

Guidelines to optimize the organization of digital information

Authors: Sandra Bravo Ramírez and Demetrio Hermida Castro

The commission and the creation of this educational material have been coordinated by the following professors: Montse Guitert, Teresa Romeu, Marc Romero and Gemma Abellán (2019)

PID_00267090

Introduction

1. Structuring information in folders and files

- 1.1. Introduction
- 1.2. Recommendations
- 1.3. Tools

2. Storage in the cloud

- 2.1. Introduction
- 2.2. Advantages and disadvantages of cloud storage
- 2.3. Legal aspects of the storage in the cloud
- 2.4. Recommendations
- 2.5. Tools

3. Synchronisation between devices

- 3.1. Introduction
- 3.2. Recommendations
- 3.3. Tools

4. Tagging

- 4.1. Introduction
- 4.2. Recommendations
- 4.3. Tools

5. Note taking applications

- 5.1. Introduction
- 5.2. Recommendations
- 5.3. Tools

6. Virtual desktops

- 6.1. Introduction
- 6.2. Recommendations
- 6.3. Tools

7. Managing large files

- 7.1. Introduction
- 7.2. Recommendations
- 7.3. Tools

8. Social bookmarks

8.1. Introduction

8.2. Recommendations

8.3. Tools

9. Content syndication and subscriptions

9.1. Introduction

9.2. Other types of digital content distribution

9.3. Recommendations

9.4. Tools

10. Content curation

10.1. Introduction

10.2. Recommendations

10.3. Tools

11. Automation in information management

11.1. Introduction

11.2. Recommendations

11.3. Tools

Introduction

The information society

For the past two decades, we have been living surrounded by technological devices that are connected to the Internet. They constantly offer us information, data and multimedia contents, and we dismiss some of these contents and use some others, whether we do it immediately or by including them into our digital storage system.

A smartwatch will show us our heart rate and how many steps we walked; our cell phone will tell us about the weather, about our surroundings; it will tell us who has just uploaded pictures to Instagram, who shared a very interesting website on Twitter or who is commenting on their meal in the best restaurant in the city. And all this happens at a dizzying pace.



Source: Designed by macrovector / [Freepik](#)

According to a study (*) by the company Domo, every minute the two thousand and seven hundred million people in the world who have access to the Internet (as was calculated in June 2012) send over two hundred million e-mails, make two million Google searches, upload forty-eight hours of video to YouTube, write more than one hundred thousand Twitter messages, publish almost thirty thousand new articles in sites such as Tumblr or WordPress and upload more than six thousand pictures to Instagram and Flickr.

To obtain a graphic picture of this situation, see the link "[Infographic on the amount of information a person may be exposed to in a single day](#)".

On [Facebook Live](#) we can watch live videos that are being created on Facebook at any given time.

According to [Cisco's](#) forecasts for 2019, content traffic in the Internet will increase; this was something to be expected, given that more and more people will have a smartphone. A *zettabyte* of contents will be generated in a year.

This huge amount of data generated in the Internet provides valuable information for companies, because, after a thorough analysis, they are capable of identifying new opportunities and trends. This is called **big data**.

This set of data and their combinations makes it possible for companies to get to know their customers better so that they may meet their needs with new products, act faster and more efficiently when changes arise and solve problems immediately.

How did we get here?

Until some years ago, Internet was a one-way channel. Only some privileged people could give their opinions, write and share information on the subjects they found interesting. That is how professional and corporate websites came to be. As the web evolved to the 2.0 web (in 2004; this is no longer such a new change, but still very timely), participating and sharing information, debating and giving one's opinion is within everyone's reach; we can do it using our cell phone, any time, all over the day. It has become normal for everybody, not just professionals, to generate content.

The Internet has become a place where all internet users may take part in the information system: creating contents, sharing, defining, editing, correcting, criticizing... This opens up the creation of digital contents to the more than **four thousand million people** in the world who are internet users (*), where contents are flexible, adaptable and short-lived.

They are short-lived because, given the huge volume of digital information available, we miss most of it: it is only present in our applications for a few seconds, until something new appears and hides what was there before.

“Getting information off the Internet is like taking a drink from a fire hydrant”.

Mitchell David Kapor, founder of Lotus

At a free buffet, where you can eat as much as you want, it's easy to get sick from eating too much and not allowing enough time to digest it. When talking about information overload, we apply the “infoxication” concept, which was coined by [Alfons Cornella](#). Infoxication, an informational “indigestion” of digital content, brings about poor judgement and ignorance, as we may not reach the contents we really want because we are surrounded by “noise”.

Accepting that we cannot cover everything is essential in order to learn how to distinguish contents according to **critical filtering guidelines for the gathering, selection and classification of information.**

“It's not information overload, it's filter failure”.

[Clay Shirky](#), writer and professor at the New York University

In order to be able to reduce these problems and the informational noise we are exposed to on an ongoing basis, and to make our time on the Internet more productive, efficient and enjoyable, it is important to know how to select the information we find and how to organize it according to our criteria by using the most suitable tools and in a critical thinking-oriented manner.

We know that many tools are available, but sometimes we do not use them in the way that best suits our needs; for instance, we know how to subscribe to web pages using RSS in order to receive information, but the main difficulty does not lie on knowing how to subscribe, but on being selective when choosing what to subscribe to. For each of the strategies shown below, recommendations and criteria for a proper use are described.

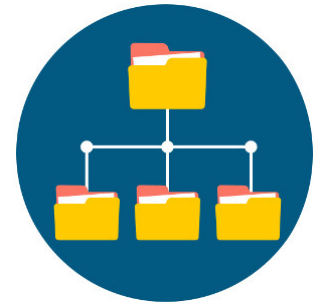
The main goal of this learning resource is to offer different strategies and tools to establish several personal guidelines for our daily tasks wherever digital information management is involved, in order to improve the gathering and the organization of the digital contents that we find more interesting. By doing so, we will improve the way we surf the Internet and obtain information in it.

Each of the eleven guidelines suggested includes a brief description and some advice on how to use it properly, in order to make its use successful. Besides, tools and applications that make their use easier and better are also listed.

1. Structuring information in folders and files

1.1. Introduction

A proper organization improves access to information and saves time.



Source: Designed by macrovector / [Freepik](#)

The organization of files and their classification into folders is the main organization strategy for digital information. It is the backbone to achieving, fast and easy access to the stored information at a later time.

All the devices and operating systems work according to the following classification system, in directories:

- Local desktop in our operating system.
- Storage in the cloud.
- External storage: USB sticks (pendrive, digital camera memory cards, cell phone memory cards, external storage units, DVD, CD, etc.).
- In the cell phone: file explorer.

It must be made clear that digital files or contents are not exclusively text files. We also store pictures, videos, audio files, executable files, websites, spreadsheets, databases, presentations...

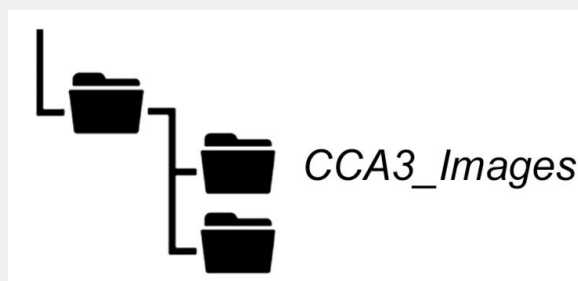
Even if most of us know how the organization method for the arrangement of digital contents works, the guidelines shown below for the definition of an arrangement protocol are intended to review the aspects that should be taken into account for this arrangement to be effective and to save time for future work, helping decision making and making it possible to retrieve the information in an easy, flexible way.

Where the files will be stored. Locally, in the cloud, in an external storage system. Which kind of files will be saved in each of these places? Current documents in the cloud, older versions in the external disk storage...

The names that will be given to folders and files. An efficient management of the files stored starts with giving them a proper name. This is why several criteria should be taken into account when naming them:

1) Use a standard procedure to name folders: it is very important to use a standard procedure or a common rule to name each of the general folders in which the files that belong to the same subject or activity will be stored.

For example, the pictures used in a continuous assessment activity could be stored in a folder called “CAA3_Images”.



The same pre-established pattern should be followed every time. By doing so, all the information will be arranged in a coherent, consistent manner and confusion will be avoided. Using the same naming pattern makes it easier to search for files later on.

2) Use self-explanatory, well defined and short names for files and folders. We advise you to do that, because, in any given moment, you may decide to move or copy the file to a different directory, thus losing the context of the folder in which you stored it first. For this reason, the file name should include proper descriptive information, irrespective of its storage site.

3) Characters and abbreviations: you should always try to avoid using accents, characters that may be incompatible in some platforms or symbols such as `¿/\:,. *” < > [] & or $`. Do not use spaces; words may be separated by underlining them.

If a part of the name needs to be highlighted, a combination of UPPERCASE_lowercase may be used, instead of using special characters.

4) Names of the authors: if you want to include the name of the author in the file name (or the name of any other person), it is advisable to write down the person's surname (or surnames) and the first letter of the person's name, separating each of them with an underscore. By doing so, files will be arranged alphabetically in the storage site. For instance: Garcia_Fernandez_J.doc

5) Numerical order: when correlative numbers are to be included in the file name, you should previously estimate the number of files to be stored, so that you know the number of digits to be used in order to name the files.

For example, if you believe you could store up to one thousand documents, you will need to use three digits, from 000 to 999, including as many leading zeroes as necessary e.g. 000.jpeg, 001.jpeg, 002.jpeg...). In this way, your files will be arranged numerically.

In a similar manner, you may use numbers before the name of folders if you need to arrange them in a given manner. 01. Customers, 02. Budgets...

6) Chronological order: whenever the date is a relevant piece of information to be included in the file name, the YYYYMMDD (Year, Month, Day) format may be followed, separated by an underscore. Thus, files will be arranged by years, months and days automatically, following a chronological order. In this case, a file created on April 23rd, 2018 could be named as 2018_04_23_Report.doc

7) Keeping control of versions: in some occasions, we may want to keep the different versions or drafts that were used in the creation of a file. In this case, we would recommend adding the successive version numbers after the name, before the file extension (using two digits so that the files are chronologically arranged). For example, PEC3_v02.doc

Create a folder directory and shorten access routes. It is highly recommended to use the same folder as a root every time, e.g. "Personal Folder".

It is advisable to shorten the access route to the file as much as possible. In order to do so, any subfolders that provide no relevant information on the location of files may be removed, while keeping the necessary subfolders to make information as accessible and within reach as possible.

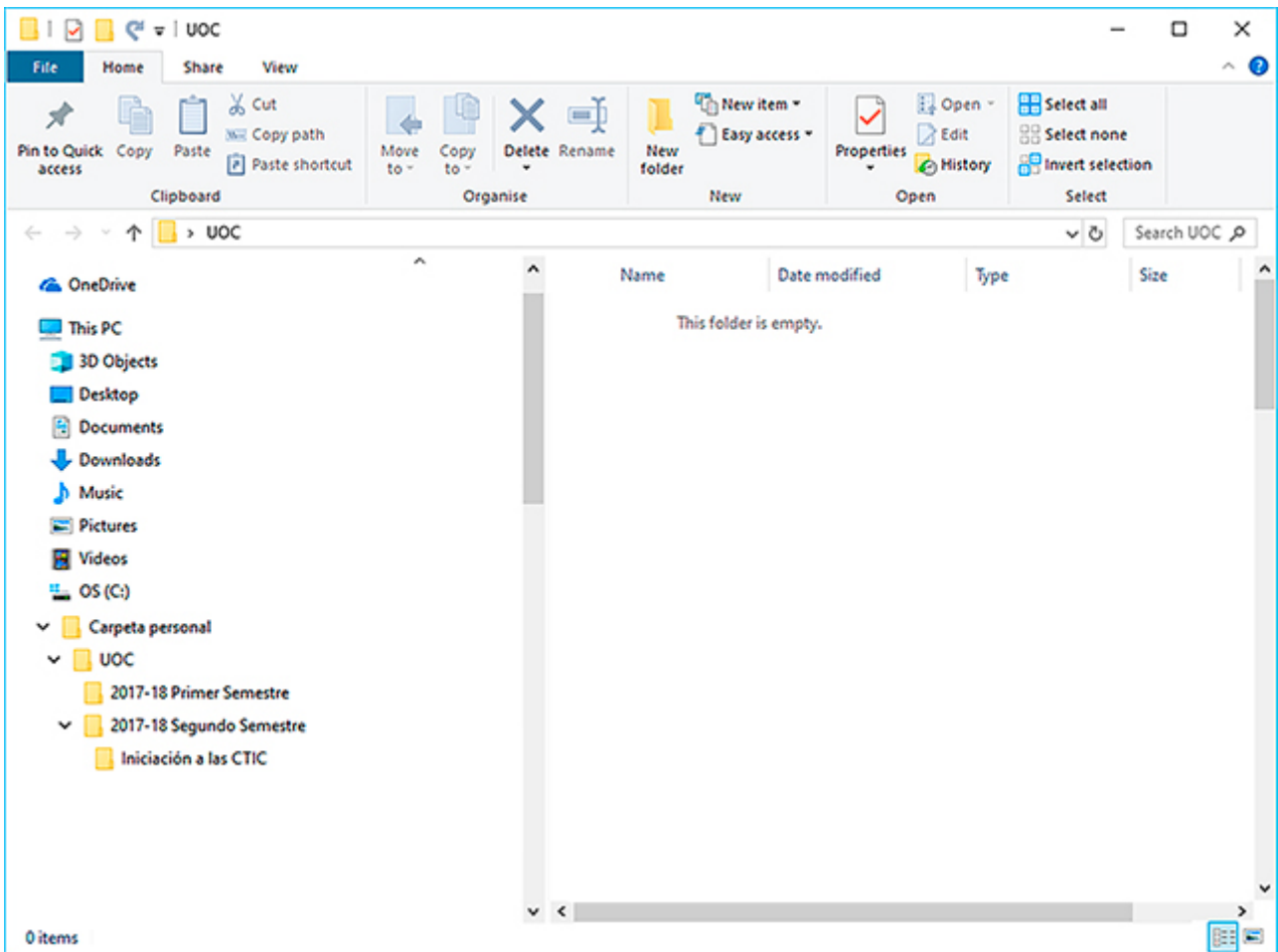


Figure 2. Folder directory

Enrich names with colors and/or tags. Colors and icons help visually identify files and folders faster. Defining the use of folders using colors provides us with a supplementary classification. For instance, we could use orange for pressing matters, green for personal/leisure files...

Tags help us classify according to general subjects and they are also helpful when searching in different folders.

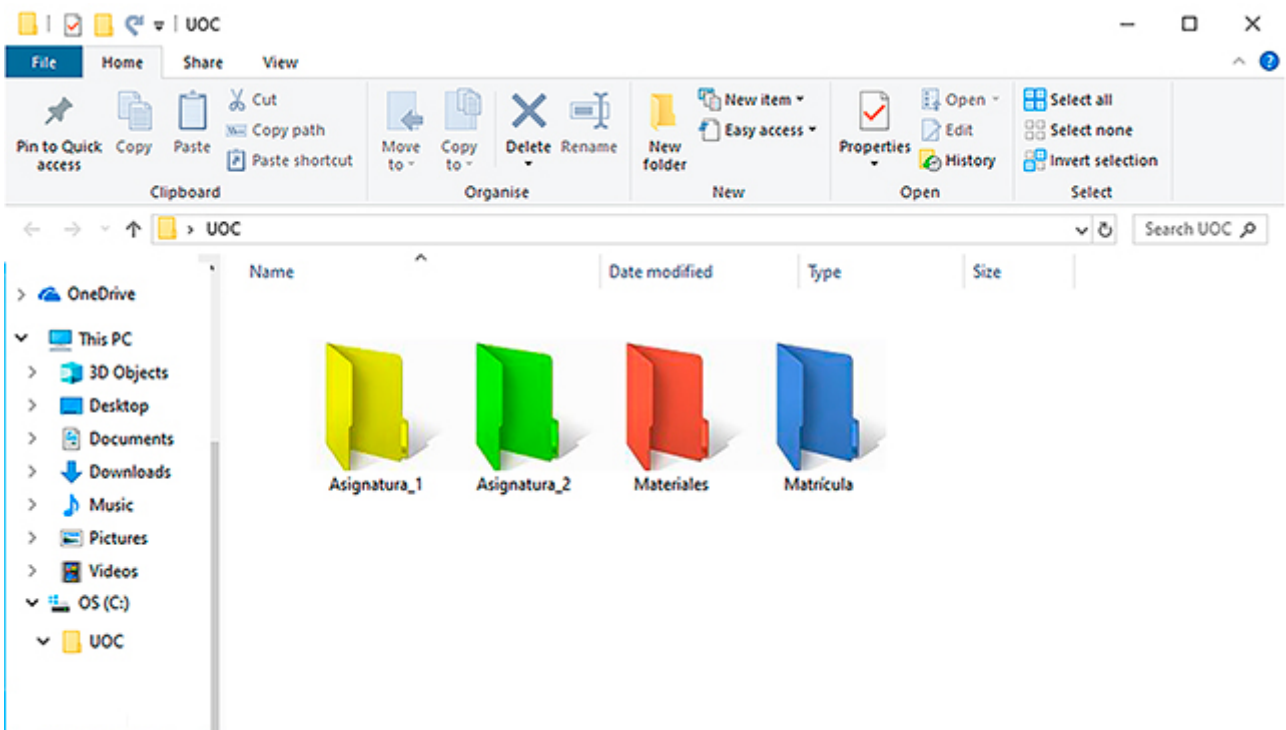


Figure 3. Folder directory using colors

Keep what you use daily within reach. Keep the folders or files you use every day within reach, just a few clicks away. You may use desktop shortcuts, for instance. Other files and documents may be stored in a digital “trunk” you will always be able to access to retrieve what you need.

