Search and location of information on the Internet

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PID_00267099

Introduction

> "In our Internet-driven society, surfing the network is not the most difficult step in the process. The really difficult step lies in knowing where to go, where to search for what we want to find and what to do with what we find. And this requires training."
>
> Manuel Castells

Searching for information on the Internet has become an inherent part of our daily life. The digital revolution changed relationships in the production and transmission of knowledge as much as the printing press did back in the 15th century, or even more so. Innovations unfailingly change the course of history and determine how future generations will live. In the past, many people could see the reason for learning to read and write thanks to the widespread, cheaper distribution of written texts, and now we are facing the need to be skilful in searching for and finding information on the Internet.

This process is rather more complex than just introducing a few keywords in a search engine. The user should acquire and develop skills that enable him/her to precisely focus the search **goals** (what do I want this for? Which format do I prefer?), choose the most suitable **instruments** (generic search engines or specialized search engines, alternative electronic sources, etc.) and thus lay out a global search **strategy** that enables him/her to reach the desired goal by choosing the most appropriate terms.

Once we have reached this point, we will need to **validate** the reliability, update status and rigour of the information we found and **contrast it**, if necessary, with other sources or formats. In the final stage, we will need to know how to **manage** results to focus them and use them properly.

Searching for and finding information on the Internet is, therefore, a step-by-step, thinking-intensive process, and by practicing it we will be able to strengthen essential skills and abilities, in particular if our interests focus on knowledge areas that are somewhat complex.

The digital arena has some particular features, and for this reason information research requires several strategies and protocols that allow for obtaining the desired results. Some of the most relevant aspects in this dynamic environment are listed below:

- The **increase** of the information flow, which tends to grow exponentially.
- The **decentralisation** of the contents available on the Internet, which turns each user into a content producer and that even fosters the collective creation of information.
- The **changeability** of contents, whereby they may never be considered finished and require constant check-ups and modifications.
- The **lack of validation and certification** for much of the information that may be found on the Internet.

These specific features push users towards honing their critical thinking skills and questioning the elements they find so that they may consider themselves proficient in finding, processing, validating and organizing data that allow for a real creation of knowledge.

1. Before: what do I want to find?

1.1. What do I need?

When we talk about the **Internet** we mean, on general terms, the global network of computers and other computer-related devices that are connected to each other and through which users from all over the world constantly share all sorts of contents.

Given that Internet surfing has become an inherent part of our daily life, we tend to dismiss the technological complexity behind a simple search, and tend to forget how fragile its grounds are.

A possible description of the basic needs to perform a search is described below:

1. In terms of **hardware**, we need a **device** (personal computer, cell phone, tablet, etc.) that is capable of establishing a **connection** (a wireline or a wireless connection) to a **network** (usually a local area network, LAN). In order to establish this connection, a **supply company** is needed to allow us to connect our local network to the Internet through a **router**.

2. In terms of **software**, we need a **web browser** (Chrome, Explorer, Mozilla Firefox, etc.) capable of reading the information stored in **Internet servers** and translate the HTML code in which it is written into verbal, visual language that may be understood by a human being. The browser provides us with access to **search engines** (Google, Bing, specialized search engines, etc.) that will help us reach the information we are searching for.

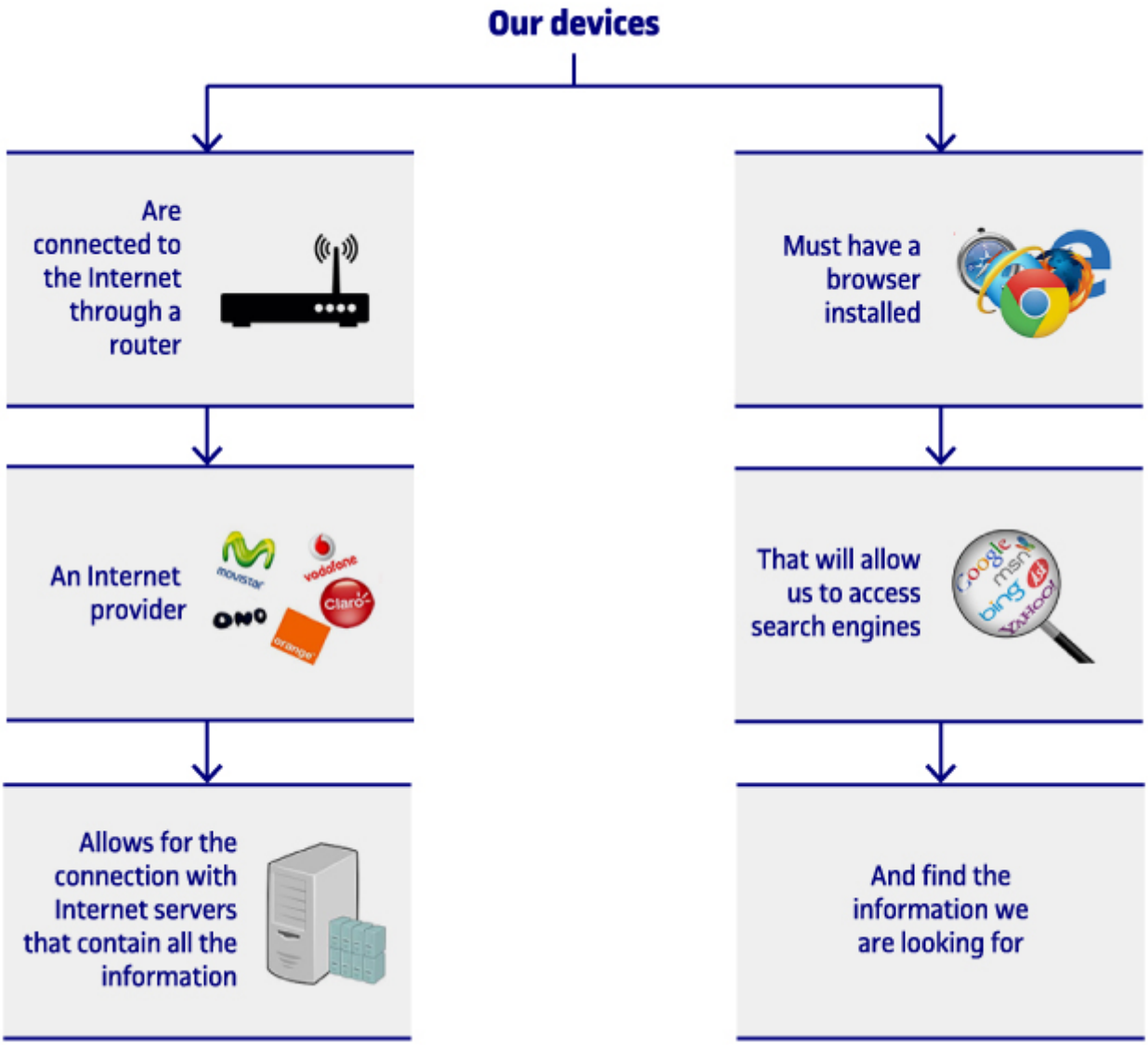


Figure 1. Elements required to perform a search

Hardware and software elements should enable us to surf the Internet efficiently, but clearly enough, given the exponential, constant increase in the information hosted in Internet servers, we will need to know what information we need to find and what we will use it for (personal purposes, academic purposes, business-related issues, bibliographic research, etc.) in order to be able to set the goals and strategies that make the search efficient.

1. Before: what do I want to find?

1.2. Search goals

It is important to define our goals before we start our search. Having a clear picture of what we want and, what is even more important, what we want it for will allow us to avoid wasting time ineffectively surfing the Internet, and may even determine the tools and strategies we will use in our research.

Therefore, having a clear picture of what our needs are and how we want to use the results obtained will be essential.

> Before we begin, we should set specific goals that help us define and narrow down the search.

If we want to perform an academic-related search, we should summarise the previous knowledge we may have on the subject. A good choice of directories and search engines will also be essential.

> **Example**
>
> If we have the goal to deepen our knowledge in a law-related topic and we want to use this information for professional purposes, performing a Google search will not probably provide satisfactory enough results. Instead, searching in a specialized database (such as http://hj.tribunalconstitucional.es/en) will allow us to find the desired information efficiently.

1. Before: what do I want to find?

1.3. Search strategies

The huge amount of information available on the Internet pushes us towards defining a set of **strategies** to achieve the most precise, relevant results according to our needs in as little time as possible. Finding information on the Internet requires skills that involve being methodical, having critical thinking skills, having problem-solving abilities, being proficient readers... Some of these strategies are listed below:

- **Have a clearly defined search goal:** what we want to search for, what we need it for, which format we would like the information to be in, how we will contrast the information, etc.
- **Choose the type of search engine that is most appropriate for each need:** Google may be an excellent generic search engine, but when doing a bibliographic research, surely a more specialised search engine such as ISBN will provide better results.
- **Think of some keywords** that describe, in a precise and, if possible, unique way, the object to be searched for.
- **Writing keywords in a majority language** on the Internet will increase the amount of results obtained. If we are proficient in some of these languages (English, Spanish, French, etc.), we may broaden our searches and find more information.
- **Choosing or distinguishing between channels and formats** (text, image, video, PDF, etc.) will bring us closer to what we really want to find.
- **Using logical operators between keywords** will help us refine our search terms. Alternatively, **using specific symbols**, such as inverted commas or asterisks, will remove non-desired results, as explained in the "Logical operators" section.

Websites hosted on Internet servers are recognized and indexed by search engines. The most popular search engines are Google, Bing, Yahoo!, DuckDuckGo, etc., but many others are available. In some cases, they may be much more powerful than the all-pervading Google.

> Therefore, a **search engine** is a system that searches for files hosted in Internet servers.

Search engines are activated when we write the keywords in the browser search box. The key to an efficient search lies in choosing key terms appropriately, thus making the job for the search engine easier.

1. Before: what do I want to find?

1.4. Logical operators

One of the most basic and yet productive techniques when searching for information on the Internet is the use of **logical operators** between keywords. This type of search is called a **Boolean** search, after the English mathematician George Boole, who created a logical system to relate or exclude concepts. Most search engines understand and accept logical operators (AND NOT, NEAR and OR) and their equivalences as mathematical symbols.

Logical operator	Mathematical symbol	Description
AND	+	It tells the search engine to show results that contain both of the words linked by the operator. For instance, *Sitges AND modernism* will retrieve pages that contain both concepts.
NOT	–	It tells the search engine that we want to find the word before the operator, but excluding the word after the operator. For instance, *Sitges NOT modernism* will provide pages about Sitges that include no references to modernism.
OR	White space	At least one of the words should appear on the page. In this case, *Sitges OR modernism* will show us pages that refer to either Sitges or modernism (nevertheless, by default, it will show first those pages that contain both terms).
NEAR	Put the word in quotation marks	This is the way to ask the search engine to show results that contain both words in a row. In this case, *Sitges NEAR modernism* will retrieve pages where a word is next to the other or close by.

Even though the **asterisk (*)** may not be considered an operator, search engines consider it a wild card. Thus, moder* will provide results that contain words such as modernism, modern, moderation, etc.

The operators mentioned above (or their equivalents) may be used in combination, which means that the search may be further refined. For instance, the expression *"Sitges moder*" NOT painting* will retrieve pages that contain Sitges and modernism (or modernity or modern, etc.) and do not include the concept "painting".

1. Before: what do I want to find?

1.5. Search types

Without doubt, the Internet has become the key tool for searching and finding information. When we, as users, use search engines, we leave a trace that companies and institutions try to profit from, and they do not miss the opportunity to have an influence on our decisions. The way search engines offer results to users has changed a lot since the emergence of the Internet, and this fact also determines the kind of searches we perform on the Internet.

The basic search types, which were available from the beginning of the Internet, try to find any of the following:

- **A website:** searches devoted to finding a website or an on-line application without the need to write its URL address. When we write "YouTube" or "Netflix" in the search box, we do not intend to find information on these services, but access them directly.

- **Information:** the goal of the search is to find the most relevant information hosted on the Internet on a given topic. This information may be retrieved in many different formats: text, image, video, infographics, maps, PDF documents, slide presentations, glossaries, directories, etc.

- **A product:** in this case, the aim of the search is usually the purchase of a product or service. Companies devote many resources and efforts to achieving the most favourable positioning, and this is one of the main income sources for search engines.

Search engines have extensively studied user behaviour, and for this reason they put a great deal of care in the design of their results page (SERP, Search Engine Results Pages) and try to meet users' needs and obtain an economic profit from them.

