

Media Release

info@cbs.gov.il www.cbs.gov.il Fax: 02-6521340

Jerusalem
April 04, 2024
109/2024

Survey of Knowledge Commercialization Companies in Israel 2021-2022 Reports on Inventions, Patents, Licence Agreements, Income and Startup Companies Revenues in 2021 increased by approximately 4% compared with 2020

- In 2022, approximately 928 **invention disclosure reports** were submitted by the researchers of the various universities and R&D institutions for examination by the commercialization companies, an increase of 1.5% compared with the previous year. About 63.4% of the reports were from the companies associated with the universities, a decrease of 3.0% compared with 2021.
- Commercialization companies filed **665 original patent applications** in 2022, a decrease of 5.1% compared with 2021.
- In 2022, 582 **original patent applications were approved**, compared with 677 in 2021, a decrease of 14.0%.
- The **revenue from sales of intellectual property and gross royalties** amounted to NIS 1.143 billion in 2021, compared to NIS 1.102 billion in 2020, an increase of 3.7%; 86.4% of the revenue were from the companies associated with universities.
- In 2022, commercialization companies were involved in the establishment of **70 startup companies**; 68.6% of them were established by companies associated with the universities.

Definitions

The survey of commercialization companies in Israel for 2022 included companies associated with research universities (eight companies for the eight universities), companies associated with hospitals (six companies) and with research institutions and academic colleges (four companies).

Written by Lior El-Al and Tsofiya Fishman, Social Services Accounts Sector

For more information, please contact the Statistical Information Center +972-2-659-2666

This survey was initiated and supported by the Israel National Council for Research and Development of the Ministry of Science, Technology and Space. The questionnaire dealt with the following topics: expenditure and personnel in the field of managing IP (intellectual property), IP and its protection (inventions, patents, etc.), revenue from IP and startup companies.

The Activity of Commercialization Companies

The role of commercialization companies is to search out, develop, and market the knowhow accumulated in the institutions mentioned above, to turn a patent into a commercial product, and help in creating startup companies. Commercialization companies with these activities contribute substantially to the growth of the economy concomitant with increasing the income of the institutions they represent.

Commercialization companies deal with the management of intellectual property (IP). IP is a generic term referring to rights associated with intangible resources that were a person's intellectual creations, such as patents, copyrights, and trademarks. These property rights enable the holder to form a monopoly on the use of the item for a certain period and in certain countries.

There are different types of intellectual property: inventions, computer programs, databases, educational means, other means, industrial designs, un-registered trademarks (TM) or registered trademarks ([®]), new varieties of plants, etc.

The commercialization process in these companies usually takes this form: Initially the companies approach the academic staff at the university, hospital or research institution to receive the ideas, innovations and new inventions. Commercialization companies then examine whether the ideas, innovations or inventions can be legally protected and whether they have commercial potential that justifies a patent application. They decide to continue the process with selected ideas and reject others.

In the continuation of the process, the companies submit patent applications to the appropriate authorities in Israel and abroad, and attempt to market the patent rights to companies in Israel and abroad. The companies may sell exclusive or non-exclusive rights on the use of the patent but usually do not sell their ownership of the patent.

Invention Disclosure Reports

In 2022, commercialization companies received 928 invention disclosure reports, 63.4% of them were received by commercialization companies associated with universities.

In 2022, there was an increase of 1.5% in total invention disclosure reports in all institutions, compared with 2021. In the companies associated with universities, there was decrease of 3.0%, compared with 2021. An increase of 33.8% was noticed in reports to companies associated with hospitals.

Table A - Invention Disclosure Reports

	2019	2020	2021	2022
Total	839	977	914	928
Companies associated with universities	544	673	607	588
Companies associated with hospitals	219	211	201	269
Companies associated with research institutions and colleges	76	93	106	71

