

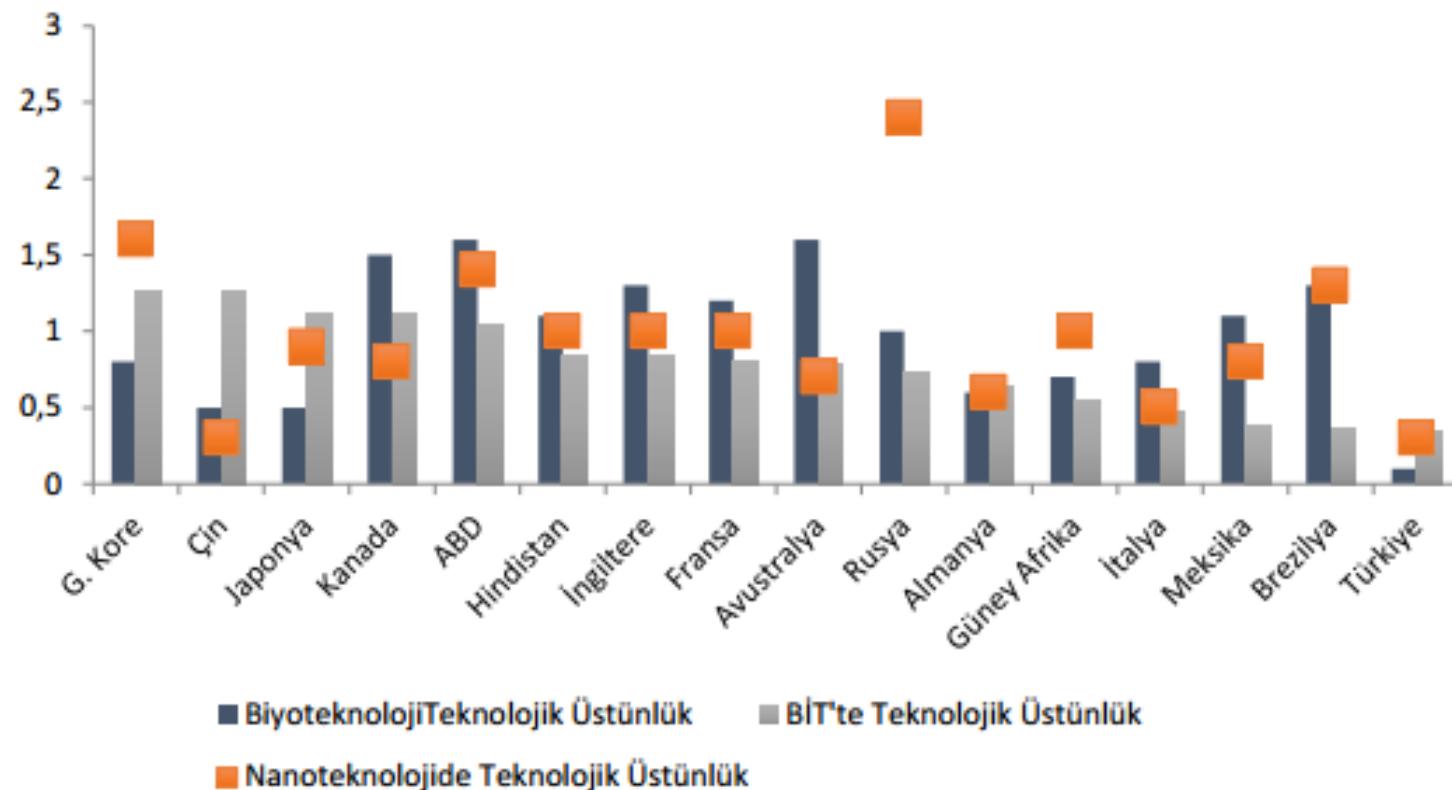


Araştırmadan Pazara Ulusal / Uluslararası İşbirlikleri

Fazilet Vardar Sukan

05.05.2017

Biyoteknoloji, Nanoteknoloji ve BİT'te Teknolojik Üstünlük Karşılaştırması, 2015



Kaynak: OECD, 2015

BİYOTEKNOLOJİ ENDEKSİ



EBİLTEM-TTO
TEKNOLOJİ TRANSFER OFİSİ

| | 2.1 | 2.2 | 3.4 | 3.5 | 4.1 | 4.3 | 4.4 | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 6.1. | 6.2 | 6.3 | 6.4 | 7.1 | 7.2 | 7.3 | 7.4 |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| UNITED St | 10 | 8.5 | 5.2 | 10 | 8.4 | 8.1 | 9.2 | 4.4 | 5.4 | | | 10 | 5.3 | 6.6 | 8.1 | 8.6 | 7.4 | 7.1 | 7.1 | 8.3 |
| SINGAPOR | 7 | 9.7 | 7.4 | 0.1 | 10 | 8.4 | 9.3 | | | 5.7 | 7 | 0.7 | 3.3 | 4.6 | 9.7 | 8.6 | 9.2 | 10 | 10 | 9.3 |
| DENMARK | 9.1 | 7.9 | 10 | 0.1 | 9.1 | 2.5 | 8.2 | 4.2 | 2 | 9.3 | | 0.3 | 5.6 | 7.1 | 8.1 | 9.7 | 8.4 | 8.5 | 8.4 | 9.9 |
| NEW ZEAL | 6.1 | 9.4 | 9.6 | 0.1 | 9.8 | 6.9 | 6.9 | 10 | 10 | 4.5 | | 0.5 | 1.2 | 2.8 | 5.8 | 8 | 10 | 9 | 9.1 | 9.7 |
| AUSTRALI | 6.8 | 8.5 | 7 | 0.5 | 7.8 | 3.8 | 8.4 | 7 | 5.8 | 5.3 | 5.3 | 3.4 | | 5.2 | 5.6 | 8.5 | 8.8 | 7.7 | 8.9 | 9.4 |
| SWITZERL | 7.5 | 9.7 | 4.1 | 0.3 | 6.5 | 5.6 | 8.7 | 3.6 | 3.3 | 7.2 | | 0.6 | 5.7 | 6.9 | 10 | 9.5 | 9.3 | 9.7 | 8.8 | 9.7 |
| FINLAND | 9.1 | 10 | 1.1 | 0.1 | 8.1 | 8.1 | 8.3 | 3.6 | 2 | 9 | | 0.2 | 6.4 | 8 | 9.2 | 9.1 | 9.4 | 9.3 | 9 | 10 |
| UNITED KI | 8.5 | 9.1 | 4.1 | 1.4 | 8.5 | 6.3 | 9.3 | 7.6 | 6.4 | 5.1 | 2.3 | 5.8 | 2.8 | 3.7 | 6.7 | 9.1 | 6.9 | 7.8 | 8.8 | 9.2 |
| SWEDEN | 8.5 | 8.5 | 2.2 | 0.3 | 8.3 | 5.9 | 8.4 | 2.5 | 2.3 | 7.3 | | 0.4 | 6.4 | 7.7 | 7.5 | 10 | 8.8 | 8.4 | 8.7 | 9.6 |
| CANADA | 9.1 | 8.5 | 3.3 | 0.8 | 7.8 | 5.6 | 10 | | 6.4 | 5.3 | 4.5 | 1.6 | 2.1 | 3.9 | 6.9 | 8.2 | 9.1 | 8.3 | 8.8 | 9.2 |