Review, remove and clean. While it is true that storage spaces are increasingly larger and cheaper, a time for reviewing, removing and cleaning files and documents should be established. Even if this just means you will move them from your daily use area to your digital trunk.

Save each digital document in the proper folder from the very beginning. If you keep things properly arranged from the very first day, you will save yourself the time spent on rearrangements that last for hours and you will avoid having to perform unnecessary searches. It will just take you one minute to store and arrange each new file in its proper place.

1. Structuring information in folders and files

1.2. Recommendations

Shared order: each and every one of us organizes things in a particular, personal way, especially in our private lives. However, if files and/or folders are to be shared with other users, we need to be more careful with the names we use and with our file classification system. We should keep things in order and use clear, meaningful names. For instance, we could use rev01, rev02... for reviews of the same documents, or to store the different document versions.

Safety: our protocol for sorting files should include a safety protocol according to the level of privacy of the information stored. General passwords may be set for accessing the device and files containing the most confidential information may also be protected.

Backups: in order to avoid losing files and information, backups should always be made. A space should be devoted to copying the information periodically (in the cloud, in an external store device, in a DVD). By doing so, we will keep our important files safe (text documents, spreadsheets, presentations, databases, pictures, video files, etc.) in the event of any potential drawbacks:

- Loss or theft of the computer or the device where the information was stored.
- Erasing data in the device by mistake.
- The device is blocked or rendered useless due to a computer failure.
- Your system is hacked and third parties get access to the data.

When creating backups, you need to make sure that:

1. You save the updated versions of the files you want to keep and destroy any existing previous version in case you are using the same storage device (cloud storage, external device storage...) so that things do not get mixed up in the future.
2. You know about all the backup options provided by the storage service, if necessary:
 - **Incremental backup:** only new files are copied.
 - **Differential backup:** only those files that contain content modifications are copied.

Defining when, how and where we will make backups will help us prevent losing information.

In order to choose the best place to make the backups, we need to analyze which backup storage devices are more resistant and long-lasting.











1. Structuring the information in files and folders

1.3. Tools

Apart from keeping files properly organized, we need to be able to find them easily in our different devices whenever we need them.




A good organization system will foster a fast, efficient search, as will using the proper search parameters (author, date, name, file type, tag...).

The operating systems currently used make it possible to perform advanced or smart searches. If a given type of search is performed on a regular basis, search parameters may be stored so that the search may be performed faster and in more automated way.




File search engine	Operating system/Platform	Description
<u>Launchy</u>		Free application that indexes programmes in the start menu and allows for searching for and accessing documents, files and folders in just a few clicks.
<u>ES File Explorer</u>		It's free. It stands out because it plays all the following roles: application manager, task manager, cloud storage server-client (Dropbox, Google Drive, Box.net), ftp client and samba client. You can explore pictures, music, videos, documents and other files in your cell phone and on your computer.
<u>Astro File Manager</u>		A well-rounded file management tool that also includes the possibility to perform application backups or manage open processes. Free with ads.
<u>FX File Explorer</u>		A file manager designed to let you manage all the content in your cell phone or tablet in a fast, easy way. Basic version free.
<u>Spotlight</u>		File explorer included in the operating system.
<u>Search&Siri</u>		File searcher in iPhone, iPad.
<u>Windows File Explorer</u>		
<u>Searching for Files in Windows 7 using the command line</u>		We may also search for files using the command line.
<u>Searching for files in Windows 10 using the command line</u>		We may also search for files using the command line.
<u>Searching for files in Linux</u>		We may also search for files using the command line.

Renaming blocks makes it possible to change the name to several files at the same time, without having to waste your time changing names one by one.

A good example of that can be found when exporting picture files; we may want to change their default name in a fast way.





		
NameChanger	Renamer	We may rename files using the command line: <ul style="list-style-type: none"> • Windows: with PowerShell and advanced command interpreter, more powerful than MS-DOS. • Linux: How to rename files
NameMangler	Windows Explorer (no software installed)	
Renamer4Mac	Flexible Renamer	
Automator	Métamorphose	
	Advanced Renamer	
	File Grinder	

There are several applications and software solutions to change folder colors and add icons. By using them, we make file management more visual, and the documents we are searching for can be found more quickly.

		
Folder Maker . Free.	Xplorer . Free period. Paid	Change folder colors with Finder
Folderico . Free period. Paid	Numix folders	

[Strategy 4](#) in these guidelines provides more information on tags. The guidelines for a proper tagging of files and folders may be found in that section.

	Tags in Windows
	Tags in Linux
	Tags in MAC

	Create a shortcut to the home screen in Android
	Create shortcuts with Windows 10
	Create shortcuts in Linux
	Create alias (shortcut) in MAC



2. Storage in the cloud

2.1. Introduction

Storing data in the cloud makes it possible to access them any time, from anywhere.



Source: Designed by macrovector / [Freepik](#)

The name **cloud** as a metaphor of the digital world was adopted widespread since 2010. It implies the idea of our digital data floating around us as if they were in a cloud, easy to capture and accessible from anywhere.

“Around 2010, Internet users were introduced to the idea that the digital world around them could be understood in terms of the ‘cloud’. As a metaphor, the cloud seems easy to grasp: our data are somewhere in the ether, floating, drifting and wireless, available wherever and whenever we need them”.

Hua Hsu (10-11-2015). [“How the metaphor of ‘the cloud’ changed our attitude toward the Internet”](#). *The New Yorker*.

In practice, the concept mentioned above refers to a huge worldwide network of interconnected remote servers, which are designed to store data, execute applications or provide services and content, such as web mail, video streaming or computer software.

Drawing from this metaphor, we may define **cloud storage** as a service by which data may be transferred, either using the Internet or another network, from the user’s device to an external storage system kept by a third party.

As shown in figure 4, users get connected to the cloud through their own computers or handheld devices, using the Internet. To these users, the cloud looks like any other storage device or application. Nevertheless, the hardware in the cloud (and the operating systems whereby connections are managed) is invisible to them.

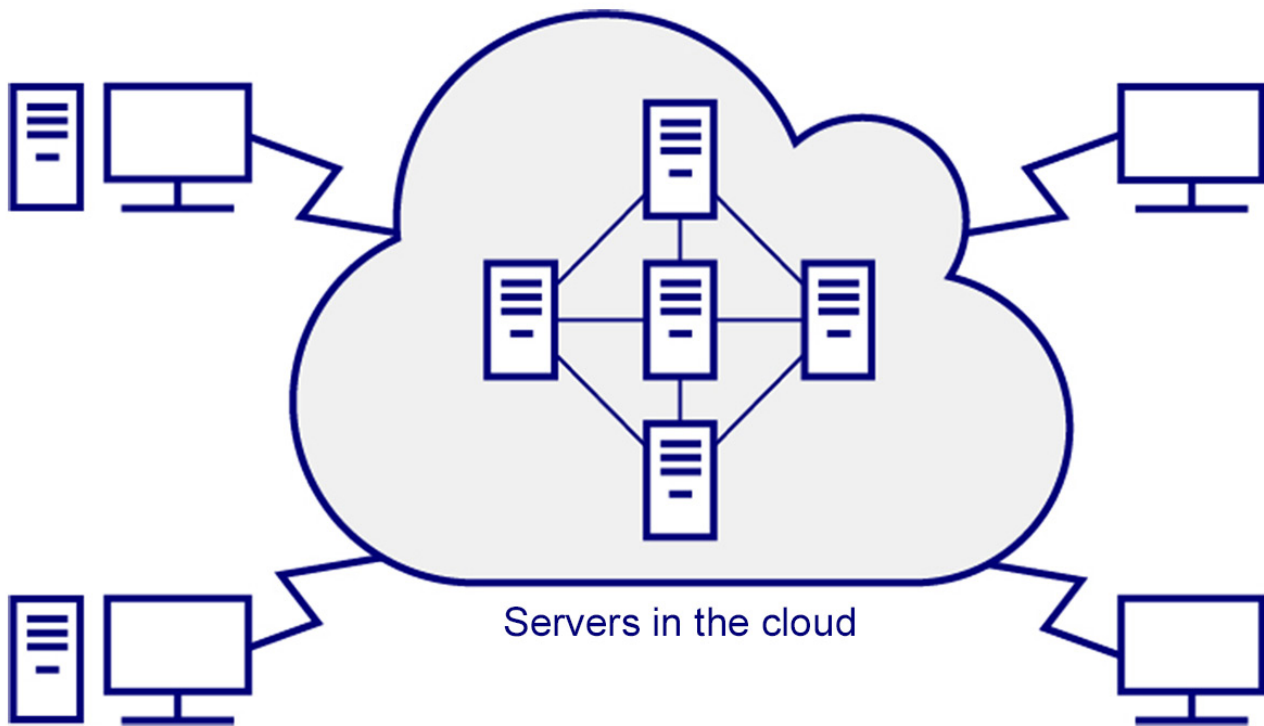


Figure 4.

Source: adapted from "Cloud computing: Web-Based Applications That Change the Way You Work and Collaborate Online". *Que Publishing* (2009).

Even though virtual storage of data may seem a relatively recent technology, it was devised more than half a century ago by Joseph Carl Robnett Licklider (1915-1990), one of the scientists who were responsible for ARPANET (a network of computers that was a precursor to the Internet, which was commissioned by the U.S. Department of Defense to be used as a channel of communication between different academic institutions).

2. Storage in the cloud

2.2. Advantages and disadvantages of cloud storage

When it comes to organizing digital information, cloud storage presents several advantages and disadvantages that are briefly described below:

Advantages

- Data may be accessed from anywhere, at any time, as they are stored in a central location. Any changes done in the data from a given device will be automatically synchronized and will be visible immediately from any other device.
- Files may be shared with other users, either by sending them the files through the Internet or by granting them access to a shared folder.
- Files may be located faster and more easily, as they are all stored in a single place instead of being stored in several storage devices (local hard disks, etc.).
- Users are provided with a high security level for their data. The cloud is one of the safest places for information to be stored, as several of such storage services use complex encryption systems to protect data from attacks and from other forms of unauthorized access.
- Storing information in the cloud instead of doing so in the hard disk of a device may be less detrimental to the user's privacy in case the device is lost or stolen.
- A backup may be done for all the information that is locally stored in a device.
- It provides a cheaper alternative to storage in local hard drives (either internal or external). Many personal storage plans in the cloud provide large storage capacity at a very low cost, or even for free.

Disadvantages

- The user is dependent on service providers, given that the data are stored in their servers.
- Service access is dependent on Internet availability.
- When using safe transmission protocols (e.g. HTTPS), data transfer rates decrease.
- Service deficits may arise and high levels of jitter (i.e. fluctuations in signal transfer) may appear as a consequence of the overload in provider's servers in case a large number of users are connected simultaneously.

2. Storage in the cloud

2.3. Legal aspects of the storage in the cloud

Even though no specific regulation regarding storage services in the cloud exists to date, it must be noted that those services involve several legal implications. In this sense, we need to take into account that most cloud storage services providers hand the client a contract to be adhered to, with little room for negotiation. Actually, the contract mostly consists of accepting several legal conditions when accessing the services (by checking the section “I accept the conditions...”). Nevertheless, before contracting a service, it is essential to carefully examine the contract.

Specifically, the user should make sure that the contract complies with the **current regulations in data protection**. Users should also make sure they agree with the **obligations and liabilities of the provider in the provision of the service** (regarding aspects that include the quality of the service, the loss of data or interruptions in the service).

In terms of regulations for data protection, it must be taken into account that legal frameworks are substantially different between countries. For example, the regulations that are in force in the European Union are preventative in nature (they protect citizens' rights from being infringed), whereas the opposed situation takes place in the USA (if necessary, a compensation would be given to the citizen *after the fact*).

The European regulation that rules all member States is **the Regulation 2016/679 of the European Parliament and of the Council**, of 27 April 2016, on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

The European regulation mentioned above is directly applicable in all member States, irrespective of whether a national regulation exists, since **May 5th, 2018**. It establishes a harsh sanctioning regime and criteria for grading sanctions are quite general. For this reason, several member States, including Spain, have approved new national laws on data protection as soon as possible. In these new laws, grounds for sanctions are much clearer in each country.

2. Storage in the cloud

2.4. Recommendations

Storing files in the cloud will not only allow, as we have seen, having access to them from anywhere, at any time; it will also increase productivity and place less storage demands on devices.

Nevertheless, we should take several key recommendations into account when it comes to managing data in an efficient, safe way.

Classifying information in the cloud. In order to keep an organized and efficient cloud storage site, we should follow several relevant strategies:

- 1. Agree on a common structure.** If several users in a work group share a common storage space, it would be advisable to adopt structures that were previously used by the group, or previously agreed upon by the whole group.
- 2. Keep access controlled.** Sharing a storage space in the cloud does not necessarily mean using a totally centralized structure, as many work teams provide private spaces for each member of the team, depending on the roles to be played by each member. For this reason, if necessary, access to several of the folders and files stored will have to be controlled and restricted. This will determine the structure of the storage space, in which free access or restricted access directories will be available. The different storage platforms in the cloud have mechanisms to manage this kind of permissions.
- 3. Control folder structure.** In a cloud storage space, using a folder structure that contains more than four levels is not usually recommended. This would hinder file search and the perception on the general storage space arrangement. Besides, this could make the route to the files too long (it should not be above 255 characters).
- 4. Avoid duplicate files.** As a general rule, a file stored in the cloud should only be duplicated if (because of its features or context) we want to keep it in more than one folder. In any case, we should take into account whether the file is a definitive file or could still be modified, because its subsequent versions should be included in all the corresponding folders simultaneously.
- 5. Make a distinction between files “under development” and “closed” files.** You should consider a structure that makes room for the distinction between files that are being used in the present and files that have already been closed and will not probably require updates. In this sense, we would recommend creating sub-folders for given periods of time (e.g. “2018-01”, “2018-02”...) that contain files created or used in this period and will not be changed in the future.

Create backups. You should not miss the opportunity to take advantage of one of the great advantages provided by cloud storage: backups. Performing backups periodically is essential to keep important files safe.

Configure permissions. A correct configuration of permissions should be done on the user’s account, as this will make it possible to properly establish which files stored in the cloud are to be shared. Some of them will be shared publicly and some will be shared with some users only. Others will be kept in a private space in the cloud storage system. Besides, it is also important to decide whether some of the files that contain sensitive information should be stored in the cloud (where they are potentially exposed to hacking or to information leaks by the service provider) or else be kept in a local disk storage system exclusively.

Control storage capacity. When folders are shared with one or several users, we should keep in mind both the storage capacity of our own account and the storage capacity of those users we share the folder with. In this regard, we would recommend periodically checking the size of the files that are shared and preventing other users on the inclusion of new files that are too heavy and could drain the storage capacity in other users’ accounts.

2. Storage in the cloud

2.5. Tools

Even though many cloud storage services are available, we would recommend analyzing the different options available to determine which one suits one's needs best. Our choice will be based, mainly, on the kind of files to be stored, the security level expected, the need (or lack thereof) to share data with other users and the kind of devices used to access the files and edit them. Besides, the users' degree of digital literacy will also need to be taken into account, as several services are easier to use than others.

Four of the most popular free cloud storage services are described below:

Dropbox. It was created more than a decade ago, which makes it one of the "senior" remote storage services. It currently has over five hundred million users. It is available as a desktop application or as a mobile device application (iOS, Android or Windows), in seventeen languages.

Dropbox Offers 2 GB of free storage (in its "basic" version), which may be increased up to 16GB (also for free) if the Dropbox account is linked to social networks and friends are invited to join the service.

More information on using Dropbox may be found at: <https://help.dropbox.com/en-en>.

Google Drive. Google Drive is included in all Android devices, but it is also a widespread service in other platforms. Besides, it is closely linked to Gmail, its e-mail client. Since it appeared in 2012, more than eight hundred million users have registered with this storage service. It is available as a desktop application and as a mobile device application, in sixty-eight languages. Since the end of 2017, an application ("Backup and Sync") may be downloaded to enable the user to select several folders in the local hard drive to be automatically synchronized with folders stored in the Drive space, which greatly facilitates creating backups. Google Drive offers 15 GB of free storage.

More information on using Google Drive may be found at: <https://support.google.com/drive/answer/2424384?hl=en>.





OneDrive. OneDrive (previously known as SkyDrive) is a Microsoft cloud storage service. For this reason, it may be accessed from the web and is also included in the Windows 10 file explorer. This makes it possible to synchronize files stored in the local hard disk and files stored in the cloud storage system. This service is also linked to Outlook, Microsoft's e-mail client. It is available as a desktop application and as a mobile device application (iOS, Android or Windows), in one hundred and seven languages. In addition, more than one hundred and fifteen million users have used their services since it was launched in 2007. OneDrive offers 5GB of free storage capacity.

More information on using OneDrive may be found at: <https://answers.microsoft.com/en-us>.

