

Les travaux personnels du Lycée Ermesinde Mersch



The digitalisation of media

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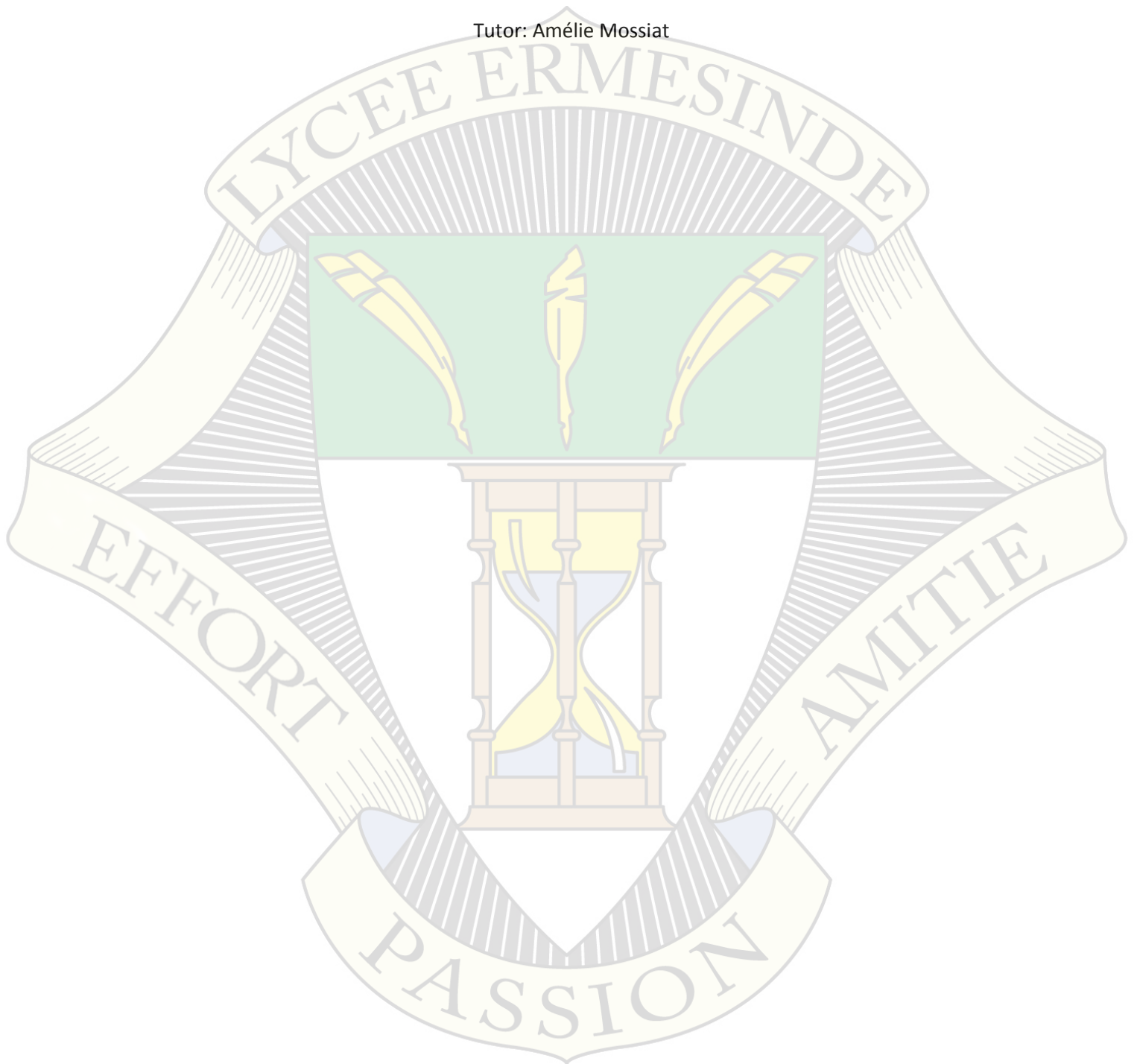
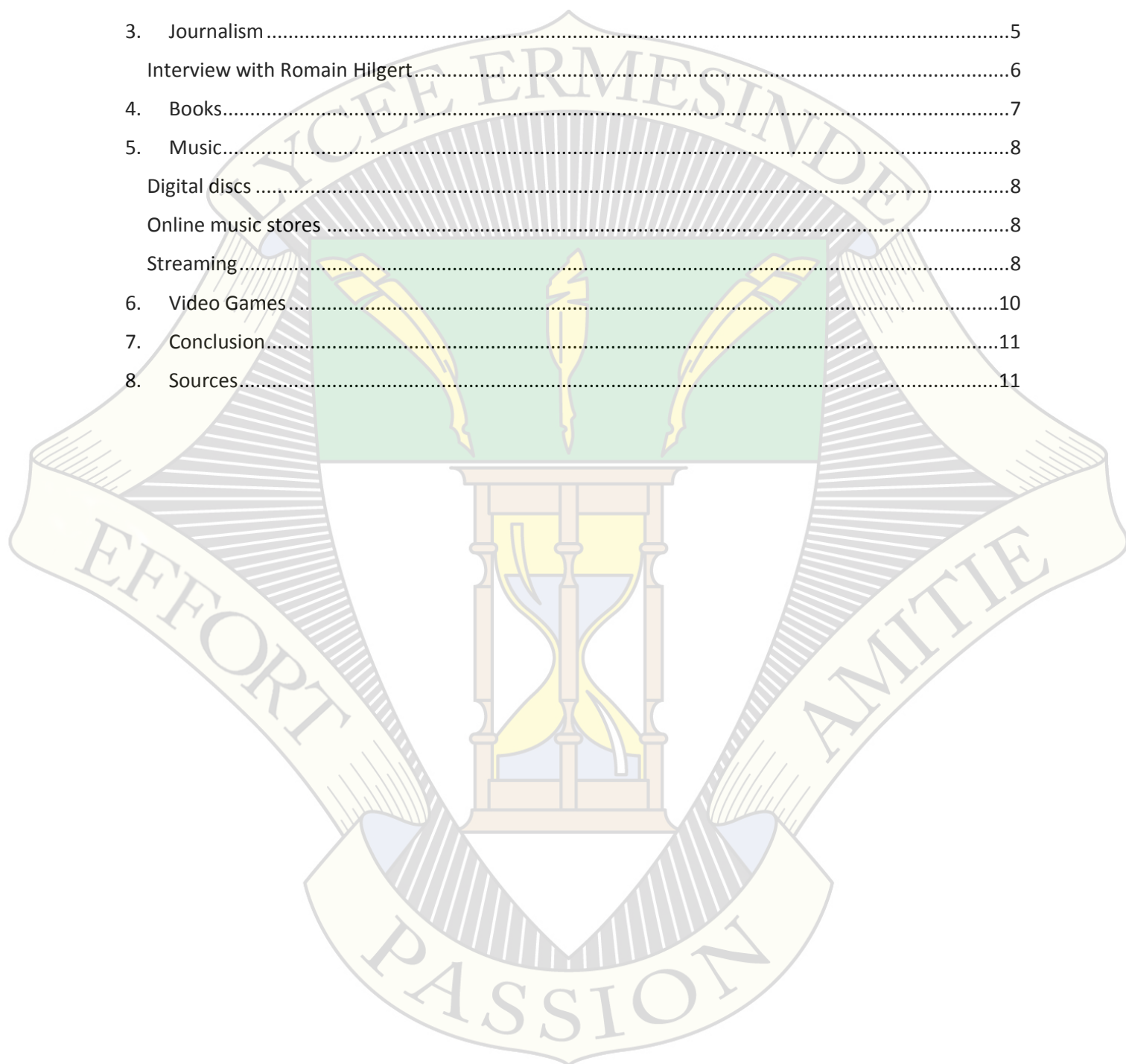


