

Executive Summary

ALIPRO objective

ALIPRO¹ aims at supporting the alignment of the NMS' national and regional research programmes with the European IST research in the area of mobile technologies, applications, and services.

Purpose of the document

The main objective of this document is to present the findings of ALIPRO carried out at national level. This comprises thorough description of national and regional mobility-related R&D programmes identified in Turkey and the presentation of the results of their evaluation performed by national experts.

This document is meant for Institutions and individuals active in the field of mobile technologies, services and applications.

Mobile Sector in Turkey

Year 2004 was a turning point for Turkish telecommunication sector. As of January 1, 2004, liberalization process started and monopoly rights of Türk Telekomünikasyon AS (Turkish Telecom) in infrastructure and voice areas ended. New regulations have been issued in order to allow operators other than Turkish Telecom to provide voice services over the fixed network.

As of the end of 2004, there are 91 licensed operators providing internet services and 3 GSM operators in Turkey. As it is the case in the whole world, ISSs in our country, provide necessary infrastructure, hardware and software and provide content and access to Internet. GSM operators provide data services like SMS, WAP, GPRS, MMS and value added

¹ ALIPRO is an EU research project under Framework Programme 6. For more information on ALIPRO, please refer to <http://alipro.eurescom.de>.

services over smart networks like geographical data, special invoicing, virtual user platform building, different tariff options, audio message, cellular-mail.

Given the number of population, while GSM penetration rate in EU-25 countries is 83%, it is 49% in Turkey in 2004. Number of GSM subscribers increased rapidly and while it was 692.779 in 1996, it increased by about 50 times more and reached 34.707.549 in just 9 years.

Regulatory Background

There are two main acts governing telecommunications industry in our country. With the Act no 4502 dated 27.1.2000, which amend these two main laws, regulatory and administrative activities have been separated. Regulatory authorities have been vested in Telecommunication Authority, as an independent regulatory body. New regulations will aim at building competition environment as well as increasing the welfare of the consumer and accelerate growth of the industry.

Telecommunication Authority is the first industrial regulatory body of Turkey. With Act no 4052 , Telecommunication Authority was founded. With this law, policy and strategy determination and implementation functions have been separated. The main goal of Telecommunication Authority is ensuring full liberalization of the industry. While the office plays an important role in liberalization process, it will minimize its regulatory role as a result of liberalization, but it will still keep up its inspection and arbitration roles in order to ensure a sustainable competition environment in the industry.

The Ministry of Transportation's main activity area is building and developing telecommunication, radio, television and information networks that provide cheap, fast, quality and reliable services and that offer alternative selection opportunities to users in a free competition environment, in a way that they will integrate with the modern world and adapt to information age society.

National Research Strategy and Financing the R&D

Implementation of the Turkish Science Policy, assisting the government in determination of long termed S&T policies, identification of targets, elaboration of plans and programs,

assignment of public organs, establishment of collaboration with private establishments, elaboration of required laws and legislation, provision of human resources development for researches, implementation of measures for establishment of research centers, determination of fields of research and provision of coordination services are the responsibilities of Supreme Council for Science and Technology (SCST) which is founded with Decree Law dated October 1983.

The task of implementation of the Technology Foresight Project in coordination with the related institutions and establishments, pursuant to the decision of the Supreme Council for Science and Technology, constitutes the main axis of the Vision 2023 Project which has been assigned to TUBITAK.

The strategy document, has been presented to the member establishments of the Supreme Council for Science and Technology. The strategy document contains socioeconomic and technological objectives of Turkey for the period of 2003 – 2023.

Information and communication technologies containing mobile communication technologies are one of the technological objectives emphasized on the strategy document. Currently, existing research programmes supports all R&D activities without any thematic limitation. The budgets of programmes are controlled by the Under Secretariat of Foreign Trade, TUBITAK - TIDEB and TTGV are responsible of the assessment and the monitoring.

It involves four sub-projects:

- Technology Foresight
- Technological Capacity
- R&D Manpower
- R&D Infrastructure

Technology foresight is a tool that can be used to match future needs of societies with the supply of science and technology. Technology foresight has recently gained widespread acceptance all over the world and across Europe, not only as a policy instrument used in formulating science and technology strategic plans, but also as a means of promoting the foresight culture in the society.

It is for these reasons that the technology foresight exercise, to be conducted for the first time in Turkey, constitutes the backbone of the “Vision 2023” project. The remaining three sub-projects aim at collecting data on the existing science, technology and innovation capacity of the country, in terms of R&D manpower, technology inventory, R&D infrastructure and institutional and legal framework.