Box. This cloud storage service was created in 2005, even before Dropbox was. Nevertheless, it has never had Dropbox's wide popularity. In any case, this service makes it possible to share stored content and to work cooperatively in a very easy manner. It is available as a desktop application or as an application for mobile devices (iOS, Android, Windows or BlackBerry), in Spanish and in other 8 languages as well. Box offers 10GB of free storage capacity.

More information on using Box may be found at: <https://community.box.com/t5/Box-Community/ct-p/English>.

The main features of the four storage services described above are summarized in the table below:

	Dropbox	Google Drive	OneDrive	Box
Icon				
Free storage space	2 GB	15 GB	5 GB	10 GB
File size limit	20 GB	5 GB	10 GB	250 MB (free version)
Server location	USA and Ireland	All over the world	All over the world	All over the world

Main cloud storage services

3. Synchronization between devices

3.1. Introduction

Synchronization makes it possible to work with several devices. Information is updated simultaneously in all of them.



Source: Designed by
macrovector / [Freepik](#)

Nowadays, most people use, in their professional and personal lives, several devices (PCs, laptops, smartphones, tablets, etc.). Information must be up to date in all them, irrespective of the device they use it from. In other words, they need to keep their devices synchronized.

The **synchronization** process between devices is based on the following: whenever information is added, modified or removed from a device, the update is immediately transferred to the rest of devices in sync. Therefore, the synchronization process makes it possible for all information to be simultaneously updated in several locations or devices.

Even though manual synchronization is possible, there are many software solutions nowadays (some of which are free) that allow users to synchronize files and folders between several locations in a much faster and reliable manner. Several of these applications are listed in the “Tools” section.

Besides, we should also take into account the growing importance of cloud services and applications, such as Dropbox, Google Drive and Microsoft OneDrive. When using them, a user account may be easily synchronized between the different devices used, which gives the user access to all the information that was stored from any of the existing locations. In this case, when synchronizing, let's say, a calendar application (such as Google Calendar) among different devices, the events that were previously planned using a PC will be seen when using a tablet or a smartphone.

3. Synchronization between devices

3.2. Recommendations

Make the most of the synchronization possibilities offered by Google applications. A Google account (a UOC e-mail account is also a Google account) is linked to several applications (e.g. Gmail, Drive, Chrome, Calendar, Documents, Presentations, Spreadsheets, Forms, Google Sites, Blogger, YouTube, Hangouts, Google Search, Google Maps, Google Analytics, etc.) that offer useful synchronization possibilities. A Google account will help manage the way in which applications synchronize e-mails, messages and other recent information in several devices. By default, Google applications will be automatically synchronized in all devices, but there is always the option to disable (or enable back again) automatic synchronization in each application individually. If, at one time, battery is running low on a device, disabling automatic synchronization will help save battery.





Properly manage the privacy of the information synchronized in the Internet browser. The main Internet browsers (e.g. Google Chrome, Mozilla Firefox, Microsoft Edge, Safari) make it possible to synchronize information regarding the user's profile (bookmarks, browsing history, etc.) by storing it in its corresponding account (Google, Mozilla, Microsoft, iCloud). If you do not want to synchronize all content, you may choose which data you would like to store and later on synchronize. When using Chrome, in case you do not want Google to read your data, you may protect them through a password sentence for synchronization, which will be requested in order to access the account from each device. Besides, it should be noted that synchronized data will always be protected by encryption while in transit.

Use synchronization applications between devices with different operating systems. Applications that enable synchronization between devices with different operating systems are becoming more and more popular. The application "Phone complement by Microsoft" is an example of that. It offers the possibility to automatically transfer content between a Windows 10 PC and several mobile devices that use iOS or Android operating systems and includes the synchronization of Office and Outlook documents. Another option is the virtual assistant Cortana, a Microsoft application available for iOS and Android that enables synchronizing these two operating systems with Windows-based operating systems.

3. Synchronization between devices

3.3. Tools

If several devices are used daily in order to manage information and we need to access this information at any moment and from anywhere, we will probably need applications that help us synchronize files. Some of the most popular ones are listed below.

Name	Icon	Description
<u>Resilio</u>		<p>This synchronization application is not based on cloud storage, but on P2P (peer-to-peer) technology. For this reason, the application will have to be installed in all devices to be synchronized. It offers free and paid options and is available for Windows, Mac, iOS and Android.</p> <p>More information about how the application works may be found at: https://help.resilio.com/hc/en-us/categories/200140177-getting-started-with-sync</p>
<u>Mozy Home</u>		<p>This is one of the most popular synchronization tools, which also includes synchronization options for SQL databases, Exchange and Outlook. It is available for Windows, Mac, iOS and Android. Free and paid versions are available.</p> <p>More information on how to use Mozy Home may be found at: http://support.mozy.co.uk/articles/en_GB/Documentation/mozy-c-overview-mozy-c</p>
<u>Syncplicity</u>		<p>This is a powerful application which is at once very intuitive and easy to use. Its free version provides 10GB of storage. It is available for Windows, Mac, iOS and Android. More information on how it works may be found at: https://syncplicity.zendesk.com/hc/en-us/articles/201345394</p>
<u>Sync</u>		<p>This is one of the most well-rounded synchronization tools. Its free version provides 5GB of storage. It is available for Windows, Mac, iOS and Android. More information on how Sync works may be found at: https://www.sync.com/help/category/getting-started/</p>

4. Tagging

4.1. Introduction

Tagging provides a detailed description of the content of a file, which makes subsequent searches easier.



Source: Designed by
macrovector / [Freepik](#)

Tags are attributes that are applied to files and add additional information to them (metadata).

Including metadata is particularly useful for those types of files (image files, audio files, etc.) that contain no text apart from that in the file name. Tags provide an additional description that will make subsequent searches much easier.

Therefore, tags will be really helpful when searching for information stored in devices, as they provide a detailed description of the structure or contents of a file. They will also enable performing a joint search for all those files that share a common element (e.g. a key word), even if they are not all stored in the same directory in the hard disk.

For this reason, operating systems such as Windows or MacOS have included a tagging function for more than a decade. Nevertheless, this feature is not widely taken advantage of by users, which in most cases do not even know it exists. This is, however, a really useful function that makes it possible to organize files in the hard disk and find them later in a very easy way, with no need for browsing folders. In fact, file explorers in most operating systems enable showing files using tag categories instead of showing them in folders (the usual default way).

Using tags is not only restricted to the private arena in the hard disk or in a user's cloud storage space. **Social tagging**, also known as **folksonomy**, involves using tags on all kind of information on the Internet (images, audio files, video files, documents, etc.). By doing so, content is enriched and more precision is provided to the information that may be found on the Internet. This a cooperative classification using descriptive tags, without hierarchies, which is highly useful for Internet search engines.

In this sense, many social networks offer their users the option to search for markers that are linked to specific tags, and a content ranking is performed according to the number of users that tagged it. These are precisely the web services -particularly Twitter, Facebook and Instagram- that made hashtags popular; a hashtag is a tag that includes one or several linked words preceded by a hash sign (#). Hashtags play a very relevant role in the process of indexing and searching for contents on the Internet.

4. Tagging

4.2. Recommendations

How to add labels to files stored in user devices. In **Windows**, open the “File explorer”, click on the tab “View” and then click on the “Details pane”.

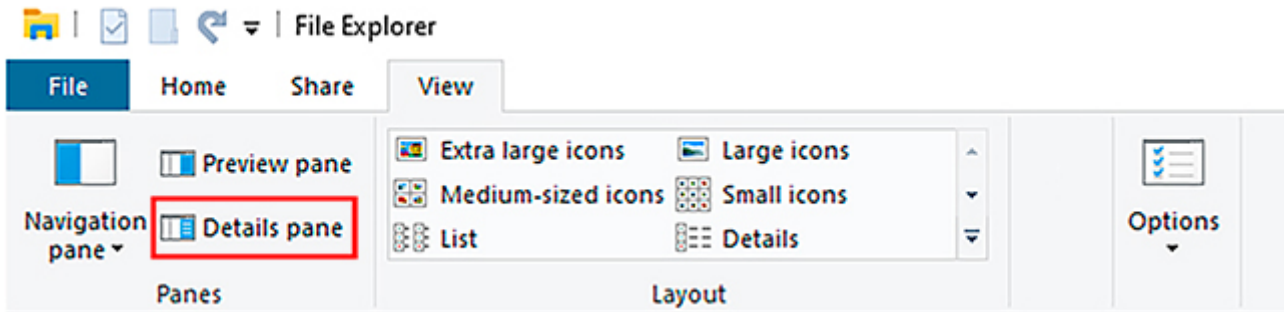


Figure 5. “Details pane” in Windows File explorer

When choosing a file, all the information available on it will appear on the right side of the “File Explorer” window.

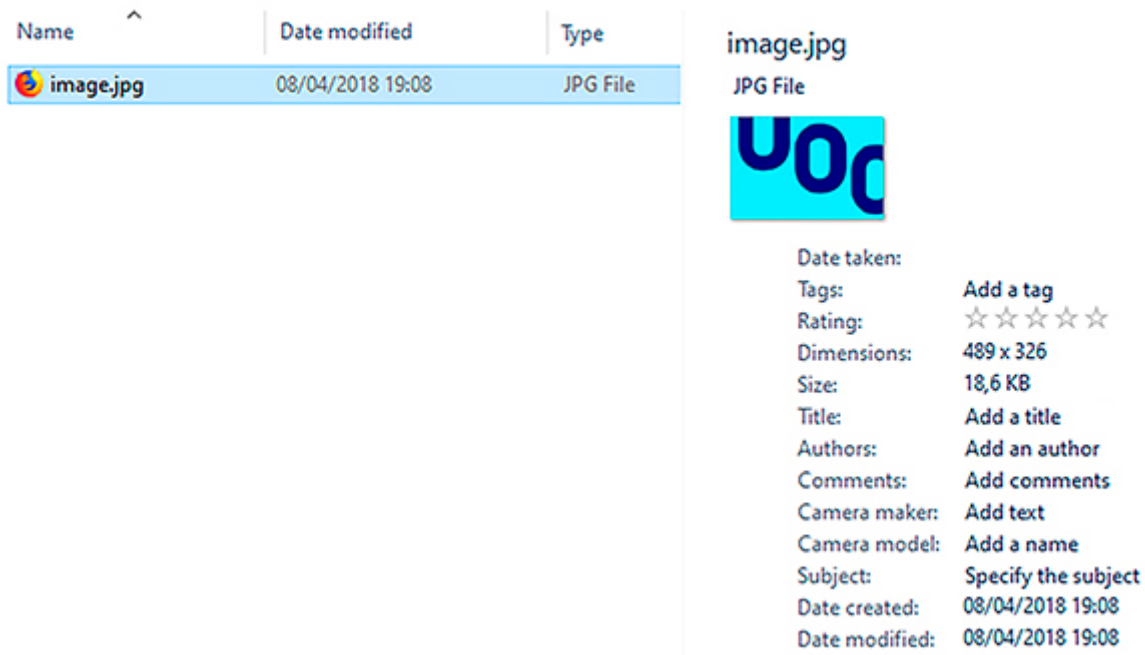


Figure 6. View of a selected file in Windows “File Explorer”

This is where tags can be added to the file. It must be taken into account that tags must be brief but descriptive. Each word will be separated by a comma. Once all the tags have been introduced, press the “Save” button.

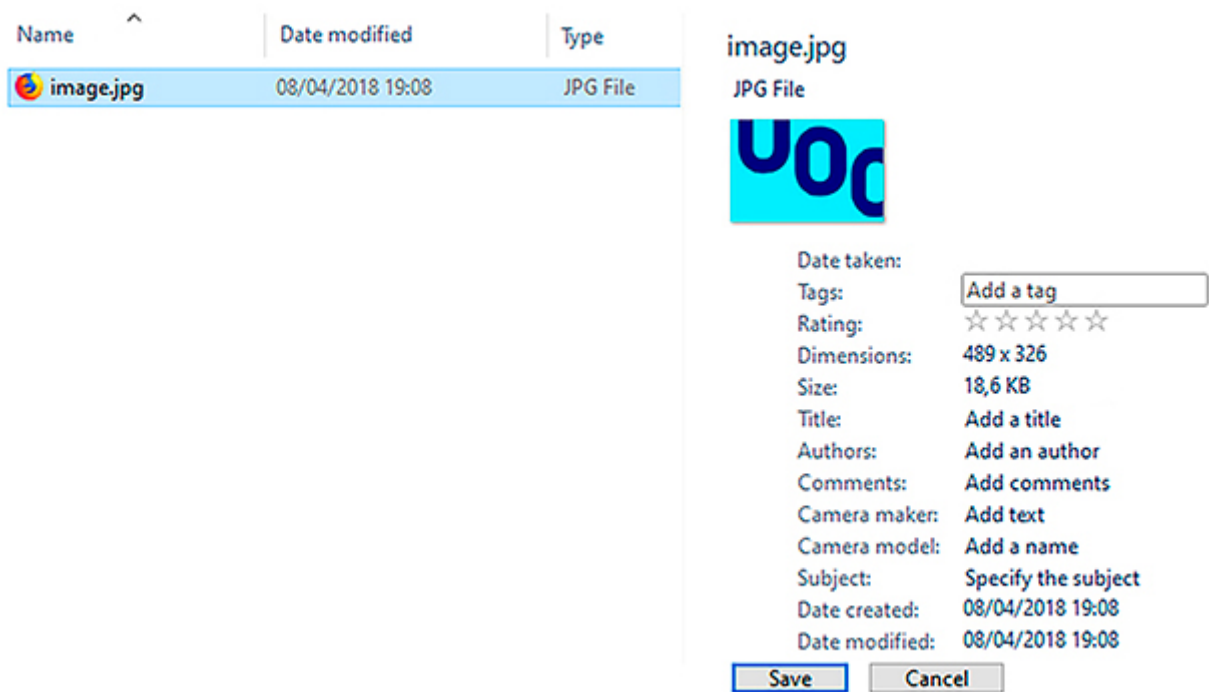


Figure 7. Adding tags using Windows "File explorer".

When doing searches later, we will find the file quickly and easily.

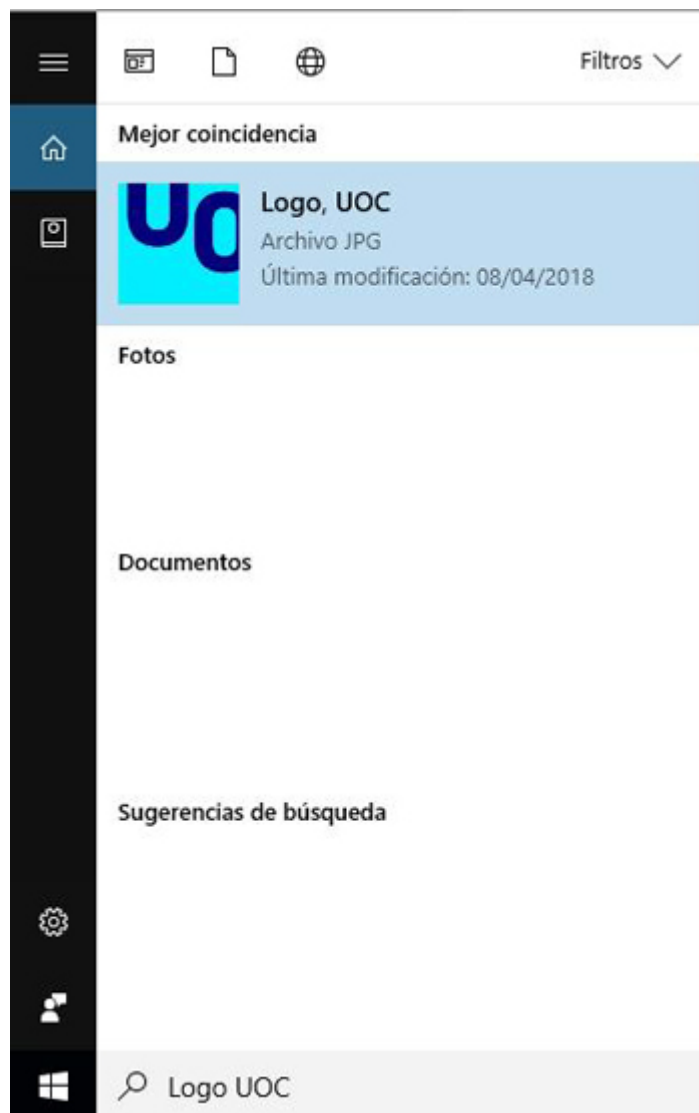


Figure 8. Searching for a tagged file in Windows

In a similar manner, in order to add tags to a file in **MacOS** you need to do the following: open a window in “Finder”, choose the corresponding file, click on the button “Edit tags” and introduce any tags you want.

How to view files using tags instead of folders. Even though the default view in a file explorer provides a folder arrangement, arranging them according to tags may be useful sometimes. For this reason, we should simply follow these steps:

- In Windows: Open the “File Explorer”, click on the tab “View” and simply choose the option “Arrange by” > “Labels”.
- In MacOS: open the “Finder”, choose “View” > “Show viewing options” and choose the box “Tags”.

How to add common tags to a group of images during the import. A particularly useful tagging operation involves adding common tags to a group of images during their import from an external device, such as a picture camera or a smartphone.

In order to do this, you will need to introduce all the desired tags when the import window appears. Tags will be common to all the images to be imported, and they will be automatically applied to all of them.

By doing so, when trying to find those images afterwards you will only need to type the corresponding tags in order to show all the images in the explorer, no matter if the images are stored in different folders.