| HONG KO | 5.2 | 9.1 | 1.5 | | 8.9 | 7.5 | 9.4 | | | 2.5 | | 0.3 | | 1.6 | | 9.7 | 8.7 | 8.9 | 8.6 | 9.5 |
| GERMANY | 8.3 | 8.2 | 1.1 | 1.6 | 7.7 | 5 | 6.9 | 4.8 | 2.9 | 6.5 | 5.1 | 2.8 | 5.3 | 6.7 | 8.3 | 8 | 8.4 | 8.2 | 8.4 | 9.3 |
| ISRAEL | 6.6 | 6.1 | 6.3 | 0.1 | 4.9 | 8.1 | 6.5 | | 4.2 | 10 | 3.6 | 0 | 10 | 10 | 3.9 | 6.2 | 2.7 | 6 | 6.9 | 6.6 |
| NETHERLA | 9.1 | 9.1 | 4.8 | 0.4 | 6.5 | 5 | 8.3 | 2.6 | 0.9 | 6.1 | | 0.8 | 2.9 | 4.5 | 9.4 | 8.6 | 8.7 | 8.6 | 8.6 | 9.5 |
| JAPAN | 9.1 | 9.4 | 0 | 2.7 | 6.1 | 5.3 | 6.6 | 0.9 | | 5.9 | 5.5 | 2 | 7.5 | 7.8 | 9.2 | 7 | 8.6 | 8.5 | 6.7 | 8.3 |
| IRELAND | 9.1 | 8.8 | 5.9 | 0.1 | 7.5 | 4.1 | 7.7 | 7.3 | 4.3 | 5 | | 0.1 | 3 | 3.6 | 5.6 | 8 | 8.8 | 7.7 | 8.6 | 8.9 |
| FRANCE | 9.1 | 8.5 | 3 | 1.3 | 6.5 | 4.7 | 7.2 | 5.3 | 3 | 6.9 | 2.8 | 3.7 | 3.9 | 5.2 | 8.3 | 7.5 | 6.7 | 6.9 | 6.5 | 7.8 |
| AUSTRIA | 7.5 | 8.2 | 2.2 | 0.1 | 7.3 | 3.1 | 6 | 3.3 | 2.7 | 6.6 | | 0.8 | 5.7 | 6.6 | 8.6 | 9.1 | 9.4 | 7.6 | 7.8 | 9.5 |
| NORWAY | 6.8 | 8.5 | 4.1 | 0.2 | 8.2 | 7.2 | 7.6 | 2.7 | 1.5 | 6.3 | | 0.2 | 2.2 | 3.7 | 5.8 | 9.1 | 8.9 | 8.5 | 8.2 | 9.8 |
| BELGIUM | 9.1 | 8.2 | 7 | 0.2 | 5.5 | 5 | 6.8 | 2.4 | 1.4 | 6.2 | | 0.6 | 4.3 | 5.2 | 6.9 | 7.7 | 6.9 | 6.8 | 8 | |
| LUXEMBO | 6.7 | 10 | | | 4.2 | 7.5 | | | 0.6 | 8.7 | | | 1.8 | 2.6 | 7.5 | 9 | 9.7 | 7.9 | 8.2 | 9.3 |
| ICELAND | 3.8 | 7 | | | 7.4 | 3.8 | | 4.1 | 4.7 | 7.9 | | 0 | 2.8 | 5.8 | 8.6 | 9.1 | 9.3 | 7.3 | 6.9 | 8.7 |
| TAIWAN | 4.9 | 6.7 | 0 | 0.2 | 7.9 | 6.9 | 6.2 | | | 2.6 | | 6.4 | | 7.2 | 7.1 | 8 | 6.8 | 7.2 | 6.9 | |
| SOUTH KO | 7.5 | 3.6 | 0.7 | 0.5 | 8.9 | 2.2 | 8.1 | 4.4 | 3.7 | 6.8 | 3.7 | 0.8 | 9.3 | 9.5 | 7.5 | 7 | 6.2 | 6 | 6.6 | 6.2 |
