

The Patent Library: an information network at the service of companies and of scientific research.

The experience of the Documentation Centre of the Turin Chamber of Commerce

Patents represent a particular type of "grey" literature of ancient lineage, which embrace all aspects of technology: a study by the OECD has revealed that over 80% of existing technical information can only be accessed by consulting patent literature and that most of this store of knowledge is not published elsewhere.

To date over 50 million patents have been published around the world and every year a million new applications are filed.

However, in spite of the fact that they are public documents of undoubted social and economic utility, until a few years ago their circulation was limited to restricted circles, because they were only produced on paper and filed with the Industrial Ministries of each country, often being classified together with administrative documents.

What exactly is a patent?

It is evidence that proves an individual's or a group's ability to invent something.

The term *patent* is an abbreviation of *letters patent* (1), while the Italian term **brevetto** derives from *breve* or brief. In the past it was defined as a **privilege** or **sole right**, and one peculiar aspect of a patent was and is that of **territoriality**, which establishes the mutual independence of patents obtained for the same invention in different countries (2).

The motivations are basically practical:

- a desire for self-sufficiency in relation to other, technologically more advanced countries;
- the intention to occupy a national and international market bracket permanently;
- the need to obtain every possible advantage from the monopoly granted.

It is an exclusive right for a limited period of time, an extension of the **barter** system, because in return for the advantages deriving from the monopoly received, the owner of the patent must fulfil a number of obligations, such as:

- paying government taxes;
- making the contents of the innovation available to the public;
- realising the invention in a manner suited to the country's needs.

Innovations have been protected since antiquity.

The **Marciana Library in Venice** contains a 3rd century BC document in which the Greek historian **Phylarcus** referred to a law promulgated in the 7th century BC, which granted a monopoly for one year to a cook from **Sibari** to prepare an original and particularly elaborate dish.

The first documented patent of the modern age dates back to **1421** and regards **Filippo Brunelleschi**, to whom the **Government of Florence** granted a monopoly for a barge he had invented and used to travel up the Arno river, loaded with the marble needed to build the Cathedral.

Officially, the first "modern" patent is considered to be the one granted in **England** in **1449** to **John von Uthynahm**, who had invented a new way of producing stained glass.

The first law in the world to protect inventions was certainly Italian, and was enacted by the **Republic of Venice** in **1474**.

The text contains concepts that are still relevant today, and in fact many countries have incorporated them into their current legislation.

It refers to the intention of protecting "... *very keen intelligence, able to devise and find various ingenious artifices that may have produced any new and ingenious artifice, not formerly within our powers...*"

The exclusive right to production lasted ten years, and included the individual's right to sue anyone who violated the monopoly and that of the Government to use the invention for the common good.

James I of England later enacted the **Statute of Monopolies (1624)**, granting patents and privileges for a period of 14 years only to the first real inventor.

The Kingdom of Italy issued its first law on the subject in **1859**, while the current Law is **no. 1127 of June 29, 1939**, modified recently by **Decree 198 of March 19, 1996** and **Law 383 of October 18, 2001**.

It has not yet been possible to award a patent that is valid all over the world, but regional and multinational systems were created in the second half of the last century to protect those who wished to extend their monopoly outside their national borders (3).

The international validity of patent rights and documents was first recognised in **1947**, when a number of European countries created the **IPI (International Patent Institute)**, with its headquarters in The Hague, as a facility to find and store patents.

Two years later, the Council of Europe decided to create the **European Patent Office (EPO)** (4), which had executive duties and filled the dual role of granting patents and giving out information about them.

In **1970** the **International cooperation treaty regarding patents** (5) was signed in **Washington**, giving rise to the **PCT (Patent Cooperation Treaty) system** (6), which came into being in **1978** (7).

The **European patent system** was created in **Monaco** on October 5, **1973**, when the **European Patent Convention (EPC)** was ratified, coming into effect on **October 7, 1977** (8).

On **June 1, 1978**, the EPO (9), whose **mission** consisted in *encouraging innovation, competitiveness and economic growth*, registered the first application for a European patent (10): initial forecasts estimated that no more than 40,000 would be filed per year.

This number has now tripled and continues to grow (11), the EPO has a staff of over 5300 of different nationalities, based in four offices (12).

The European patent is a **strong patent** in every way.

Its effectiveness is based on three elements:

- ⇒ an economic, rapid method to present the application,
- ⇒ a highly professional, uniformly strict examination,
- ⇒ a computerised search structure that is constantly updated.