How to organize the Gmail inbox with tags. Tags may be configured in [Gmail e-mail \(*\)](#) in order to arrange messages. Those tags will work as folders, but they include a difference: several tags may be added to the same message. Gmail makes it possible to create, edit and remove tags at any time and move messages from one tag to another. Besides, in order to tag several messages simultaneously, you will only need to select them in your inbox and click on “Tags”, choosing the corresponding tag(s).



How to use tags properly. Raquel Gómez-Díaz, the author of *Etiquetar en la web social* (Tagging in the social web) (Publishing UOC, 2012), offers practical advice on how to use tags properly:

- 1. Use words that would be used to retrieve the file to be tag, those that make it specific in its field.** For instance, if a researcher who specializes in a given insect tags all his/her documents using this word only, he/she will not be able to distinguish among the studies performed. Generic terms are useful to organize broad categories, but specific words must be added to improve document retrieval.
- 2. Choose four or five words that best describe the file content.** Given that finding a single word that includes all the features involved in the content of a file, it would be advisable to use at least four or five words, even if some of them are more generic than others.
- 3. Use words that may be helpful to other users in their subsequent searches.** When tagging a file, keep in mind that the words used should be as little subjective as possible. Otherwise, if subsequent searches are performed by different users, they could find it difficult to ascertain the meaning of tags that were created from such a personal perspective.
- 4. Review the instructions provided by the system or application in which tags are created, in order to find out about its particular characteristics in terms of tagging.** In this sense, it is very important to take several aspects into account, such as how to separate tags or how to introduce compound terms, as the proper way to do it varies among the different systems and applications. An example of that is shown below:
 - **Twitter:** type the hash (#) and then the words; no blank spaces between them.
 - **Youtube:** separate tags using blank spaces; in case tags contain more than one word, they should be placed between quotation marks.
 - **Diigo:** After introducing the tag, whether it contains a single word or several words, press “intro”; once you have done so, this unit will be considered a tag.
 - **Flickr:** each tag must be separated from each other by a space. If a combination of several words is to be used, they should be placed between quotation marks.
 - **Mendeley:** tags must be separated by a semicolon (;).

4. Tagging

4.3. Tools

Several tagging tools are shown below. By using them, files and folder are kept properly arranged and subsequent searches may be performed in a fast, easy way:

Name	Icon	Description
<u>Tagstoo</u>		<p>This is a free application that helps arrange folders and files with custom-made tags (in different shapes and colors). It offers the possibility to export all the tagging information if files and folders are to be transferred to another computer. It has an intuitive interface that is quite similar to that of Windows file explorer, which makes it possible to arrange files and folders and perform searches on them in an easy, quick way. No installation is required: if you use Windows or Linux, you will only need to execute a file. If you use MacOS, you will only need to decompress the program files in the directory you choose.</p> <p>More information on how to use Tagstoo may be found at: https://tagstoo.sourceforge.io/help_en.html</p>
<u>TagSpaces</u>		<p>This is a free multiplatform application (Windows, MacOS, Linux and Android) that helps manage and arrange local files using tags. A Pro version (paid version) is available and includes advanced functions, such as Geo tagging.</p> <p>More information on how to use TagSpaces may be found at: https://docs.tagspaces.org/</p>

5. Note taking applications

5.1. Introduction

Note taking applications help manage information in a flexible manner.



Source: Designed by
macrovector / [Freepik](#)

Applications to create and store notes, both in mobile devices and in desktop devices, are tools that help improve productivity and manage information in a fast and easy way. They may be accessed at any time, from anywhere.

These applications make it possible to gather, arrange and later on search for any information stored, including personal information, professional information or information you found on websites, social networks, e-mails... by creating notes. You will be able to include texts, images, screenshots, links or even voice messages and audio files in these notes. For this reason, this kind of tools may be considered a comprehensive solution for information management. **Evernote** stands out among all the existing applications to write down and manage notes, as it is really well-rounded.

5. Note taking applications

5.2. Recommendations

Note taking applications offer countless possibilities for information management. They may be perfectly suited to all kinds of users and their needs. Nevertheless, several recommendations should be taken into account in order to make the most of these tools.

Using a notebook classification system. If notes are properly arranged, finding a specific piece of information you previously stored will be much easier. For this reason, note taking applications allow for the creation of notebooks and sub-notebooks (a similar system to that of folders and subfolders in a hard disk) in order to arrange information according to a specific subject or set of criteria, and establishing different information levels. This function should be used properly, using as many notebooks and sub-notebooks as necessary, as most note taking applications do not limit this functionality.

Tagging notes. Using tags to classify notes according to key words, subjects, types of attached document, etc. is highly advisable. By doing so, finding the desired information is easier and faster.

Text information in images. As we have seen, classifying information in notebooks and tagging make information searching a much easier task. Moreover, the powerful search engine that is usually included in these applications also helps to find text included in the notes and in attached documents, even if they are images. This function will be particularly useful when searching for a word in scanned documents, hand-written notes or pictures on which notes were included.

Capturing text from websites. An interesting functionality of note taking applications are browser extensions or plugins, by which additional features may be added. Among them, there is a particularly useful one that lets users capture text on a website or e-mail and store it straight into a note, which may afterwards be read offline at any time. It is also possible to capture and store several web links found when surfing the internet.

Audio and video recordings. This functionality in the note taking application enables us to record an explanation, a piece of information or even a conference as an audio or video file, which may then be stored in a note file. This is particularly useful in academia and learning environments.

Sharing notebooks and network collaboration. Note taking applications make it possible to publicly share any notebook from an account and to create notes and notebooks to be used by several users. This makes it specially useful for group work in teams that need to collaborate virtually (by adding comments, content and files to the common notebook) or when trying to convey information to a particular group of users. This kind of tools also include a chat function to further facilitate communication between users.

Reminders and planning. We need to keep in mind that a note taking application may be an excellent planning tool as it includes a function to add reminders in notes. Reminders will be sent to users at the chosen day and time. Reminders will remain visible when accessing the application and they will be removed once the task has been finished or once the deadline is over.

In this way, you could easily manage your UOC coursework by creating a notebook named “Coursework to be done” and a note for each of the activities that included a reminder with its corresponding due date.

5. Note taking applications

5.3. Tools

Evernote

This is a tool to facilitate the organization of personal information by storing quick notes created from several elements (texts, images, pictures, screenshots, audio files, links to websites...) or even scanning texts using the cell phone camera.

Likewise, it includes reminders for notes and a system to classify notes in folders and perform searches on the information contained in them.



Evernote is available for both mobile platforms (iOS, Android, Windows Phone and Blackberry) and desktop versions for Windows (compatible with touch screens and handwriting recognition systems) and Mac. A web version is also available.

The free version of the application (**Evernote Basic**) includes its synchronization in two devices, a monthly load up to 60 MB and a maximum note size of 25 MB.

Paid versions are also available (**Evernote Plus / Evernote Premium**) and have several functionalities and corporate packages in which a shared use of both notebooks and corporate documents is emphasized.

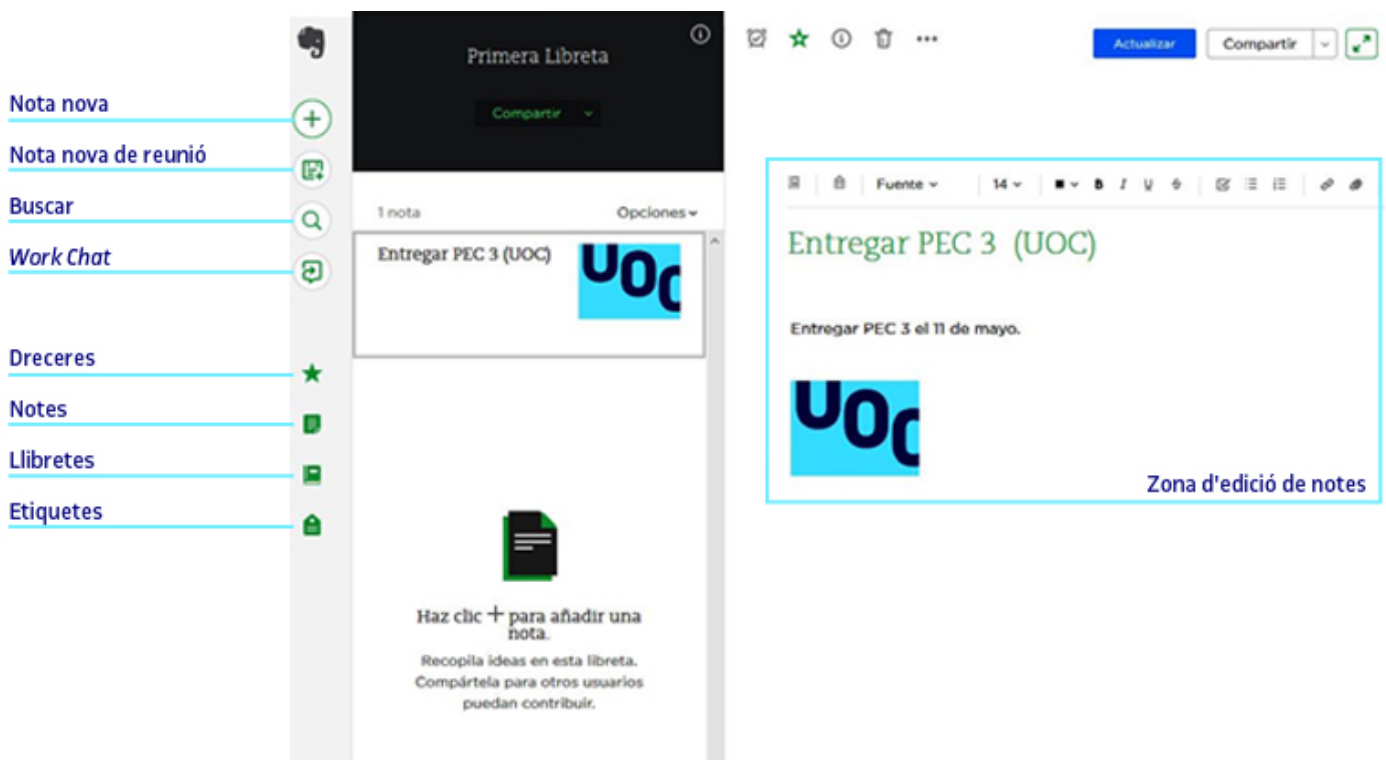


Figure 9. Interface of the Evernote application

More information on the use of Evernote may be found at: <https://help.evernote.com/hc/en-us>.

6. Virtual desktops

6.1. Introduction

Virtual desktops provide users with a desktop that may be accessed from anywhere.



Source: Designed by macrovector / [Freepik](#)

Virtual desktops are applications that provide users with access to a cloud-stored desktop from several devices.

Therefore, this is a very interesting management tool for users who need to make sure that neither mobility nor multi-device access are an obstacle.

Virtual desktops are intended to be **application launchers**. This means that applications and web services may be added to them, so that they may be accessible at any time and from any device. **Netvibes** and **Symbaloo** are two of the most popular virtual desktop applications.



Figure 10. Interface of the virtual desktop Symbaloo

6. Virtual desktops

6.2. Recommendations

Virtual desktops are a powerful tool to manage and organize information gathered from several sources, including websites, social networks, blogs or e-mail accounts. Virtual desktop applications are quite intuitive and easy to use, but still some recommendations should be taken into account in order to make the most of their potential.

Arrangement in tabs and modules. A proper use of tabs and modules in a virtual desktop should be made in order to visually arrange information.

Each tab in a desktop will provide access to a webmix, that will be arranged according to a consistent approach (subject, language of resources, etc.). Tab arrangement may be changed by simply clicking on the tab to be moved and dragging it leftwards or rightwards to the desired place. Most applications also allow for the addition of an icon to each tab to distinguish them, which may be really useful.

Besides, each tab provides access to a webmix of resources composed by several widgets that will show the gathered contents. All widgets in a webmix should belong in a given subject or set of criteria; besides, module arrangement should also be consistent. In order to achieve that, remember that moving a widget is as easy as clicking on it and dragging it to the desired position.

Finally, it would be advisable to create a new desktop in the same account if you have already created too many tabs in a desktop, if you want to work with very different subjects or if several users are to share the same accounts.

Shared desktops. Virtual desktop applications make it possible to create webmixes with links to digital content for a personal use. Apart from that, they also provide the opportunity to publicly share those links comprehensively. By default, all desktops created by a user will be private until the user decides to share them. In this sense, it should be noted that these tools include the possibility to configure a public part and a private part, which means you do not need to publish all your contents, but only those webmixes and modules you want to share. You need to remember that during the publication process a given set of tags (with keywords for the content) will need to be included, as well as a brief description of the collection. A webmix may be shared through a link sent to contacts or on social media (Twitter and Facebook have a functionality for that).

You should also keep in mind that you may publish webmixes and also use your application to find and store interesting collections gathered by other users.

RSS feed. One of the main features of a virtual desktop is the automatic update of its contents through RSS (Really Simple Syndication). This is a format used to distribute frequently updated information to users that are subscribed to this particular source of contents. By using them, you may simultaneously follow (with its corresponding automatic updates) several news websites, social networks or blogs, efficiently managing a large amount of information.

It must be noted that you need to introduce the link to the RSS source in the virtual desktop application in order to follow that RSS source. In some cases, the exact source URL will be required, whereas in some other cases only the publication URL will be necessary.

You can also add a website that has no RSS activation in one of the widgets. In order to do so, you may easily create the RSS source using one of the many websites that offer this service (e.g. <http://createfeed.fivefilters.org/> or <https://feedity.com/>).

Finally, RSS sources included in a publicly shared webmix should be checked frequently. In many cases, links are broken or no longer updated, and when this happens the public collection will not look or work as well.

6. Virtual desktops

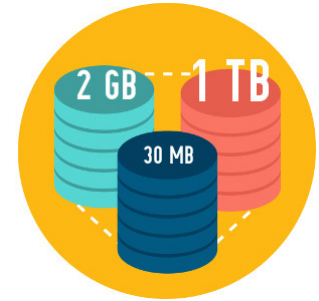
6.3. Tools

Name	Icon	Description
<u>Netvibes</u>		<p>This is a virtual desktop arranged into tabs included in several modules that may be dragged over the screen. These tabs act as small windows and show content generated by other web services.</p> <p>Netvibes is available from iOS mobile devices; it is also available as a Windows and Mac desktop version and as a web version.</p> <p>The free version of the application (Netvibes Basic) provides total customization, automatic control on an unlimited amount of apps and reading articles and social media. Paid versions (Netvibes VIP / Evernote Premium) are also available and include many other functionalities, such as advanced search, analytics or support by the service provider.</p> <p>More information on how to use Netvibes may be found at: http://documentation.netvibes.com/</p>
<u>Symbaloo</u>		<p><u>Symbaloo</u> (*) is a virtual desktop application that acts as a browser: it makes it possible to arrange web content and to access this content from any device that has an Internet connection. Thanks to an agreement with the <i>Ministerio de Educación, Cultura y Deporte</i> (MECD), all Spanish centers in the public education system are granted free access to a Symbaloo PRO account over the 2016-2019 period.</p> <p>Symbaloo is available for mobile platforms (iOS, Android, Windows Phone) and in Windows and Mac desktop versions. A web version is also available.</p> <p>Its free version is different from the paid versions in several aspects: for instance, there is no control panel in the free version and only a webmix at a time may be shared (they cannot be shared simultaneously). Paid versions (PRO and PRO+) include other additional functionalities (exclusive URL address, the possibility to add users and to control access, included Lesson Plans...).</p> <p>More information on how to use Symbaloo may be found at: https://en.help.symbaloo.com/portal/kb</p>

7. Managing large files

7.1. Introduction

The high quality of multimedia files is increasingly pushing us towards searching for alternatives to the most widely used transfer channels.



Source: Designed by macrovector / [Freepik](#)

In many occasions, we manage files considered “heavy data files”. More and more frequently, those files, particularly audiovisual files, have a better quality, which has an impact on the storage space they require in our storing systems.

A file may be considered a “heavy data file” if it exceeds 50 MB, because in this case we will not be able to send it as an attached file using most e-mail provider services.

Storage disks (hard disks, external storage disks, pendrives, memory cards) increasingly offer more space at a lower cost, but given the fact that we usually handle a large amount of files, we should always keep in mind how much space is available.

The most obvious downside to large volumes files arises when we need to send them on-line.

Most e-mail services, such as Gmail, Outlook and Yahoo accept attached files that are as large as 25 MB. When using webmail services, no more than 10MB are allowed.

What is as large as 25MB?



5 pictures
20Mpx in JPG



A 500-page
PDF document



A 3-min video
Resolution: 720p
Coding system
(H.264)

Figure 11. Examples of different file sizes

Some applications, such as WinRAR or WinZip, offer an option to compress files, which reduces their size. When compressing, several files may be gathered together in a single file, that is treated as just one file (which makes things easier when having to attach, download and work with the file). These applications have an option to encrypt files and add a password to them, in case a higher level of security in the transfer is required.

However, how much the file may be reduced will depend on its content. A significant size reduction may be achieved with usual text files, but images or more complex text files will hardly be reduced in size upon compression.