| ESTONIA | 6.7 | | | | 7.6 | 5 | 7 | 4.5 | 2.8 | 4 | | 0 | 2.1 | 5 | 5.8 | 6.4 | 7.9 | 5.5 | 8.3 | 7.5 |
| UAE | 7.6 | | | 0.1 | 6.3 | 7.8 | 6.7 | | | 0.7 | | 0.7 | 1 | 9.7 | 6.2 | 8 | 7.2 | 6.2 | 5.3 | |
| MALAYSIA | 3.7 | 7.3 | 2.2 | 0.1 | 7.5 | 9.1 | 7.3 | 3.3 | | 2.1 | | 0.8 | 2.5 | 7.5 | 4.6 | 6.6 | 5.9 | 5.8 | 5.3 | |
| QATAR | 8.8 | | 0 | 0 | 3.5 | 10 | | 0 | | | | 0.1 | 1 | 7.5 | | 8.6 | 5.3 | 5 | 6.3 | |
| SPAIN | 7.5 | 3 | 5.9 | 0.6 | 6.2 | 2.5 | 6.6 | 3.2 | 2.5 | 5 | 3.9 | 0.7 | 1.6 | 2.9 | 7.8 | 5.7 | 6.6 | 6 | 5.6 | 6.1 |
| CZECH REP | 7.5 | 4.8 | 0.7 | 0 | 5.9 | 4.4 | 4.4 | 4.6 | 3 | 5.2 | | 0.5 | 2.7 | 4.1 | 5.6 | 6.2 | 8.5 | 5.5 | 6.4 | 6.7 |
| PORTUGA | 7.7 | 5.2 | | 0.1 | 7 | 2.8 | 6.9 | 3 | 4.6 | | | 0.2 | 1.6 | 3.1 | 7.8 | 5.5 | 8 | 5.4 | 5.6 | 6.7 |
| CHILE | 7.3 | 3.6 | | 0.1 | 5.1 | 4.4 | 5.8 | 1.9 | 0.3 | 0.7 | 7.4 | 0 | 0.1 | 0.7 | 4.7 | 5.5 | 7.1 | 5.9 | 7.8 | 7.7 |
| LITHUANI | 6 | 3.3 | | | 7.4 | 3.4 | 4.8 | 3.1 | | 3.4 | | 0 | 2 | 5.8 | 4.2 | 7.9 | 5.3 | 6.9 | 6 | |
| SLOVAK R | 7 | 3.3 | | 0 | 6.4 | 3.1 | 4.1 | 4.8 | 4.5 | 3 | | 0.1 | 0.8 | 1.8 | 4.4 | 5.1 | 8.6 | 4.9 | 6 | 4.6 |
| SOUTH AF | 7.2 | 7.3 | 4.4 | 0.1 | 3.1 | 3.4 | 5.3 | | 0.9 | 0.9 | | 0.8 | 0.6 | 1.6 | 3.9 | 5 | 5.4 | 2.8 | 4.2 | 3.5 |
| POLAND | 7 | 3 | 4.1 | 0.1 | 6.7 | 1.9 | 2.8 | 5.2 | 3.7 | 2.3 | | 0.3 | 0.8 | 2 | 3.3 | 5.1 | 8.2 | 4.7 | 6.5 | 5.7 |
| HUNGARY | 8.3 | 2.1 | 3 | 0 | 5.5 | 1.6 | 4.6 | 2 | 0.9 | 4.1 | | 0.2 | 2.6 | 2.9 | 5 | 3.8 | 7.7 | 3.5 | 5.6 | 4.6 |
| ITALY | 9.1 | 3.3 | 1.5 | 0.8 | 5.3 | 0.6 | 4.9 | 2 | 2.8 | 4.8 | 3.2 | 1 | 1.7 | 2.9 | 3.3 | 4.6 | 7.1 | 2.9 | 5.3 | 4.1 |
| LATVIA | 3.9 | | | | 7.2 | 3.1 | 3.3 | 2.9 | 0.7 | 2.4 | | 0 | 1.4 | 5.3 | 4.9 | 7.3 | 5.3 | 6.8 | | |