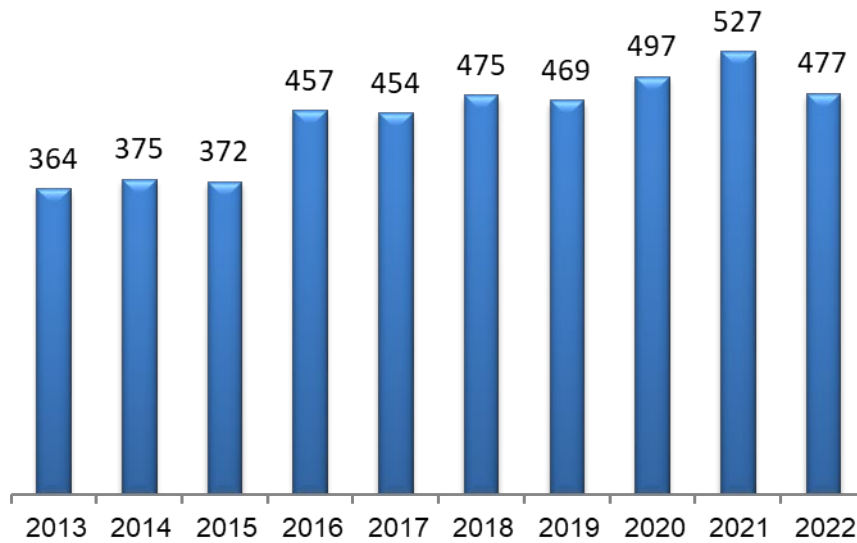
Patent Applications

In 2022, 665 new original patent applications were filed, a decrease of 5.1% compared with 2021. In companies associated with universities there was decrease of 9.5%; in companies associated with hospitals there was an increase of 35.0% and in companies associated with research institutions and colleges there was a decrease of 31.0%. Most of the applications were filed by companies associated with universities: approximately 71.7% in 2022 and 75.2% in 2021

Table B - Original Patent Applications in Israel and Abroad

	2021	2022
Total	701	665
Companies associated with universities	527	477
Companies associated with hospitals	103	139
Companies associated with research institutions and colleges	71	49

Diagram 1 - Original Patent Applications in Israel and Abroad in Companies Associated with Universities



The number of **approved** applications (regardless of submission year) in 2022, decreased by 14.0%, compared to those approved in 2021.

Table C - Number of Original Approved Patent Applications in Israel and Abroad

	2021	2022
Total	677	582
Companies associated with universities	523	454
Companies associated with hospitals	72	86
Companies associated with research institutions and colleges	82	42

Patent Families

During the years in which the commercialization companies were active under the auspices of the institutions included in the survey, the companies accumulated a large inventory of current patents that were marketed or yet remain to be marketed. The inventions inventory of the companies is presented in Table D.

Table D - Patent Families in the Active Portfolio

	2021	2022
Total	4,009	3,931
Companies associated with universities	2,803	2,734
Companies associated with hospitals	620	578
Companies associated with research institutions and colleges	586	619

*Active portfolio - meaning at least one patent out of the patent family is operative.

The number of patent families in 2022 decreased by 1.9%, compared with 2021. An increase was in companies associated with research institutions and colleges (5.6%) as opposed to a decrease in companies associated with hospitals (6.8%) and a decrease of 2.5% companies associated with universities.

In 2022 the patent families in commercialization companies associated with universities were 69.5% out of the total.

Licence Agreements

The role of commercialization companies is to market and deliver the knowledge generated in universities, hospitals, research institutions and colleges. This is normally accomplished with licence agreements.

The number of new licence agreements with external companies was 1,120 in 2022, compared with 1,039 in 2021, an increase of 7.8%. Most of the agreements were signed with local companies: 81.5% in 2022, and 77.5% in 2021. Most of the agreements were signed with companies associated with universities: 76.8% in 2022 and 82.1% in 2021.

Table E - New Licence Agreements with External Companies

	2021			2022		
	Total	Israel	Abroad	Total	Israel	Abroad
Total	1,039	805	234	1,120	913	207
Companies associated with universities	853	644	209	860	674	186
Companies associated with hospitals	89	74	15	124	111	13
Companies associated with research institutions and colleges	97	87	10	136	128	8

Revenues of the Commercialization Companies

It should be note that the income data series is a volatile series, which may affected by trends of individual companies.

Total company's revenues include: **revenues from selling IP** and **revenues from other activities of commercialization knowledge companies**. Total company's revenues amounted to NIS 1.143 billion in 2021. Most of the revenues were from the companies associated with universities (86.4%). The revenues at companies associated with universities in 2021 (NIS 0.988 billion) increased by 2.9% compared with 2020. Revenues from other activities of the company were 55.4% of total revenues.

Table F - Revenues of Commercialization Companies, by Type of Revenue, 2021
NIS million

	Total	Revenues from selling IP (1)	Income from other activities of the company (2)
Total	1,143	510	633
Companies associated with universities	988	432	556
Companies associated with hospitals	70	36	34
Companies associated with research institutions and colleges	85	42	43

(1) Revenue from selling IP include: sales of patents, royalties, licence fees, options, income from ownership of startup companies (dividends, profits from the sale of startups, etc.) and other income from IP.

(2) Revenue from other activities include: contracts and research grants, external studies, usage of labs, income from Israel Innovation Authority, refunds for issuing licences, etc.

