



## Review

## Evolution of the Patent Information World – Challenges of yesterday, today and tomorrow

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## ABSTRACT

Over the last 18 years, the field of patent information searches has dramatically evolved.

Centralized information centers have started to disappear while new internet applications targeted at end-users have emerged. At the same time, the quantity of information has increased exponentially.

Patent information specialists must now master several high level techniques to run precise searches, but also to analyze the large amounts of information retrieved, using modern software packages.

The goal of this paper is to review the major advances over the last 18 years, how we have arrived at the current situation and what will be the future challenges for the industry.

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## 1. Introduction

Thirty years ago, the Information Professional work was totally different from what it is today: office was in a library; tools were books and periodicals; there was no personal computer (PC).

Then it started to change with some of the first personal computers, e.g. the ZX Spectrum [1] and in accordance to Moore's law [2], the number of transistors on integrated circuits have since doubled every 18 months.

In parallel computers started to communicate and share information with each other.

Computers and networking evolutions were probably among the most drastic changes in the lives of patent information searchers, moving them out of the "paper" library and sitting them in front of a screen.

The aim of this article is to look back at the evolution of the Patent Information World over the last 18–20 years, so that based on historical knowledge we all will better understand the challenges of tomorrow.

## 2. Where are we coming from?

## 2.1. 18–20 years ago

About two decades ago, employees in companies were hit by the IT (r)evolution:

- Computers started to be available to all of them,
- E-mails allowed communication between people,
- Limited access to Internet was possible via external dedicated lines, using a phone network.

Most of the few thousand existing technical databases were available via a few hosts: STN [3], Dialog [4], Datastar, Questel [5], Dimdi [6] [7], using analogic lines for connection.

Due to the involved cost, keeping the connect time to a minimum was absolutely necessary. Other factors influencing costs were the number of documents visualized and the criteria used to run the search. To make matters more complicated, they were different from one database to another.

As such the use of these databases was fully reserved to information professionals who had to learn all the complexity of on-line searches (Boolean search, fielded searches, specific fields for each database, etc.)

Major hosts provided two kinds of databases: bibliographic databases with abstracts (e.g. Chemical Abstracts [8], Derwent World Patent Index [9]) or factual ones (e.g. Beilstein database [10]).

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Most of these databases were labeled as “added value” ones as:

- They were collecting data from different sources, different countries, etc.
- Several technical ones, out of the original documents, were writing their own enhanced titles and abstracts and adding specific indexed terms allowing better search and retrieval (e.g. Chemical Abstracts, Derwent World Patent Index)
- In most cases, these databases have been using English as their exclusive language then allowing to search in only one language and to retrieve information on documents originally written in other languages.

Two major complaints were:

- (1) How to search the full text of documents, mainly patents?
- (2) How to access the original documents following a search?

## 2.2. The last ten years

The last decade was one of great changes, breakthroughs in technologies, emergences of new economies, continuing mergers and acquisitions in the industry landscapes.

Those, of course, had an impact on the Patent Information World, as they had an impact on the rest of the World.

With this in mind, and as summarized in Fig. 1 “Main factors of changes these last 10–15 years”, we’ll focus our paper on:

- The technical revolution that came into place with the Internet and its consequences,
- Mergers and acquisitions, both in the Patent Information World but also in industrial companies
- New geographic, emerging economies

Several consequences of these evolutions will also be investigated, such as the overload of information and the focus on innovation.

## 3. Technical revolution

### 3.1. Internet

The very initial idea behind Internet [11] was about *communication*: create a “web” network that would continue to operate if some key points were shut down for some reason.

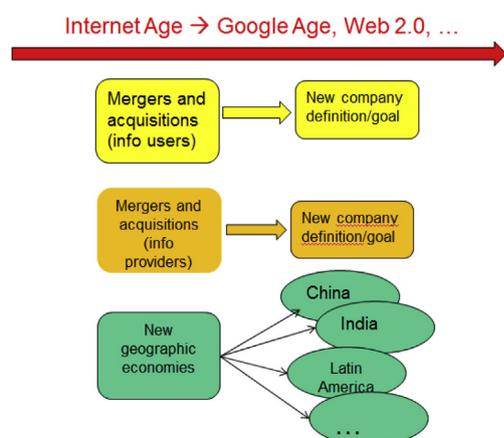


Fig. 1. Main factors of change these past 10–15 years.

After communications started the age of the webpage: it was no more about sending an instantaneous message via an e-mail but about having a permanent place where a message, advertising could be displayed. These pages, which were static at that time, had a lot of interest for companies; it was strategic for every company to be present on the web in order to have a “web reputation”, including information providers.

As Information Technology development progressed, it rapidly became possible to interact dynamically with the websites and exchange information.

This would give the information providers a fantastic opportunity to not only develop new easier more friendly platforms on the web (e.g. STN on the Web, STN Easy [12] for STN) but also to change drastically the paradigm by developing new platforms whose focus would directly be the end-users, not the information professionals anymore. Scifinder [13], from Chemical Abstracts Service, which was first available as software and later as a web application, can be considered as an example. Fig. 2 “Major Providers Platforms on the World Wide Web” illustrates some of the new web “players”.

In the early 2000s, the major patent offices (EPO [14] and USPTO [15]) would also move to the web, and provide free access to the full texts of their collections.

New companies developed their own web applications to search for patent information. They proposed relatively low annual fixed fees, which was another paradigm change compared to the pay per use of “traditional” host providers. As a few examples we can consider PatBase from Minesoft [16], MicroPatent [17] and Delphion [18].

Internet technology and fixed annual fees changed drastically the way of working: with several providers, it was not necessary anymore to worry about connection time or to be careful on the number of records visualized.

But if it is now possible to search and easily access the original patent documents, the lack of added value as provided by historical databases is clearly the drawback.

Last but not least publishers like Elsevier [19], Wiley [20], Springer [21], EBSCO [22], etc. also entered the game providing easy – (but not really free) – access to original non-patent documents.

### 3.2. Web 2.0

One could argue that with the Web 1.0 the exchanges between end-user and any website are in fact going only one way: a query provides answers.

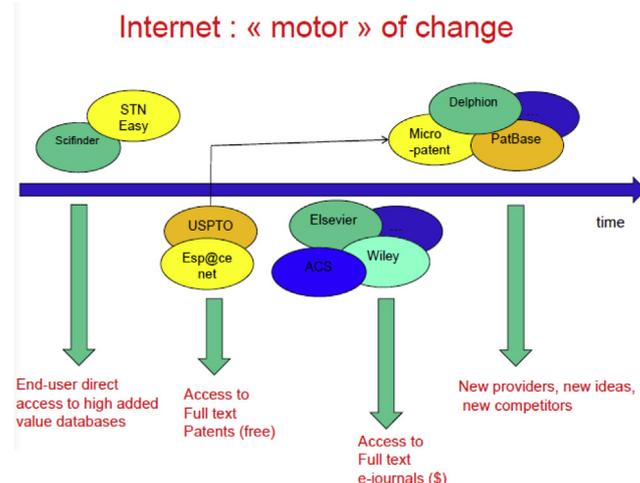


Fig. 2. Major provider platforms on the world wide web.

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