| SAUDI AR | 1.4 | 6.1 | 0 | 0.1 | 2.6 | 5 | 4.8 | 5 | 1.7 | | 10 | 0.6 | 0 | 5.6 | 3.8 | 4.9 | 2.3 | 3.2 | 3.9 | |
| CHINA | 6.4 | 3 | 0.4 | 2.7 | 2.5 | 5.9 | 5 | | | 1.9 | 0.7 | 1.2 | 4.4 | 4.4 | 4.4 | 2.9 | 4.3 | 2.5 | 1.9 | |
| GREECE | 7.4 | 3.3 | | 0.1 | 4.2 | 0 | 4.2 | 3.5 | 0.6 | 4.9 | 1.9 | 0.4 | 0.4 | 1.5 | 3.9 | 4.1 | 5.7 | 3 | 4.3 | 4.1 |
| MEXICO | 5.5 | 2.4 | 3.3 | 0.4 | 5.8 | 2.8 | 3.9 | 1 | 1 | 0.6 | 4.5 | | 0.9 | 3.3 | 1.2 | 3.4 | 2.2 | 4.6 | 1.5 | |
| RUSSIA | 4.6 | 0 | 5.6 | 0.5 | 5 | 2.5 | 2.7 | 4.3 | 0 | 4.6 | 1.9 | 2.3 | 1.7 | 2.3 | 3.3 | 4.6 | 3.2 | 1.2 | 2 | 0.6 |
| THAILAND | 0 | 0.6 | | 0.1 | 5.1 | 4.4 | 6.1 | | | 0.5 | 8.7 | | | 0.8 | 3.1 | 2.4 | 3 | 2.8 | 4.1 | 2.5 |
| TURKEY | 6.1 | 2.1 | 0 | 0.3 | 4.4 | 1.9 | 2.8 | 3 | 1 | 1.8 | 3.4 | 0.5 | 1 | 2 | 5.6 | 2 | 2.5 | 3 | 4.5 | 3.1 |
| BRAZIL | 4.2 | 2.1 | 3 | 0.7 | 0.9 | 1.9 | 3.1 | 1.2 | 0.4 | 0.2 | 5.1 | 0.2 | | 2.6 | 0 | 3.3 | 5.6 | 0.9 | 3 | 2.7 |
| PUERTO RICO | | | | | 4.3 | | | 3 | | 0.6 | | | | 0.9 | | | 7.8 | 3 | 5.9 | 5.6 |
| INDIA | 5 | 3.6 | 3 | 0.5 | 0 | 6.6 | 4.1 | | | 0.3 | 0 | 0.4 | | 1.8 | 3.1 | 0 | 2.8 | 0.7 | 1.9 | 2.7 |
| PHILIPPIN | 6.8 | 2.7 | | 0.1 | 1.7 | 3.8 | 1.9 | | | 0 | 2.8 | | | 0.1 | 1.1 | 1.3 | 3.6 | 2.2 | 3.2 | 1.9 |
| KUWAIT | 2.1 | | 0 | 1.7 | 3.1 | 5.5 | | | 0.1 | | | | 0.1 | 3.3 | 5.2 | 6 | 0.9 | 2.9 | 3.2 | |
| INDONESI | 0.5 | 3.9 | 0.2 | 1.1 | 5.9 | 1.9 | 0.7 | | | 0 | | 0 | 2.5 | 0.3 | 4.6 | 1.4 | 3 | 1.8 | | |
| UKRAINE | 4.6 | 0.3 | | 0 | 2.6 | 1.6 | 0 | 3.8 | | 1.9 | 2 | 0.4 | | 1.6 | 2.5 | 3.3 | 0 | 0 | 1.4 | 0.4 |
| ARGENTIN | 5.9 | 0 | | | 0.1 | 0.6 | 0.3 | 0.2 | 1.5 | 0.4 | 1.6 | 3.2 | | 0 | 1.2 | 0.3 | 3.1 | 5.6 | 0.8 | 0 |