Diagram 2 - Revenue from Selling IP, by Companies Associated with Universities



Involvement in Establishing Startup Companies in Israel and Abroad

A **startup company** is a company founded with the aim of developing an innovative product or service, usually in the field of high tech. It ceases to be considered a startup company after it is sold to an established company or after it becomes established itself (i.e. the company begins to sell its products or services).

Startup companies are usually financed by venture capital funds, technological incubators or private investors (angels). The initial capital serves for establishing the company, recruiting staff, developing products or services and selling them. Table G presents startup companies that were established based on the technology developed by researchers in the aforementioned institutions, even if the commercialization company had no share in the ownership.

Table G - Involvement in Establishment of Startup Companies

	2021	2022
Total - Israel and Abroad	64	70
Companies associated with universities	47	48
Companies associated with hospitals	16	18
Companies associated with research institutions and colleges	1	4

In 2022, 70 startup companies were established compared to 64 in 2021. In that year, 68.6% of the startup companies were establishment by commercialization companies associated with the universities.

Expenditures and Personnel in Commercialization Companies

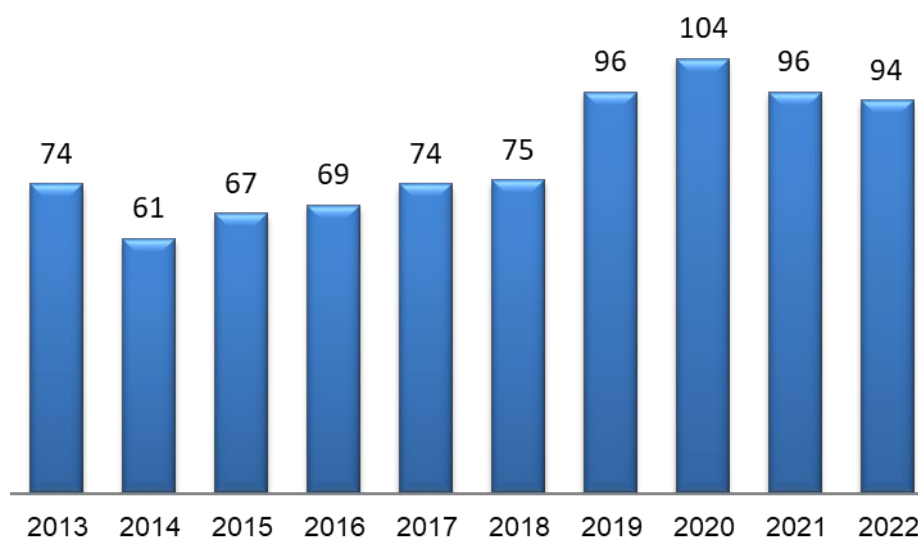
In 2022, the number of professional employees (dealing with IP) in commercialization companies was 183, similar to 2021. The number of full-time jobs of professional employees was 152 in 2022, compared with 155 in 2021, a decrease of 1.9%.

Table H - Professional Employees (Dealing with IP) at Commercialization Companies

	2021	2021	2022	2022
	Number of full-time jobs of professional employees	Number of professional employees	Number of full-time jobs of professional employees	Number of professional employees
Total	155	183	152	183
Companies associated with universities	86	96	80	94
Companies associated with hospitals	54	66	55	67
Companies associated with research institutions and colleges	15	21	17	22

The number of professional employees in commercialization companies associated with universities increased significantly over the years; from 74 in 2013 to 94 in 2022.

Diagram 3 - Professional Employees at Commercialization Companies Associated with Universities



In 2022, total expenditure¹ on the management of intellectual property in Israel was NIS 79.387 million, compared with NIS 86.016 thousand in 2021, a decrease of 7.7%. Of this expenditure, payments to external factors amounted to NIS 35.198 million, compared to NIS 37.179 million in 2021, decrease of 5.3%.