If we focus on Google, which is, without doubt, the most popular search engine, we may see the different ways it has to show results according to its interpretation of the user's needs. When trying to search for a historical figure, for instance, it will show us Wikipedia articles first. At the same time, on the right side of the screen, a knowledge graphic will provide us with data in an immediate and visual manner:

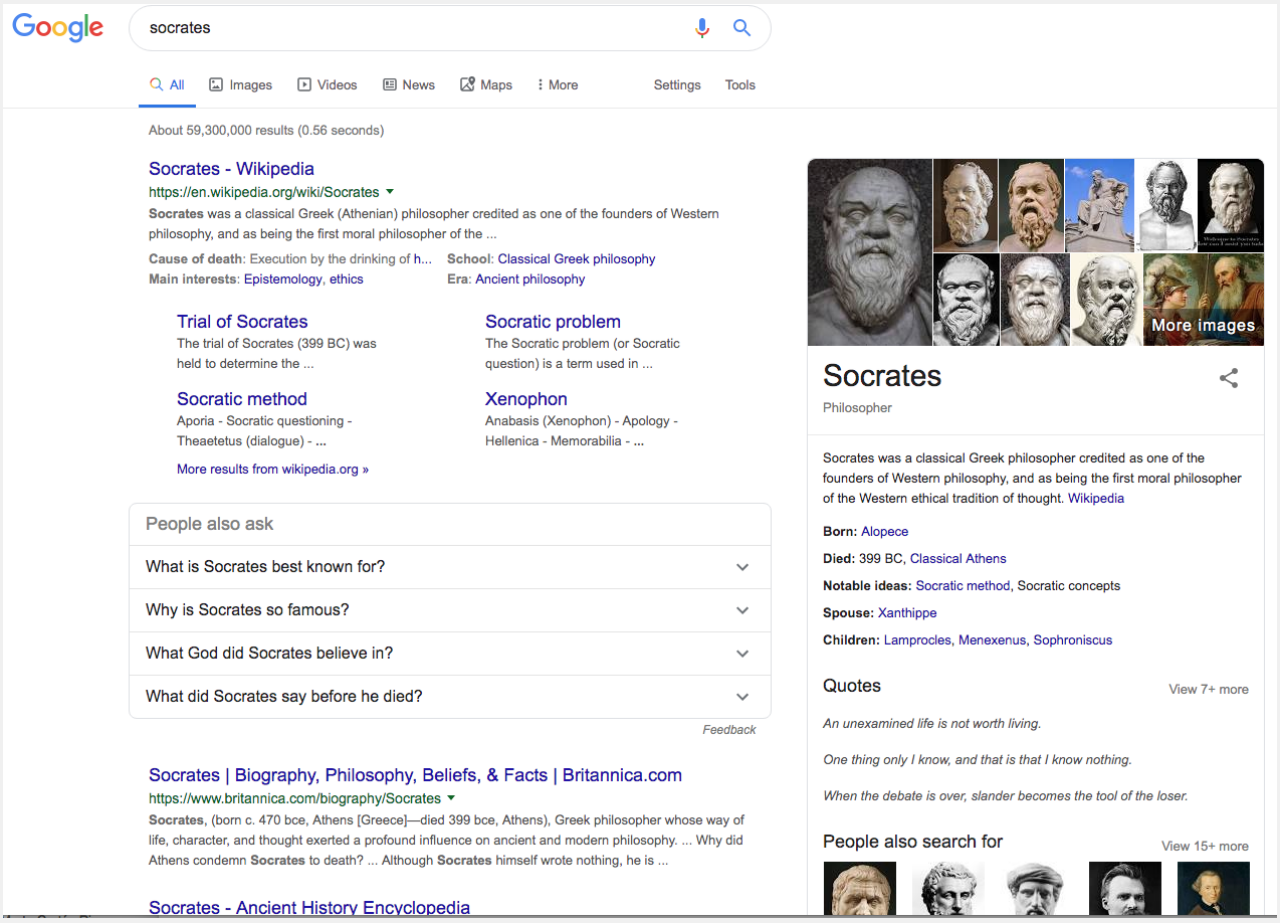


Figure 2. An example of the results obtained with Google search engine.

If we are searching for a song instead, Google will offer us the possibility to watch a YouTube video in which the original performer plays the song, as well as other recordings.

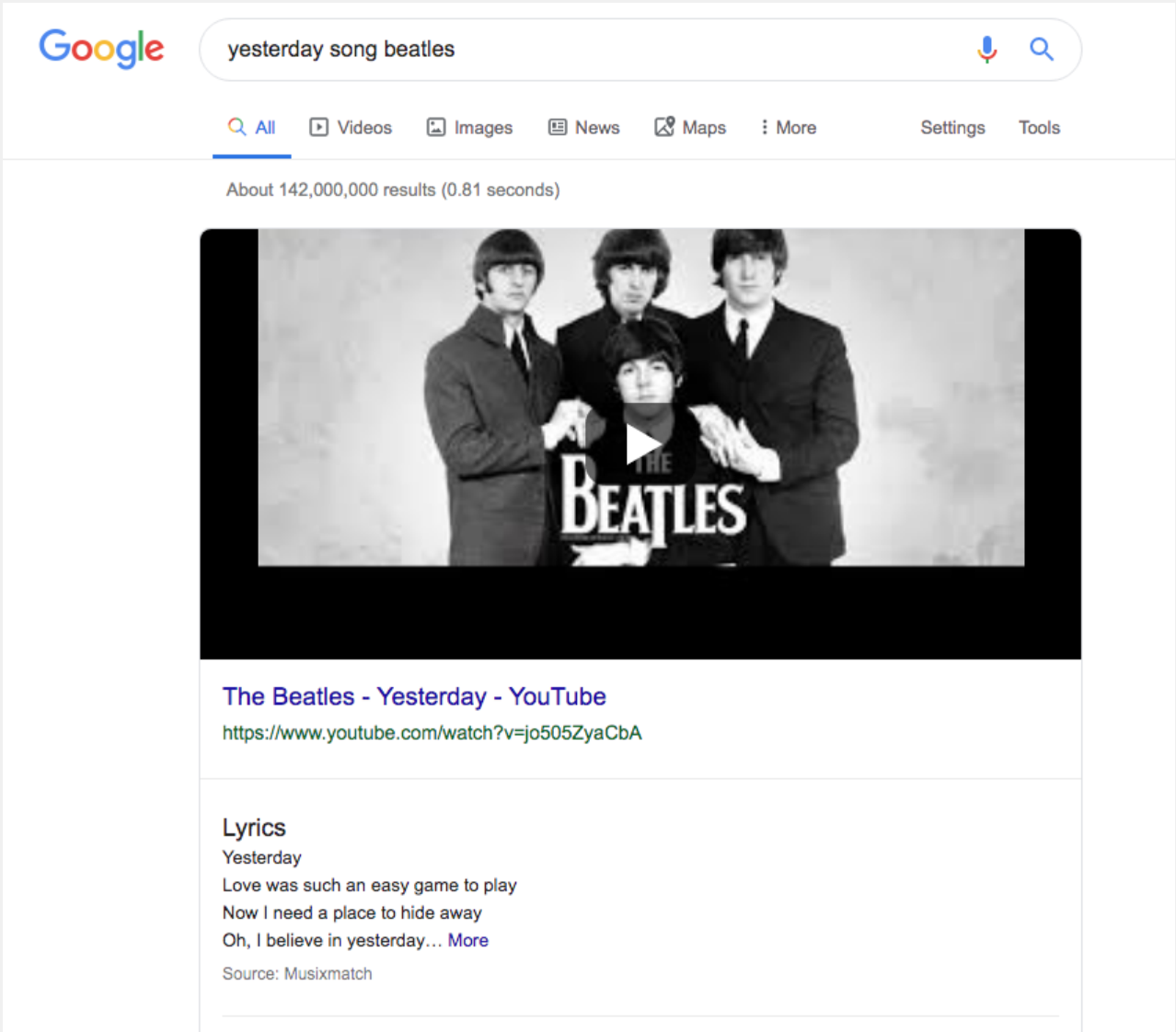


Figure 3. An example of the results obtained with Google search engine if we are searching for a song.

If, conversely, we write “trip to Rome”, the first results that appear are sponsored advertisements (among which there is a ticket sale service) and on the right we may see a squared shape that contains information from Wikipedia.

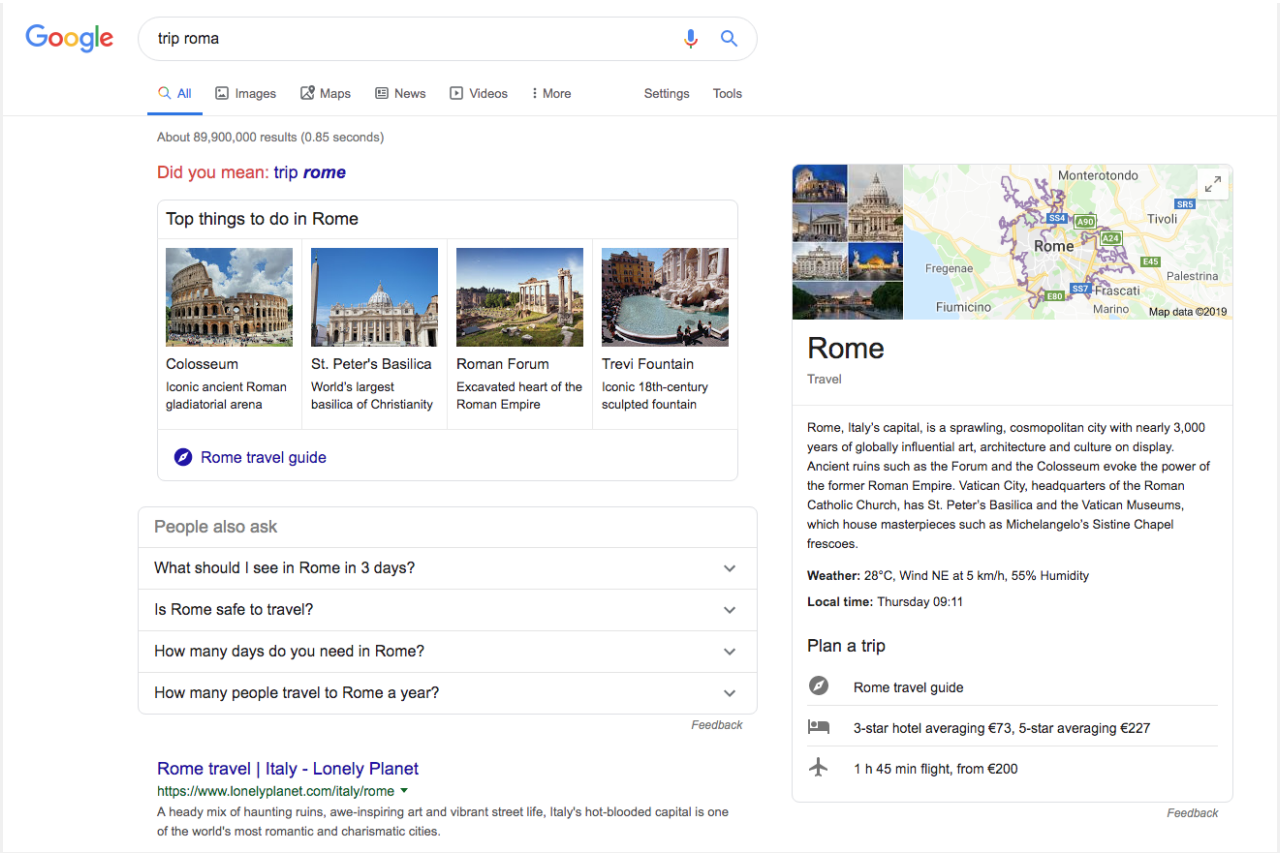


Figure 4. An example of the results obtained with Google search engine when we search for a city.

In order to see further examples of how versatile the Google results page is, we may try to introduce such words as “ibex35”, “from Barcelona to Andorra”, “translate candlestick”, “buy pan” candy crush”, etc. and see how the results page obtained in each case are very different.

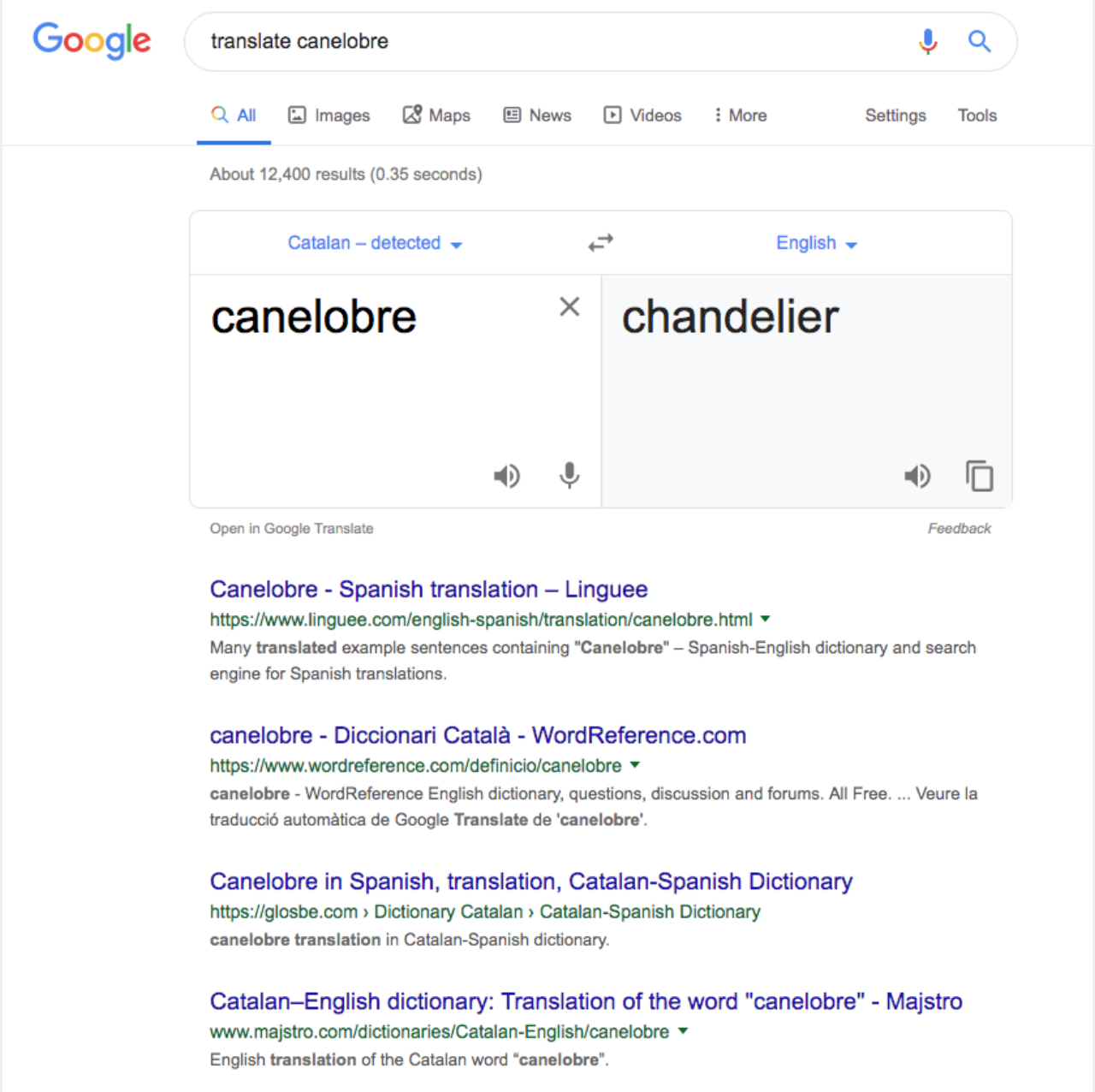


Figure 5. Google translator.

Google makes its search engine more sophisticated and tries to offer search results in a more immediate way. For instance, we may use the search bar as a calculator (we will see this if we write an arithmetical calculation on it, such as "3+12/100").