In the near future, the **EPO** will also grant **EU patents**, the result of the **Luxembourg Convention (1975)** signed by the states of the European Economic Community as it was then, which will be **uniformly effective** (13).

The first patents are expected to be filed in 2005.

The European Office immediately recognised the importance of making patent documentation accessible and as a result moved simultaneously in two directions, undertaking to computerise all the existing patent archives (14) and creating an information network, setting up the **PatLib INFO CENTRES**.

The **patent libraries** were first established in Europe in **1991**; today there are **180** operating structures, in **27 countries** (15).

In Italy, the **Chamber of Commerce network**, which is on the cutting edge where computerisation is concerned, was recognised as the most suitable to host and perform this public service, both because of the clear convergence of its mission with that of the EPO, and for its institutional role as the archive of patent applications in Italy.

One of these PatLib (**Patent Library**) Centres is already operative at the **Documentation Centre of the Turin Chamber of Commerce**, and there are a total of 20 in Italy (16).

It is the **Piedmont PatLib Centre** (17), which in March 2001 renewed the ten-year convention on the basis of which the Ministry of Manufacturing Activities accredits it at the European Patent Office.

It renders its services to a specific clientele, generally composed of SMEs, economic operators, researchers and professional people, for whom the service has a high added value, because, by accessing the descriptions and pictures of the inventions filed, they can exploit the information acquired, not only to find out about individual discoveries, but also and above all to:

- Monitor the state of the art in different technological sectors all over the world;
- Save money in the field of technological research: in Europe alone, it is thought that 30% of research is not innovative, but only an unwitting repetition of studies already carried out by someone else;
- Identify technological developments on the markets, to direct their own research to less "crowded" development "niches" with greater potential for development;
- Protect their products from counterfeiting and imitation, at home and abroad.

What is more, being able to draw on a vast, complex archive of patent information is extremely useful for small businesses and private individuals, who thus have an opportunity to access the business world, in which documents of this nature are essential, both to identify potential partners abroad, when it is their intention to access common funds for innovation, and to grant licences to third parties for the realisation of patents, in exchange for royalties, should their own manufacturing capacity be insufficient.

The first pages of the complete texts of patents give precise information about the inventors and the persons filing patents; from a marketing perspective, this is a precious opportunity to identify them, in order to propose products and services that can improve or complete the subject of their patent.

The presence of this type of archive has been an important stimulus to the development of a special project, divided into two separate years, as part of the programme of the Chamber of Commerce's **Equalisation Fund** (18).

It has proved to be a good opportunity not only to make patent documents known to a wider public, but also to recover and make available all the literature contained in the libraries of the Piedmontese Chambers of Commerce, regarding topics that range from corporate quality to legal matters and statistics.

It all began in **1999**, when the Turin PatLib centre and the Documentation Offices of the other five Piedmontese Chambers of Commerce (**Alessandria, Biella, Cuneo, Novara and Verbania**), collaborating on the inter-Chamber project for the *"Strengthening of the Piedmontese PatLib centre and the subsequent creation of an online information service addressing the regional Chamber of Commerce system"*, began to lay the foundations for a regional network of documentation services, regarding patents and other documents, for SMEs and private individuals operating in the various provinces.

The common commitment was addressed in particular to the professional training of personnel and the promotion of existing information services by various means, such as articles in the national and local papers, participation in fairs and exhibitions, and conferences regarding technological innovation.

The Turin Chamber created a series of Web pages about its PatLib Centre, which can be consulted both on the Internet site that **DINTEC** (19) dedicates to the national patent documentation network, and through the Chamber of Commerce site.

Each of the six Documentation Centres is now equipped with suitable computer systems to communicate via the Internet with individual operators in order to provide advice, information and documentation **free of charge** to whoever consults the individual Chambers of Commerce. All patent requests are forwarded to the PatLib, which carries out the searches in its database, sending the results by e-mail or by fax to the other Piedmontese Chambers which act as local help desks.

The Office offers the same type of service for all the documentation and information in its possession (20).

The intention of extending the patent information service offered by the Turin Chamber of Commerce to the whole region, creating a network made up of a PatLib Centre and five official Patent Information Points, and of including in the service all the documentation in its possession, has to date only been realised in part, because only **Cuneo** has been recognised as a PIP (21), but in fact the network does exist and its members do collaborate.

The common goal is to recover and exploit all the documentation filed by the Piedmontese Chambers of Commerce, even the smallest and least organised, because it bears witness to the historical, social and economic development of their provinces and these exclusive documents cannot be found in other documentation centres.