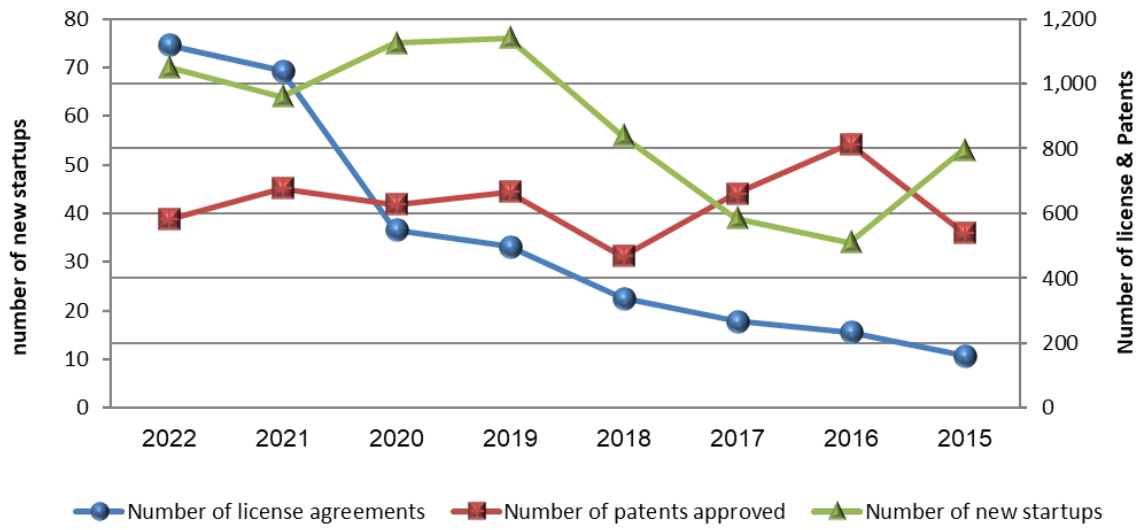
Table I presents parameters that represent the knowledge commercialization activity for the years 2018-2021. In 2021 there was an increase in the number of new licence agreements, as well as the number of approved patents and in intellectual property income. In contrast, the number of new startups and other revenues there was a decline.

Table I - Knowledge Commercialization Activity Indices, 2018-2021

	2018	2019	2020	2021
Number of new licence agreements	339	498	550	1,039
Number of patents approved	467	666	628	677
Number of new startups	56	76	75	64
Income from intellectual property (in NIS million)	872	588	454	510
Other income (in NIS million)	683	745	648	633

¹ The total expenditure includes salaries, fees for patents and licences, and various other expenditures.

Diagram 4 - Knowledge Commercialization Activity Indices, 2015-2022



Definitions

Intellectual property (IP) - IP is a generic term referring to rights associated with intangible resources that were a person's intellectual creations such as patents, copyrights and trademarks. These property rights enable the holder to form a monopoly on the use of the item for a certain period and in certain countries. The legal proceedings begin with a court decision that determines the owner in each branch of the IP, the conditions of protection, and the scope of the rights.

A **patent** is an exclusive right of use granted by the state to the owners of the invention to prevent illegal use of their invention by others.

Original patent – this refers to the first request for protecting a new invention with a patent, submitted to the appropriate authority in Israel or abroad (such as the Patent Office, Designs and Trade Marks of Israel, USPTO, EPO, etc.), on a national or international track (PCT), including provisional patents. A particularly important role of commercialization companies is protecting an invention by submitting patent applications.

A patent is an exclusive right of use granted by the state to the owner of the invention for a limited time, whether it is a product or a process in a technical field. To receive a patent on an invention one must submit an application to the appropriate authority in that country – a patent is valid only in the countries where it is registered.

An application for a patent may be submitted in several countries, and therefore a patent is often registered in more than one country in order to obtain maximum protection for the idea or innovation.

A **patent family** includes the original patent granted in a certain country and the rest of the patents granted in its wake, for that same invention, idea, or piece of knowledge, in other countries with an affirmation of the precedent of the initial patent. That is, all the patents directly originating from the original patent (by priority date).

Commercialization of knowledge is searching out, developing, and marketing the knowledge accumulated in research universities, hospitals, research institutions and academic colleges, to turn a patent into a commercial product, and help in creating startup companies.

A **licence agreement** is a signed contract between the commercialization company and a company or institution for developing a product according to new know-how or a patent. By means of this contract the commercialization company transfers the rights to use IP in their possession to the licencing company.

A **startup company** is a company which is the outcome of technological entrepreneurship based on research and development in order to create a new for profit business, and its resources are aimed to develop an idea, a product or service. This business has not yet earned profits or become a mature business (a business where the only aim is marketing and sales of a product or a service to the markets, even if it is going through processes of improvement). A startup company develops through the following stages:

1. Examining the feasibility of the idea and preliminary research.
2. Developing the product, corrections and the transition to production.
3. A completed product and increasing the rate of sales.

It ceases to be considered a startup company after it is sold to an established company or after it becomes established itself (i.e., the company begins to sell its products or services).

Startup companies are usually financed by venture capital funds, technological incubators or private investors (angels). The initial capital serves to establishing the company, recruiting staff, developing products or services and selling them.