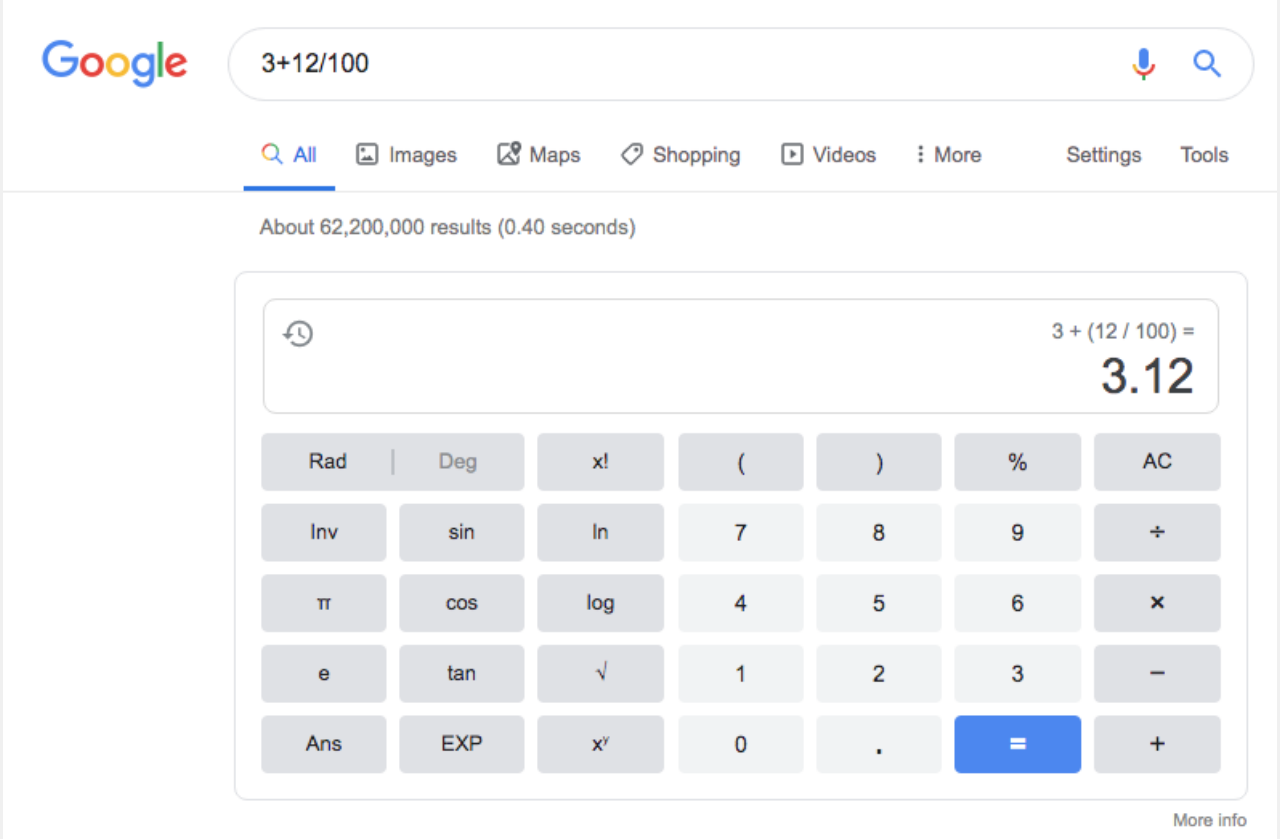


Figure 6. Calculator in Google search engine.

The search engine understands that we want to make a calculation, and opens up a perfectly functional calculator that contains the result. It does not only admit simple operations, but also allows for the graphical representation of functions such as "cos (3x) + sin (x), cos (7x) + sin (x)":

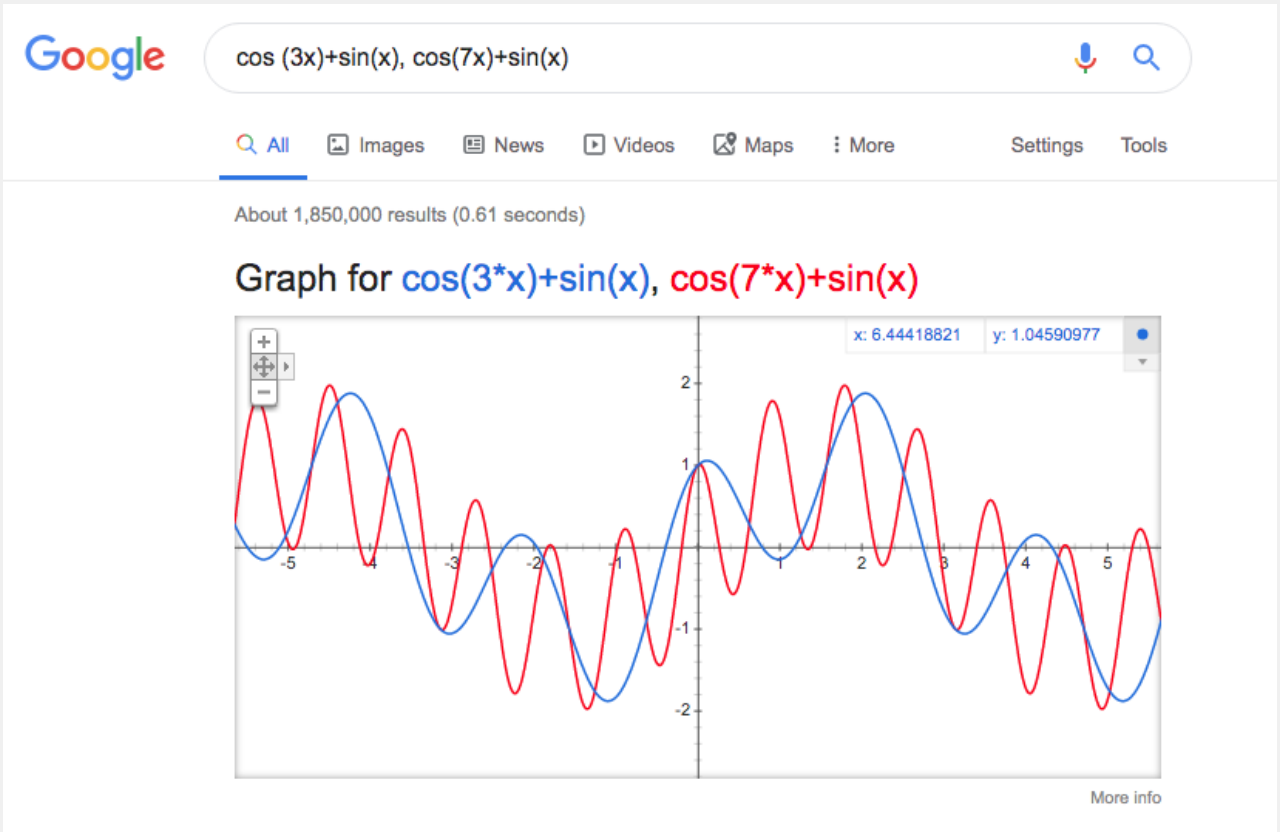


Figure 7. An example of the graph that is obtained when performing an operation with Google.

The search bar may also be used as a unit converter (figure 8), as a currency converter (figure 9) and even as a colour code converter (figure 10).

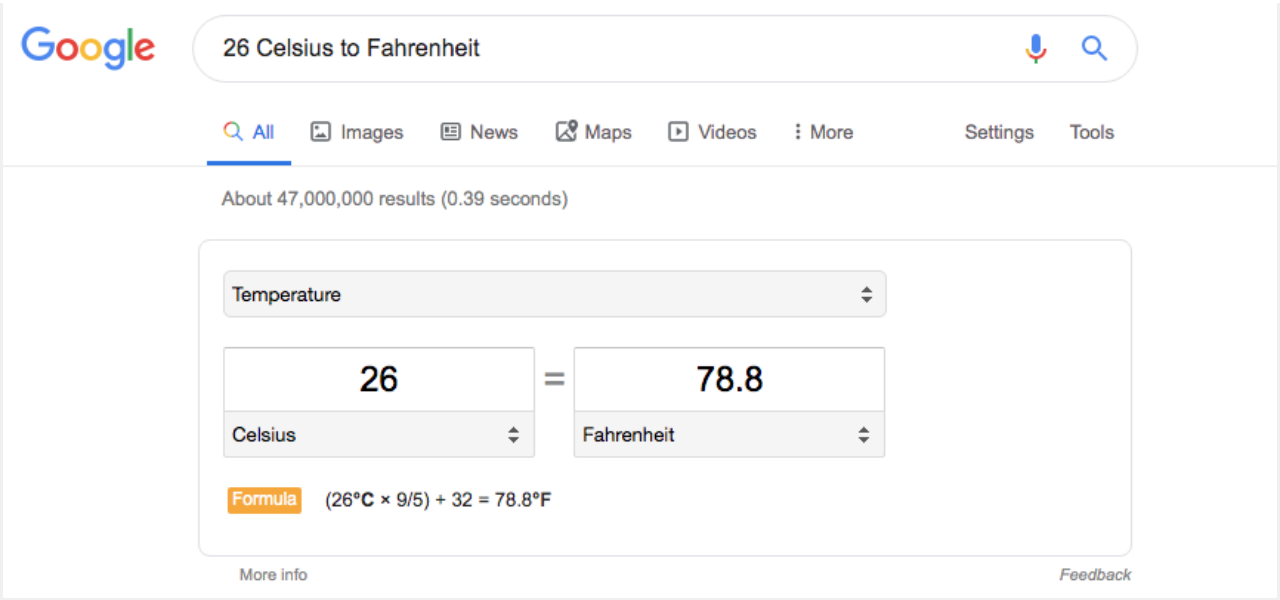


Figure 8. Unit converter.

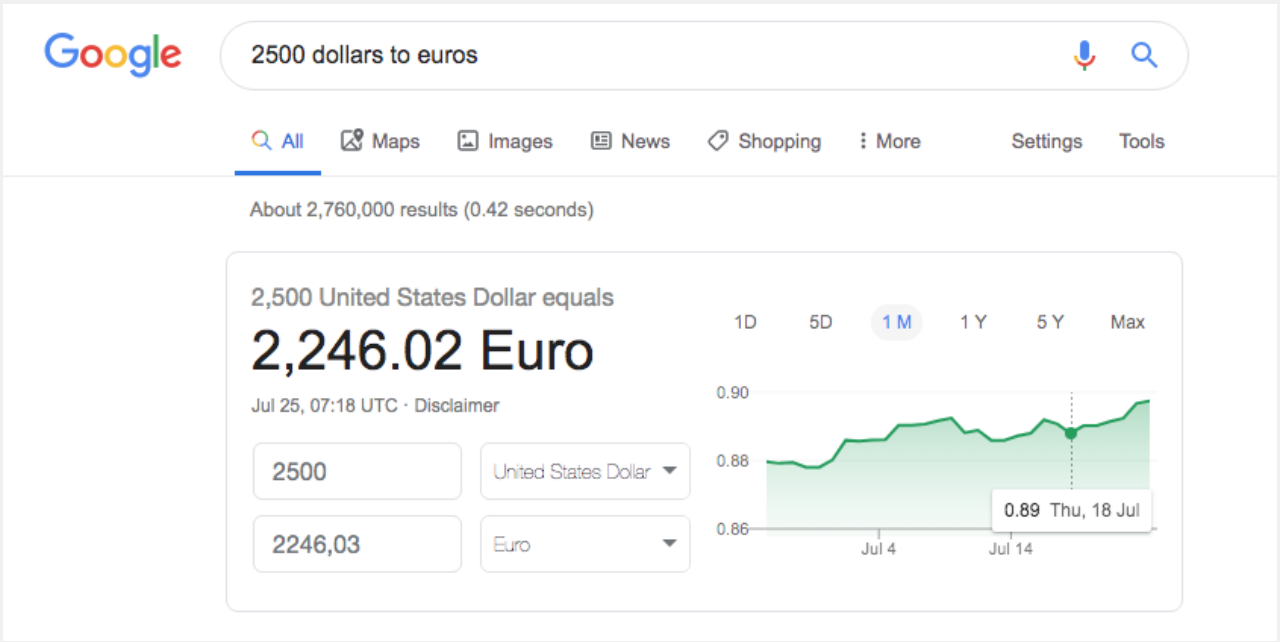


Figure 9. Currency converter.

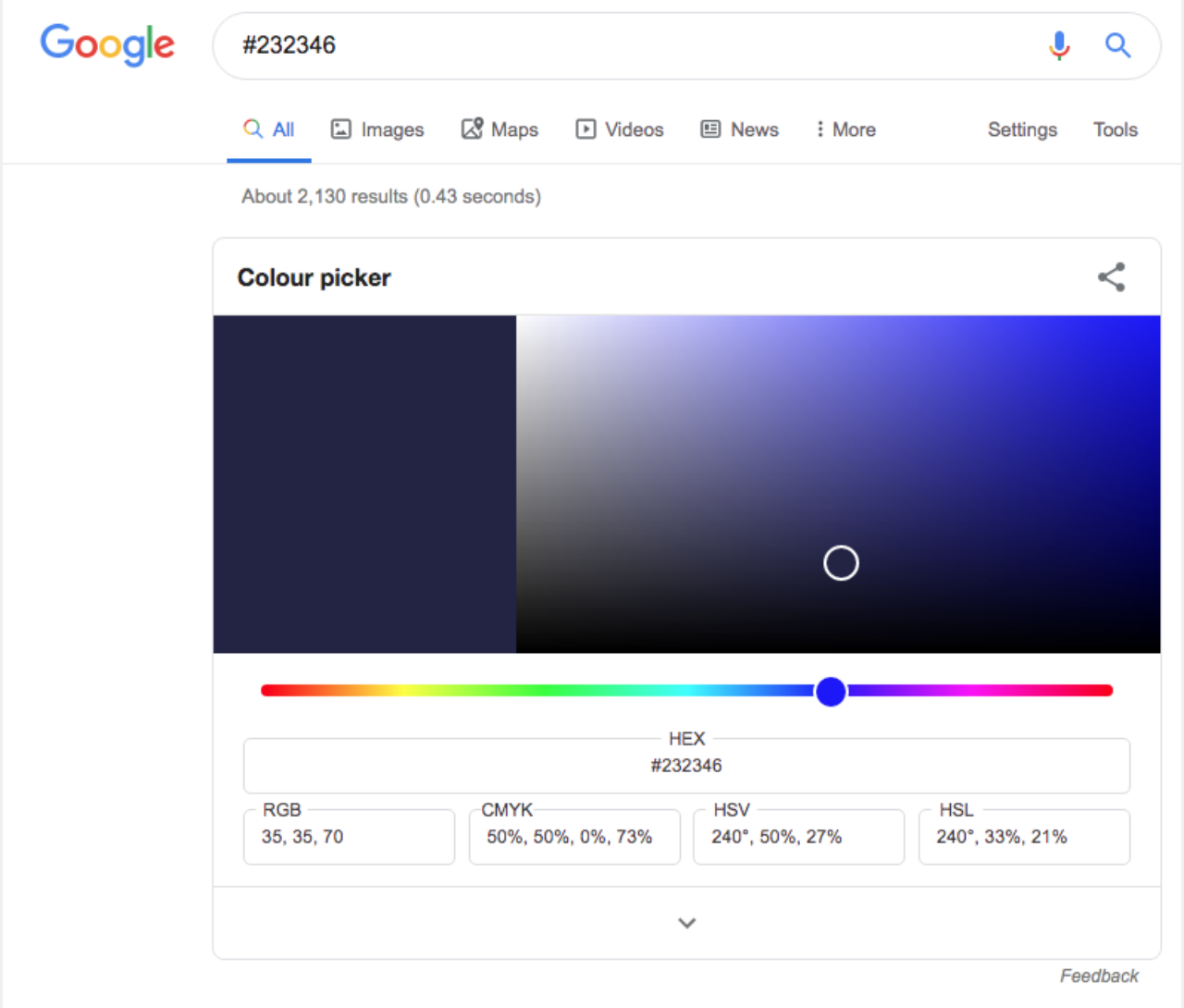


Figure 10. Google colour code.