Kaynak: Scientific American Worldview, 2016

Araçlar

**Sektörün İnovasyon
Kapasitesinin
Belirlenmesi**

**Biyoteknoloji Ar-Ge
Kümesi**

**Biyoteknoloji Girişim
Sermayesi Fonu**

**Sektör Odaklı
Kontratlı
Araştırmalar**

Yan Sanayi

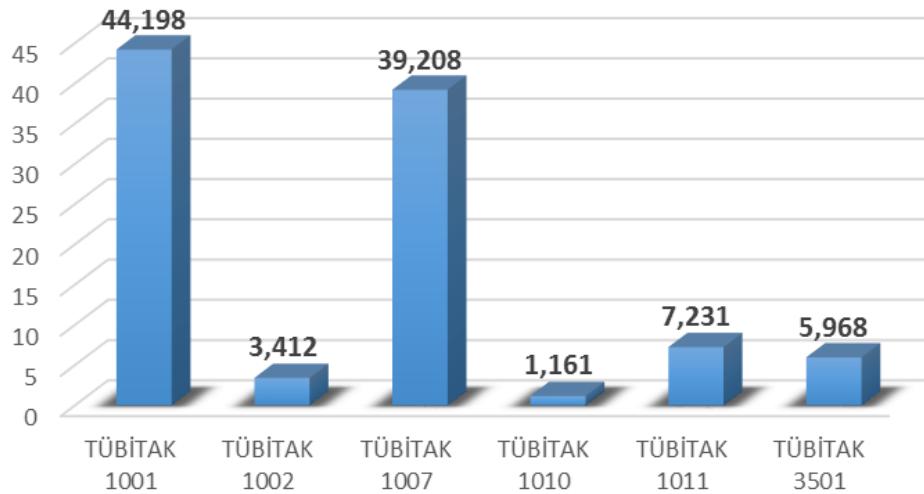
**Biyoteknoloji Veri
Haritası**

**Tematik Teknoloji
Transfer Ofisleri**

**Tematik
Teknopark/Kuluçka
Merkezleri**

Kamu İhaleleri

Proje Toplam Bütçesi (Milyon TL)



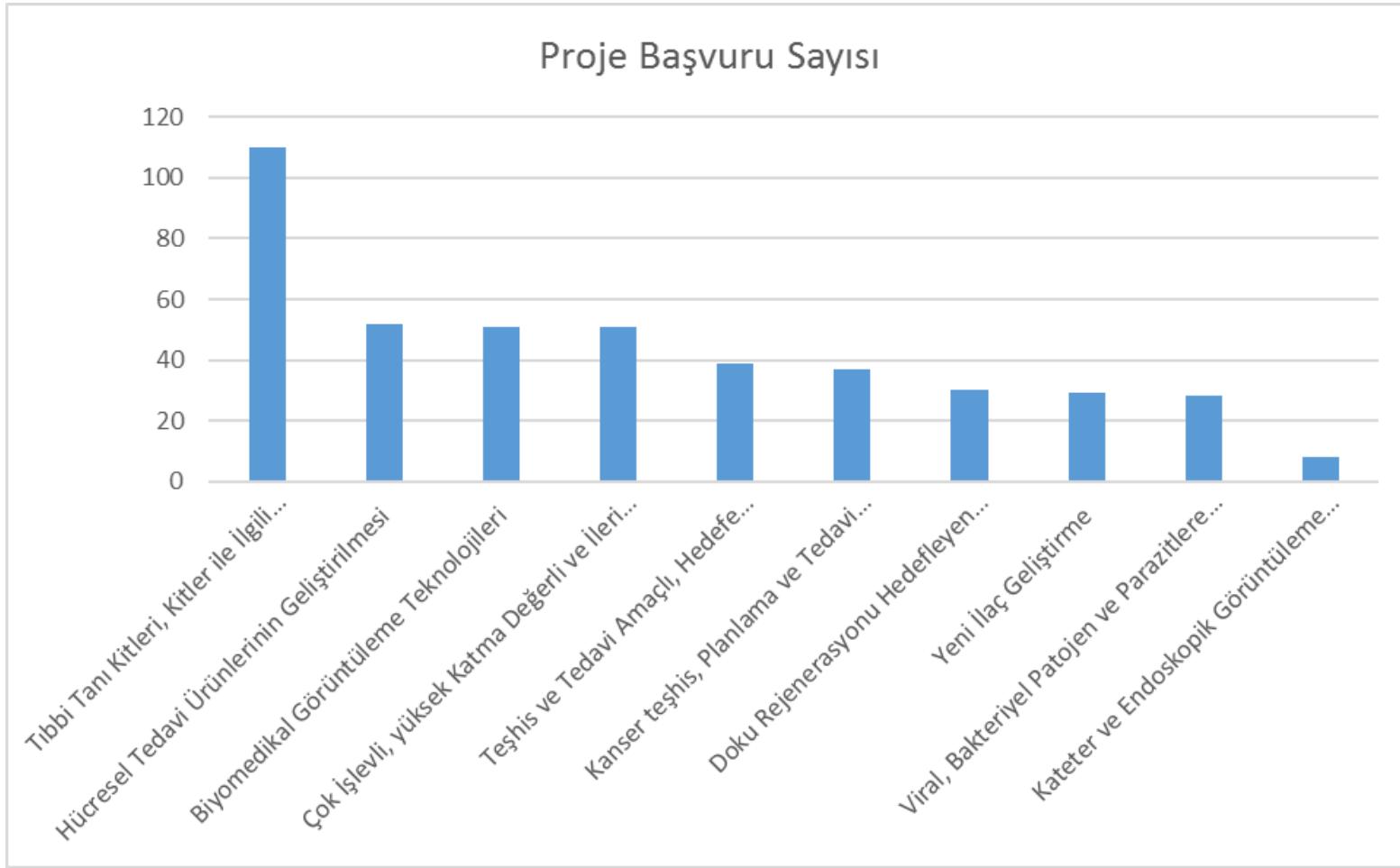
TÜBİTAK ARDEB GENEL DESTEK İSTATİSTİKLERİ¹ (2000-2015)