There are two main strategic objectives which are;

- “Increase in R&D spending”: encouraged competitiveness of the research institutions and more active participation in EC’s framework programmes. But it is also important to create and sustain the National R&D Fund to finance the National Research Programme. TUBITAK and TTGV have been assigned for assessments and monitoring R&D programmes.
- “To increase the number of researchers”: Turkey has very young population. In order to have sufficient number of researchers, educational and employment policies should be revised considering to reduce weaknesses and to support strenghts in our human resources.

The profound exploratory research showed that there is no mobility related research programmes. R&D project proposals in the field of the mobile technologies, services and applications can be submitted to calls two national research programmes with general character. These programmes are

- TUBITAK – TIDEB Research and Development Support for Industry
- TTGV Technology Development Projects Programme

The management of the these programmes has been done by Turkish Scientific and Technological Research Organization (TUBITAK) and Turkish Technology Development Foundation (TTGV).The financial budget of these programmes is controlled by Under secretariat of the Prime Ministry for Foreign Trade.

In addition to these two main R&D support programmes, Some additional governmental financial support incentives for R&D listed below have been mentioned briefly at this report,

- General Investment Encouragement Programme
- The adjourn of the Corporate Tax

- Small and Medium Industry Development Organization (KOSGEB):
- Technoparks, Incubators, Knowledge Intensive SMEs
- Venture Capital

Programme Evaluation

Industrial R&D Grant Programme (TR-TIDEB)

The Under Secretariat of Foreign Trade (UFT) and TIDEB have shared responsibility for the management of programme. TIDEB has been assigned to use its monitoring and evaluating capabilities, to determine projects worthy of subsidy and to monitor the projects approved by UFT. The organization examines each concerning project thoroughly by its relevant staff as well as through 3 independent arbitrators and then assigns an individual watcher to monitor the project in order to determine the whether subsidy decision is justified.

R&D grants, whether the project is ICT or not, cover; the product development or the new product technology development of a technique to increase efficiency or productivity or to decrease the production costs. The phases starting from concept definition to prototype production or pilot runs are considered as R&D activities of a project.

The R&D Support Program is a non-refundable fund and companies would be able to get funding up to 60% of R&D expenses. Although there is no limitation on project budget for duration of the project should be less than or equal to 36 months. Companies can appeal for funding for R&D projects inline with thematic areas or R&D projects not directly inline with thematic areas. Thematic areas are listed as

- Information Technologies
- Multifunctional production technologies
- Enhanced material technologies
- Gene engineering and bio-technology
- Space and Aeronautics technologies
- Technologies for saving environment

This is a bottom-up programme. Companies themselves decide on the subject of the R&D project and there is no limitation or other restriction for the application to the programme. Any time during the year the companies can make R&D project proposals to the TIDEB. The

evaluation process is performed on project basis and the granting decision includes the decision on the accepted costs and duration of the project.

The evaluation reports prepared by evaluators are examined by TIDEB specialists and a Project Information sheet containing evaluation results are sending the Grant Committee for the final decision.

The applicant company is being informed about the final decision of the Grant Committee by the one of the referee selected as external monitoring expert. The company has always right to comment on or object to the decision. The criteria used in assessment are very open and clear;

- Clearly defined objectives
- R&D approach achieving defined objectives
- Clear added value at company/national level
- Innovation level
- Technological complexity level
- Potential impact at national/international level
- Commercialization possibility
- Project management structure
- Dissemination plans

Industrial R&D Grant Programme comprehensiveness is more than average. Comprehensiveness describes the universality of the programme, mostly in terms of thematic range (if the programme is capable of covering a widely understood mobility or just its part) and direct beneficiaries spectrum (if a beneficiary has to be a specific entity or it is allowed to represent any category of organization).

First of all, the programme is a general programme and financial support has been given as grant. In addition to the general approach, some mobility-related projects were sponsored in the past; this is not a planned action, which also reveals the quality and relevance of programme goals. However, TR_TIDEB supports projects from all disciplines of technology; therefore it has no thematic gaps.

Communications quality covers programme founder's communication performance in terms of programme information dissemination. The quality of communications within TR-TIDEB

programme is more than average. The programme has been promoted via presentations in meetings organized by Industrial Chamber and umbrella institutions, internet, stands in fairs and articles in industrial magazines. Programme information is also available in English.

Goals and rationale validity describes the quality of programme goals and validity of its rationale as well as reflects the relevance of the assumptions made while setting these goals to the real needs of the R&D market. This evaluation criterion is one of the strongest point of TR-TIDEB programme. Companies themselves decide on the subject of the R&D project and there is no limitation or other restriction for the application to the programme.

The administrative complexity of TR-TIDEB programme is average. The reporting procedures are apparent and reporting forms are available at the TIDEB website. Reporting has been done every six months. To receive the payments reports should be approved by the monitoring expert who is selected from one of evaluators.