1. Before: what do I want to find?

1.6. Which tools do I need?

Without dismissing the huge technological complexity behind Internet surfing, the tools we need to perform a web search are not too demanding apparently: we need **a device that is connected to the Internet** (a personal computer, a laptop, a tablet, a cell phone, etc.). Processor speed and data transfer speed will be important elements to ensure an excellent navigation experience.

In the device mentioned above, we will need to install a programme called **browser**, which is a digital application that makes it possible to access websites hosted in servers from all over the world. The most popular browsers are Google Chrome, Mozilla Firefox, Microsoft Explorer, Microsoft Edge, Opera, Safari, UC Browser, Dolphin, etc. There is a fierce competition between browsers, and testing sites and comparative assessment are provided quite frequently to highlight the strengths of each competitor (speed, integration with the existing operating systems and platforms, simplicity of use, plug-ins, etc.) Probably, each user should find the browser that best suits his/her needs. It is also advisable not to limit oneself to a single browser, but keep two or three of them installed. Given that not all users surf the web the same way, choosing a browser or another depends on many factors. Nevertheless, the data provided by experts do not leave much room for doubt about the browser used by the largest amount of users:

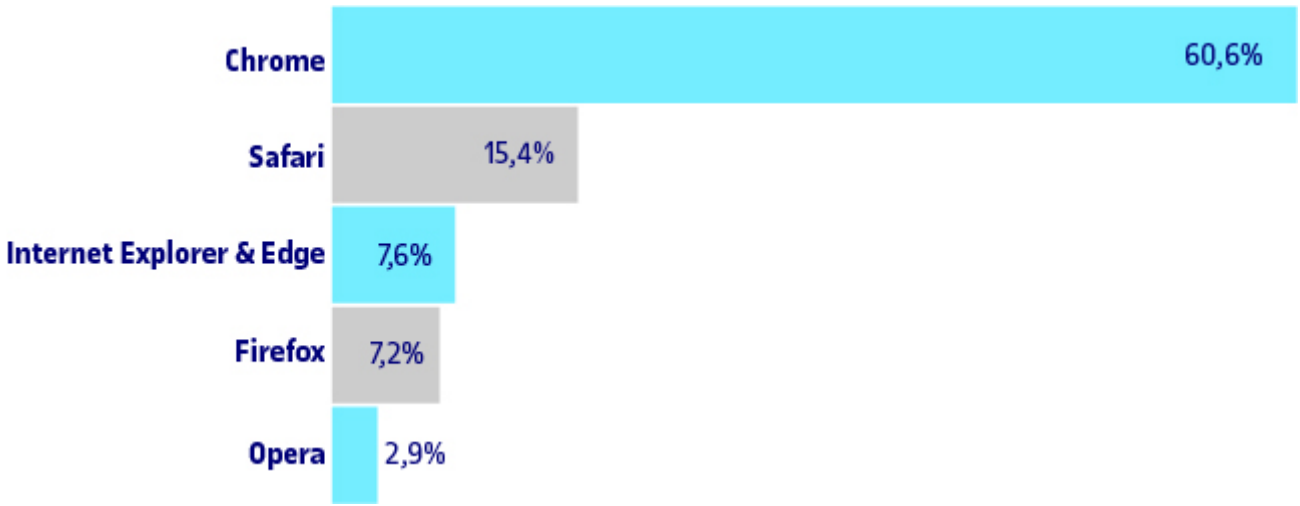


Figure 11. Browsers that are most often used by users. Source: data from March 2018, obtained from https://www.w3counter.com/globalstats.php

Google's leadership position is mostly due to the high performance of Google's browser: highly user-friendly, fast searches, a large library of extensions, compatibility in all devices and operating systems, integration in the Google ecosystem (images, maps, YouTube, etc.), protection from malicious websites, private or hidden surfing, etc.

One of the differences between some browsers and others are **extensions** or **plug-ins**. These are small applications every user may install in the browser to meet some given needs and make surfing the Internet more satisfactory. The browsers with more extensions are Chrome and Firefox.

The procedure to install such plug-ins is easy, as may be seen in the example below.

The plug-in we want to install is called "Colorful tabs", and it gives a different colour to each of the tabs opened in the browser, which allegedly makes it easier for us to identify tabs. In order to install it, we write the name of the plug-in in the search box.

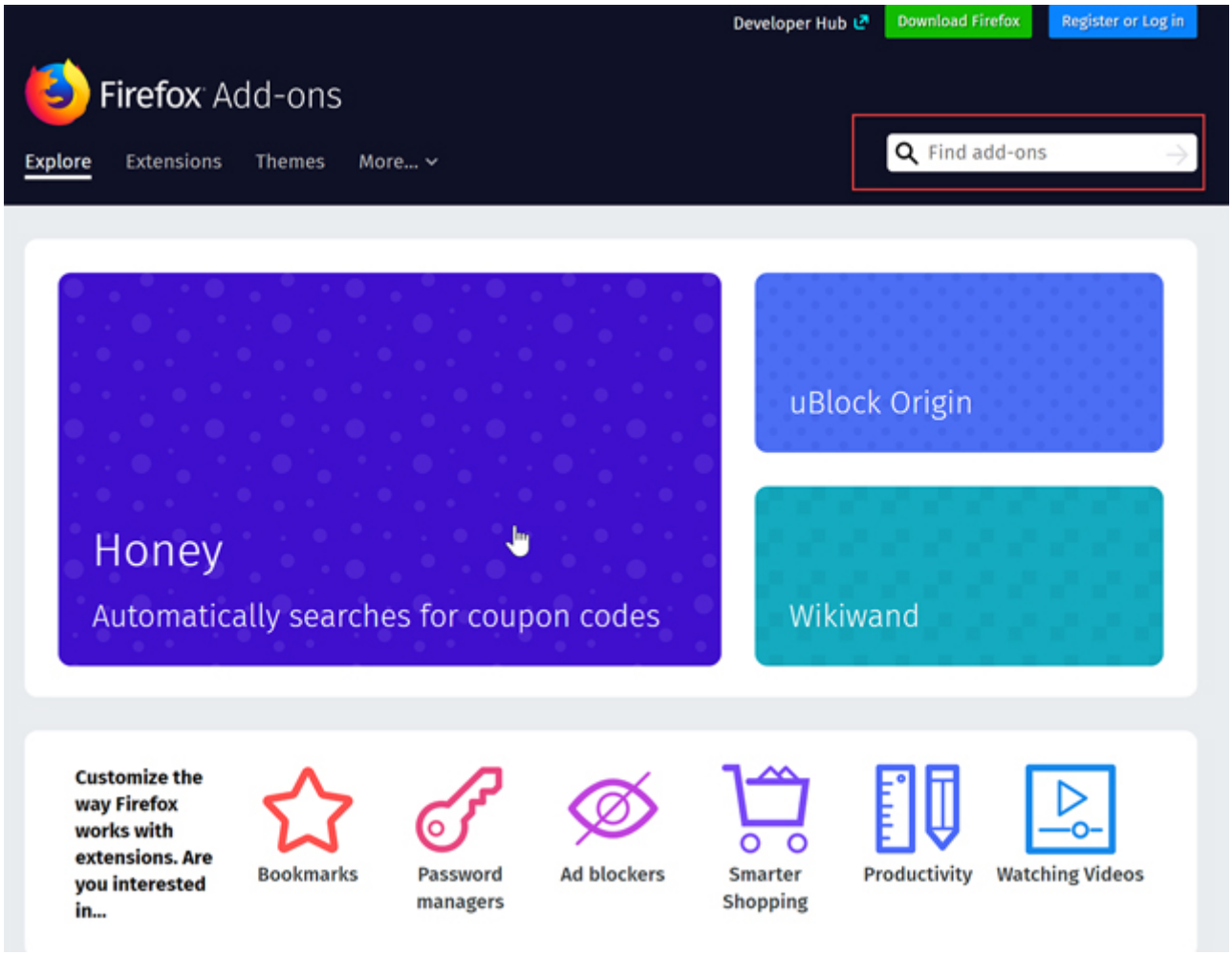


Figure 12. Installing the Firefox plug-in, “Color Tabs”.

Afterwards, we will click on the corresponding button to say we want to add it.

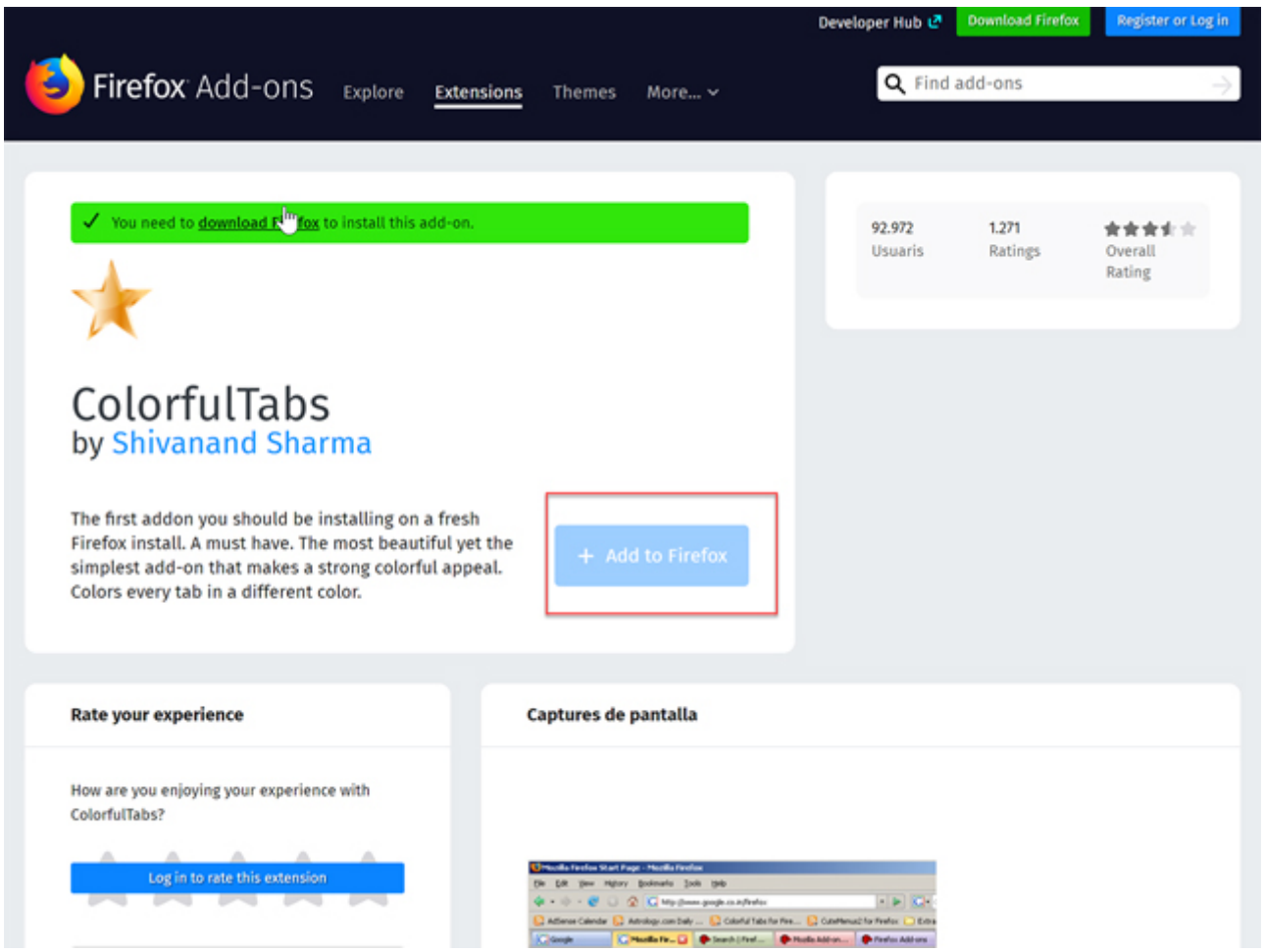


Figure 13. Installing the Firefox plug-in, “Color Tabs”.

Next time we start Firefox and open a tab, colours will be available. If we are not satisfied with the new function, we may click on “Menu” > “Plug-ins” and disable “Colorful tabs”. By doing so, we may explore the possibilities for visual and functional customization enabled by plug-ins, and tailor them to our needs so that they help us include services, remove advertisements, add functions, etc.

Finally, the last element we need is a **search engine** or search tool, which is a website that allows us to find other websites, as well as other information (images, videos etc.) hosted on the Internet. Some of the most popular search engines are Google Chrome, Bing or Yahoo!, but interesting alternatives are available, such as Qwant, DuckDuckGo or Startpage, which stand out for the fact that they do not trace user activities.

When choosing the best search engine, many technical tests are available (use of computer resources, start-up speed, search speed, graphic output, etc.), but other aspects may be key when having to make a choice. These could be privacy when surfing the web, objectivity when retrieving results, compliance with standards, a transversal approach between platforms and devices, its interface being user-friendly, etc.