The software adopted and the classification methods chosen will allow all the documentation possessed by the Chambers of Commerce to be consulted by a public without geographical or social limits, within a very few years.

The project was officially terminated on **December 31, 2001** with the creation of the logical and operative conditions for real collaboration that will be anything but occasional, and which in fact has already developed into a common desire to create a "working group", to include all the heads of the Chamber of Commerce Documentation Centres involved, to establish a common acquisition and management strategy, which will make it possible to streamline the documentation costs for individual Centres, offering an archive of documents that is much vaster and better updated than in the past.

Experts have accepted that the patent culture must be increased because they have come to realise that it still plays too small a role in our general culture: available data show that only a small number of inventors protect their own inventions and those that do so tend to be large companies.

The individual does not know how or when to protect his own ideas, and often understands too late the reasons why it would have been advisable to do so.

These are the premises that persuaded the EPO to involve universities in the PatLib network, because they are currently at the centre of a complex legal debate concerning the regulation of the patents of university research workers.

PIPs such as the one created in **2001** at **Turin Polytechnic** and Patent Offices like the one created the same year in **Turin University** were designed as consultancy centres for academic staff, researchers and students involved in research. Because they do not have the same store of documents as the PatLib, or its ten years of experience, both institutions contacted the Chamber of Commerce to establish collaboration relations throughout the region.

The work that the three structures are doing together is not limited to an exchange of information between technicians, but is turning into a coordinated initiative with the goal of increasing **patent literacy** among students and research workers.

A congress was held on October 21, 2002, regarding *Patents, universities and business: a virtuous triangle. The exploitation of the technological heritage of universities, starting from a patent literacy programme*. It was an opportunity for the Chamber of Commerce and Turin University, the organisers of the event, to present the cycle of meetings that they are organising together at several Faculties during the current academic year.

During the **Patent literacy seminars** which, in the first half of the current year have involved the Faculties of Law, Agriculture, Veterinary Science, Pharmacology and Medicine, the School of Biotechnology, the Faculties of Mathematical, Natural and Physical Science and of Economics, and the School of Business Administration, we have met students, researchers and academic staff, grouped according to their respective studies.

Each seminar is designed to reflect the cultural interests of the specific audience, with the clear goal of introducing them to a world that has erroneously been undervalued.

The agenda of the meetings envisages an introduction by myself and my colleague Fabrizio BOASSO, a document specialist from the PatLib Centre, whose task it is to explain:

- current national and international patent legislation,
- the role of the European network of patent libraries,
- the documents available, accessible through the Chamber of Commerce PatLib and online,
- how to achieve the transfer of technology and the networks existing in the context of the Chamber of Commerce (22).

The state of the art of the individual technology sectors of interest is proposed with practical examples, including the exact corporate strategies followed when filing an application, by experts in industrial patents.

We must recognise that they have interacted brilliantly and effectively with a public that is often ignorant, but very receptive, and that they have enthusiastically and creatively accepted, without payment, a commitment to inform others because they were the first to understand, with great sensitivity and experience, that it was both useful and important (23).

The initiative concludes with a lecture by the head of the University's Patent Office (24), Francesca CROSETTI, who describes

- the current procedure adopted to protect inventions within the University,
- the text of the Regulation of patents and intellectual property drafted by the University (25),
- the text of the recent Regulations regarding approval of university and academic "spin-offs" (26),
- how to achieve technology transfer, and the respective networks existing in the university environment.

The experiment has proved so effective that it will be repeated annually for all Turin university students. And not only for them, because we are already working to propose similar meetings for the students of the European Design Institute, which has expressly requested it.

Our intention is to continue with our basic activity – i.e. patent literacy – with the goal of analysing specific topics in response to requests and proposals from the public.

Together with the PIP at the Polytechnic, which is currently organising a conference on the legal standards covering the protection of inventions in a university environment, to be held in the second half of 2003, we are looking into the idea of organising a similar experience for secondary schools.

The purpose of initiatives such as these is to convince researchers and inventors, through updated, detailed technical information, that scientific research can be a flourishing business. Each researcher, when he addresses his attention to the development of socially and commercially exploitable inventions, is in a position to protect his own rights, to obtain the right payment for his work and to provide the university in which he works with funds for new research.

Experience in the United States has shown that intensive use of instruments to protect intellectual property creates a virtuous circle.

The experts of the Association of University Technology managers indicate that income from royalties to the two hundred universities and research centres involved in the transfer of suitably protected technology exceeds one thousand million dollars.

Technological innovation has always been a central element for the social and economic development of mankind, on a par with culture and information: the PatLib international patent information network successfully combines the two.

