist movement, a number of scholars have also been concerned for decades with bridging the gap between technology and society. For example, a symposium was held in 1979 under the title “Science and Society”. At the symposium, Jin-Joo Lee presented his paper on TA for the first time. He compared similar concepts between “technology evaluation” and “technology assessment”. According to his paper, the former was conducted to analyze short-term and primary effects and the latter was to assess the longer-term impacts, including secondary and tertiary effects. Indeed, the two terms are confusing as both “evaluation” and “assessment” have the same Korean translation. He argued that everybody should be concerned with TA, the government should collect and analyze trends of technologies, special institutions for TA should be established, and special educational programs for TA were needed. In the same year, his paper was published in an academic journal (Lee 1979). However, his pioneering work was too future-oriented to be accepted and realized at the time. Most of all, there was no social consensus about the need of TA then.

After a decade, the situation had changed. In the 1990s, a group of scholars in the field of science and technology policy argued the need for institutionalizing TA (Kim/Lee 1994; Lee/Kim 1997). They presented TA from foreign countries such as the US and European nations in their papers. They also argued for the establishment of an independent TA institution. As those scholars belonged to the Science & Technology Policy Institute, the predecessor of KISTEP, they were well informed about conditions and trends in TA practice, and were able to increasingly influence government policy.

Practices in a true sense of TA were conducted in the late 1990s. The Korean National Commission for UNESCO hosted consensus conferences under the title “Safety of Genetically-modified Foods and Bioethics” in 1998 and “Cloning Technology” in 1999. The Center for Democracy in Science and Technology (CDST), an influential activist group in science and technology, hosted another consensus conference under the title “Nuclear-centered Power Policy: What to Do?” in 1999. All consensus conferences shared the common aim of “democracy in science and technology”, and were

driven by civic groups as a kind of “participatory TA”. However, these unofficial TA activities failed to draw public and social attention (Lee 2007).

2 Introduction to the Law

In 2001, the Framework Act on Science and Technology was enacted by the National Assembly. For the first time, an article about TA was included in the Framework Act. Because of the Korean translation problem mentioned above, the term “technology impact assessment” was used instead of TA (“technology impact assessment” is used synonymously with “TA” in this article). The aim of TA, as defined in the article of the Framework Act, is to “preliminary assess impacts on economy, society, culture, ethics, environment, etc. from emerging science and technology.” According to this article, the government had the obligation to conduct TA.

Indeed, the Science and Technology Promotion Act, which preceded the Framework Act, included a similar concept of TA when it was revised in 1991. According to the Promotion Act, the government should preliminarily assess the beneficial and negative effects of emerging technologies on all areas, including economy, culture, etc. The task of the government was to prepare relevant policies based on the assessment for the future. Although it was not named as nominal TA, the concept in the article was very similar to that in the Framework Act. However, it did not have any actual effect. The government did not conduct any TA activities during the decade when the Promotion Act was in force. Thus, the Framework Act forms the legal basis for institutionalizing TA.

The introduction of TA in the law was the result of the efforts of a number of scholars and activists. Among the civic groups, CDST was particularly interested in introducing TA in the law. CDST presented a written opinion on the draft of the Framework Act in 2000, welcoming the article about TA in the draft. However, it also insisted on “public participation” in science and technology policy and on the establishment of an independent TA institution under the National Assembly or the National Science and Technology Committee. Although its claim was rejected, CDST demonstrated the civic groups’ interest in TA from the perspective of participatory science and technology policy.

Unlike the United States, the United Kingdom and other European nations, the National Assembly of Korea has not played an active role in institutionalizing TA (Bae 2011). The political position of the government was an important factor for the institutionalization of TA. The government prepared the draft of the Framework Act, and actively held public hearings for the Act. Indeed, enacting the Framework Act to reorganize the national innovation system was a presidential election pledge in 1997. The Kim Dae-jung administration (1998–2002) at that time had a friendlier attitude towards civic groups and public participation than previous administrations. The basic idea was embraced by the following Roh Moo-hyun administration (2003–2007). In this context, the government had played an active role in enacting the Framework Act.

