

**WIPO/INN/ABJ/99/12****ORIGINAL:** English**DATE:** September 1999

GOVERNMENT OF THE REPUBLIC  
OF CÔTE D'IVOIRE



WORLD INTELLECTUAL  
PROPERTY ORGANIZATION

## **WIPO REGIONAL SEMINAR ON INVENTION AND INNOVATION IN AFRICA**

organized by  
the World Intellectual Property Organization (WIPO)  
in cooperation with  
the Government of the Republic of Côte d'Ivoire

**Abidjan, September 1 to 3, 1999**

### **PATENT DOCUMENTS AS A SOURCE OF INFORMATION FOR R&D ORGANIZATIONS AND FOR INVENTORS THE WIPO NET CONTRIBUTION**

*Document prepared by Mr. Christopher Kiige, Examination Officer, African Regional  
Intellectual Property Organization (ARIPO), Harare*

**CONTENTS**

	pages
<b>1. INTRODUCTION</b>	<b>3</b>
<b>2. TECHNICAL CONTENTS OF PATENTS DOCUMENTS</b>	<b>3-4</b>
<b>3. ORGANIZATION OF PATENT INFORMATION</b>	<b>4-5</b>
<b>4. USES OF PATENT INFORMATION IN DEVELOPING NATIONS</b>	<b>5-7</b>
<b>5. WIPO NET CONTRIBUTION TO PATENT INFORMATION</b>	<b>7-8</b>
<b>5. CONCLUSIONS AND OUTLOOK</b>	<b>8</b>

## 1. INTRODUCTION

Patent Documents have long been recognized and used by industrialized countries as a valuable source of technical information, and are being used by an ever increasing number of developing countries, as an important tool of technological and economic development. Many developing countries are aware that it is in their best interest to establish national industrial property systems, where they do not exist, and to strengthen and upgrade existing systems which, inherited from their historical past, are no longer adequately responding to new needs and priorities. The Patent Offices, particularly Regional Patent Offices should work as patent information and documentation centres.

The World Intellectual Property Organization (WIPO) Global Information Network (WIPO NET) and Digital Patent Libraries (DPL) projects proposed and managed by the WIPO Standing Committee on Information Technology (SCIT) is making patent information readily and easily available particularly to developing countries, through the internet.

## 2. TECHNICAL CONTENTS OF PATENTS DOCUMENTS

In any patent system, the inventor is required to disclose the invention in the form of a patent application which is scrutinised by the patent authority (Patent Office) to evaluate whether it is novel and useful and qualifies for a formal protection in the form of a patent. The patent systems have been modified significantly to keep pace with the growth in our scientific understanding and the changing societal needs. Though the patent system may vary from country to country, the basic spirit to offer protection for a limited period to new and useful inventions is common to most countries.

Patent laws require that an application for a patent for invention describe the invention with such clarity and completeness of all the technical details that anyone having ordinary skill in the art should, by merely reading the description, be able to carry out the invention, and that granted patents for invention be published. In other words, at least when the patent for invention is granted, the invention will be “disclosed”, that is, its essence and mode of exploitation will be brought to the knowledge of anyone who cares to know.

The utilization of information available through this disclosure avoids wasteful duplication of effort and the multiplication of costs that research aimed at finding solutions to technical problems can entail; it acts as an inspiration or catalyst for further inventions and this contributes to the advance of science and technology.

With the rapid strides in research and development (R&D) in industries and other public/private funded institutions, the volume of technical information is growing by leaps and bounds. Chemical Abstracts alone publishes over 11,000 abstracts each week, over 22 million to date; with disclosures of over 15 million compounds; currently about 25% relate to patents. There are thousands of scientific journals documenting contributions from researchers all over the world. In addition, there are over 40 million classified and well documented patents published world-wide and growing at a rate of more than half a million new applications per year. It is significant to note that 80% of these disclosures in the form of patent applications are not published elsewhere, i.e. in journals, periodicals, etc.

Patent literature can, therefore, be considered to be a very large and well-structured source of technical/scientific information.

The relevance of patent information in identifying new business opportunities, creating business strategies, planning of R&D programmes including technology and business forecasting is gradually being appreciated. Proper use of patent information can help one to identify state-of-the-art technologies and global expertise, do technology shopping and investment planning, avoid duplication, monitor competitors, and avoid possible infringements. Patent documents can also help in planning of technology transfer, striking joint ventures etc. The advances in information/communication technology (e.g. the internet) already influence almost everything we do.

