

3.3 Libraries of multimedia resources. Video repositories

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3.3.1 Libraries of multimedia resources

A multimedia library is a repository of multimedia files organised based on specific criteria. Regarding educational content creation, using multimedia libraries is a compulsory step in generating relevant and visually-appealing learning materials (Elloumi et al., 2019).

On a small scale, organising multimedia files by type, source, theme, or any other relevant criteria ensures easy file management. However, suppose the user creates a new library for each project without considering the possibility of reusing already available resources. In that case, the user will have multiple libraries with overlaps and a high number of duplicates at a certain point. The main issues in this scenario relate to high storage requirements, the inability to capitalize on multimedia resources and difficulties in generating new content in a time-efficient manner (as the user spends too much time searching for resources).

Studies on creating digital repositories and their management reveal that another significant concern is the possibility of searching and quickly identifying a particular file in the repository (Kubik, Kwiecień, 2020). Furthermore, on the back of the increasing size of multimedia repositories, there are real difficulties associated with the retrieval of irrelevant search results for certain categories (Gaona-García et al., 2018). The solution to these issues is creating an IT architecture that enables accessibility and relevant search results for the capitalization of multimedia libraries.

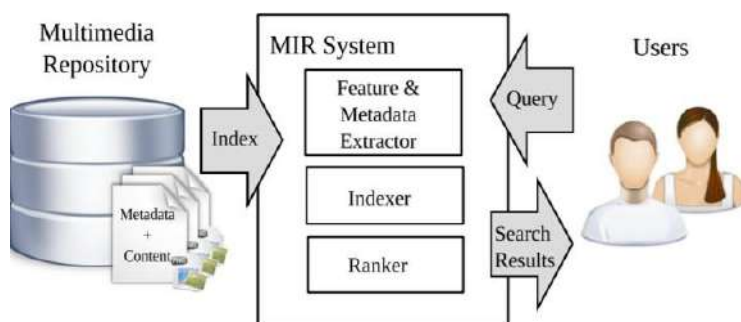


Figure 3.8 The architecture of a traditional multimedia information retrieval (MIR) system

An exciting approach to multimedia repositories comes from (Bracamonte et al., 2018), suggesting that the Internet is a massive multimedia repository. However, in the immense variety of resources available

online, multimedia files can be, at times, challenging to identify and retrieve as per specific requirements. Figure 3.8 represents the architecture of a traditional multimedia information retrieval (MIR) system.

Finally, a wide variety of software solutions enhance the creation and management of multimedia libraries. For example, in the past decade, cloud-based solutions emerged to address both storage and pricing concerns.

Further reading

- [16 multimedia learning tools for the classroom](#)
- Multimedia online libraries: <https://ro.pinterest.com/> <https://www.pngwing.com/>
<https://www.dreamstime.com/>
- [Staff competence and training for the digital industry](#)
- [The framework catalogue of digital competences](#)

3.3.2 Video repositories: YouTube and Vimeo

By 2022, online videos will account for approximately 82% of consumer internet traffic. Moreover, a 2021 Wizowl report shows that 96% of internet users watched at least one explanatory video to enhance their knowledge of products/services. As per the same report, the average time spent watching videos online is 18 hours per week, representing an increase of 7.5 hours per week over three years.

Among the multimedia repositories available online, YouTube and Vimeo are the most renowned platforms, with YouTube being the market leader. The significant benefits of using online multimedia repositories are accessibility, technical support (either via experts or via tutorials and informative materials), usability and easy access to a large audience⁶².

YouTube

Launched in 2005 by Steve Chen, Chad Hurley, and Jawed Karim, YouTube is the most renowned video-sharing platform and the second most visited website worldwide⁶³. YouTube provides a wide array of video content, offering the possibility to monetize content uploaded on the platform⁶⁴.

YouTube can be regarded as a video repository, as it allows users to upload an unlimited number of videos.

⁶² <https://dataoneorg.github.io/Education/bestpractices/plan-for-effective.html>

⁶³ https://en.wikipedia.org/wiki/List_of_most_visited_websites

⁶⁴ https://www.youtube.com/intl/ALL_ro/howyoutubeworks/product-features/monetization/

Table 3.4 Pros and cons of using YouTube

Pros	Cons
Free video repository – unlimited cloud storage for video files	Basic embedding options
Market leader with 1.9 billion users	Impossibility to remove advertisements from the videos, as they play automatically
Possibility to maintain certain videos as private, with an option of removing the video files from the public	A recommendation of other videos accompanies every video
Accessible video embedding via customized iframe codes	Requirement for a third-party service for download
The most significant online audience for content sharing and visibility	Potential copyright issues

Further reading

- [How to upload a video on YouTube](#) [View and manage videos on YouTube](#)

Vimeo

Founded in 2004 by Jake Lodwick and Zach Klein, Vimeo is a video hosting/collaboration platform aimed at professionals. Vimeo provides video-sharing services with content filtered by humans (not based on machine learning, as is the case of YouTube). It is generally preferred by creative professionals, videos with the highest popularity being original short films and animations, music videos and videos with extreme sports or nature.

As per Figure 3.5, Vimeo offers limited access under the free subscription plan but provides a wide array of services at affordable pricing plans. However, the audience is considerably narrower than on YouTube; hence marketing and self-promoting possibilities are restricted in some instances.