It is worth taking advantage of it.

1 Under Italian law, a **patent** is defined as follows:

"...a privilege by which the State grants a temporary monopoly for the exploitation of the invention described in the patent itself, consisting of the exclusive right to develop it, have it developed by others, market it [... preventing...] third parties ...: if the patent regards a product... from producing, using, marketing, selling or importing the product in question to that end; and, if the subject of the patent is a process ... from using, marketing, selling or importing the product directly obtained by the process in question..."

2 This condition was reiterated in art. 4 b of the **Paris Convention of 1883**, which represents the first attempt to harmonise the laws of different countries.

3 Supranational systems were created to help inventors who needed to be familiar with the language, law, bureaucratic procedures, and the tax systems of different countries, and to use different currencies to pay the necessary taxes, in order to exploit their inventions abroad.

4 The EPO is an intergovernmental organisation based on the EPC (European Patent Convention); countries signing the EPC are members of the EPO. It is an autonomous structure in economic terms, and its revenues originate from the examination fee and annual taxes paid after a patent is granted, calculated on the basis of the national law in the various participating countries.

5 115 countries currently subscribe to the Washington Convention, the most advanced of which, in industrial terms, are the United States, Japan, the European Union, Australia, Canada and South Korea.

6 Under the **Patent Cooperation Treaty**, payment of a common fee entitles a person to apply for a patent in a great many countries – corresponding in theory to those contracting the PCT – in the territory of each of which the international application has the same effects as a national application.

The international application is subjected to an international search by **ISA (the International Search Authority)**, which concludes with a report listing all the documents published that could predate the invention in question. International patents are not granted yet.

7 The PCT is administered by the World Intellectual Property Organisation (WIPO) which is based in Geneva. The EPO collects the international applications and performs a preliminary examination on them. European patents can also be granted on the basis of international applications, because the examination procedures are the same.

8 The EPC came into force in Belgium, Switzerland, West Germany, France, the U.K., Luxembourg and the Netherlands in 1977. They were gradually joined by Austria, Cyprus, Denmark, Finland, Greece, Ireland, Italy (in 1978), Liechtenstein, Monaco, Portugal, Spain, Sweden and Turkey. In the last decade, the countries of **central and eastern Europe** have also expressed a constructive interest regarding the protection of patents, and they have undertaken to modernise their national systems to bring them into line with the prescriptions of the EPC; this underwent a first review in 2000, and was signed by Bulgaria, Estonia, and the Slovak and Czech Republics on July 1, 2002.

In 2001, the EPO reached bilateral agreements with Albania, Lithuania, Latvia, Macedonia, Romania and Slovenia, on the basis of which application for European patents can be extended to these countries, on the explicit request of the applicants.

Slovenia became a member on December 1, 2002, Hungary on January 1, 2003 and Romania on March 1, 2003.

9 It had incorporated the **International Patent Institute (IPI)** in the meantime.

10 The creation of a European patent represents the achievement of a form of protection that is valid in all countries signing the EPC on the basis of a single examination and issuing procedure, which implies uniform rules and the filing of a single application written in English, French or German (the official languages of the EPO).

11 In the last five years, European patent applications have increased by 100%. In 1992 200,000 European patents were granted, and 500,000 applications published, but this figure had reached one million by 2000.

12 The EPO offices are in Monaco, The Hague, Berlin and Vienna.

13 When it is enforced, the EU patent will be valid throughout the Union.

It will be subject to a single annual tax and, if it is cancelled in one country, it will automatically be cancelled in all the others, but introducing it in practical terms will be particularly complicated, because the text of the patent has to be translated into all the official EU languages and work is still ongoing to find a system to apportion the annual tax.

14 The EPO, which incorporated the International Centre of patent documentation (IMPADOC) in 1991, markets and constantly updates whole series of patents and patent applications through offline systems. Some are bibliographic, and others provide the full text of the documents.

The only users to exploit the system free of charge are the PatLibs, while two special online services are available to everyone:

- Esp@cenet which collects over forty million patent documents from all over the world on the Internet. Created in 1998, this electronic archive was born to increase public awareness of the patent culture by supplying the relevant information service free of charge.
- Epoline an integrated, secure communication system by which applications can be filed, taxes paid, folders inspected and searches performed in the European Patent Register, all online.

15 The EPO created the network of PatLib Centres to give substance to its informative role.

All the centres are staffed by highly specialist personnel with cutting edge computer equipment, and they have numerous offline patent databases which, together with the Esp@cenet online archive, represent the huge heritage of the international patent documentation system.

