

Summary results of the OECD survey on patenting and licensing activities

		Patents					Licences			Start-ups and spin-offs
		Total patent stock	Patent grants		Patent applications		Issued in last year	Earning income	Gross income	Total number created in last year
			Number granted in last year	% total stock	Number filed in last year	% total stock				
Australia (2000)	All	-	498	-	834	-	417	491	99 525	47
	Univ	-	219	-	586	-	234	-	79 834	32
	PRO	-	279	-	248	-	183	-	19 691	15
Belgium (Flanders) (2001)	All	506	57	11.3	121	23.9	46	4	240	15
	Univ	-	-	-	-	-	-	-	-	-
	PRO	-	-	-	-	-	-	-	-	-
Germany (2001)	All	-	-	-	-	-	-	-	-	-
	Univ	-	-	-	-	-	-	-	-	-
	PRO	5 404	747	13.8	1 058	19.6	555	1 188	46 468	37
Italy (2000)	All	-	64	-	190*	-	36*	84	-	36
	Univ	-	34	-	102*	-	27*	12	-	27
	PRO	-	30	-	88*	-	9*	72	-	9
Japan (2000)	All	682	163	23.9	567	83.1	89	324	1 397	6
	Univ	-	-	-	-	-	-	-	-	-
	PRO	-	-	-	-	-	-	-	-	-
Korea (2001)	All	9 391	1 018	10.8	1 692	18.0	247	132	3 822	56
	Univ	404	186	46.0	244	60.4	44	22	1 032	19
	PRO	8 987	832	9.3	1 448	16.1	203	110	2 790*	37
Netherlands (2000)	All	991	167	16.9	212	21.4	368	93	11 400	37
	Univ	394	64	16.2	111	28.2	250	-	-	27
	PROs	597	103	17.3	101	16.9	118	-	-	10
Norway (2001)	All	-	-	-	-	-	-	-	-	67
	Univ	-	-	-	-	-	-	-	2 000*	16
	PRO	114	28	24.6	43	37.7	22	39	7 700*	51
Spain (2001)	All	781	64	8.2	133	17.0	125	136	961	11
	Univ	-	-	-	-	-	-	-	-	-
	PRO	-	-	-	-	-	-	-	-	-
Switzerland (2001)	All	1 184	112	9.5	175	14.8	475	77	5 650	68
	Univ	914	59	6.5	132	14.4	200	61	2 800	56
	PRO	270	53	19.6	43	15.9	275	16	2 850	12
United States (2000)	All	-	5 103	-	8 294	-	-	-	-	-
	Univ	-	3 617	-	6 135	-	4 049	8 670	1 297 452	390
	PRO	-	1 486	-	2 159	-	3 007	484	69 600	-
Russia (2001)	All	-	349	-	171	-	206	8	1 375	15
	Univ	-	-	-	-	-	-	-	-	-
	PRO	-	-	-	-	-	-	-	-	-

Australia: Data from the *National Survey of Research Commercialisation*, Australian Research Council 2000. Gross income in USD.

Italy: number of patent applications and number of licences granted are estimates.

Korea: One licence reported is not included in total number of active licences and total gross income. Gross income in USD.

Netherlands: Gross income is an estimate.

United States: Total number of income earning licences for federal labs is probably understated, as data are collected as earning "running royalties" and licences can earn income in other ways. Gross income in USD.

Russia: total number of patent granted and patent applications are estimates.

Licensing strategies of public research organisations

Two-thirds of PROs negotiate less than ten licences per year...but many licences are for copyright and other non-patented IP.

The majority of PROs negotiate a very small number of licences (often less than ten) a year. One-third negotiate between 15 and 46 licences each year. Surprisingly, a large share of licence agreements in Italy, Japan, the Netherlands and Switzerland were concluded for patent-pending inventions or non-patented inventions (e.g. biological materials or know-how), as well as for copyrighted materials. The importance of non-patent licensing seems to support other evidence that PROs tend to license early-stage technologies requiring further development by firms.

Licensing revenue varies greatly across PROs and countries...

One of the most sought-after pieces of information is the amount of revenue that PROs generate from the licensing of intellectual property. There is enormous variation across OECD countries and even among PROs within a country. In absolute terms, US universities generated the largest amount of income from licences, over USD 1.2 billion followed by Germany at EUR 46.5 million (non-university PROs only). Per institution gross licensing income ranges from the thousands to the low millions: United States (USD 7.7 million); Germany (EUR 1.5 million); Korea (USD 537 000); Switzerland (EUR 269 000); and Japan (EUR 93 000).

...and is highly skewed, as a few licences generate most of the revenue.

Data on licensing revenue per licence reveals the skewed nature of income from technology transfer. While some PROs in the United States generate several million USD from licences, the average value of each licence in 2000 was USD 150 000. A large percentage of licences never generate any income and only a small percentage earn high income. Japan, which has fewer licences and less aggregate revenue, generated EUR 139 000 per licence. In Switzerland, the average revenue per licence is EUR 45 000. This shows that some licences are more valuable than others and that a high number of licences does not necessarily mean high revenue or *vice versa*.

The number of new spin-off companies created to commercialise inventions is small but the phenomenon is widespread...

In general, PROs prefer to license to existing companies but they may also license IP to a spin-off or start-up company. The number of spin-offs per TTO created in 2000/2001 is low, yet spin-off activity is widespread across OECD countries. In most cases, PROs create less than one spin-off or start-up a year, except in the United States where the average in 2000 was two per university PRO. Licensing and spin-offs are two sides of the same technology transfer coin, however. PROs often license their technology to a spin-off to retain greater control and access to the IP.

...and the numbers are influenced by PROs' licensing strategies.

In many ways, the number of spin-offs is influenced by the licensing strategies of PROs as well by the pool of entrepreneurial managers and access to seed capital. The field of technology also matters, and inventions arising in areas of non-core research may be spun off. Case-study research suggests that so-called "platform" inventions, those that may lead to a wide range of applications, are more likely to be licensed to spin-offs than to existing firms.