Some browsers include a default search engine (for instance, Bing is the web searcher for Microsoft Explorer or Edge), and frequently the two concepts are difficult to distinguish from one another. Companies are willing to increase customer loyalty, but it is advisable to know about alternatives and do not limit oneself to a single web searcher. From the browser configuration, we may choose what our default search engine will be.

1. Before: what do I want to find?

1.7 Where can I search for it?

1.7.1. Search engines

We just mentioned **search engines** or searchers (Google, Bing, Yahoo!, etc.) as the most frequent tool to search for and find information. When we write a word to be searched, we start a process in which hundreds of millions of virtual interactions are activated in order to find, in fractions of a second, satisfactory results. There are three processes behind this technology:

1. Small computer programmes (bots) are constantly browsing the sites in the Web (**crawling**) and follow the links they find.

2. While crawling, the search engine **indexes**, codes and arranges the files it found using keywords. In this way, the search is done on previously arranged material, which makes it much easier to find things fast.

3. Search engine algorithms sort pages according to their **relevance** (which is determined by the number of visits, the publication date, the links to external references, etc.) and show at the top of the results list those they consider to be most relevant. Website coders try above all to keep their websites in the top positions, to improve their visibility and presence. Because of this interference (in which money is usually involved), the first results may not always be the most relevant, highest-quality ones. We will need to avoid getting carried away by the order in which the results are provided, and contrast the information with other results.

1. Before: what do I want to find?

1.7 Where can I search for it?

1.7.2. Meta-search engines

Meta-search engines and **multi-search engines** use search engines from several services to provide results for a search. As an advantage, they explore more resources than a single search engine does. As a disadvantage, they do not allow for either complex searches or the use of logical operators. Generally speaking, they are less developed than main search engines, which turns them into a not too promising alternative, particularly if we want to perform highly refined, specific searches. They are usually devoted to e-commerce, such as the popular website www.kayak.com, which searches for hotels, flights and rental car services in several search pages.

The most popular generic meta-search engines are Dogpile, Searx, etc.

1. Before: what do I want to find?

1.7 Where can I search for it?

1.7.3. Specialist search engines

Specialist search engines (also called **vertical** search engines) allow for filtering searches according to specific standards. For instance, Google Scholar shows results from the training and academic-related arenas (usually, articles and reviews in PDF format). This guarantees the quality and the relevance of the information found.

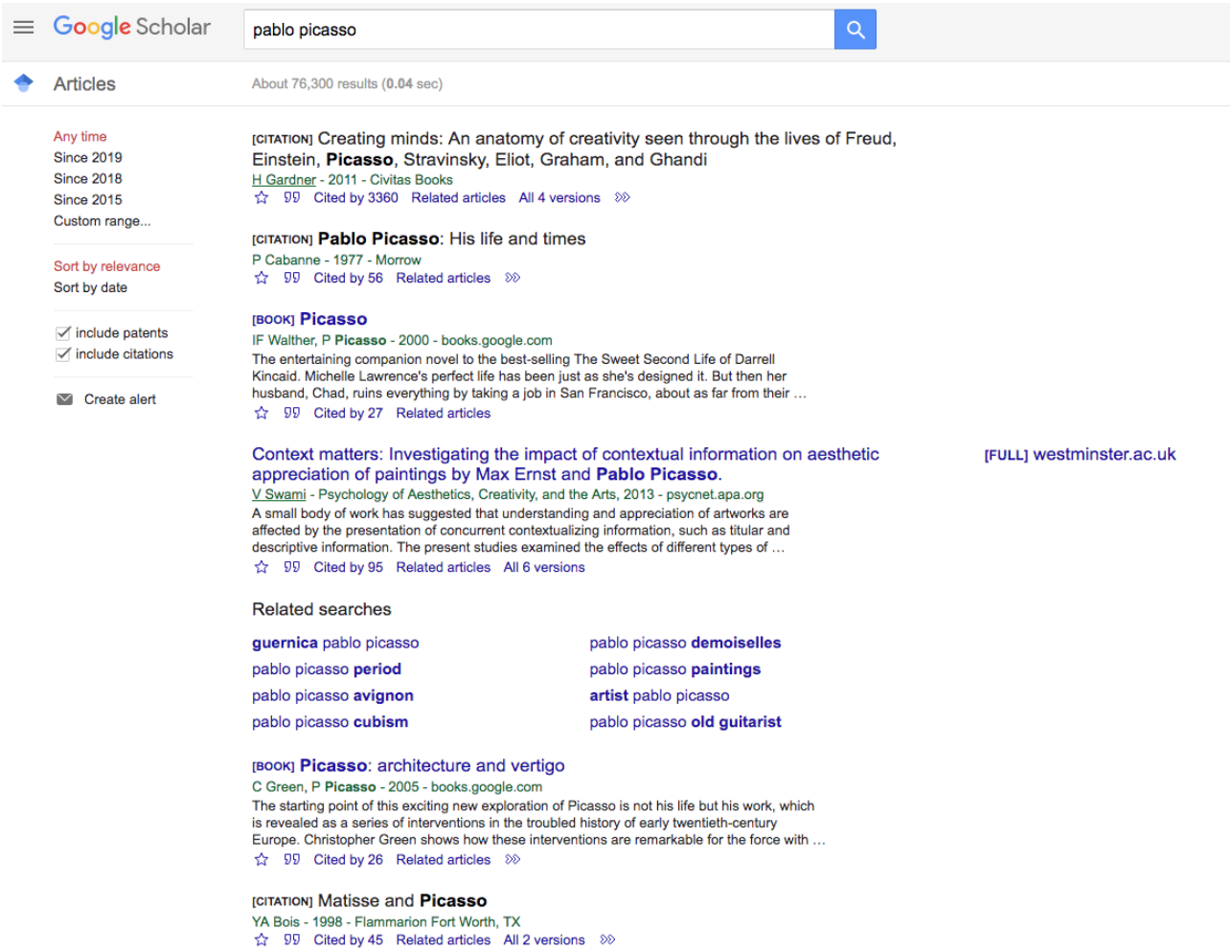


Figure 14. Google Scholar, a specialist search engine.

The advantage of vertical search engines lies in the fact that they provide excellent results, because the user has previously defined the topic area.

For instance, at https://www.internationalstudent.com/scholarships/ we will only find calls for institutional funding, or else IMDb will be really useful to us in order to find results related to cinema or TV products. In a similar manner, at https://www.buscabiografias.com you will find biographies of famous people (only in Spanish).

It is necessary to choose the searcher for the specific topic area appropriately.

1. Before: what do I want to find?

1.7 Where can I search for it?

1.7.4. Discussion groups and distribution lists

A **discussion group** is a virtual community of users who are interested in a given topic.

In some cases it may be useful to perform a search in the contributions provided in these expert communities. Even if the number of users is not usually large, they have the advantage of possessing a broad, specialized knowledge on the subject we are interested in.

For instance, in websites such as https://stackexchange.com we may find questions and answers (and ask questions ourselves) on a wide variety of topics. The quality of the information depends on the users who belong to the discussion groups, and for this reason some of the initiatives have been undermined in terms of the quality of results.

1. Before: what do I want to find?

1.7 Where can I search for it?

1.7.5. Databases

Databases and **data catalogues** are an excellent information source, because the institution in charge of managing them usually has a reputation for high quality and academic rigour. In order to search in a database, we need to bear in mind that the information is segmented in several fields (which are usually the same all over the database) and that we may filter our search using these fields.

Some specialist databases are Traces (Catalan literature), PubMed (medicine), Aranzadi (law), WorldWide Science (science), Dialnet (academic resources), Academia (academic resources), etc. Most of these databases require registration by users, and many of them are paid services.

The UOC Library provides access to platforms and databases from the main editors to which it is subscribed, and articles, journals, ahead of print editions, conference proceedings, etc. may be found there.

The link to these databases of electronic resources is: http://biblioteca.uoc.edu/en/resources/e-resources, and it provides access to a broad range of databases where searches may be performed.

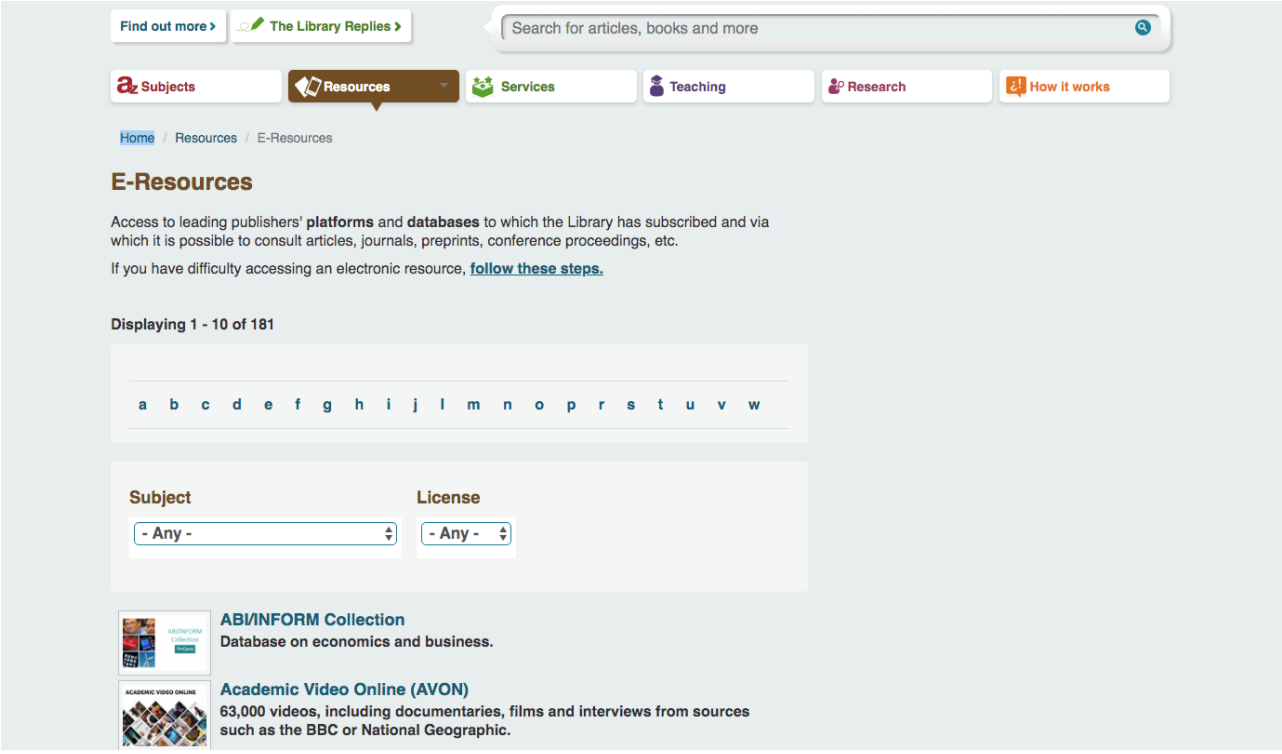


Figure 15. UOC Library – electronic resources.

1. Before: what do I want to find?

1.7 Where can I search for it?

1.7.6. Virtual libraries and the UOC Library

Until the outbreak of the digital revolution, libraries had always been an almost exclusive reference in terms of searching for and finding information. After the technology adoption in the digital era, many libraries offer a virtual service that makes it possible to access their catalogue (and usually their resources) on-line.

We should keep some names in mind: World Digital Library, Europeana collections, Biblioteca Digital Hispánica, The free library, etc. Some of this portals have a restricted access for their members only, while others provide free access to some of their resources. Many academic institutions allow their members to access their own library, or else they have agreements with other organisations in order to have access to their services.

The members of the UOC academic community have access to the Virtual Library, with a large team of experts working to ensure quality in terms of learning and research. Students and teachers are allowed to check reference materials on-line. It also offers an in-person loan system that is managed on-line.

The tools and resources offered by the Library are a very interesting element, and they allow for searching for and finding relevant, high-quality information.

The following video shows how to request a book on loan from UOC Library:

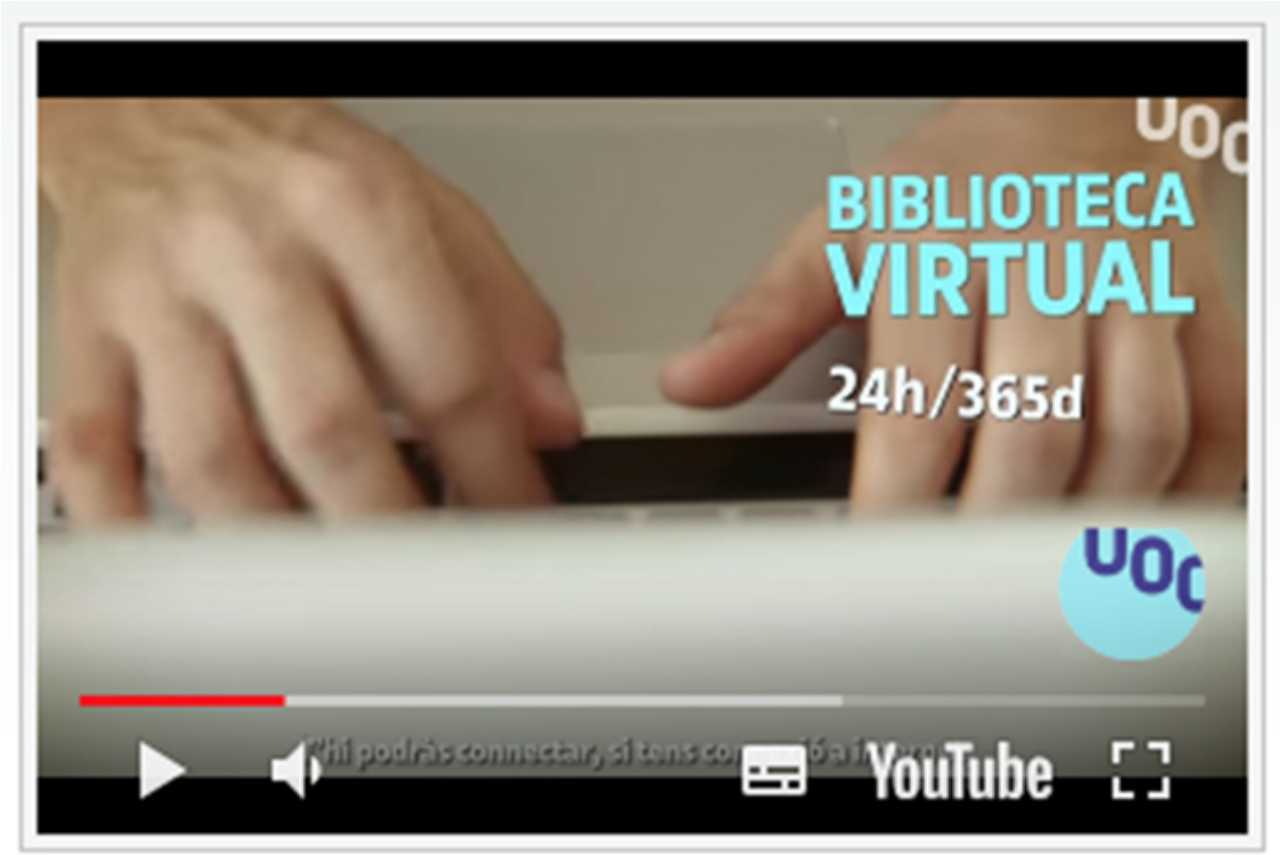


Figure 16. UOC Library.