Searches are performed in the official languages of the EPO; the only database in Italian is Espace EP/Italia, which is currently not updated.

Search parameters are the publication or application number, the priority code (which corresponds to the original national patent number), and the name of the inventor or of the person filing the application.

If these data are not available, the search will use the key words in the text of the document or the international patent classification codes.

The search may produce abstracts, or complete copies of the requested documents, complete with illustrations.

The bibliographic information service is free, as is video consultation of the documents.

The cost of extracting copies of the documents found varies according to the type of information requested.

16 The 20 PatLib centres in Italy, most of which are housed in Chambers of Commerce, although some are in Technology Parks or Universities, are found in the following cities: Rome (at the Ministry of Industry), Ancona, Bari, Bologna, Bolzano, Caltanissetta, Campobasso, Cosenza, Florence, Genoa, Lecce, Milan, Naples, Pescara, Reggio Calabria, Siena, Turin, Treviso, Trieste and Vicenza.

Recently a number of **PATENT INFORMATION POINTS (PIP)** have been established, to supply basic documentation, originally designed as help desks to boost the presence and availability of patent documentation around the country. Many PIPs were located in universities to make information about patents available to students, and they are linked to the

PatLib centres, which perform more detailed searches on request for users who, for geographical or other reasons, find it more convenient to go to a PIP.

At present **there are 38 officially recognised PIPs, an exclusively Italian institution** (updated to July 2003).

Their addresses can be found on the Internet, at the site of the Italian Patent and Trademark Office at the Ministry of Manufacturing Activities http://213.175.14.66/Dgspc/Uff_Brev/homepage.htm.

17 It is the only Italian PatLib centre inside the library of a Chamber of Commerce. The others are all linked to Patent Offices, which have an administrative role.

18 The Equalisation Fund envisages that every year Unioncamere proposes a number of areas of intervention to the various Chambers of Commerce in Italy, asking them to develop a project regarding these areas, that will usually require the collaboration of several Chambers from the same Region.

Each project, including a very detailed estimate of the cost, is presented to a commission which decides, without appeal, on its feasibility, granting a subsidy which Unioncamere will pay as a percentage (varying from 40% to 65%) of the expense met.

19 DINTEC is a consortium set up by UNIONCAMERE (the Italian Union of Chambers of Commerce) and ENEA (National Board for New technology, Energy and the Environment) to collect and distribute technical standards, and to promote a culture of certification and quality.

20 In the first year of the project, the Chambers of Commerce of **Alessandria, Cuneo and Novara** formally expressed their intention to become operative in SBN and to pool all their documentation, as this was one of the activities at the basis of the common project; they began to catalogue their respective bibliographic archives in the final months of 2001.

21 Official recognition as a PIP presupposes a (limited) commitment of funds and personnel which not all the structures are able to guarantee: this explains the informal nature of the contacts between the smaller of the Piedmontese Chambers of Commerce and the PatLib network with the collaboration of the Turin Centre.

22 As head of the PATLIB Centre, I am personally responsible for drafting the text and the presentation of two distinct lectures:

⇒ one regarding the protection of inventions through the filing of patent and trademark applications, illustrating the theoretical and historical aspects of industrial patent rights

⇒ the other regarding the PATLIB network and the services it offers the public.

My colleague, Fabrizio BOASSO, who assists our users every day in their searches, explains the various search methods, using the Espo@cenet online archive.

The complete text of all the lectures given so far can be accessed in .pdf format in full-text from the site www.to.camcom.it/patlib.

23 I must thank Luigi BOGGIO in particular; his huge knowledge of the matter and the efficient, generous way with which he relates with others, mean that he is also involved in teaching the subject in a specific course on industrial patents at Turin Polytechnic, during which he invited us to present our experience as expert document lists, in June 2003.

24 A Patent and Intellectual Property Office was created in Turin University in September 2001, in the Research and International Relations department (Institutional Research Section).

Its institutional roles are:

⇒ To manage and exploit the technological heritage of the university

⇒ To promote the patent culture in the university environment.

Its Internet site is <http://hal9000.cisi.unito.it/ricerca>

25 The Regulation of Patents and Intellectual Property rights was approved in February 2003 by Vice Chancellor's Decree no. 206 of March 19, 2003.

26 The Regulation of approval of university and academic "spin-offs" was approved in April 2003 by Vice Chancellor's Decree no. 293 of May 12, 2003.

A Spin-off is defined as: a joint-stock (S.p.A.) or private (S.r.l.) company whose purpose is to make use of the results of research and the development of new products and services, in business and in an innovative context.