3 Official TA Activities

Since the Framework Act was enacted, KISTEP has officially conducted TA on behalf of the government. The assessments cover the following technology areas: NBIC converging technology (2003), radio-frequency identification technology (2005), nanotechnology (2005), stem cell technology (2006), nanomaterial technology (2006), ubiquitous computing technology (2006), climate change countermeasure technology (2007), infectious disease countermeasure technology (2008), and brain-machine interface technology (2011). The topic “NBIC converging technology” of the first TA in 2003 – a kind of pilot project – was chosen by the government. “Nanotechnology” (2005) was specified by the Korea Nanotechnology Development Promotion Act enforcing mandatory TA (Ryu et al. 2010). There was no official TA in 2009 and 2010 because it was a low priority in budget allocation at that time. Before the revision of the Enforcement Decree of the Framework Act in 2010, the government was not bound to conduct TA every year.

During the last decade, TA has evolved in terms of systems and methods. Keywords of evolutionary change in TA are “objectively selecting technology”, “enhancing public participation”, and “effective policy means”. These issues have also been the main target of criticism by scholars

and activists. Responding to their criticism, the government decided to choose research topics for TA through a “Technology Selection Committee” instead of an authority. The committee was introduced to ensure the procedural legitimacy of TA. However, the problem of selecting technology is still discussed (Han/Kang 2011). To increase public participation, the government has applied the following methods: consensus conferences, citizens’ juries, public hearings, citizens’ open forums, scenario workshops, and so on. In 2008, the KISTEP has entrusted the citizens’ jury with supervising the work of the CDST for the purpose of enhancing objectivity of TA. In addition, the government has made attempts to enhance the effectiveness of TA. In this context, the National Science & Technology Committee (NSTC), the top-level advisory body in national science and technology policies, tried to assign responsibility for implementing the results of TA to relevant ministries. However, the assignment was not well worked because the recommendation from NSTC does not have a legal binding force for other ministries.

The question of a TA agent was another issue. Critics argued that the government was not the proper agent for TA. According to their argument, the Ministry of Science and Technology (MOST) had contradictory roles at the same time. The MOST did not only initiate policies to develop science and technology, but also had to assess the resulting technological developments. Although the actual TA agent was the KISTEP, critics were skeptical about the agency’s independence as its affiliation was the MOST (Kim 2003). Therefore, many scholars argued that the National Assembly should lead TA instead of the government like in the United States and European nations. The National Assembly, however, did not show any willingness to take on the leading role in TA. The agent problem has been lessened by the establishment of the National Science & Technology Commission in 2011. The Commission is a permanent organization to deliberate on national science and technology policies, including R&D budget allocation, whereas the NSTC was an ad hoc body. The KISTEP has also changed its affiliation to the Commission. Since the Commission does not directly conduct R&D, the problem of the agent’s contradictory roles seems to be resolved. However,

the National Assembly is still considered to be a potential candidate for leading TA in the future.

4 Implications

The main drivers in the development of TA have been experts and citizens. In the effort to improve methods, emphasis was placed on the latter in order to enhance public participation. The results of citizens’ assessments are generally presented in the form of reports including suggestions to the government. The suggestions mostly include broad meanings and deal with oughtness, except a few cases. This is one of the reasons that TA has not been effective in implementing actual policies. However, citizens’ suggestions tend to stress precautionary approaches to emerging technologies, whereas experts can generally be described as technology optimists. Citizens’ suggestions are needed to get more detailed contents, and the government should pay more attention to the precautionary measures recommended by them. Reflecting the needs of citizen’s participation, the Korean government and KISTEP have introduced “on-line open survey” as a TA method on “big data technology” in 2012. The long step for public participation in science and technology policy is still in progress.

Notes

- 1) Hereafter, South Korea is referred to as Korea.
- 2) I would like to appreciate Michael Rader, Bettina Krings, and Constanze Scherz who shared useful ideas on TA in our meeting on June 16, 2011. I hope to give European readers the opportunity to understand the political context of TA in Korea.

Literature

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The EPTA network was formally established in 1990 and has a light structure, guided by the EPTA Council and by meetings of the Directors of the EPTA partner organisations. The members of the EPTA network are European organisations, which carry out TA studies on behalf of parliaments. EPTA can decide to make “common EPTA projects”, in which EPTA members and associates can join forces and make trans-European TA activities. A project is decided at a Directors’ Meeting or Council Meeting after being contested by the boards of the members. The outcome of an EPTA project is the sole responsibility of the participating members.

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