| Yıl | Önerilen Proje Sayısı | Destek Kararı Verilen Proje Sayısı | Yürürlükteki Proje Sayısı | Yürürlükteki Projelere Aktarılan Yıllık Tutar ² (TL) |
|------|-----------------------|------------------------------------|---------------------------|---|
| 2000 | 946 | 335 | 843 | 7.461.565 |
| 2001 | 1.149 | 421 | 1.001 | 11.891.608 |
| 2002 | 1.198 | 548 | 1.242 | 17.201.978 |
| 2003 | 867 | 338 | 1.227 | 15.780.224 |
| 2004 | 1.742 | 480 | 1.353 | 21.390.239 |
| 2005 | 4.203 | 1.480 | 2.359 | 141.367.891 |
| 2006 | 4.163 | 1.366 | 3.160 | 369.004.271 |
| 2007 | 5.005 | 1.304 | 3.472 | 539.593.679 |
| 2008 | 4.944 | 1.188 | 3.295 | 437.483.292 |
| 2009 | 4.910 | 911 | 2.834 | 544.789.116 |
| 2010 | 5.154 | 1.239 | 2.652 | 525.642.194 |
| 2011 | 5.060 | 1.234 | 2.695 | 390.056.734 |
| 2012 | 6.182 | 1.131 | 2.725 | 356.872.916 |
| 2013 | 7.856 | 1.701 | 3.109 | 440.887.245 |
| 2014 | 9.623 | 2.254 | 4.212 | 560.273.824 |
| 2015 | 12.116 | 2.153 | 5.122 | 700.945.717 |

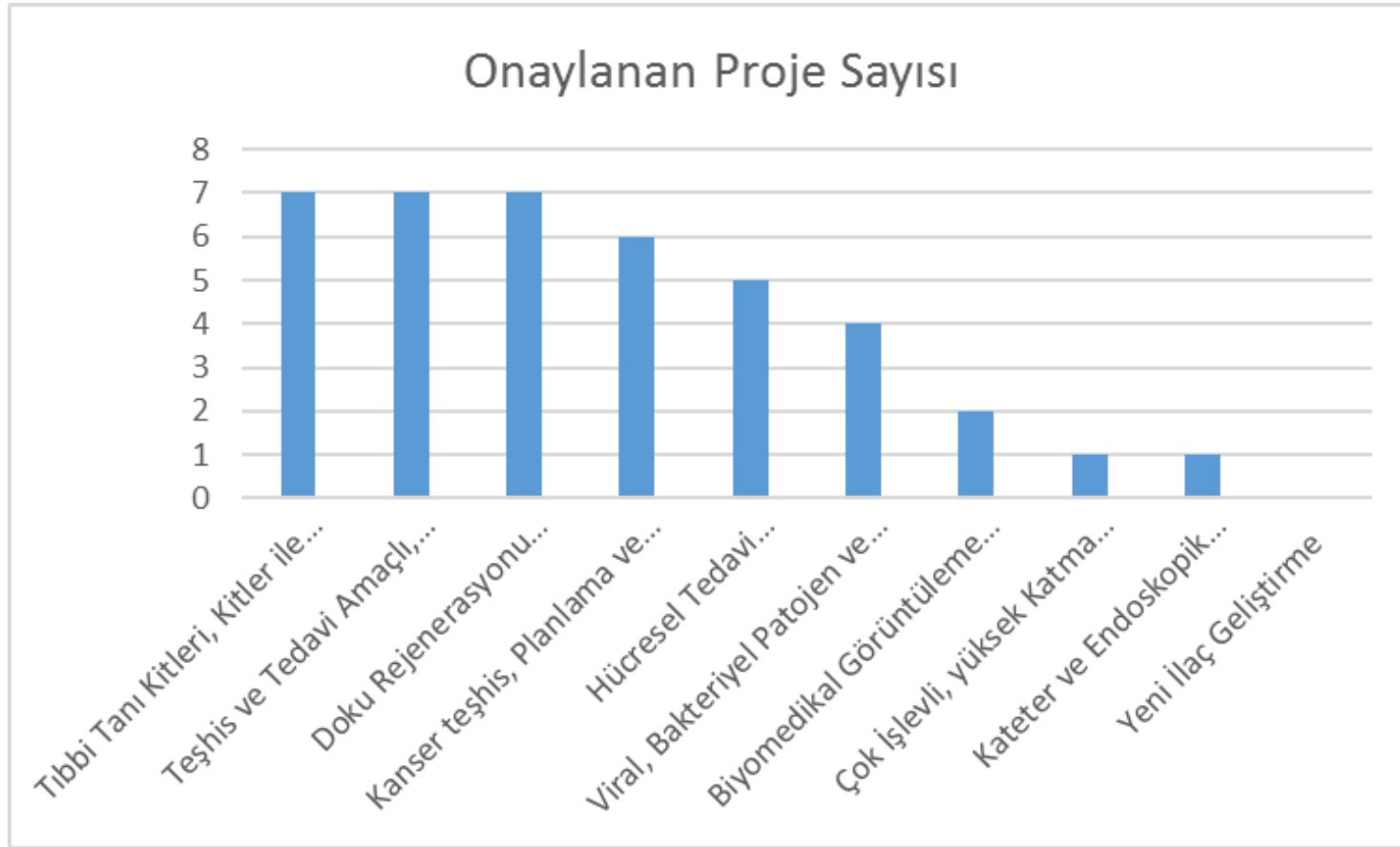
¹ Kamu projeleri dahil edilmiştir. (Ana proje bazında)