A comprehensive user-friendly patent information system together with experts should be able to guide industry to make best use of all the available information from patents.

In this era, judicious management of patent information will require well-structured functioning of information creating centres, information documentalists/retrievers, information users, IPR specialists and information technology experts. The appropriate and selective use of information aided by state-of-the-art tools of information technology will only aid in the management of this process. However, patent information scientists will have to be trained to make best use of information technology and international/local databases effectively and provide service to potential users in all sectors of a business.

### **3. ORGANIZATION OF PATENT INFORMATION**

Having explained the nature of patents and their availability around the world, we will now show how valuable patent information can be used in practical ways for an improved commercial edge. More generally, use of this information should be an integral part of an ongoing strategic approach to developing new products from initial research and conception. The purposes of searching information from patents are multifaceted and these are illustrated below:

#### Purpose of searching:

- Patentability;
- Infringement;
- Avoid duplication;
- Find products;
- Solutions to problems;
- State-of-the-art;
- Generate ideas for R&D.

Remembering that patents form the single most comprehensive technical resource in the world (over 40 million documents directed to solving technical problems, the majority of which are the first and only publication of the development described), there are many ways in which it can and should be used. For example, it has been estimated that, in the countries of the European Union, over 30% of all R&D spent is wasted in repeating work that has already been done. So in tackling a technical problem it will often be very worthwhile to find out if a similar problem has been solved before in a patent specification, with results which can be used in the new situation, maybe with minor changes. Similarly, it is very important to get a patent search done to establish the state-of-the-art when a new era for research is being investigated. Not only will it alert the company of previous research in the area, it will also point up potential major competitors whose patents might be in force and be infringed by the results of the proposed new research. It will also give leads to research in parallel or tangential areas.

Assuming that a project on any technical subject matter is begun in the early stages and produces a potentially innovative technical development, then further patent searching is valuable before any decision is made on filing patent applications or on maintaining secrecy. Such searches should be directed to determining whether the development is likely to be novel and whether on implementation, it is likely to infringe existing patents.

If a patent is applied for and granted, these searches should be updated regularly throughout this process to ensure that potential conflicts are identified early. Again if disputes do arise, extensive patent literature searches may be vital in determining the real strength of the relevant patents.

Patent searches are clearly valuable all the way through the process of initiating developing and marketing a new product, process or other manufacture. They are also useful in other ways, for example competitor analysis, marketing, and recruitment. Analysis of a particular company's patent activities over a period of several recent years can give useful pointers to future products that the company is currently working on. While only one of a number of aspects that need to be considered in looking at company's future activities, a substantial and increasing portfolio of patents is a strong indicator of a likely future commercial development.

Looking at the patent holdings of other companies can also be useful in marketing by identifying companies that might be end-users of a particular product or piece of equipment.

Analysis of the patent holding of specific inventors within a narrow research area can be used as an aid to recruitment, since it can identify a major player in the field, whose services could then be sought.

#### **4. USES OF PATENT INFORMATION IN DEVELOPING NATIONS**

Much of the information contained in patent documents has value far beyond the period of legal protection provided, value to nations less well developed than those where the original invention was made and patented. Information designed for one use can have applications in quite different fields, at different times, and in different parts of the world. Something that originally had limited application in a single field upon its discovery might have a greatly expanded application at a much later date, to perhaps solve a very different

problem (one that may not have even existed earlier or not in the society or culture where the invention originally resided). Often a “new” idea is really an old idea that has a new application or has become commercially viable only recently or even the same idea in the same application in a different culture at a different level of development (in a nation with the same level of development experienced by a more technologically advanced nation of a time now long passed). It can be seen, I think, that something long in public domain forms a valuable part of the ‘new’ technology of a developing nation. Information about such inventions need be identified, modified and used quite freely and legally.

While not getting into the complexities and the many aspects of information and technology transfer to developing nations, which are economic, legal, political and social as well as technological, I should like to address the general problem and the role patent literature plays in it. Patent documents cover the entire technological spectrum, while inventions are generally the products of yet earlier inventions, and form a large accumulated corpus of technical literature containing a considerable portion of the collective history of technological development since the industrial revolution. A corpus of literature made up of perhaps insignificant individual contributions, but together forming a valuable store of information available to all who would make use of it. Some people have described the patent literature and its potential this way:

As this documentation is stored in the various industrialised countries basically with the same structure, and as the various countries interchange documents amongst themselves, patent documentation as a whole is a literal international network of technological information that is to hand, open to consultation, ready for use.