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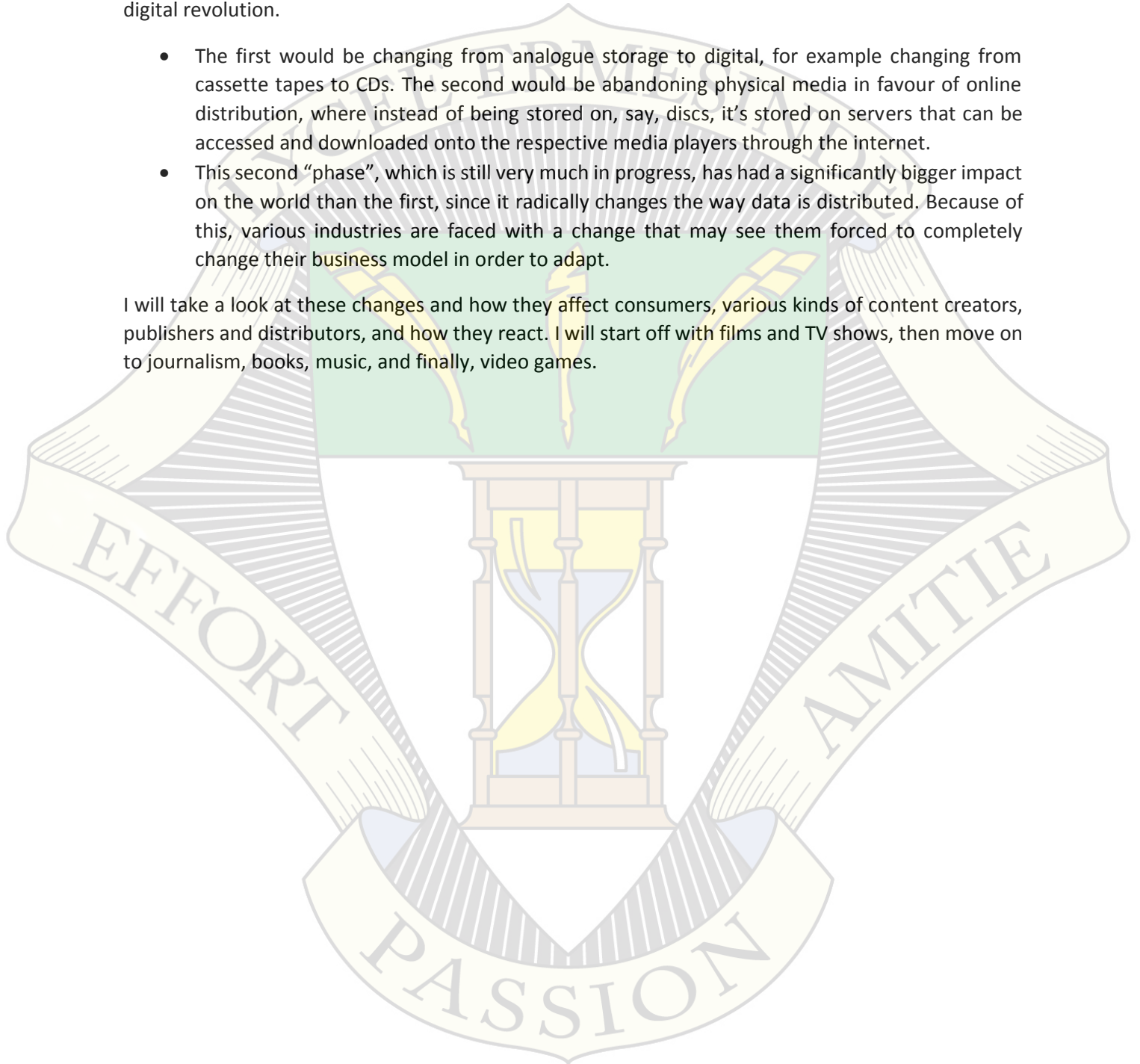