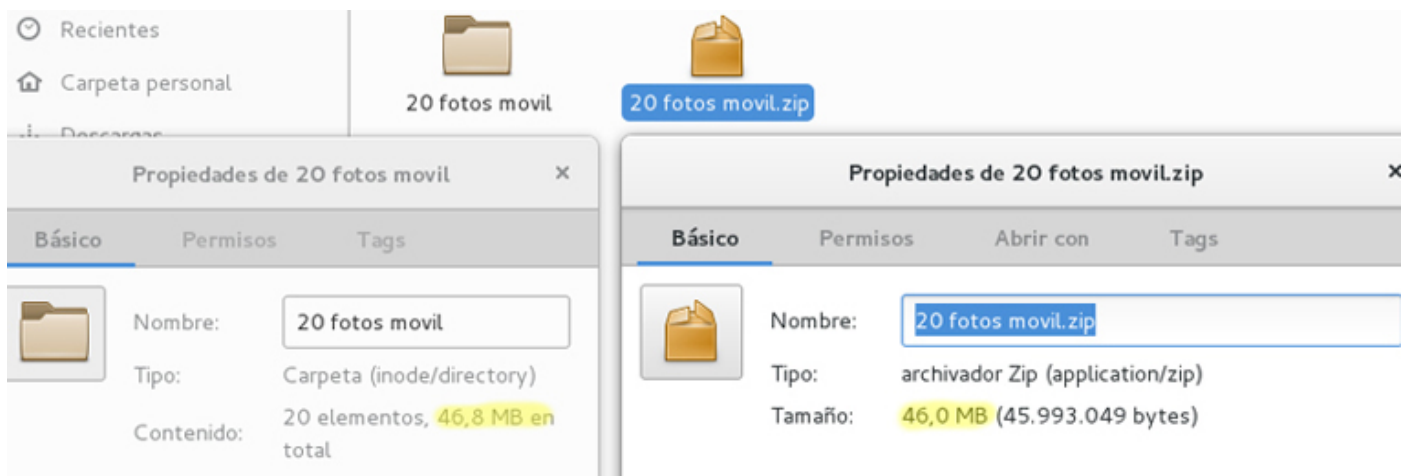


Figure 12. Compression of a folder that contains images – compression is hardly significant

On-line service for file exchange

Heavy data files may be shared or sent by other means; for instance, the **cloud** could be used as an intermediate storage system. In this case, the file would be stored on an Internet location -either temporarily or permanently- and the recipient would be able to download it on its local disk by following a link. Depending on the Internet connection available, the upload and download speed may vary.

7. Managing large files

7.2. Recommendations

If a heavy data file is involved, make sure you say it. Telling the recipient before sending an e-mail with a heavy data file attached is advisable and a courtesy. By doing so, we help the recipient avoid having his/her e-mail flooded or even fail to receive other message due to a shortage of space in the mailbox.

Safety measures. When e-mailing a file through external applications or without a previous registry, it would be advisable to encrypt and establish a password whenever possible. By doing so, the files sent are protected and the privacy between sender and recipient is not breached.












Make work easier. If a large amount of files are to be send, gathering all files and compressing them into a single file makes download easier for the recipient. This would be the case when sending pictures.

7. Managing large volume files





7.3. Tools

Compression applications

Windows 7 operating systems (and its newer versions) provide the possibility to compress files as **.zip**.

Name	Operating system	Description
 WinZip	 	
7-Zip	 	Open source, simple interface.
PeaZip	 	
IZArc		Accepts many compression formats.
 WinRAR		Well-known for the .RAR option, but it does not include as many formats as the tools listed above.
The Unarchiver		A manager for compressed files that is included in Apple operating system. Accepts many formats for de-compression, but only provides .zip files.

Sending files on-line

Nom	Icona	Descripció
pCloud Transfer		Up to 5GB-files may be sent. Free, no registration required. Easy to use, you just need to drag the file and include the recipient's e-mail. File encryption is also available.
WeTransfer		Up to 2GB-files may be sent. As in the tool listed above, you just need to include the recipient's e-mail and the sender's e-mail (they will send the sender an e-mail when the recipient has downloaded the files). Apart from the previously mentioned option, a link may be generated to decide how to share the files. The basic plan is enough for an occasional use, but a paid plan with better features is also available.
DropSend		This is a paid tool, but it includes a free plan where files may be shared within some limits. Files up to 4GB may be downloaded (max. 5 transfers per month).
Filemail		Files up to 30 GB may be sent using the free version, but they will only be available for download for a week.

Cloud storage

You may also use the tools described in the “[Cloud storage](#)” strategy and share the link with the recipient, so that he/she may download the file: Dropbox, Drive, Outlook...

8. Social bookmarks

8.1. Introduction

Social bookmarks make it possible to manage Internet content and classify it according to their usefulness and quality.



Social bookmarks are on-line tools that help locate, tag, store, retrieve and share Internet resources from any device.

Even though the function to synchronize favorite content and reading lists between several devices is already included in most browsers (e.g. Google Chrome, Mozilla Firefox, Microsoft Edge, Safari), social bookmarks provide additional features, such as sharing these markers and lists with other users and cooperating to maintain them. In this sense, social bookmarking of these on-line services makes it possible to sort and define resources in a collaborative manner, identifying them with key words.

Other functionalities that are available in most social bookmarks include the creation of user groups, internal messages, voting for shared resources or content syndication. Particularly, the content syndication functionality (RSS) makes social bookmarks a very suitable channel for web positioning, as including resources in a category and tagging them will distribute them instantaneously among the users who are subscribed to the corresponding category or tag.

Searching resources through social bookmarks usually yields results that are much more useful than those obtained when using traditional tools, such as search engines. This is mostly due to the fact that contents are not located and classified automatically by machines, but by human beings; the users themselves define whether shared resources are more or less useful and create a ranking by bookmarking the contents they find most useful.

8. Social bookmarks

8.2. Recommendations

Use social bookmarks to refine your Internet searches. Social bookmarks make it possible to perform Internet searches, as Internet search engines (e.g. Google) do. Nevertheless, the difference between them lies in the fact that social bookmarks offer resources according to those resources that were most often bookmarked or tagged by users, whereas search engines are based on quantitative criteria, such as the number of visits. For this reason, instead of using an Internet search engine by introducing some words in its search field and expecting it to find useful information in the vastness of the Internet, your search field may be significantly narrowed using social bookmarks. Besides, results will provide the most relevant information, but also the most updated information, as social bookmarks show both the newest lists added and those that are most popular (the ones that received more votes from users). Therefore, in order to easily find useful links (those that are recommended by a large number of users), you may choose a social bookmark and select the category or label that best suits the information you are trying to find.

Take the opinion of the of the community of users into account. The opinion of the community of users is very important in social bookmarking. For this reason, every time you perform a search it would be advisable to take a look at the community library related to this search, as there you will find lists created on the search term, the users that bookmarked more sites on the subjects and the user groups that were created on the subject. You may even join one of these groups, as long as they are public. You need to take into account that, for most social bookmarks, following individual users and seeing the links they bookmarked will be possible without applying for an authorization.

Install the browser extension. Many bookmarks include an option to download a browser extension, which will help manage the application in a faster, more efficient way.

Manage the privacy of the information you share. Lists or collections of favorite items that are created using social bookmarks may be shared with everybody by making them public, or else their visibility may be limited to several users by applying the corresponding privacy option.

Create notes or highlights. A very useful option in social bookmarking involves the generation and storage of notes, comments, floating notes or highlights while you read the text on the sites you visit and bookmark as favorites. These personalized text fragments will be added automatically to the user's link library and the user will be given the choice to make them public along with the web resources shared.




Create subject-related groups or join an existing group. Social bookmarks offer the opportunity to share, through subject-related groups, information with other users who share the same interests. In order to do this, new groups may be created that may be joined by other users (either whenever they want or once they receive permission to do so, depending on the restrictions the administrator user sets on the group) or else by joining groups that already exist, if you find their subject topic interesting.

Use RSS subscriptions. If you are interested in a given subject, you may find it useful to subscribe to a given category or tag using RSS. If you do so, you will be notified automatically every time a user bookmarks a resource with that tag.

8. Social bookmarking

8.3. Tools

The most popular social bookmarking tools are listed below:

Name	Icon	Description
<u>Diigo</u>		<p>This is one of the most adaptable social bookmarking tools. Apart from arranging and classifying favorite links, it also enables users to work with images. Besides, it offers the possibility to comment on bookmarked sites or to add floating notes and highlight fragments on a website. Free registration is required and an account must be created.</p> <p>More information on using Diigo may be found at: http://help.diigo.com/home</p>
<u>Pocket</u>		<p>The primary function of this social bookmarking tool is to store and classify all kind of contents using tags (websites, news, video files...), so that they may be viewed afterwards from any device. Free registration is required and an account must be created (alternatively, a Firefox account may be used, as Pocket was acquired by Mozilla in 2017).</p> <p>More information on how to use Pocket may be found at: https://help.getpocket.com/</p>
<u>List.ly</u>		<p><u>List.ly</u> is a tool to store, tag and share bookmarks through lists, which you may publish on your website.</p> <p>It also enables users to view the lists that were created and shared by other users.</p> <p>More information on how to use List.ly in its community may be found at: https://community.list.ly/categories</p>

9. Content syndication and subscriptions

9.1. Introduction

Content syndication makes it possible to obtain updated information on any websites you find interesting.



Content syndication, best known as RSS (Really Simple Syndication) is a technology that became widespread since 2005. It makes it possible to distribute contents from several websites that are frequently updated to those users who were previously subscribed to the feed.

This information is distributed automatically and for free. Distribution usually takes place through RSS aggregators/news readers (e.g. Feedly) which are software tools designed to read RSS content, and should be installed in the user's device. Reading RSS content is also possible using most e-mail management applications (e.g. Microsoft Outlook). Besides, some browsers also allow for reading RSS content without any further need to install any other software tool.



Therefore, the aim of content syndication is to provide easy access to updated information on some interesting websites. By simply subscribing to those feeds you will receive alerts immediately with the latest news and updates, which will be sent automatically to the RSS reader or to the Internet browser. This is especially useful when you are interested in information from many websites since it will be easy to know whether there were any updates without having to frequently visit them. You will just need to decide, after receiving the alert on your RSS feed, whether you wish to view all the new published content completely. By doing so, information from all interesting websites will be centralized in a single place.

9. Content syndication and subscriptions

9.2. Other types of digital content distribution

Subscription to YouTube video channels or to video channels from other internet portals (such as Vimeo, Dailymotion, etc.) makes it possible to easily follow the contents they publish. Users who are subscribed to these channels receive alerts or notifications whenever new content is published.

Nowadays, many video channels are available on the Internet, where content may be found on virtually any subject of interest. Besides, many educational institutions already have video channels through which they offer learning contents for free.

For example, UOC has six YouTube channels on different subjects and all of them are open to subscription.

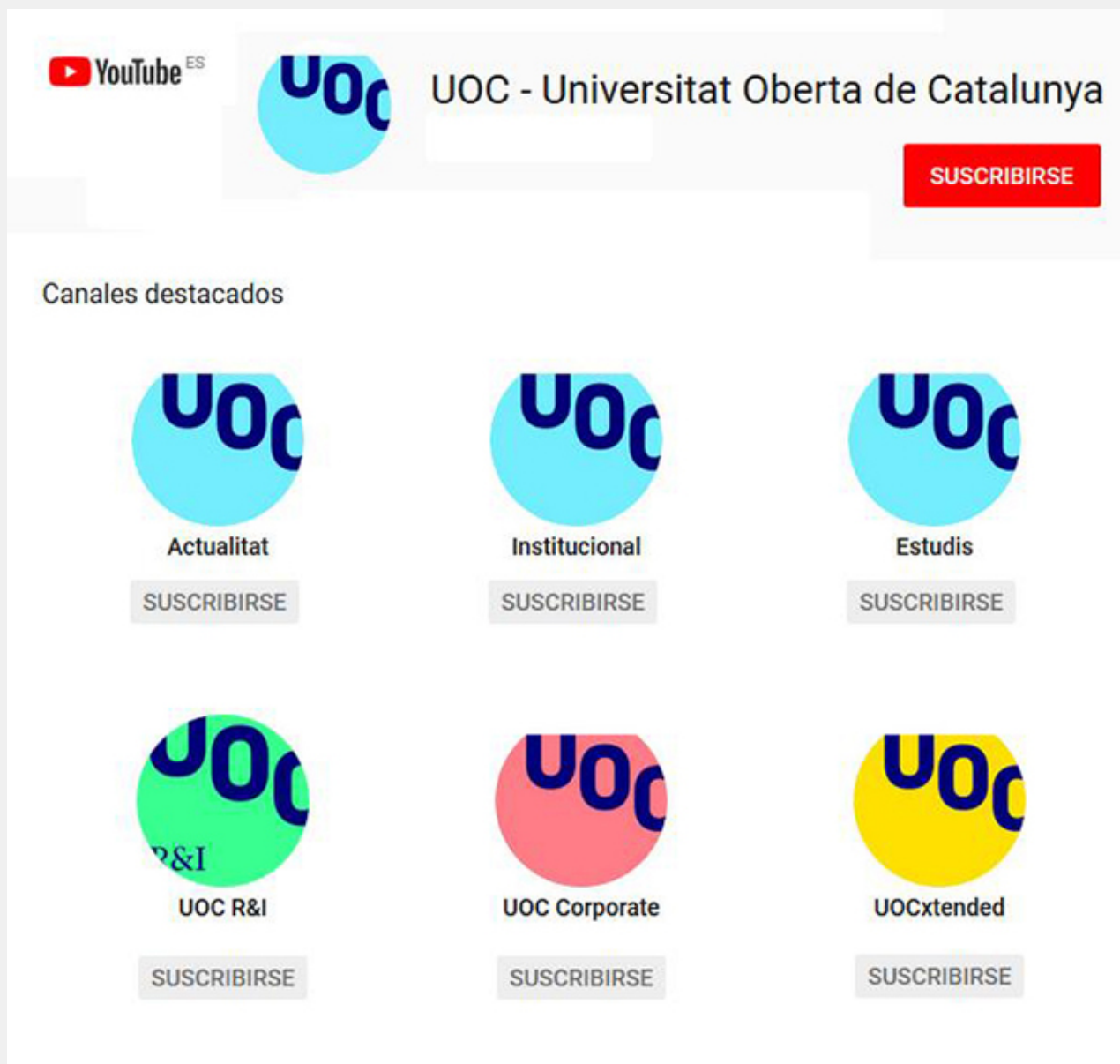


Figure 13. [YouTube channels by UOC](#)

Subscribing to a video channel is really easy: you just need to press the “Subscribe” button you will find on the page (or beside any of the videos in the channel). Of course, you will previously need a YouTube user account (or an account for another video portal). Once you are subscribed to a channel, you will see that the “Subscriptions” feed in the account (you may see it in the left margin in YouTube) will show all videos that are being published. Besides, users will receive automatic notifications on featured publications). If you want to receive an alert from the channel whenever a new publication appears (whether it is featured or not), you will need to configure the notifications settings in the account.

Frequently, after subscribing to a channel, several recommended channels appear on the screen, which are somewhat related to the channel to which the user just subscribed.

If, at one point, you decide to cancel your subscription to a channel, you should use a similar procedure to the one you used when subscribing. In this case, you will need to press the button “Subscribed”. A message will appear to confirm your cancellation.

Subscribing to a platform that provides electronic magazines and books grants access to a broad catalogue of digital content in text format. When it comes to the largest platforms (such as Kindle Unlimited, Nubico, Scribd), users frequently have to pay a monthly or annual fee for the subscription.

Figure 14 shows how subscription platforms for digital books in Spanish have grown by almost fifty percent in the year 2017.

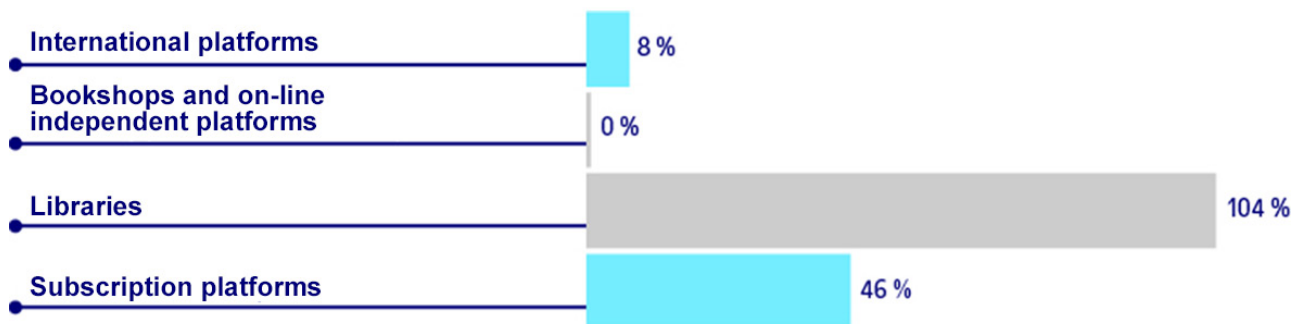


Figure 14. Global growth of the market for digital books in Spanish according to distribution channels and business models (value in Euros).

Source: “Informe anual del libro digital 2017” (Annual Report on Digital Books 2017”. <http://www.libranda.com>.

The **eBiblio** platform, an initiative by the Ministry of Education, Culture and Sports (MECD), also represents an important repository of electronic books. Its digital contents, which are obtained from the archives of many Spanish public libraries, may be borrowed for free.