- Countries where patents are unknown as a source of relevant technological information.
- Countries where there are good collections of patent documents, but where there is no efficient mechanism for making them available to users.
- Countries with major science and technology information activities, where strong stocks of patent documents exist, but the access mechanisms, if they exist, are weak.

Users that bear directly on the value of the technological information contained in patent documents can be divided into four kinds:

(i) *Solutions to a technical problem.* A search in the patent literature can potentially identify a solution or solutions to a technical problem previously sought. Patent documents often will discuss difficulties of a particular process or design which often can be avoided or will include advantages of a particular process or design;

(ii) *Alternative technology.* A solution to a problem may be known but is less than satisfactory for a number of reasons. A search of the patent literature could identify an alternative solution that is more desirable, more economical, more effective or efficient, or more environmentally beneficial. The economics are a major concern of inventors and statements concerning the economic importance of the invention are routinely included in the patent document; such things as the use of cheaper materials, streamlined manufacturing

techniques, use of fewer parts, less opportunity for damage or wear or even use of materials and skills more readily available in a particular part of the world are often included;

(iii) *Knowledge of activities in a specific field* of technology can be gained through a search of the literature. Valuable information about raw materials, procedures, processes or by-products in order to choose the most favourable conditions under which to implement a new solution or an established solution to a slightly different problem. Such information would also be valuable when entering into negotiations for production skills or for processes and procedures.

Another problem closely related to both finding alternative technologies and negotiations for products are the *evaluation of a specific technology that is available for licensing and offered for acquisition*. In this case an evaluation is needed to choose between two or more technologies about which much information can be gained through a search of the patent literature and a review of both present and past technologies and currently used and unused technologies in like and unlike fields.

Patent documents are frequently a cheaper, faster and better source of information than that found in the journal literature or in other media. They provide their information in a standardized format, can be easily associated with previous inventions and their corresponding information, can be selected at the appropriate level of advancement and degree of sophistication. Patents are not just another source of technological and scientific information for developing nations, they are *the* source of information necessary for the industrial development process.

## **5. WIPO NET CONTRIBUTION TO PATENT INFORMATION**

The WIPO Standing Committee on Information Technology (SCIT) has created the WIPO Global Information Network (WIPO NET) and Intellectual Digital Patent Libraries (IDPL) projects.

The WIPO NET project is basically to connect patent offices to WIPO through the information super-highway, which is the Internet. This will provide rapid transfer/exchange of information contained in patent documents among industrial property offices and WIPO.

The WIPO NET project will also facilitate IPDL nodes of Patent database collections to be established at WIPO and at all national and regional patent offices, which will be accessible via the Internet.

The IPDL should avoid duplication by capitalizing on currently searchable database resources i.e. maintenance of one copy of a particular database.

IPDLs will make patent information readily available in all corners of the world particularly in developing countries.

The major contributions of WIPO NET to patent information include the following:

- i) Provide small IP offices in developing countries with hardware and software necessary for Internet access;

- ii) Provide intellectual property offices in developing countries with training necessary for use of the Global Information Network in its applications;
- iii) Establish technical requirements for data exchange among IP Offices;
- iv) Facilitate IP offices automation and monitor the change over to electronic data carriers and update the technical guidelines;
- v) Assist small IP offices in acquiring CD-ROMs and DVD-ROMs to enhance search of patent information;
- vi) Undertake pilot projects to start, and where in existence, expand the Intellectual Digital Libraries;
- vii) Monitor the development of electronic filing of patent applications in IP offices;
- viii) Undertake pilot projects to facilitate the WIPO World Academy particularly in developing countries.

## **5. CONCLUSIONS AND OUTLOOK**

This is the time for developing countries to realize that patent searches and thus patent information can effectively support R&D work, company strategic planning, identify state-of-the-art technologies, help in planning of technological transfer, investment planning, avoid duplication, monitor competitors, do technology shopping, and therefore improve the quality of life.

Of course, it is not sufficient just to promote awareness of the value of patent information by means of only public relations activities, because some objective barriers exist.

Therefore, a user friendly information service is needed. Therefore, the WIPO NET and IPDLs have come at the right time and will play a very vital role in the dissemination of patent information particularly in developing countries.

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