1. Before: what do I want to find?

1.7 Where can I search for it?

1.7.7. Social networks

Social networks may be a great source of information, in particular when we are searching for current information. For instance, users share content on Twitter on subjects that are taking place at that time, instead of focusing on sharing personal and/or emotion-related contents.

Therefore, in the microblogging network we may find the latest information, contrasted by several media and even commented upon by several people, almost in real time.

The Twitter search engine allows for searching information using hashtags or tags that include all the information on the Internet related to a given subject, such as #UOCprocedures or #immigrants.

Instagram, a social network for pictures, also allows for tag searching, which makes it a very effective, user-friendly site if we are searching for images on a given subject or place.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.1. Introduction

Taking into account the amount of results obtained in the search engine, it is essential to establish several **selection standards**. Which information should I keep? Which information is more useful to solve my doubts?

> Planning the search ahead is as important as defining the parameters we will use to sift through the information obtained and avoid wandering from one result to another aimlessly. Results should always be checked by the user and contrasted with several sources and sites. On many occasions, the first choice is not the most appropriate one.

As defined in the resource *Composing and writing digital information* (*), we should first follow a validity standard. That is to say, we should assess whether the source is appropriate for the search goals, dismissing those sources that are not valid to enter the selection process.

We will sift through all valid sources in order to prioritize the most relevant information to achieve the goals we set for ourselves.

The contents that may be found in different internet channels are not checked using any sort of centralised quality check formula that monitors its credibility. This makes it mandatory for users to analyse information sources very carefully, in order to ensure that the data and documents that were found and retrieved show a minimum level of reliability.

> A search process may not be considered effectively undertaken and successfully finished if the information found does not offer a reasonable level of assurance about its reliability.

We may only be certain about the information being reliable if we rigorously apply several standards and verification strategies that endorse some results and allow us to dismiss unreliable sources of data and assessments.

We will now list some indicators on Table 1 that should be taken into account for the selection of reliable, appropriate information for our search goals. It should be noted that these indicators are a sample of the tools we have available to analyse the reliability and credibility of information; it is not necessary to analyse all of them, and they are not mutually exclusive.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.2. Source of origin – Authorship – Recognised certifications

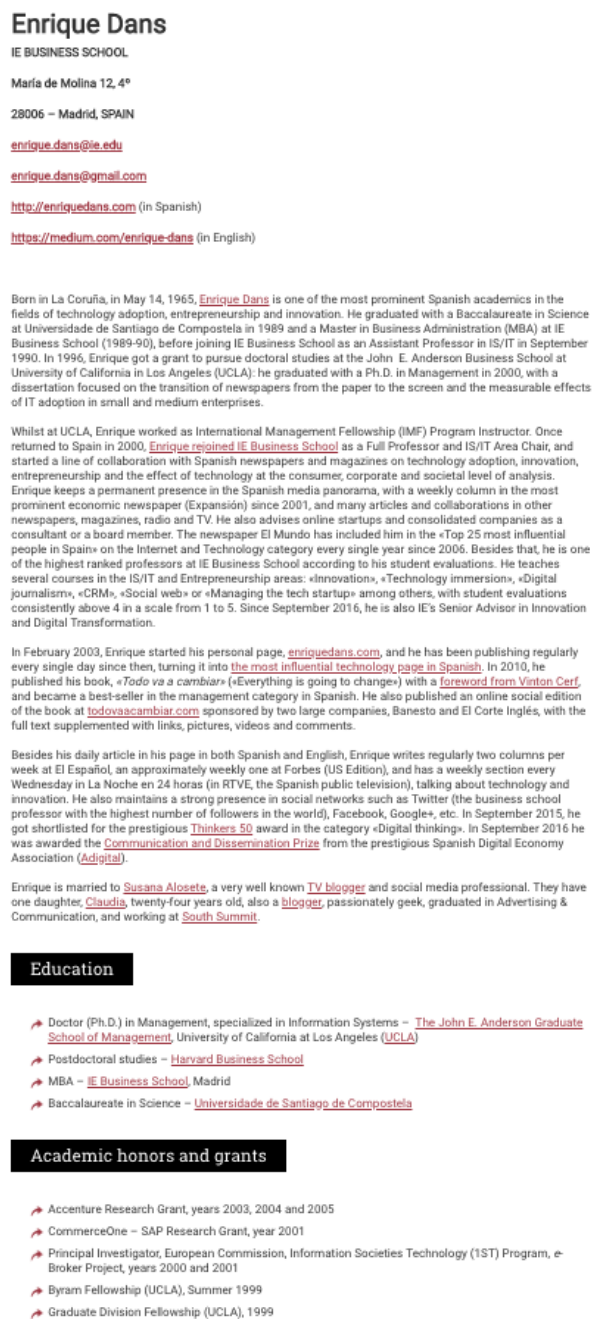
Authorship

An identified author –either a single author or a group of authors– looks more reliable than an anonymous source.

This is particularly true if the person responsible for the contents provides other elements beside his/her identification, such as professional certifications and contact elements, such as an e-mail address.

This is a particularly noteworthy standard when it comes to blogs and personal initiatives for information publication on the Internet.

Besides, on many occasions the biography of the site's author also includes additional elements with links to his/her profiles in other social networks. This allows us to follow up the author and check his/her digital reputation in several digital sites.



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Born in La Coruña, in May 14, 1965, Enrique Dans is one of the most prominent Spanish academics in the fields of technology adoption, entrepreneurship and innovation. He graduated with a Baccalaureate in Science at Universidade de Santiago de Compostela in 1989 and a Master in Business Administration (MBA) at IE Business School (1989-90), before joining IE Business School as an Assistant Professor in IS/IT in September 1990. In 1996, Enrique got a grant to pursue doctoral studies at the John E. Anderson Business School at University of California in Los Angeles (UCLA): he graduated with a Ph.D. in Management in 2000, with a dissertation focused on the transition of newspapers from the paper to the screen and the measurable effects of IT adoption in small and medium enterprises.

Whilst at UCLA, Enrique worked as International Management Fellowship (IMF) Program Instructor. Once returned to Spain in 2000, Enrique rejoined IE Business School as a Full Professor and IS/IT Area Chair, and started a line of collaboration with Spanish newspapers and magazines on technology adoption, innovation, entrepreneurship and the effect of technology at the consumer, corporate and societal level of analysis. Enrique keeps a permanent presence in the Spanish media panorama, with a weekly column in the most prominent economic newspaper (Expansión) since 2001, and many articles and collaborations in other newspapers, magazines, radio and TV. He also advises online startups and consolidated companies as a consultant or a board member. The newspaper El Mundo has included him in the «Top 25 most influential people in Spain» on the Internet and Technology category every single year since 2006. Besides that, he is one of the highest ranked professors at IE Business School according to his student evaluations. He teaches several courses in the IS/IT and Entrepreneurship areas: «Innovation», «Technology immersion», «Digital journalism», «CRM», «Social web» or «Managing the tech startup» among others, with student evaluations consistently above 4 in a scale from 1 to 5. Since September 2016, he is also IE's Senior Advisor in Innovation and Digital Transformation.

In February 2003, Enrique started his personal page, enriquedans.com, and he has been publishing regularly every single day since then, turning it into the most influential technology page in Spanish. In 2010, he published his book, «*Todo va a cambiar*» («Everything is going to change») with a foreword from Vinton Cerf, and became a best-seller in the management category in Spanish. He also published an online social edition of the book at todovaacambiar.com sponsored by two large companies, Banesto and El Corte Inglés, with the full text supplemented with links, pictures, videos and comments.

Besides his daily article in his page in both Spanish and English, Enrique writes regularly two columns per week at El Español, an approximately weekly one at Forbes (US Edition), and has a weekly section every Wednesday in La Noche en 24 horas (in RTVE, the Spanish public television), talking about technology and innovation. He also maintains a strong presence in social networks such as Twitter (the business school professor with the highest number of followers in the world), Facebook, Google+, etc. In September 2015, he got shortlisted for the prestigious Thinkers 50 award in the category «Digital thinking». In September 2016 he was awarded the Communication and Dissemination Prize from the prestigious Spanish Digital Economy Association (Adigital).

Enrique is married to Susana Alosete, a very well known TV blogger and social media professional. They have one daughter, Claudia, twenty-four years old, also a blogger, passionately geek, graduated in Advertising & Communication, and working at South Summit.

Education

- Doctor (Ph.D.) in Management, specialized in Information Systems – The John E. Anderson Graduate School of Management, University of California at Los Angeles (UCLA)
- Postdoctoral studies – Harvard Business School
- MBA – IE Business School, Madrid
- Baccalaureate in Science – Universidade de Santiago de Compostela

Academic honors and grants

- Accenture Research Grant, years 2003, 2004 and 2005
- CommerceOne – SAP Research Grant, year 2001
- Principal Investigator, European Commission, Information Societies Technology (1ST) Program, *e-Broker* Project, years 2000 and 2001
- Byram Fellowship (UCLA), Summer 1999
- Graduate Division Fellowship (UCLA), 1999

Figure 17. An example of a full biography that includes contact details.

Olmo Axayacatl Bastida Cañada**: Ingeniero y horticultor de profesión. Actualmente director y profesor de un instituto de educación media superior. Tiene en las matemáticas, física y química sus materias favoritas. Viajar es su anhelo, escribir uno de sus pasatiempos. Gusta de aprender y enseñar. Lo puedes seguir en **Twitter**; más información en **about me**. **Ver sus artículos

Patricio Savage**: estudia Ingeniería en Sistemas en la Universidad Tecnológica Nacional de Rosario, Argentina. Tiene 19 años. Su blog personal se llama **Desarmado en mil**" y allí nos relata historias, experiencias y mucho más. Ama la música, toca muy bien la guitarra y puedes ver sus fotografías en **Flickr**. Es gamer y **twittero compulsivo**. **Ver sus artículos

Figure 18. An example of a biography with an intermediate level of details that includes profiles in other social networks.

Figure 19. An example of a simple biography. No training-related or professional details for the author are provided.

Affiliation and authority

Beyond personal authorship, the credibility of any web page lies in providing an explicit, clear mention of the organisation, institution or company it depends on.

References to the institution providing the contents or financial support for the publication will not only allow us to assess its reliability, but also the degree of authority of the information source in its field of action or knowledge. In this case, adding contact information, such as an e-mail address, a phone number or a mailing address also helps increase reliability.

Figure 20. An example of a blog that mentions the institution it belongs to.

Figure 21. An example of the affiliation to a corporation group that shows the degree of authority (number of companies included in the corporation) in its field of action (mass media).

Recognised certifications

Even though there is no single authority to certify universally the quality and credibility of the contents that may be found on the Internet, several agencies and institutions have created standards for the analysis and assessment of websites. Most of these standards focus on criteria regarding accessibility, legal issues, self-control and protection of consumers and users.

These agencies and institutions focus on heterogeneous, fragmented areas of evaluation and action, and they usually provide the sites that undergo their assessment voluntarily with several quality labels that acknowledge the requirements they meet.

> Even though no quality label guarantees, for the time being, the credibility of the contents in a given website, the fact that a given site shows a certification makes it somewhat more reliable, at least in terms of the people in charge of the site being willing to submit the website to some external assessments.

The main quality and control labels that may be found on websites are listed below:

Name	Icon	Description
ICANN		**ICANN (Internet Corporation for Assigned Names and Numbers)**. An institution that regulates the provision of Internet domains. Its quality label mostly focuses on the certification of electronic commerce-related initiatives. It is managed through the Verisign company.  As defined on its website, the ICANN is a not-for-profit, public benefit corporation, with participants from all over the world devoted to keeping Internet safe, stable and interoperable.
IQUA		**IQUA (Agency for Internet Quality)**.Their label assesses standards on accessibility, usability, security, legal issues and the protection of minors. A code of ethics is available to ensure citizens' rights, and its general principles include the following, among others: honesty, protection of human dignity, confidentiality and protection of public order. This is endorsed by public institutions such as the Broadcasting Councils in Catalonia, Navarre and Andorra, and the organization Red.es (that depends from the Spanish government). IQUA has started a customer service desk, e-ODU (Office for the Defence of Users) that aims to provide answers to complaints and questions on websites.
W3C		The W3C or World Wide Web consortium, which includes over 400 associations, issues its international quality certificate that mostly focuses on accessibility criteria. Their principles are a **Web for everybody**, accessible from anywhere in the world, and a **Web from every device**, given that the amount of devices to access websites has grown exponentially over the last few years.
Confianza Online		***Confianza Online*** **(On-line confidence)** is an association that was created in 2003**.** It provides a quality label for websites after assessing the way they work. The quality label shows the ethical commitment of the entities or companies that obtain it to fostering good practices on the Internet and e-commerce.
AUI		***Asociación Española de Usuarios de Internet*** **(AUI, Spanish Association of Internet Users)**.This is not actually a quality label itself, but it promotes the adhesion of sites in terms of the protection of the interests and rights of Internet users. Some of its goals include fostering a proper use of the Internet, of information and communication technologies and of their applications in private and business-oriented areas, as well as in public administrations.
AI		***Asociación de Internautas*** **(AI, Association of Internet Users)**. An organism for the defence of Internet users, mostly in terms of phone operating companies and Internet-related companies and services.
Internet Society		***Asociación de Internautas*** **(AI, Association of Internet Users)**. An organism for the defence of Internet users, mostly in terms of phone operating companies and Internet-related companies and services.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.3. Is Wikipedia reliable?