This repository may be accessed through the following link:

<http://www.mecd.gob.es/cultura/areas/bibliotecas/mc/ebiblio/inicio.html>



9. Content syndication and subscription

9.3. Recommendations

Using the Thunderbird e-mail manager as an RSS feed source/reader. The e-mail management software tool Thunderbird is a free, open-source software tool that allows for following and Reading RSS content. We will now show you how to add a RSS source using this application. As an example, we will use “[INFORMÁTICA++](#)”, a blog on computer science moderated by teachers in the Computer Sciences, Multimedia and Telecommunications Degree at UOC.

As the first step to add a RSS source to Thunderbird, click on the “Edit” menu and choose the option “Account Settings”. Click on the icon “Account Actions” in the pop-up window, and choose “Add Feed Account”.

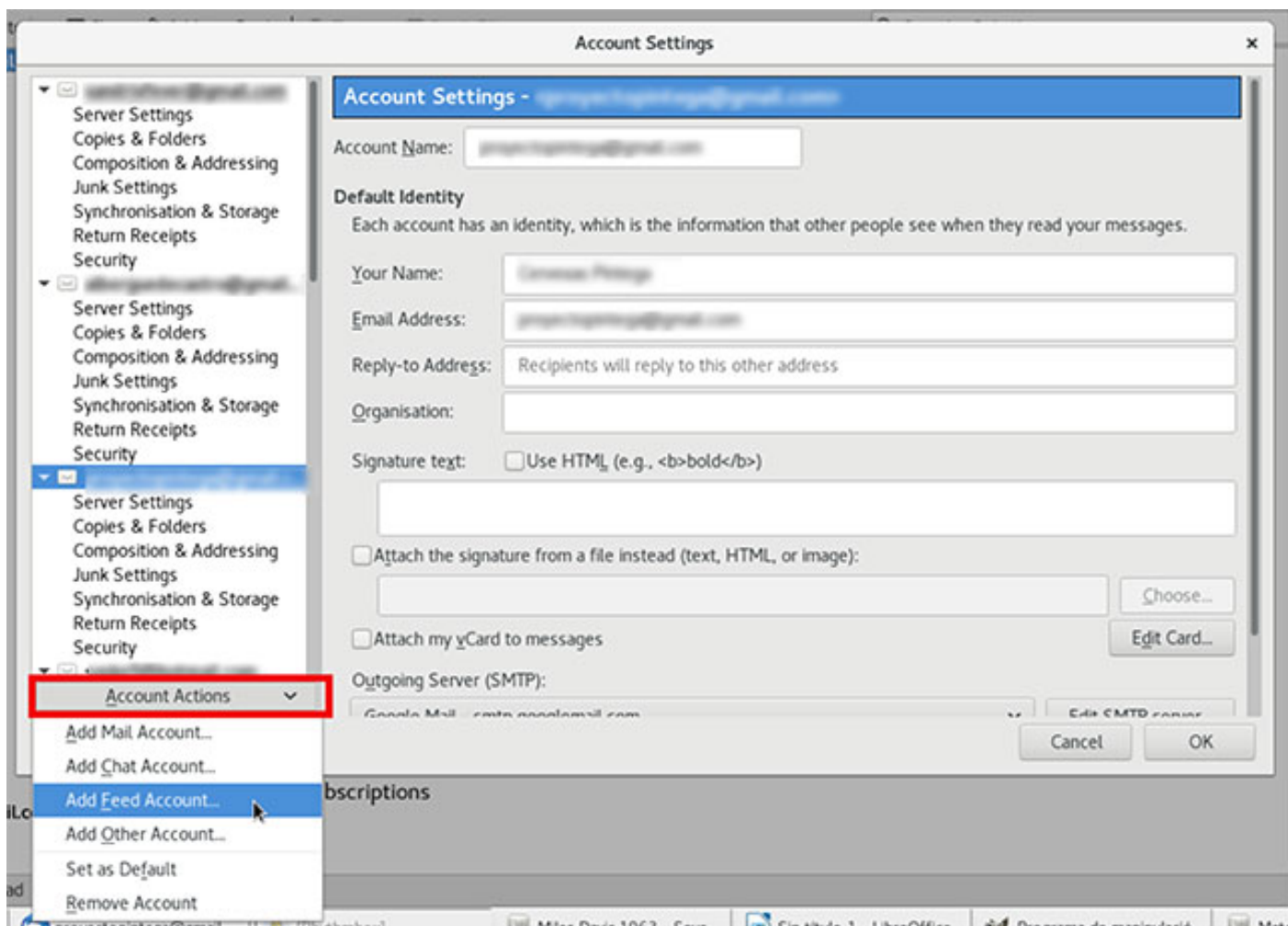


Figure 15. Configuring an RSS feed in Thunderbird

By doing so, we are creating a folder for our subscriptions. We may create several folders for different subjects, such as news, computer-related topics, cooking, etc. We will give the folder a name:

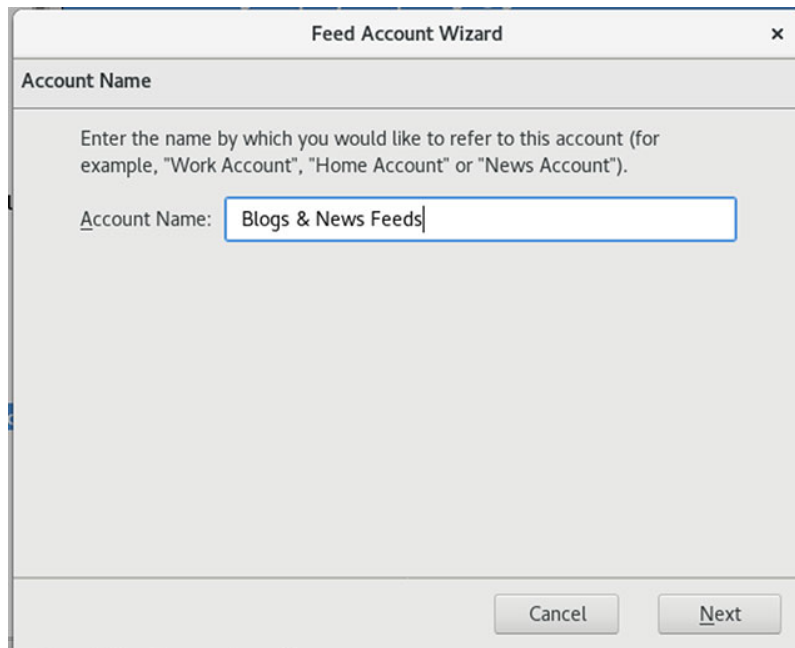


Figure 16. Creating a folder for subscriptions

From this new account we may add new subscriptions by clicking “Manage subscriptions”.

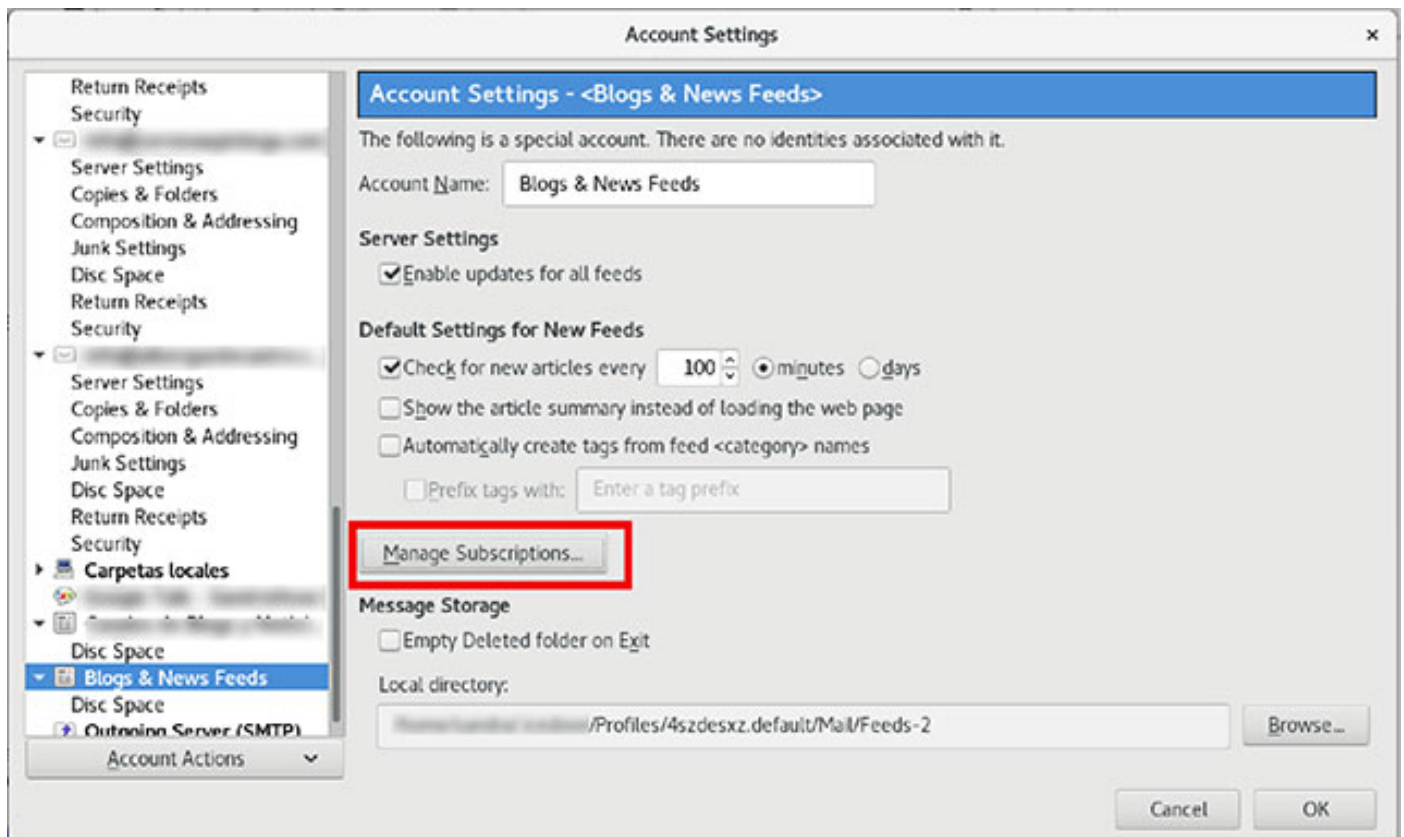


Figure 17. RSS feed options in Thunderbird

Now we need to provide the location of the RSS feed we want to add. In this case, we will provide the following address:
 «<http://informatica.blogs.uoc.edu/feed/>»

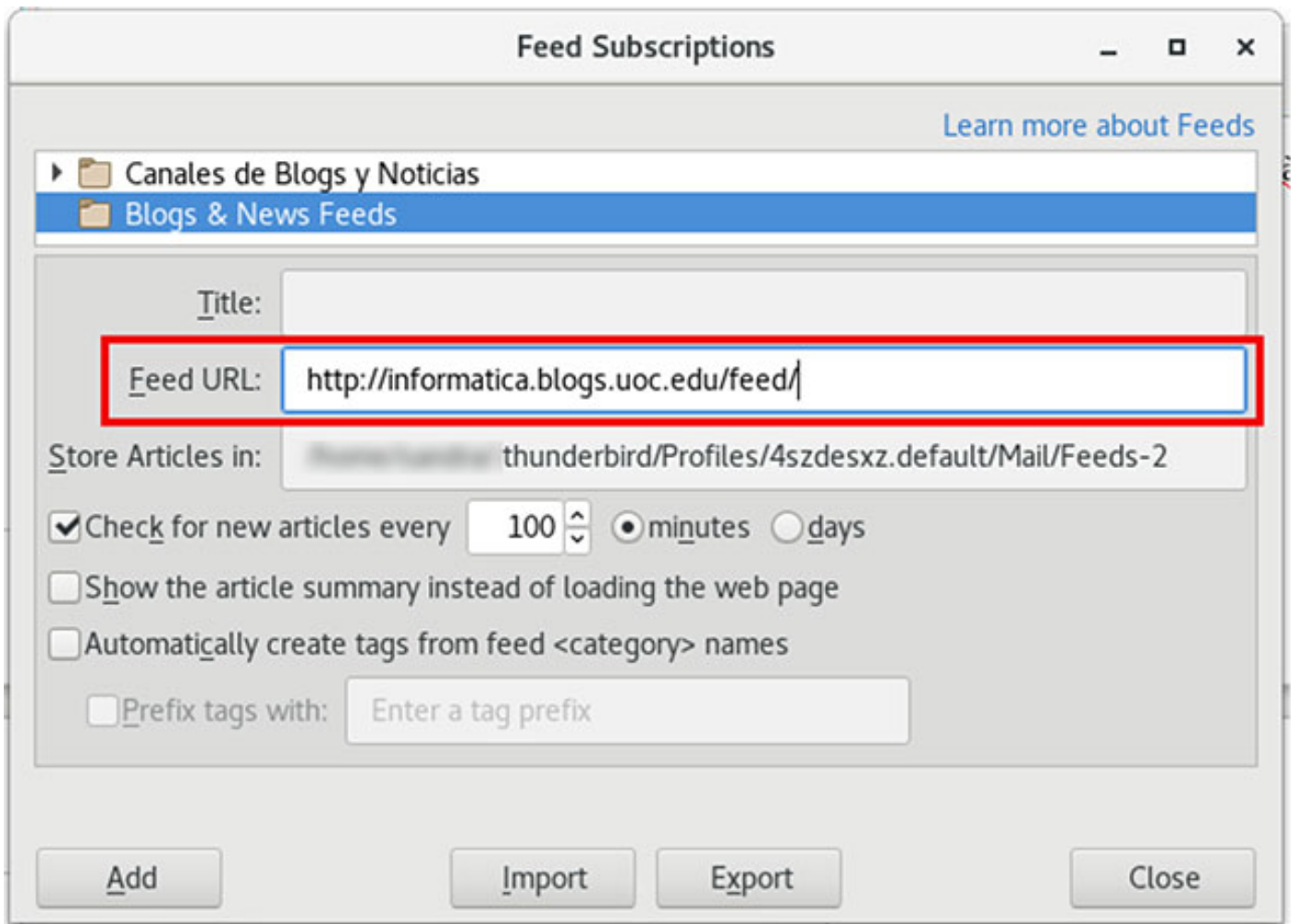


Figure 18. Location of the RSS feed

In the following step, we will be able to provide settings for several options in the source (name, delivery location, type of download, etc.).

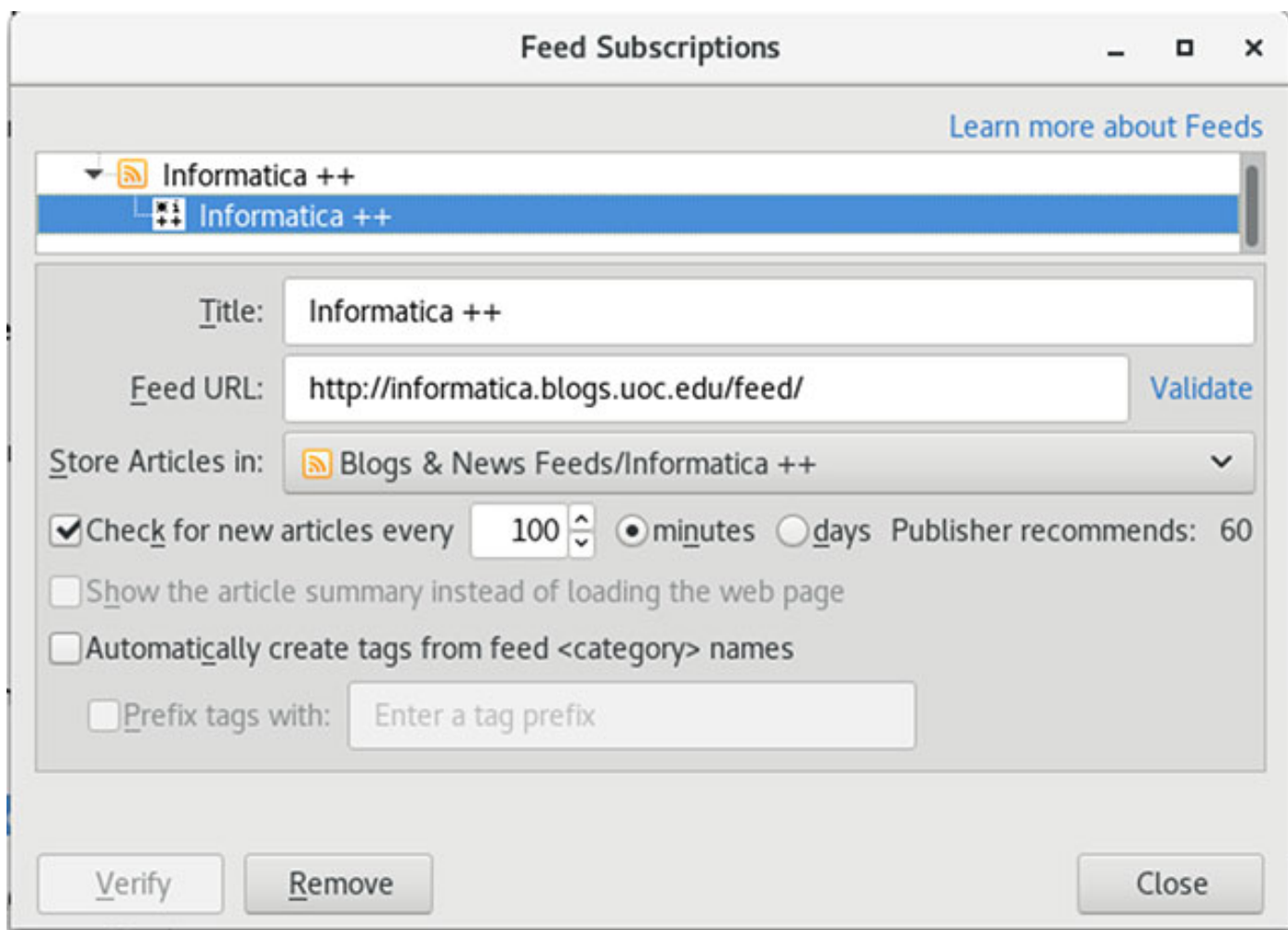


Figure 19. Provide settings for options in the source

Once the RSS feed has been added, we will start receiving update alerts from the website, and we will be able to download the content and read it comfortably from Thunderbird.