Table 3.5 Pros and cons of Vimeo

Pros	Cons
<p>There are no advertisements inserted in the videos, and recommendations can be removed</p> <p>Video embeds are customizable</p> <p>Option to create video content for professional social media</p> <p>Possibility to advertise creative services on the platform</p> <p>Enables video downloads</p> <p>Paid solution at affordable pricing – the minimum fee is \$7/ month.</p> <p>Designed for professional use</p>	<p>Free accounts have limited upload limits</p> <p>The audience is limited (as compared to YouTube)</p>

Further reading

[Managing and organizing videos on Vimeo](#)

Figure 3.6 provides a comparative analysis of the technical parameters of the YouTube and Vimeo platforms. The key strengths of YouTube are the high length of the videos (up to 12 hours) and the unlimited file storage; at the same time, Vimeo offers the possibility of uploading larger files (256 GB as compared to 128 GB for YouTube), but only for paid subscriptions.

Table 3.6 Comparative analysis of YouTube and Vimeo platforms

Parameter	YouTube	Vimeo
Minimum dimension	240p (426 x 240)	240p (426 x 240).
Maximum dimension	4K (3840 x 2160)	8K (8192 x 4320).
Aspect ratio	16:9 (automatically adds black frame for 4:3 videos)	16:9 (automatically adds black frame for 4:3 videos).
Maximum file size	128 GB	500 MB for free users (up to 256 GB for pro users).
Maximum video length	12 hours	restricted by file size
Total file storage	Unlimited	500 MB/week for free users (20 GB/week for pro users).
Accepted video formats	MOV, MPEG4, MP4, AVI, WMV, MPEGPS, FLV, 3GPP, and WebM	MOV, MPEG4, MP4, AVI, WMV, FLV, MKV, 3GPP

3.3.3 Alternative repositories – a comparative overview

Although YouTube and Vimeo are the leading solutions for video content creation and management, the

market for video solutions has expanded in recent years. Table 3.7 presents a few solutions representing valuable alternatives to YouTube and Vimeo.

Table 3.7 Alternative online video repositories

S. no.	Solution name	Key Features	Category
1.	Facebook Watch	unlimited video storage space preferred by users due to the high usage of the Facebook platform lower video quality (as compared to other solutions)	The social media video repository
2.	Wibbitz	a platform for online video creation access to customizable video templates editing tools in-house expert support access to an extensive repository of licensed photo, video and audio files paid solution	B2B solutions
3.	StoryXpress	screen and webcam recording editing tools unlimited ad-free hosting video analytics team libraries paid solution	B2B solutions
4.	Brightcove	content management system advanced marketing automation management of complex video repository paid solution	B2B solutions
5.	Wistia	video hosting services integration of marketing tools enables insertion of text, images or HTML in videos option to add social media sharing buttons	B2B solution
6.	Dailymotion	similar to YouTube (video streaming solution) higher flexibility in copyright policies free solution	Solutions for the general public
7.	Behance	enables various types of creative work, including design, branding, illustration and animation primarily addressed to professionals in video content creation	Solutions for the general public

3.3.4 References and further readings

- [1] Bracamonte, T., Bustos, B., Poblete, B., & Schreck, T. (2018). Extracting semantic knowledge from web context for multimedia IR: a taxonomy, survey and challenges. *Multimedia tools and applications*, 77(11), 13853-13889

- [2] Elloumi, S., Alja'Am, J. M. & Zakraoui, J. (2019). Building multimedia repository for composing images perspective. SN applied sciences, 1 (9). doi:10.1007/s42452-019-1123-y
- [3] Gaona-García, P., Montenegro-Marin, C. E., Gaona-García, E., Gómez-Acosta, A. & Hassan-Montero, Y. (2018). Issues of Visual Search Methods in Digital Repositories. International Journal of Interactive Multimedia and Artificial Intelligence, 5 (3), s. 90. doi:10.9781/ijimai.2018.10.00
- [4] Kleinberger, T., Schrepfer, L., Holzinger, A., & Müller, P. (2001). A multimedia repository for online educational content. In EdMedia+ Innovate Learning (pp. 975-980). Association for the Advancement of Computing in Education (AACE)
- [5] Kubik, T. & Kwiecień, A. (2020). Resolving Dilemmas Arising during Design and Implementation of Digital Repository of Heterogenic Scientific Resources. Applied sciences, 11 (1), s. 215. doi:10.3390/app11010215
- [6] *** What's New in Publishing, "Over 82% of internet traffic will be online videos by 2022: How publishers can scale their content production", 2020, retrieved from: <https://whatsnewinpublishing.com/over-82-of-internet-traffic-will-be-online-videos-by-2022-how-publishers-can-scale-their-content-production/>
- [7] *** Wizowl, "The 10 Best YouTube Alternatives for 2021", 2021, retrieved from:
- [8] <https://www.wyzowl.com/youtube-alternatives/>
- [9] *** StoryXpress, "Top 5 Vimeo Alternatives", 2021 retrieved from: <https://storyxpress.co/blog/top-5-vimeo-alternatives/>
- [10]*** Kinsta, "10 Best Video Hosting Solutions to Consider in 2021 (Free vs Paid)", 2021, retrieved from:
- [11]<https://kinsta.com/blog/video-hosting/>
- [12]*** YouTube official website: <https://www.youtube.com/>
- [13]*** Vimeo official website: <https://vimeo.com/>