Considering responses, average time dedicated for proposal preparation is reasonable; all beneficiary companies declared that Average time for proposal preparation is around 2 months.

TR-TIDEB programme is a passively opened programme since the participation of foreign partners is possible but without receiving any fund. The projects funded by TR-TIDEB can be supported from other programmes, two of respondent confirmed that they also received funds for their projects from FP6, EUREKA and TR-TTGVP.

All beneficiary companies were agreed that all eligible costs claimed reimbursed by TIDEB. But the budget of the programme was limited approximately 20 MUSD. This budget has been expanded approximately 80 MUSD with the Decree dated August 2005.

The financial efficiency of the TR-TIDEB programme was average. Almost all respondents declared that they had some delays on their payments. In order to increase the financial efficiency of the programme pre-payment became applicable with the Decree dated August 2005.

The programme founder assigns a referee for each funded project. The referee prepares a monitoring report in every two months. This process helps to improve the quality of project management methodology and culture.

All beneficiary companies were agree that TR-TIDEB programme has a substantial impact on sectors, they declared that programme promotes to project monitoring, Industry-University collaboration and encourages the product development in Turkey. Therefore TR-TIDEB programme is strongly important for technology development in Turkey. The programme also has impact on economy and industry. It influences the market rather in mid and long term.

Technology Development Projects (TR-TTGVP)

TTGV has been implementing its programs through the funds provided by The Under secretariat of Treasury from the resources of the World Bank and through The Foreign Trade Under secretariat, since 1991. Within this framework, TTGV has supported "technological products and process innovation" projects of the industrial companies and software companies. Technological products and process innovations are defined in accordance with the OECD criteria.

Since its inception, as its main task, TTGV has been funding technology development projects carried out by manufacturers and software companies. Supported activities are technology development projects carried out by companies within the technological product and process innovation concept but in such a way that know-how will be retained by the company. Projects based on infrastructure or production investments and projects developed by universities and research organizations, are not covered by this subsidy.

TR-TTGVP supports projects from all disciplines of technology; therefore it has no thematic gaps. In addition to the general approach, some mobility-related projects were sponsored in the past, this is not a planned action, which also reveals the quality and relevance of programme goals. However, the main difference from TR-TIDEB programme is that this financial support is a loan. Therefore applicants should also have a market strategy about their projects.

The programme has been promoted via presentations in meetings organized by Industrial Chamber and umbrella institutions, internet, stands in fairs and articles in industrial magazines. Programme information is also available in English.

Companies themselves decide on the subject of the R&D project and there is no limitation or other restriction for the application to the programme. Generally, application which reflects the technological objectives listed above has been accepted.

The reporting procedures are apparent and reporting forms are available at the TTGV website. Reporting has been done monthly basis. To receive the payments reports should be approved by the monitoring expert who is selected from one of evaluators.

TR-TTGVP programme is a passively opened programme since the participation of foreign partners is possible but without receiving any fund. The projects funded by TR-TTGVP can be supported from other programmes.

All eligible costs claimed reimbursed by TTGVP. But the budget of the programme is limited approximately 20 MUSD. Some of beneficiary companies had some delays on their payments. However the delay on payments is less then TIDEB case, because of the monthly reporting of expenses.

The programme founder assigns a referee for each funded project. The referee approves the monitoring reports and project expenses monthly. This process helps to improve the quality of project management methodology and culture.

TR-TTGVP programme has a substantial impact on sectors, the beneficiary companies declared that programme promotes,

- Financial support to realize the project
- Defining marketing strategies,
- Increasing Industry-University Collaboration,
- Enabling Product Development in Turkey,
- Encouraging Technology Development,
- Short-term Financing.

Therefore TR-TTGVP programme is strongly important for technology development in Turkey.

Conclusion

Having examined the system of science financing in Turkey and all R&D related activities, there are some practices considering the best for adaptation in other countries. Turkish programs are very compatible with programmes in NMS and ACC countries.

The main advantages of existing system and programmes are having;

- well organized implementing agencies, and their broad vision on R&D programmes,
- Skilled and experience project assessor,
- Flexible programme structure; open call
- Unlimited and free consultancy support during the assessment and the monitoring stage of the projects

Considering the last changes on the related Decree, the budget of Industrial R&D Support Programme Budget has been increased around 80 MUSD. But considering the whole R&D support in Turkey this increase has still been insufficient considering the National GDP of Turkey.

Considering the objectives in Vision 2023 document, they are all similar with the ERA objectives. It is very important to put necessary measurement criteria for monitoring the performance in national level. It is one of the key challenges to keep track these objectives in order to establish a knowledge based economy.

Increase in R&D spending, encouraged competitiveness of the research institutions and more active participation in EC's framework programmes. But it is also important to create and sustain the National R&D Fund to finance the National Research Programme.