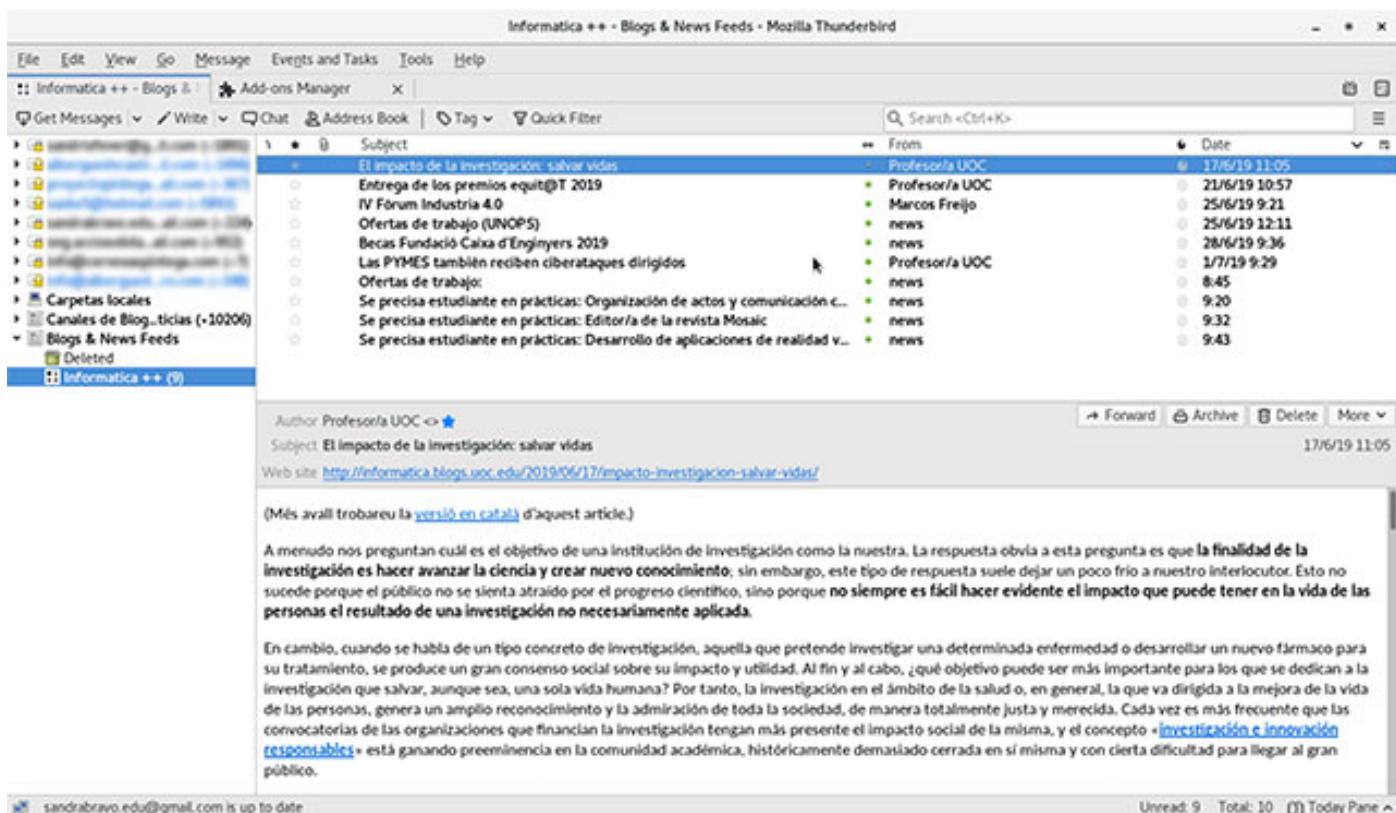


Figure 20. Alerts from the website

Use dynamic markers in Mozilla Firefox to add and read RSS sources. Unlike other browsers, Mozilla Firefox uses dynamic markers, a functionality that makes it possible to obtain the most recent updates from any websites you are subscribed to without having to visit them. Every sixty minutes, the browser will automatically check dynamic markers in order to obtain the latest updates from your favorite websites. In any case, they may be manually updated by right-clicking on a given dynamic marker and choosing the option “Update dynamic marker”.

Dynamic markers are stored by default in folders from the “Marker toolbox” (in the “Markers” menu). They may also be stored directly in the “Markers” menu in Firefox, as would any other marker. In order to see the latest updates on a website you are subscribed to, you will simply need to access the “Markers” menu and choose the desired dynamic marker.

We will now see how to add a dynamic marker in Firefox. The UOC “[INFORMÁTICA++](#)” blog will be used again as an example.

First of all, you will need to make sure that the site you wish to subscribe to has an RSS feed available. In case it does, as is the case for the “INFORMÁTICA++” blog, you will need to click on the “Subscribe to this page” option in the “Markers” menu.



Figure 21. Subscription to RSS channel of the “INFORMÁTICA++” blog

If the option is provided by the website, you will be allowed to choose between complete feeds, RSS for the comments or simply the beginning of RSS for the comments. Once you have chosen the desired option, you will need to indicate you wish to subscribe to that channel through “Dynamic markers”.



Figure 22. Subscription to an RSS channel using dynamic markers

Afterwards, you will need to choose a name for this dynamic marker and press the button “Subscribe”. By default, it will be stored in the “Firefox markers toolbar” in the “Markers” menu.

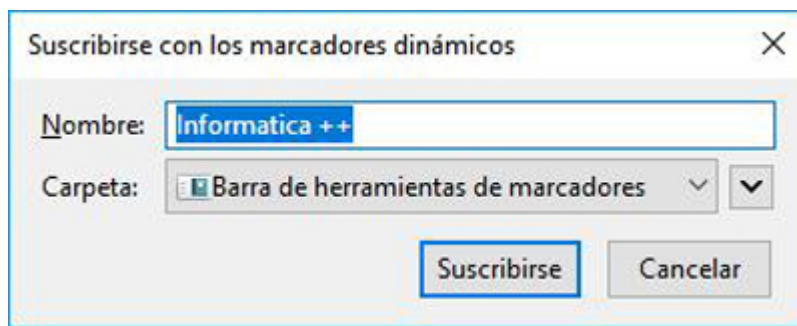


Figure 23. Choosing a name for a dynamic marker

The dynamic marker will be added to the browser and you will be able to access it through “Markers” > “Markers Toolbar” in order to find out about the most recent updates in that website. By clicking on the desired piece of news, you will have access to its page. If you choose “Open everything in tabs”, each piece of news will appear on an independent tab.

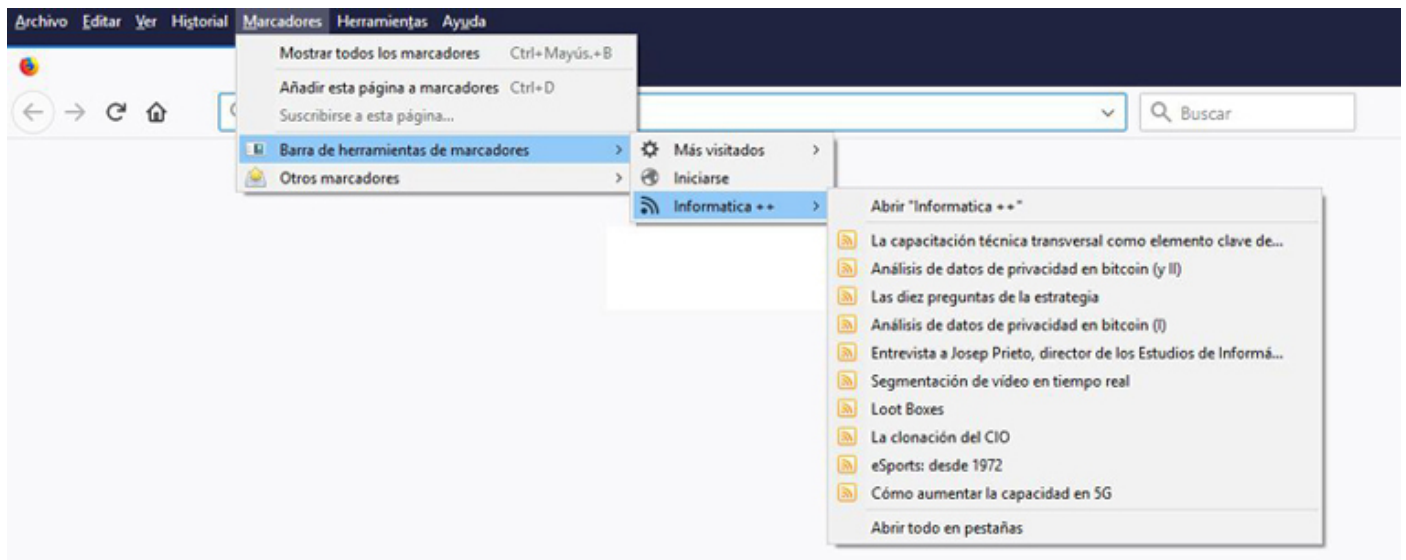


Figure 24. View of the “Markers” menu of the browser

Manage notifications from YouTube video channels using Google Chrome. YouTube offers an option to receive notifications from channels while using the Google Chrome browser. By activating this function, pop-up windows will appear to alert you on new contents in the channels you are subscribed to.

In order to do this, sign in to your YouTube account and click on “Configuration” > “Notifications”. Afterwards, click on the “Activate” button beside the Chrome icon in the “Desktop Notifications” section.

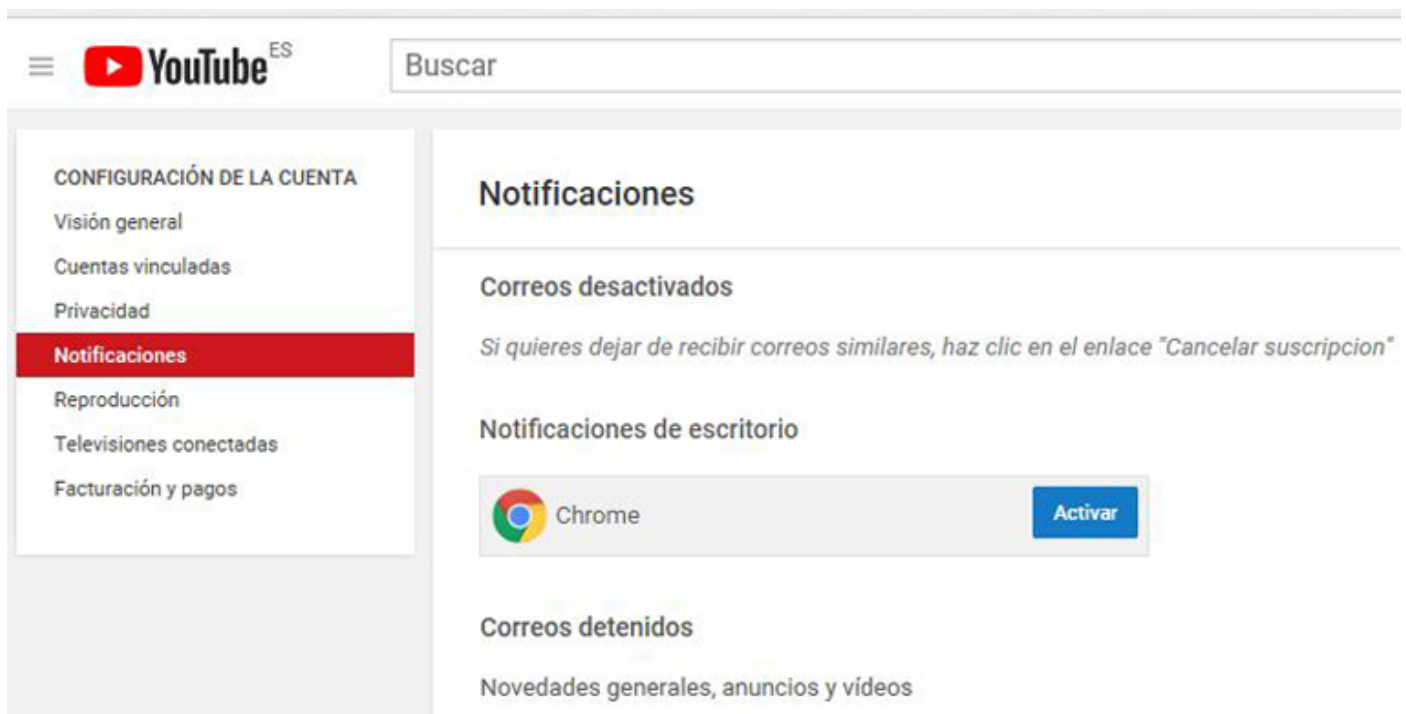


Figure 25. "Notification" configuration of a YouTube account

Check the playlist of a channel. Checking the playlist of a channel is a good option when you are not interested in all the videos published in that channel. Reproduction lists will enable you to keep on top of all published contents. Nevertheless, you need to make sure this option is available in the channel, as it is not available in all of them.

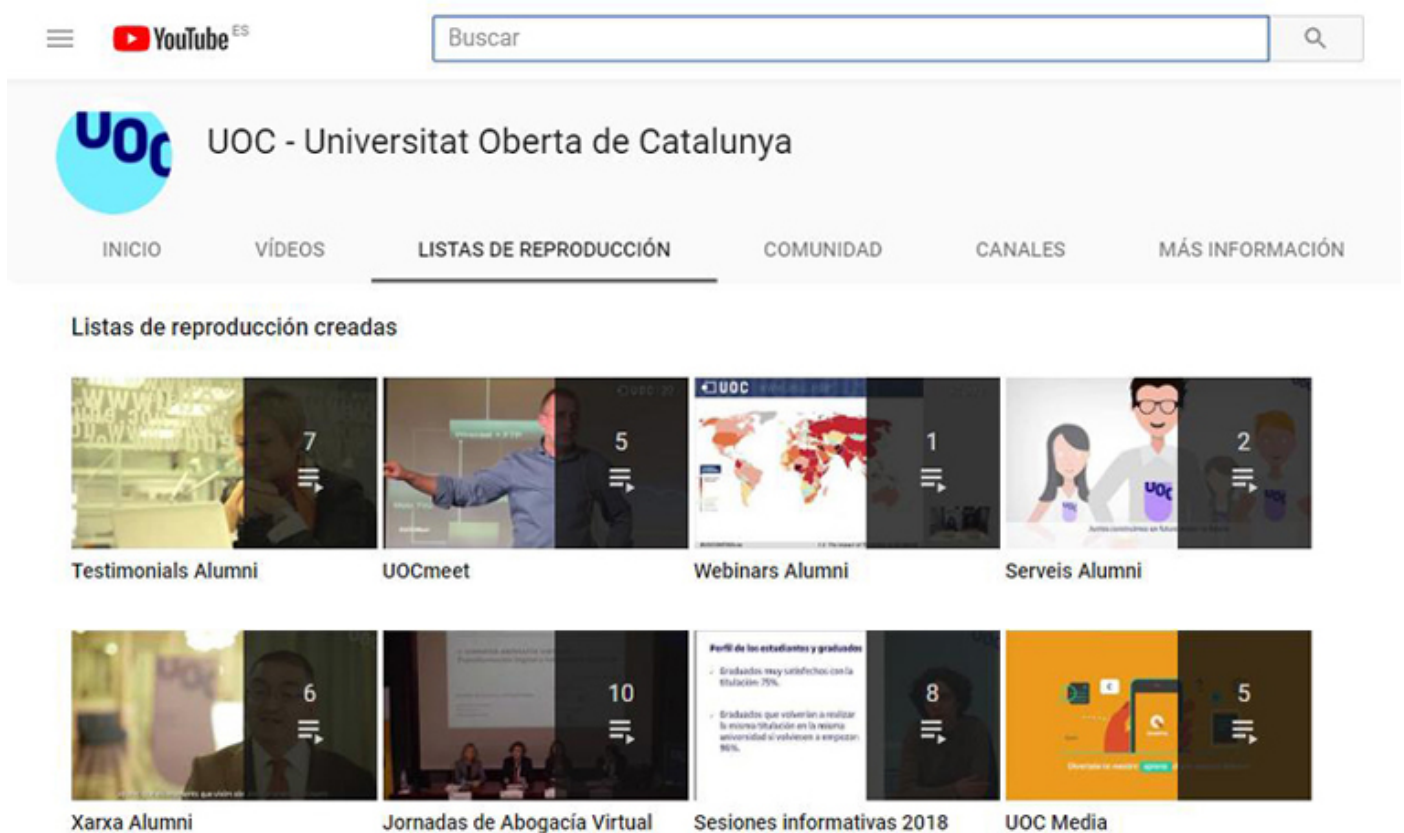


Figure 26. Reproduction list of the UOC YouTube channel

In most channels, the section for playlists may be opened by simply adding “/playlists” to the channel URL.