² 2016 yılı sabit fiyatlarıyla enflasyondan arındırılmıştır.

Yapılan Proje Başvuru Sayısı



Onaylanan Proje Başvuru Sayısı



- Tanı
 - Kitler
 - Kimyasallar
- Tedavi
 - İlaç ve ilaç Maddesi
 - Ekipman
- Koruyucu Hekimlik
 - Aşılar
 - Monoklonal Antikorlar

- Programlar
 - Farklı Program Adları:
 - Biyomühendislik
 - Genetik ve Biyomühendislik
 - Biyoloji Mühendisliği
 - Biyosistem Mühendisliği
 - Biyomedikal Mühendisliği
- Mezunlar – sadece EGE'den 700

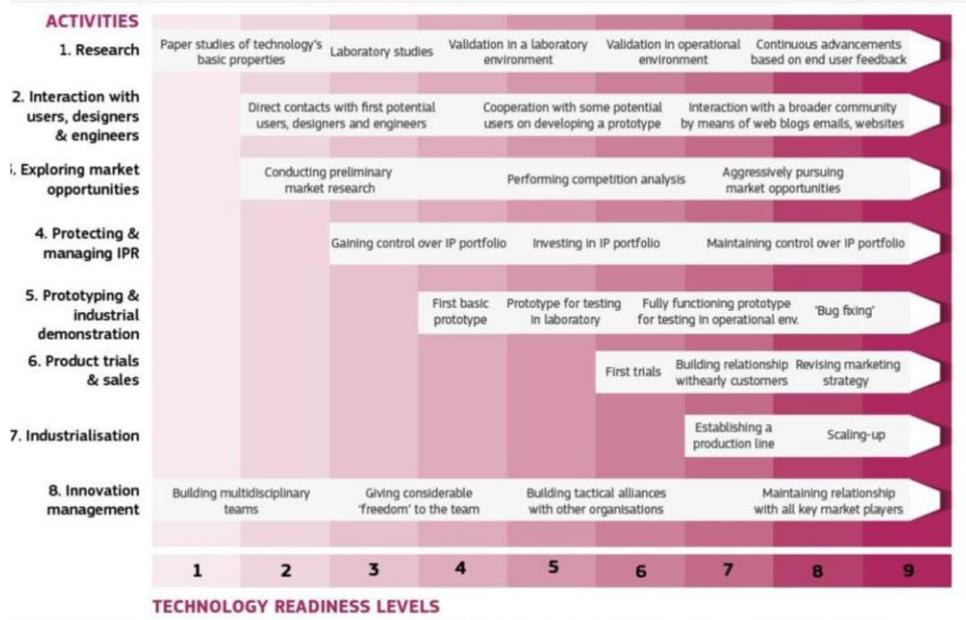
Taraflar

- Araştırmacı

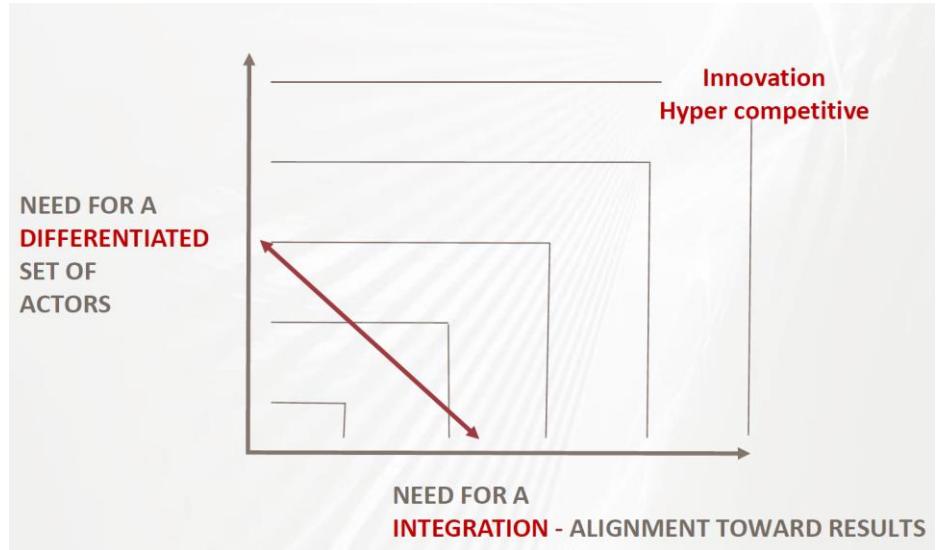
- Öğrenci

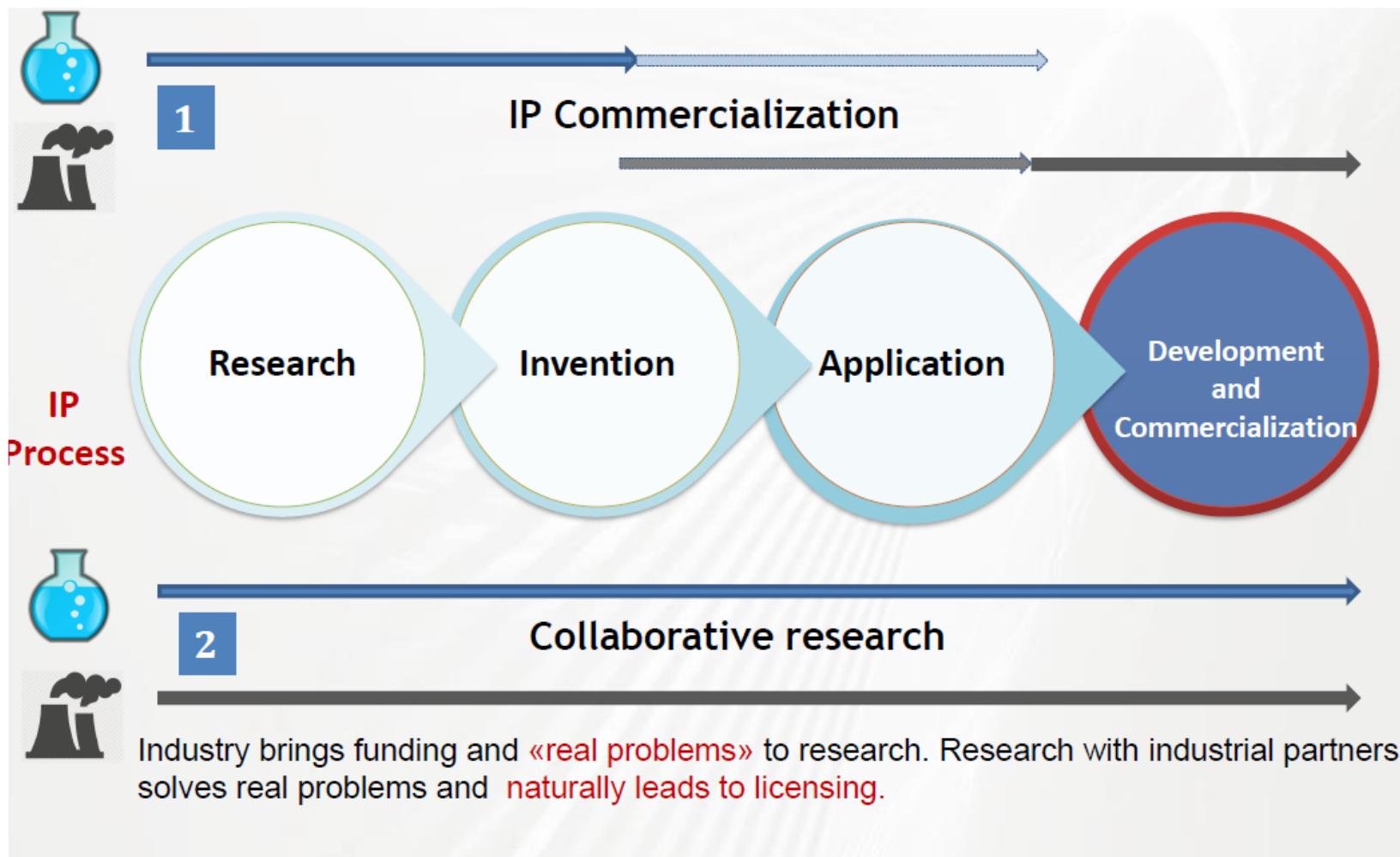
- Sektör – Yerel Firmalar

- Uluslararası Firmalar



- Danışmanlık
- Ortak araştırma
- Kontratlı Araştırma
- Translasyonel Araştırma
- Klinik Araştırma





- Yerli teknolojiler
 - Talep
 - Güven
 - Kurumsal güvence
- Global Firmalar
 - Ar-Ge
 - FMH



Teşekkürler