Many search engines retrieve results from a specific source of information when we are searching for something: **Wikipedia**. In this sense, we should take into account that Wikipedia is not a primary source. Besides, it is a collaborative source, which means it does not have a specific author. Therefore, it is really important to always keep in mind the sources provided as references in the article. That is to say, valid references that make it possible for us to contrast and check the information provided and assess its reliability.

More information on that may be found on the following links provided by Wikipedia:

- https://en.wikipedia.org/wiki/Wikipedia:No_original_research
- https://en.wikipedia.org/wiki/Wikipedia:General_disclaimer

Besides, it should be noted that when the article published in Wikipedia does not meet the criteria for the reference section, a warning appears to make sure we notice it. Other remarks may also be included, mentioning potential areas for improvement in terms of article quality.

Nevertheless, the discussion and history sections in the Wikipedia articles also allow us to see what the controversial points in a given subject may be, or the different updates that were done on a given article.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.4. Relevance and/or last update

An essential level to assess the information found lies in the dates on which the content was created, on which it was published in a given site and, above all, on its last update.

An information source that endorses its contents with dates does not only make it easier for us to determine whether its update is relevant for us in terms of our search goals, but also shows a much higher level of rigour and reliability than that of those sources where no information is provided on the dates their contents were created or updated.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.5. Goals and intended audience for the contents

> An explicit statement of the goals and purposes in a given web provides elements for clarity in terms of the degree and sort of confidence the user may feel towards the site. Nevertheless, this is not a sign of credibility by itself.

A site that is explicitly commercial may be as reliable as a University-related site in terms of contents, as long as it openly states its goals, its character and its intention, so that the user always knows what kind of information he/she is having access to, what the source goals are and, therefore, what the framework for its credibility is:

- Academic-oriented.
- Institutional.
- Information-related or related to information dissemination.
- Journalistic.
- Instructive.
- Persuasive or commercially-oriented.
- Leisure-oriented.

Assessing the purpose of the website allows us to determine whether the information provided may be useful for our search goals, and to define how specialized the contents are.

The URL address of a site, in some cases, may indicate the purpose of the website. For instance, ".edu" shows the website is an education-related website. In this way, we may also find what the target audience for the website is.

Still in terms of purpose, knowing about the intended audience for the website we choose helps us assess whether it may suit our needs. For instance, an informative content for a general audience will not probably be appropriate if we are performing an investigation and/or an academic-related search.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.6. Objectivity and precision of information

The language used, the website goals and its intended audience allow us to determine how subjective the content may be. Knowing about the authors' purposes helps us determine whether the website content is objective or subjective.

Assessing the objectivity or the validity of the information obtained may become more difficult when we are not experts on a given subject, or in subjects we know nothing about (which are the main reasons why we would like to perform a search on them), but the following points may help us address this issue:

1. Do the ideas make sense and are well connected, or do they contradict each other?

2. The authors provide the information sources they read and used, and these may be contrasted and checked. Explicitly citing information sources is a clear guarantee of credibility, as it puts content in context and allow us to search for the original information source in order to contrast data and obtain more information on the subject. It is advisable to perform a critical review and a systematic check-up of all the contents we find if they do not provide their original source of information.

3. Comments or assessments by other users are available on the information shown, in which the contents are endorsed or else, discredited.

Information precision is related to the nature of the content: statistic, bibliographic, biographic, law-related or journalistic contents, for instance. It is also related to the degree of specialization of the analysed website.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.7. Organizing and structuring information

A careful design, the proper application of usability elements or a clearly-defined, easy- to-follow navigation structure do not determine, by themselves, content credibility. Nevertheless, they may show that the people in charge of the site are serious about making the site available on the Internet, and we may assume they are serious about content quality too.

Conversely, a careless, messy presentation will make it difficult to have confidence in the information source, and besides, from a practical point of view, it will make the source inefficient when trying to find data and documents.

2. During the search: What did I find? How do I sift through information?

2.1. How to sift through information and assess the results obtained

2.1.8. Quality (grammar, spelling, illustrations, etc.)

Previously, we mentioned that a good navigation structure shows a positive attitude by the authors in terms of providing high-quality contents. The same happens when information readability is also appropriate.

Using grammar and semantics that are appropriate for the contents, with no spelling mistakes and visually pleasing to read are some indicators to assess content quality.

We should also focus on the specific features of the information format: textual information, multimedia contents, sound files, graphic content, etc. Showing respect for the intellectual property of other authors, whenever information from other authors is used, providing the sources used (not only for text-related content, but also when using images, for instance), makes the information presented more reliable.

As for content presentation, the following is a supplementary standard for checking credibility in in websites that contain advertisements: a clear-cut distinction should be provided between informative contents and publicity-related or similar contents. A site that makes a clear difference between advertisements and information will always be more reliable than a site where users may not tell advertising (commercial advertising, political advertising, etc.) apart from allegedly objective or independent information.

2. During the search: What did I find? How do I sift through information?

2.2. What happens if I do not find what I am looking for? Readjusting standards

2.2.1. Introduction

If the results of our search are not satisfactory –maybe we found too many results, which makes selection difficult, or else we did not obtain enough results, or the results we obtained do not suit our search goals– we should check the strategy we used and modify some of the search parameters.

If too many results were obtained, we should specify the search using more specific words or concepts. Or else, we should search for exact phrases using inverted commas, or use the fields available in advanced searches (they will be defined below). We should check the search criteria we defined in order to narrow them down and obtain less results.

Otherwise, if few results are obtained, we may assess and check the following:

- Keywords defined were properly used, and no spelling mistakes were made. Such mistakes are more frequent when using a non-native language or when symbols are misplaced (15M or 15-M).

- Assess whether the keywords chosen are the most appropriate ones for the search. When searching in an area we do not know much about, not using the most appropriate keyword to obtain the expected results is a frequent mistake.

- The search may have been too specific and narrow because we used many filters. We should broaden concepts in order to obtain more results.

- Make sure we used the appropriate search engine or tool.

A good information search process on the Internet takes its time. On many occasions, good results do not come up in the first search. Two or more searches are required and we need to modify the parameters we previously defined in order to finally obtain the expected results.

Apart from the standards for credibility assessment related to information sources, we may also apply several direct measures on contents in order to ensure they are reliable.

The easiest possible way involves trying to obtain the same information through two different search processes, using different search instruments and thus checking at least two different information sources. When contrasting them, the results of our search will be endorsed (or perhaps they will not).

2. During the search: What did I find? How do I sift through information?

2.2. What happens if I do not find what I am looking for? Readjusting standards

2.2.2. Advanced searches

The most powerful search engines usually provide advanced search options that may be really useful for an initial automatic screening of the results obtained, as long as the different parameters for our search have been previously defined and established.

The most frequent parameters in advanced search options are listed below:

- Including or excluding terms. This allows us to define whether the search results should include all the terms introduced in the form, if they should include all the results in which any of the defined terms is present or else if they should show results without any specific term requirements.
- The search may be restricted to a specific sentence or wording.
- Narrowing down the search so that only results written in a given language are retrieved.
- Narrow down the search to the most recent updates of the pages included in the search engine database.
- Determine whether search terms should appear in the title, in the full text, in the website URL or in the links it contains.
- Choosing the information format in which we want our results to be in.
- Search for sites that link to a given website or domain.

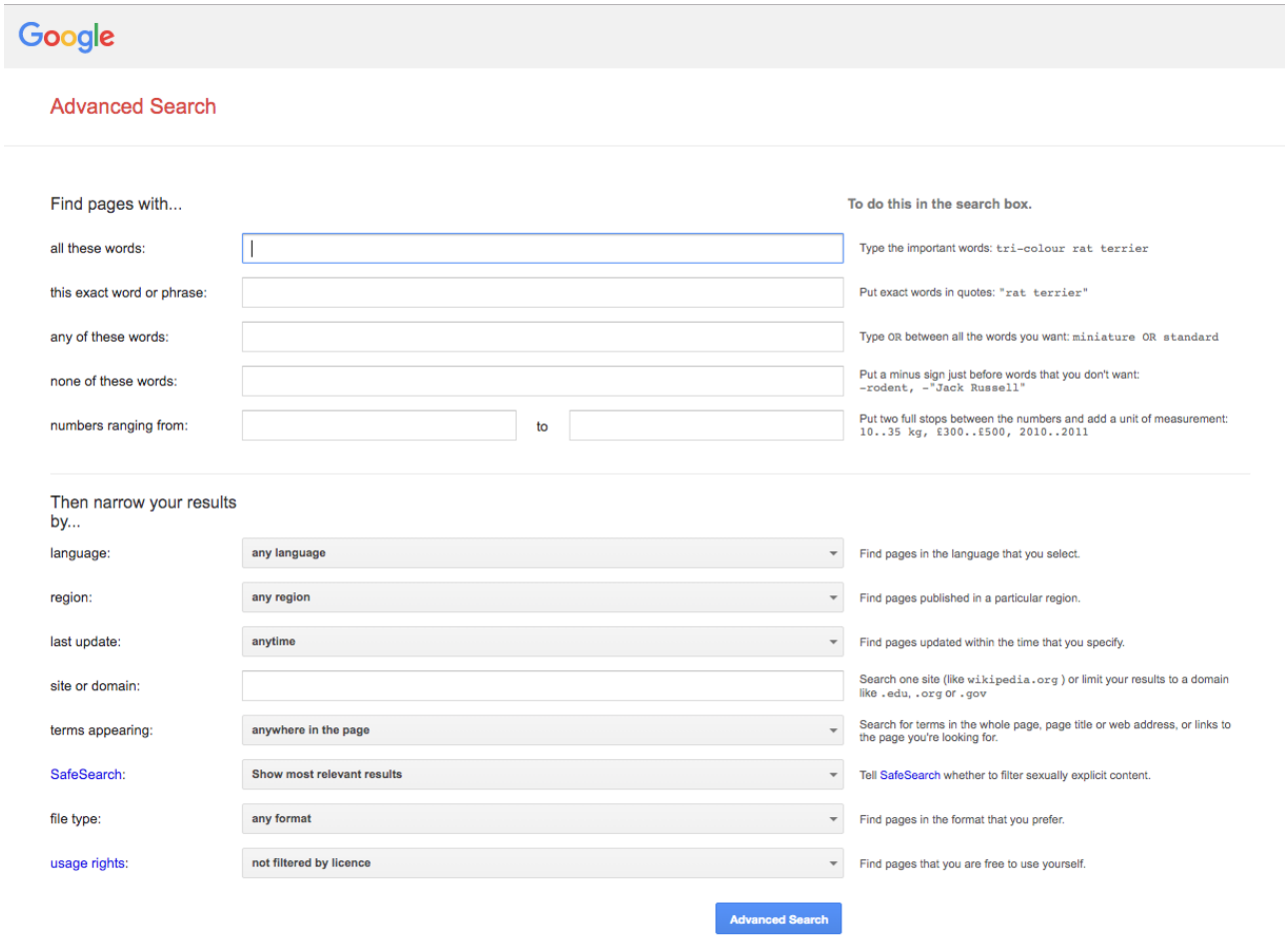

Figure 22. Google Advanced search

Each search engine combines a given set of advanced search options depending on the way it works.

- Google advanced search
- Twitter advanced search

- Yahoo advanced search

We may perform this search by directly applying filters in the search box, using operators that may be combined with other operators, such as Boolean operators:

define: *word*	This is used to search for the definition of the word we are looking for.
site: *websiteURL*	It allows for searching for a given word in a given website.
info: *websiteURL*	This is used to obtain information on the website, such as the cache version stored, similar websites or sites that redirect to this website.
filetype: *filextension*	It finds pages that contain files of the previously specified types (PPT, PDF, XLS, DOC, etc.), related to the defined keyword.
inurl or **allinurl:** *word*	It searches for websites that contain the word in its URL.
allintitle or **intitle:** *word*	It searches for websites that contain the specified word in its title texts.
@: *word /user name*	It searches for social tags or users in Twitter, Instagram and other social networks.
#: *word*	This is used to search for tags in social networks.
...word ...number ... number	It allows for searching between number and dates intervals.

2. During the search: What did I find? How do I sift through information?

2.2. What happens if I do not find what I am looking for? Readjusting standards

2.2.3. Automated searches

When information in specific topic areas is to be searched frequently, it may be advisable to help the user progressively hone his/her skills and specialization with programmable search tools that allow for finding information in specific sources, or to detect changes and updates in information sources that are particularly interesting.

For those tasks that involve information follow-up and update, search engines and alert services may be useful.

Search agents

These are search engines that work from the user's computer, instead of doing so from a web server, as do most of the search engines we use directly on the Internet.

> Their main feature lies in the fact that they provide many options to set parameters and schedule searches, which makes them particularly useful to find information in topic areas the user is already quite familiar with and in which he/she may set very specific, narrowed-down search goals.

These search engines index all the information in the computer (a document in the local hard disk) but also the browsing history and tags of any browsers installed.

Copernic is one of the search engines we may install in our computer (Windows) with a free version.

Alert services

Once we have found specially interesting information sources, it may be advisable not only to note down their address in order to find them immediately later on, but also to find out about the updates and the new information they constantly include on subjects about which we will need to search for information again.

We may partially automate a regular check-up for these sources by using some given update alert services such as the following:

Name	Functionality
Google Alert	We may set the alert parameters and apply them to search engines, news sources or other information of interest.
Talkwalker Alert	An alternative to Google Alert where alerts may be created on any subject we define, or else on specific brands, people, etc.
Website-Watcher	Paid software that detects changes in the defined website and highlights changes in text.
Visualping	It allows for monitoring a website, and when a change appears it sends an alert to the e-mail provided by the user.
Giga Alert	A tool to monitor websites using keywords and detect changes that are notified by e-mail.

When managing search agents and alert services, it is advisable to define and apply very strict standards for precision and differentiation of search goals, so that only the necessary and manageable information is obtained.

> Having to deal with too many scheduled search results and update alerts may end up completely blocking the workability and efficiency of any information search.

3. Afterwards: what shall I do with the information?

3.1. How do I store the information obtained?

Each information search process involves acquiring skills that the user adopts in order to design search strategies that are ever more efficient, and provides new information on the instruments and techniques to search for contents and to validate them. This is a skill-building, progressive process that may be supported by using information storage and organization tools so that this information may be found afterwards.

