

# Bio-in-techno polis

## A Study on Biotechnology Companies in METU Techno polis, Turkey

In spite of many ethical discussions, biotechnology, as a growing sector, keeps on taking a place in techno poleis, in other words technoparks, in many countries including Middle East Technical University (METU) Techno polis, Turkey. This study aims to show common features of biotech firms.



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### Techno poleis and biotechnology firms in Turkey

The first techno park in Turkey was established in 1985 by ITU-Istanbul Technical University and the Istanbul Chamber of Commerce. In ensuing years, based on a contract between KOSGEB and ITU, Techno Park has continued its activities as a Technology Development Center. In 1987, METU started a research on METU-techno polis (Reisman et al. 2004: 25).

In 2001, with the Regulation of Techno parks accepted by KOSGEB, METU Techno polis and TUBITAK-MAM (Turkish Industrialists and Businessmen's Association-Marmara Research Center) were regarded as the first Technology Development Zones in Turkey. Following this, many other technology development zones have been established in Ankara (such as TDZ-Cyber Park, Bilkent University – 2002, Hacettepe University TDZ – 2003, Ankara University – 2006, Gazi University – 2007) (Varol et. al. 2009: 147).

Still, modern biotechnology and its uses in industry are not developed enough in Turkey. According to Erbaş (2006: 33), "...there is no systematic registry on the companies engaged in biotechnology in Turkey". Varol et al. (2009: 150) give information about METU-TEKMER (METU-Technology Development Center) and OSTİM (Organized Industrial Region) Incubation Center: "Between 1992 and 2007, 117 firms had been supported where 80 of them had completed the incubation phase and graduated successfully. When the sectoral distribution of the firms was analyzed, it was seen that informatics, electronics, mechatronics, and **biotechnology** sectors were dominant." The only data can be gained from a study financed by TUSIAD (Turkish Industrialists and Businessmen's Association), and in this study, it was seen that the number was 90 firms in 2005, whereas it was only 50 in

2000. Although the numerical data are not consistent, the average number obtained for 2006 is about 170 firms engaged in biotechnology (Basaga and Cetindamar, 2006: 1).

### Methodology

In order to understand and see the common features in the foundations, product diversities, and strength or weaknesses of the companies, an empirical study was performed in METU Techno polis in 2008. The empirical data were gained from the interviews with four biotechnology company authorities through a semi-structured questionnaire. These firms have been chosen according to their sectors. As there were just four biotechnology firms in the techno-polis of METU in 2008 all of them were interviewed.

### Findings and Discussions

#### ■ Establishing a biotech firm and the founders

In this sample, it is apparently seen that the person who decides to establish a biotechnology firm generally comes from the academic arena. Besides, there are many similarities among the firms about the reasons for establishing a new biotechnology firm. The most common point was about the unnecessary importation of expensive biotechnology goods and services, such as the biotechnology test kits, which are necessary for even the most basic biotechnology researches. Recently, the production of biotechnology test kits and other goods and services in Turkey is done by imitating imported products in general. However, the founders and their workers are complaining about many researchers' and doctors' preference in buying the foreign good by the justification of getting more qualified goods.

#### ■ The products and services & customers

It is impossible to assume that there is a various product range in the biotechnology sector in Turkey. Only biotechnology test kits, tests and analyses are being made for the sectors of health and education. Moreover, the customers are increasing in universities and medical centers. Hence, biotechnology firms produce the necessary goods in accordance with the demands of these customers. In addition to this, the product variety may be adapted to the de-

mands of various geographical regions and changed in parallel to these demands. According to Pfirrmann (1999: 657), the majority of firms offer a mix of analytical services, contract research and act as suppliers for universities, research institutes and other firms by providing intermediary products such as testing kits and cell cultures. Furthermore, he regards this as the “bread and butter” activity, which provides a funding base that sustains the entity, while the search for more sophisticated target products proceeds and in many cases, universities and research institutes also provide the laboratory and manufacturing equipment to help the small company to overcome specific size barriers.

#### ■ The advantages of Techno-polis

Being a member of METU Techno-polis, as a technology development zone, is very desirable for all new established firms and also for techno-polis's biotechnology firms in many respects. This desirability is coming from the particular infrastructure opportunities of techno-polis which includes electricity and water system, internet network, tax reduction, buildings and the most important one is the academic counseling and technical assistance for the biotechnology processes. Actually, the unpaid “helps” of university students or trainees to their university professor should not be ignored here. The point to be regarded is that among the other advantages listed above, the most important one was explained as the “synergy” among the firms.

#### ■ Capital source and patents

There is no foreign investment confirmed in the interviews of firms. All of them are established by the indigenous and personal effort and only by the help of KOSGEB and TUBITAK. This result is in contradiction with Lerner and Merges' (1998: 126) argument, that “small, research-intensive firms frequently rely on alliances with larger corporations”. This contradiction has its reason in the production type of the biotech firms in Turkey, and it is not so much research-intensive. However, one of these firms was offered to have a corporation by a foreign company but the firm responded that they didn't accept it because they wanted to be successful first by themselves without any other assistance.

Only one firm has a patent in a sort of educational testing kit. They had some patent applications. However, OECD statistics (Beuzekom and Arundel, 2006: 44; 2009: 75) clearly reveal that Turkey is one of the least specialized countries in biotechnology patents, and only one patent application has been made from biotechnology sector between 1994-1996, but this increased to 5 between 2004-2006.

#### ■ Technical problems

All biotechnology firms work with expensive machines which are essential for carrying out DNA series analysis. The main reason for the firms in Turkey to import these machines is the fact that there is no place to produce or even repair them. The dependency on the possibility of repair of the ma-

chines costs the firms not only substantial but also customer trust loss by the time (approximately in forty or fifty days).

#### Conclusion: Academics in biotechnology sector

As we see in this article, biotechnological firms have academic founders who at the moment import machines and imitate established products. A well-known first step in production, or even in a creative process, is imitation. However, if one chooses to produce only by imitating failure would be the consequence both in the commercial biotechnological sector and academia. The biotechnological field generally requires creativity. Thus, being an academic is a brilliant pre-condition in this sector. To be successful, academics should keep their origin in mind and remain as “academic” as possible in this capitalist sector. If they fail to do so they will get the response they deserve.

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