Figure 25. URL off the playlist for the UOC YouTube channel

9. Content syndication and subscriptions

9.4. Tools

Two of the most popular RSS aggregators/readers to search for updated content on a website are shown below.

Name	Icon	Description
<u>Feedly</u>	 The logo for Feedly, featuring a green diamond shape with white lines inside, followed by the word "feedly" in a lowercase, green, sans-serif font.	<p>After Google Reader shut down in 2013, Feedly has been the RSS aggregator/reader trusted by most users. This is due to its simplicity and flexibility, in particular after the recent inclusion of a RSS feed organizer, both in its free version and in its premium version. This is a web-based application, so it must be used through an Internet browser. In mobile devices, the RSS reader is accessed through an application that is available for iOS, Android and Windows platforms.</p> <p>More information on how to use Feedly may be found at: https://blog.feedly.com/category/tutorials/</p>
<u>QuiteRSS</u>	 The logo for QuiteRSS, featuring a green square with a white RSS symbol and a yellow star, followed by the text "QuiteRSS" in a bold, black, sans-serif font and "free news reader" in a smaller, black, sans-serif font below it.	<p>Unlike Feedly, QuiteRSS is a software-based RSS reader. This is an open source application that is free for Windows, Linux and MacOS. QuiteRSS is very simple to use and offers the main basic functions for users who are not familiar with such applications. Nevertheless, it also offers several advanced options for more experienced users.</p> <p>More information on how to use QuiteRSS may be found at: https://quiterss.org/en/forums/questions</p>

10. Content curation

10.1. Introduction

Content curation involves locating, filtering and gathering information in order to share contents that are valuable, important and useful.



Source: Designed by macrovector / [Freepik](#)

Content curation arises from the need by companies and marketing professionals to locate, filter and gather valuable, interesting information on a given subject, which is usually related to the professional role they develop. Once the information is obtained, their goal is to distribute it in their communication channels and social networks in order to become established among their target audience and clients.

The goal is to segregate digital contents among the large volume of available information in order to locate what interests us most in a faster way. We need to be able to choose, arrange and store information, thus optimizing our Internet surfing experience.

The definition of content curation in Sergio Ortega's blog is well-rounded and clear:

“Content curation is regarded as the capacity of a system or of a human being to find, arrange, filter and add value, relevance, significance... in a word, to make content useful; this content is based on a given subject and is obtained from several sources (digital media, communication tools, social networks...)”

Sergio Ortega. “Simplicidad, UX y curación de contenido” (“Simplicity, UX and content curation”). Available at: <http://www.sortega.com/blog/simplicidad-ux-y-curacion-de-contenido/>

According to the 4S method by [Javier Guallar and Javier Leiva \(*\)](#), the process of content curation is divided into four phases:

- 1. Search:** searching the information we are interested in among the large volume of messed up contents we find when surfing the Internet. Several key words are to be established for the search and the places in which to search for the contents are to be defined.
- 2. Select:** this is the most important step in the process: choosing the relevant information among the results obtained in the search. Several filters are established in order to focus on those contents that are considered more valuable and interesting.
- 3. Sense making:** reading, analyzing, arranging and adapting content according to the curator's criteria. Information is characterized and drafted and several applications are available to help us in this process (see “Tools” section). A blog may also be used for that purpose.
- 4. Share:** distributing and sharing the chosen contents with our target audience using the channels that are considered most appropriate.

Content curation is not restricted to marketing professionals, documentalists, journalists or communicators: everybody may curate contents. Any user who cares about selecting interesting content to share with his/her online community is doing a content curation task. It is a matter of bringing sense to our own contents or to the contents that are shared by others and in doing so improving communication between users.

If we want to use the strategy mentioned below as users, the first three steps may allow us to quickly read on the subjects we find more interesting, in an efficient and faster manner, which will help us make the most of the surfing time that is available to us. This is a strategy to relieve **infoxication**, which was defined in the introduction of this document, telling “useless” contents apart from those that are really useful to us.

This strategy is closely linked to [social bookmarks](#) and to [content syndications](#) and subscriptions, which make it possible to select links and “subscribe” to the channels we choose in order to receive publications and contents in a given location without having to surf several websites searching for updates. Both strategies are linked to content curation, because they also include sharing results with other users. That is to say, they allow us to select information, label it and share our selection with the digital community or with a restricted group of users.

The last stage, sharing, can usually be found in professionals. After reading and redefining the relevant information that was found, information is shared mainly in social networks, to keep the target audience informed about the latest news, trends or changes in a given sector (corporate, cultural, journalistic...).

In his blog, [Juan C. Mejia](#) lists the different ways to perform content curation:

- **Aggregation:** gathering all the information in the same location. For instance, in an on-line newspaper such as Paper.li.
- **Distillation:** only the most relevant ideas or concepts are shared, instead of sharing the full content. When subscribing to a blog (e.g. using our e-mail), some authors allow for the reception of the full post; others only allow for the reception of a headline, thus making you access their page if the headline was interesting to you and you want to continue reading.
- **Uploading:** sharing and defining trends in small information capsules that are shared online (as happens on Twitter, for example).
- **Mixture:** mixing previously chosen content by creating a new perspective or approach. You need to read, redefine and provide a new idea through a personal blog, or else by writing on social networks.
- **Chronology:** gathering the information on a timeline with a view to showing how a given subject has evolved. For instance, storify allows us to organize the information chosen along a timeline.

Exemple content curation on Pinterest: <https://onlinelibrary.wiley.com/doi/full/10.1002/meet.14504901189>

References to articles:

- <https://www.viget.com/articles/dont-simplify-the-ux-curate/>
- <http://www.curata.com/blog/content-curation-the-art-of-a-curated-post-infographic/>
- https://rossdawson.com/blog/5_ways_to_add_v/
- <https://www.masternewmedia.org/what-makes-a-great-curator-great/>
- <http://www.contentcurationmarketing.com/content-curation-copyright-ethics-fair-use/>

10. Content curation

10.2. Recommendations

Make a good selection. For this strategy to be effective and alleviate the effects of an intoxication due to an excess of content, it is important to use critical thinking skills when searching and selecting. Distinguishing content that is really useful for the community (if sharing content is our goal) from content that is not will determine whether content curation was effective.


Keeping a critical thinking approach on content selection helps reduce the amount of information we receive, and thus optimizes the little time we have to read and analyze digital contents that are really interesting for us.

Updated selection. You need to forget about “just in case I need it later”; otherwise, you will not reduce the amount of information you receive. Before choosing an information source, you need to analyze content extension, whether it is up to date, when it was published, who created it and whether it really belongs to the subjects of interest.

10. Content curation

10.3. Tools

Several applications may help us gather the information we are interested in and allow us to select (stages 1 and 2: searching and selecting), beside the tools defined in the “[Social bookmarking](#)” and “[Content syndication and subscriptions](#)” strategies in this document. Some of these applications are listed below:

Name	Icon	Description
Pinterest		It helps us search contents (ideas, in a very visual format), choose and arrange them in personal dashboards created by the users.

In order to draft the chosen contents (stage 3: Sense Making):

Name	Icon	Description
Paper.li		This is a tool to create a digital “newspaper” that is customized according to the user’s interests.
Flipboard		This application allows for the creation of a subject channel where new publications that are interesting for the user are added daily.
LinkedIn Pulse		A “digital newspaper” for LinkedIn.
Scoop.it		Similar to Paper.li or LinkedIn Pulse, it allows to share contents, filter them and store them in order to read them later.
Storify		It makes it possible to create a timeline from the user’s own publications or from other people’s publications in websites and social networks.

Curating and sharing: All-in-one:

Name	Icon	Description
Buffer		It is a social networking manager. It allows you to schedule entries (post, tweets) in different social networks. The paid version allows you to include up to 15 RSS feeds.

11. Automation in information management

11.1. Introduction

Several digital tasks are monotonous and repetitive. By making them automatic, we save time and become more effective in managing our tasks.



Source: Designed by macrovector / Freepik

Having reached this point, we have already analyzed several guidelines for the organization and management of digital contents. It is now time to introduce a last strategy: how to **make the processes for content organization automatic** in order to save time and be more productive in the tasks we perform more often and repeatedly.

As stated in the slogan for the application we will analyze below, this is “a world that works for you”, where many actions that are performed repetitively and manually may be automated.

For example: creating a backup of your pictures, copying files from Google Drive to Dropbox, or making sure that a copy of every picture you take or upload to Instagram is stored in Google Photos as well, automatically storing the links to your favorite Tweets in Pocket... Countless options may be programmed to save time.

The top application for such processes is IFTTT (If This, Then That). It is easy and intuitive to use.

The application works with **applets**. You need to state which action is the trigger (cause) and which later action must take place (effect). If “this” happens, then do “that”.

Many applets have already been defined and shared by other users in order to make the initial automation process easier. They may be a source of inspiration and ideas.

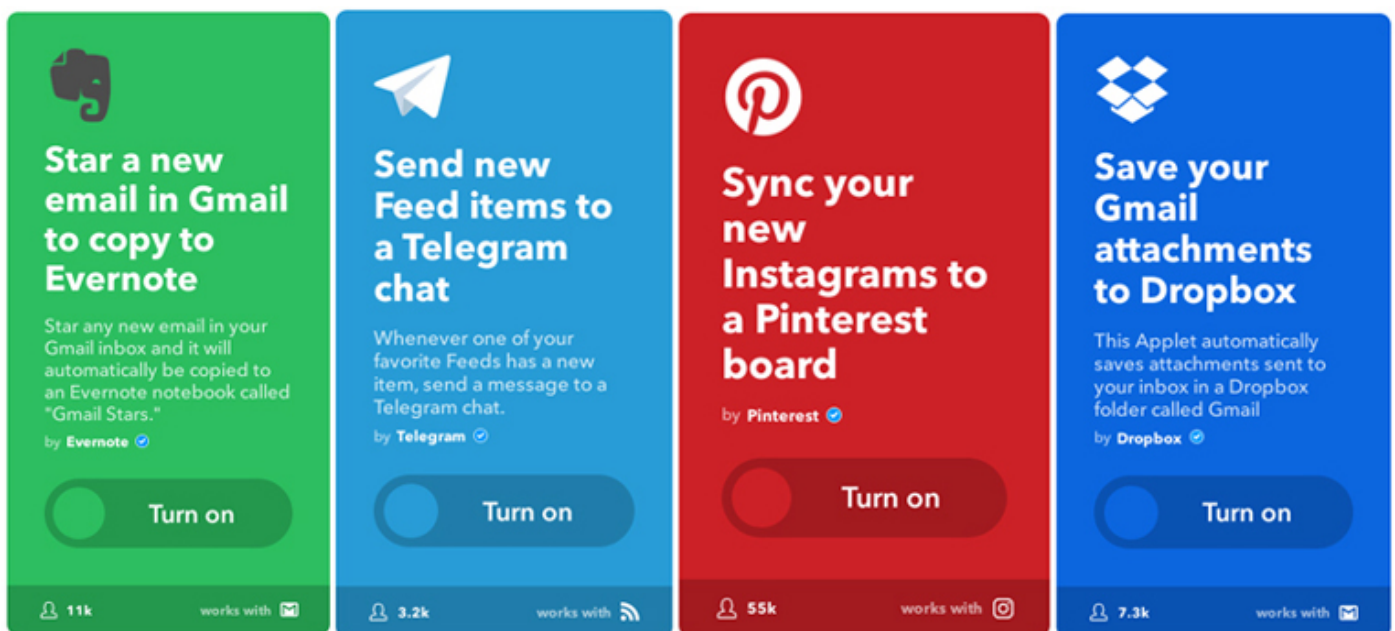


Figure 27. Applets defined by other users. They are ready to use.

To create an applet, you will first need to activate the channels. **Channels** are applications or services that will be used by IFTTT to perform automatic actions for us. In order to activate the channels, you need to introduce a username and password for the services and accept its terms and conditions.

Most channels are web applications, but some others control several devices that are connected to the Internet, such as the WeMo switches, the connected lightbulbs Philips Hue, car sensors “Automatic” and Home Connect in household appliances by Bosch and Siemens.

The application offers more than six hundred channels available to create applets. Among others, we may find Facebook, Evernote, Instagram, Google Calendar, Pocket...

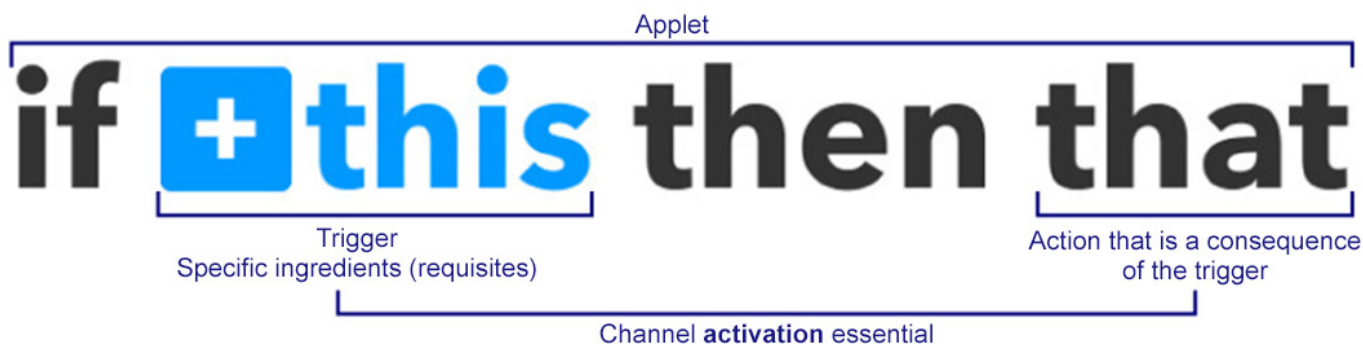


Figure 28. Overview of an applet definition

In order for the applet to become active, **triggers** must be defined. The action is executed either by user behaviors or service behaviors. General triggers may be defined, such as “when I upload a picture to Instagram (all pictures uploaded to Instagram)” or “when I send an e-mail (to any user)”.

We can also add “**ingredients**” to narrow down the requirements for the trigger to initiate the action: “when I upload a picture to Instagram tagged #pictureoftheday” or “when I send an e-mail to a given e-mail address”.

Process for creating an applet

Any new item This Trigger fires every time any new item is added to Pocket.	New item tagged This Trigger fires every time you tag an item with a specific tag in Pocket.	New favorite item This Trigger fires every time you favorite an item in Pocket.	New item archived This Trigger fires every time an item is archived in Pocket.
Share an update This Action will share an update on your LinkedIn profile.	Share a link This Action will share a link on your LinkedIn profile.		

- Adding a new item
- Adding an item with a specific tag
- New favorite item
- New item archived

And, as the subsequent **action**, the LinkedIn channel shows the following options:

- Share an update in your profile

- Share a link in your profile

One of the final **applets** could be the following:

When I add a favorite item in Pocket, the link is shared in my LinkedIn profile.

11. Automation in information management

11.2. Recommendations

Make sure that applets work properly. When creating a new applet, it is important to check that it works properly and that no mistakes were made. The application allows for checking that everything is correct.


You need to take into account that the application takes care of many actions that would usually be done by the user. This is enough to double-check that actions are those that were defined by the user and work according to what has been stated.

If there is an applet you do not use, remove it or turn it off. IFTTT gives you the option to manage applets from the user's profile and temporarily turn off those applets you are not going to use or want to keep in stand-by for some time. Applets that no longer work, or are useless, should better be removed permanently.



Security during access to IFTTT. You need to take into account that the application stores personal information and information on how to access any linked accounts (active channels). It is essential to perform the activation process in places and devices that are safe, in order to keep personal data private.

11. Automation in information management

11.3. Tools

Name	Icon	Description
<u>IFTTT</u>		<p>This is the most powerful application for this strategy. It is available in English only. Free.</p> <p>Help service for the application (in English): https://help.ifttt.com/hc/en-us</p> <p>Tutorials</p> <ul style="list-style-type: none">• “What IFTTT is: applets, benefits and guidelines for use”• “The Ultimate IFTTT Guide”

Other alternative tools are also available to make repetitive processes automatic.

Name	Icon	Description
<u>Zapier</u>		<p>It currently contains nearly two hundred and fifty compatible web services, such as Evernote, Facebook, Twitter, Google Calendar, Trello, Gmail, Dropbox, Paypal, MailChimp. As in IFTTT, you may combine all of them in order to make some actions automatic. By default, Zapier is free of charge, but you will need a paid account if you want to perform more than one hundred tasks per month and create more than five types of tasks.</p>
<u>Apiant</u>		<p>This is a service tailored to professionals. It allows for the automation of actions, such as generating an invoice from a new order. It includes popular services such as Evernote, Twitter, Gmail, as do other similar applications, but we may also find services with a professional approach, such as Salesforce, LMS, CRM... in the premium option.</p> <p>No free accounts are available, but a 30-day trial period is available.</p>

(*) Content available online only.