With these search processes, a variable amount of interesting information sources are located, and they should be arranged and classified for immediate or future use.

When having to store these electronic information sources, we may choose between several options of variable effectiveness, which are not mutually exclusive. For this reason, the most efficient thing to do may be to combine them so that they better suit the needs of each user in every moment.

In the resource "Guidelines to optimise the organisation of digital information", the strategies listed below are defined, among others, along with tools and recommendations of use to store the information chosen over the different search processes in a simple, orderly manner:

- Browser tags.
- On-line bookmarks (social).
- Personal notes.
- Content syndication (RSS).

Making storage processes automatic makes management easier when it comes to using a combination of different tools. Several actions may be scheduled, such as storing browser tags in a place in the cloud without having to do it manually.

This point is explained in detail in the section "Automation in information management" in the resource "Guidelines to optimise the organisation of digital information".

3. Afterwards: what shall I do with the information?

3.2. How do I use the information chosen?

3.2.1. Introduction

The search process ends with the selection and storage of the sources we found and considered to be of interest to us. Even though sometimes the goal of a search is to solve a doubt or check for some specific content, in other cases the main goal of the search is to find graphic, text-related or audio-visual material in order to create new documents. For instance, a search was done in order to write a new article on a website, or else graphic elements were searched for in order to create an advertising poster.

> We should always bear in mind the respect towards the intellectual property of the author when we process, manage and present information found on the Internet, so that we always cite where the data and contents come from.

3. Afterwards: what shall I do with the information?

3.2. How do I use the information chosen?

3.2.2. Plagiarism and literal copy of contents

The *Oxford English Dictionar defines plagiarism as:*

> "According to the Oxford English Dictionary, to plagiarise is to «take the work or an idea (thoughts, writings, inventions) of someone else and pass it off as one's own»."
>
> *Oxford English Dictionary*

Therefore, literally copying contents or else using contents without mentioning where they come from, their source or their authors involves not complying with the regulations on intellectual property and copyright regulations.

Intellectual property is the legal framework that protects authors' interests and the Spanish Criminal Code includes sanctions for infringement (crime) of this law and of the rights of authors. You can consult the full text about Spanish Property Law: https://www.boe.es/eli/es/l/2019/03/01/2.

A large amount of information and contents flow freely and publicly through the Internet, so that everybody may have access to them. Nevertheless, this does not mean we may freely use this content. If we take an original picture and upload it to Flickr, for instance, we automatically become the owners and authors of the picture, and nobody can use it, modify it or distribute it without our previous consent.

Ignorance of the concept of plagiarism or of the intellectual property laws may even be a crime in an unconscious, non-intentional manner. Besides, having an open access to all sorts of information and resources on the Internet may mislead the user, given that he/she understands he/she may freely use all that is available.

Therefore, one of the basic assumptions when using an Internet resource is the fact that, unless otherwise specified, the resource authorship is protected and we are not allowed to reuse the content without previously obtaining permission to do so, or else without mentioning where it comes from.

The following cases are examples of **plagiarism**:

- If we use a picture we found on the Internet for our website. Also when using sentences or expressions by an author (a blog post also has an author, even if not specified) without acknowledgement or permission.
- If we copy and/or reuse images, audio files, videos, text documents, etc. that are protected by copyright.
- When we do not quote or cite properly.
- If we do not include inverted commas in the exact quotes by another author.

In summary, when we use ideas or other resources we found without mentioning where we found them, it is assumed that we imply we are the authors of that information, and therefore we are plagiarizing.

Acts or ideas considered to belong to the general, public pool of knowledge in a given field, such as Einstein's Theory of Relativity, may not be considered plagiarism. Obviously enough, using our own content or ideas may not be considered plagiarism either.

3. Afterwards: what shall I do with the information?

3.2. How do I use the information chosen?

3.2.3. Quoting

Quoting involves providing information on the source, the authorship of the material and of the information we used to create new content.

According to the Intellectual Property Act, works that have already been distributed may be used if the source is properly quoted and if they are used with a clear intention to analyse them for an education-related purpose.

> "It is lawful to include, in a work of one's own, fragments of other works from other authors, whether they are written, sound-related or audio-visual in nature, as well as fragments of single works in fine arts or in figurative photography, as long as these works have already been distributed and as long as they are included as a quote or for their analysis, comment or critical appraisal. Such use will only be allowed for educational or research purposes, as long as the inclusion is justified and if the source and the name of the author of the work used are provided".
>
> Article 32.1

In this case, if the bibliographic references used are collected, the ideas are quoted and the text content is paraphrased properly, we are not committing plagiarism.

Quoting, following the standard regulations by the **ISO 690 rule** or others such as the **APA** rule (American Psychological Association), on electronic references, provides an immediate credibility endorsement for our contents and provides readers with fast access to the original sources of information.

The same happens the other way around: when assessing the reliability of a content, we may focus on the quotes regarding the information origin and sources. A proper quotation, in which original sources may be contrasted, endorses the credibility of the content and its author.

If we suspect of plagiarism or of the wrongful use of some content by a given information source, we may also perform a basic check by choosing a significant fragment of the questionable text and performing a literal search –in inverted commas– in a top-power generalist search engine, such as Google or Alltheweb. The search engine will show us the detected websites that contain the literal text in their results list.

Other tools are available to detect written plagiarism: for example: Plagiarism detector or Plagiarisma or to find the original source of an image (**TinEye**).

In the UOC Library, we may find resources to obtain more information on intellectual property and on how to avoid plagiarism:

- http://biblioteca.uoc.edu/en/resources/academic-plagiarism

3. Afterwards: what shall I do with the information?

3.2. How do I use the information chosen?

3.2.4. Copyright and licenses for use

As we have seen until now, the fact that many files (documents, images, ideas, audios, videos, etc.) are available on the Internet and within everybody's reach does not necessarily mean that the user has rights of use and/or modification of these files. The author is the only person who is allowed to define the type of license to be applied to his/her work, and therefore, decide what can or cannot be done with it.

As defined in the material *Notions of digital technology*, section "Tools for generating web content", subsection "Rights of use for Internet contents", we may currently find content with several licenses for use. Therefore, before we use, modify or distribute any file we need to know about copyright and about the license of use of this file:

Name	Icon	Description
Copyright		If no specifications are provided, or else we find a registered trademark (©), this means the copyright has all rights reserved and therefore we have no permission to use, modify or reuse the content without permission from the author.
Public domain		Works for which their copyright is no longer in force. In Spain, works enter the public domain 70 years after the death of their author, such as *El Quijote* by Cervantes.
***Copy left* – Creative Commons License**		As opposed to the copyright, in which all the rights for the work are reserved, in Creative Commons licenses the authors establishes some conditions so that their content may be used by third parties. Such works are still copyrighted (for instance, their authorship must be stated) but they allow for their use if the standards defined in the license are followed (Figure 23).
GPL License (GNU General Public License)		In computer-related areas, Richard Stallman created the GPL license that is used with free and open-source software. This allows final users to freely use, copy, distribute and modify computer programmes. It must be stated that the words "free software" do not imply that the software has no copyright, but the fact that some rights are still protected while others are opened to a general audience and allow for changes and uses under some specified conditions. One such condition would be the fact that modified versions of the software and their subsequent uses should be maintained under the same license.

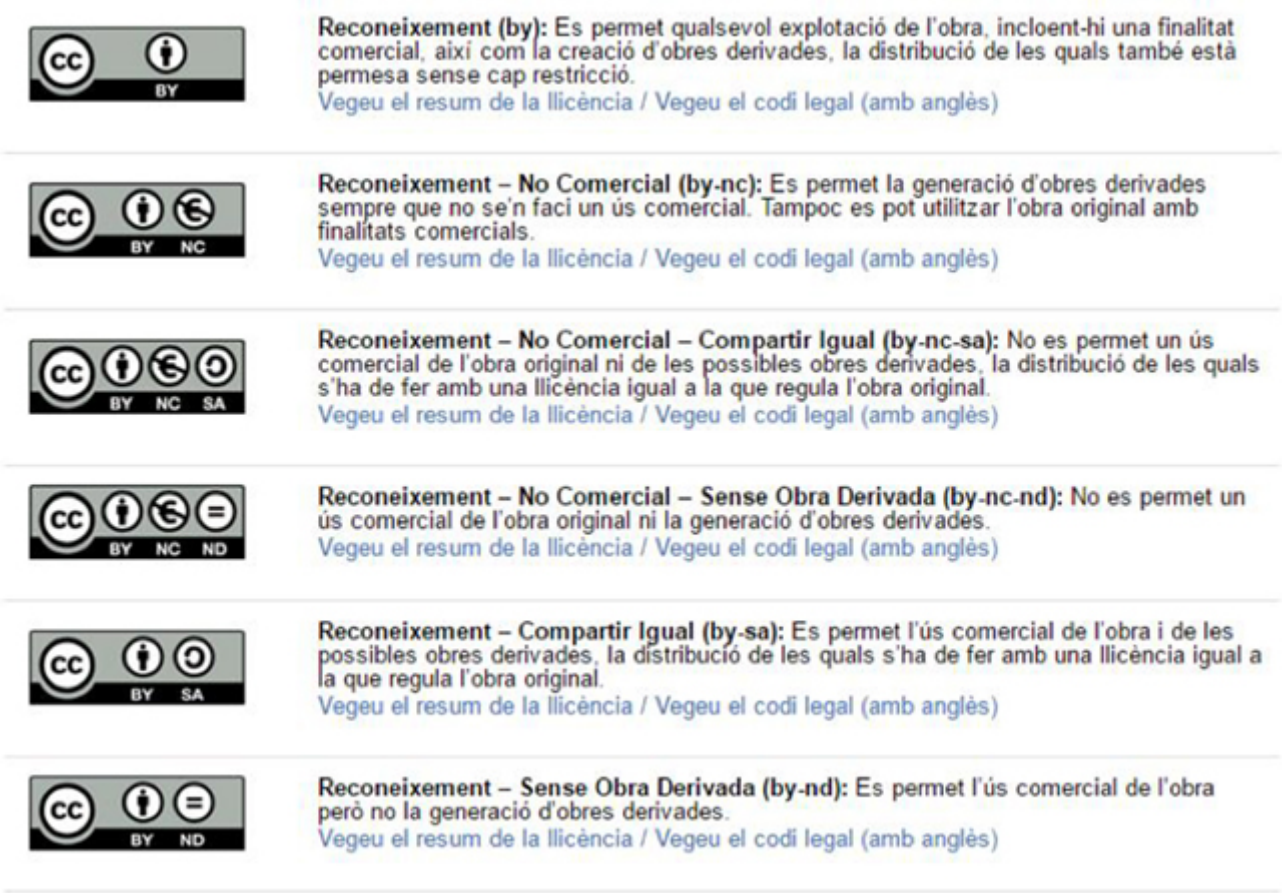

Figure 23. Different types of Creative Commons licenses.

Another way of using images or videos without infringing the authors' intellectual property rights involves **using an embedding code** as long as these works are used on-line.

This involves inserting an image, a video or an audio file in the website itself, without severing the link to the original publication source and respecting the original authorship.

If we download a multimedia resource, store it locally and afterwards upload it to a website (a blog, a wiki, a social network, etc.) we are infringing copyright (unless otherwise specified in the license), even if we mention the source of origin of the resource.

In YouTube or Flickr, as well as in other platforms, we may find the insertion code, which is usually located in the "Share" area. We should choose the option "Insert" or "Embed code" and copy the code provided by the application in our website.

Figure 24. Insertion code for a video.

The Court of Justice of the European Union, in some of its sentences, has concluded that inserting elements in this way does not infringe copyright law, as long as the original content is not modified and as long as the element is not published for a different kind of audience than that for which it was initially published.

If, before we start the search, we know that we need the content to be under a specific license type because we need to publish it, for instance, we will save work and time by focusing our search in open license resources. Some search engines allow us to filter the results searched according to their licenses for use:

- In the Google search engine, in Images, by clicking on the "Tools" button we may filter the results obtained according to some types of license (Figure 25).
- Some images are available in Flickr with a Creative Commons license: https://www.flickr.com/creativecommons/
- When searching in YouTube, it is possible to filter results that have a Creative Commons license.

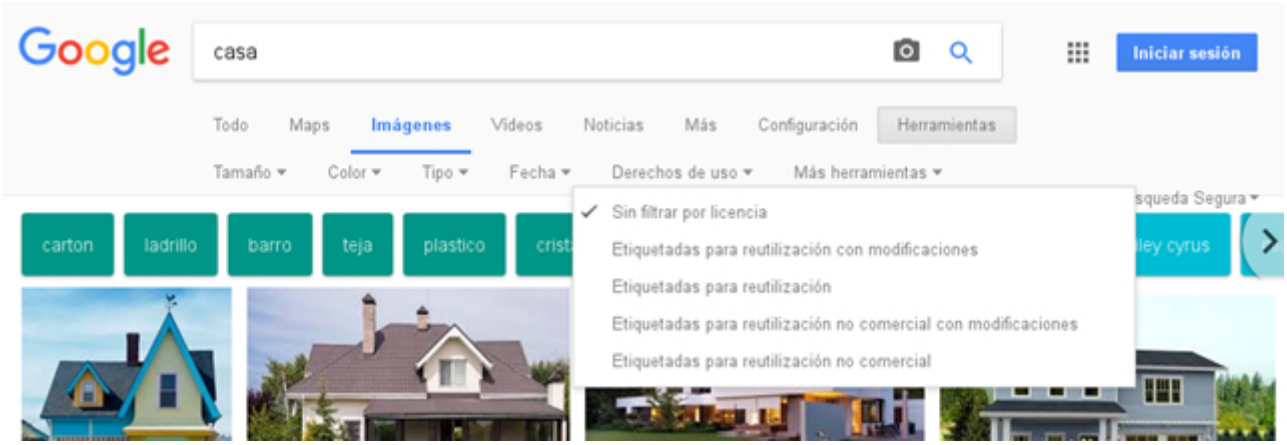

Figure 25. Research filter according to rights of use.

Apart from the filters available in search engines, some websites provide multimedia resources with more open licenses so that the material may be used. Some of these sites are listed below:

Images	Sound	Videos
Freeimages	Jamendo	Internet file
Openphoto	Vimeo music store	Videvo
Unsplash		Vimeo Creative Commons
Wikipedia:Public domain image resources		
Pixabay		
Clip Art (drawings)		
Iconmonstr (icons)		
Freepik (icons and vectorial images)		

(*) Content available online only.