1. Introduction

In this Travail Personnel, I will talk about how the evolution of technology has affected different forms of media through the introduction of digital storage, whereby information is converted into binary data. This radical change in the way we preserve and distribute media is commonly known as the digital revolution. So far, most forms of media have gone through two “phases” of change through the digital revolution.

- The first would be changing from analogue storage to digital, for example changing from cassette tapes to CDs. The second would be abandoning physical media in favour of online distribution, where instead of being stored on, say, discs, it's stored on servers that can be accessed and downloaded onto the respective media players through the internet.
- This second “phase”, which is still very much in progress, has had a significantly bigger impact on the world than the first, since it radically changes the way data is distributed. Because of this, various industries are faced with a change that may see them forced to completely change their business model in order to adapt.

I will take a look at these changes and how they affect consumers, various kinds of content creators, publishers and distributors, and how they react. I will start off with films and TV shows, then move on to journalism, books, music, and finally, video games.



2. Film and TV



Despite being relatively new, this medium has gone through a lot of changes in format, from cinema to television to watching movies at home. In 1995, Philips, Sony, Panasonic and Toshiba partnered to create the DVD (which stands for digital versatile disc) which eventually replaced VHS tapes as the main medium for playing movies. Previously, there had been some optical disc formats designed to play video, such as the LaserDisc, but these failed to overcome the tape format used by VHS and Betamax. DVDs offered cheaper discs and video players, which led to them becoming more popular and widely used than the analogue contenders. In 2006, the Blu-Ray Disc was invented as a way to play high definition video, which soon replaced the DVD. Today, various online services are becoming more and more popular as a way to watch not only movies, but TV shows as well. For example, Netflix, which lets you watch movies and TV shows for a monthly subscription, has become big enough to produce its own series, some of which have reached immense popularity. Youtube is experiencing exponential growth, to the point where it has more viewers between 18 and 49 years old than any American cable TV channel (1), even though a lot of its content comes from users, rather than big budget production firms. A lot of content creators have become successful enough to make a living off the site, with the most popular ones having estimated yearly revenues ranging from several hundred thousand to a few million dollars. Traditional television is becoming less and less popular, especially among younger age groups.

Similarly, cinemas are becoming less and less exclusive when it comes to newly released movies. With films leaving the theatres and releasing for home viewing earlier, cinemas might end up becoming more of a vessel for marketing than anything else. Thanks to the massive data trafficking achievable by the internet, piracy is becoming a bigger problem than ever, especially in the film industry. In some cases, the films even get leaked before their official cinema release.

There's a startup project launched by Sean Parker, who helped create both Napster and Facebook, for a new service called the "Screening Room", where you'd buy a TV box with piracy protection that would allow you to view movies from the day of their cinema release. The box itself would cost around 150\$, while one would pay 50\$ per film. To convince the distributors and exhibitors to participate, the entrepreneurs offered to give both parties a share. The startup has also stated that the service isn't aiming to replace cinemas, but that it targets people who don't watch many movies in theatres in the first place, for example because of family responsibilities. Only 11 percent of the American population frequently visits cinemas, so the project would cater to those who don't fall into that category. (2) Some influential people in the film industry are supporting the project, including Peter Jackson, Martin Scorsese, J. J. Abrams and Ron Howard.

3. Journalism

Journalism is arguably the most important medium covered in this essay, since it provides news and other information to readers on a regular basis. The Internet has made it possible to write articles that you can publish at any given moment and that anyone with an internet connection can read, for free. The pros are that you don't have to spend time and money on printing and distributing the papers and that you can publish articles at a significantly higher pace. However, it's a lot harder to earn money off of these. The problem is that people have come to expect to get information for free on the web. The business model of a printed newspaper doesn't really work online, leaving you with ads as your only source of revenue. But having ads on your website isn't nearly as profitable as having them in a printed newspaper. I'd imagine this is in part caused by the fact that you could just as well put them on another site, like Facebook. That's another problem with the online business model, lack of exclusivity. Adverts used to be a big part of a newspaper's business model, making the newspapers more than just a news outlet. However, with the internet have come a lot of other options for advertisements, such as social media. Newspapers are no longer the go-to source if you're looking for/offering a job, an apartment, a used car, or the like.

But online news sites aren't the only ones suffering from this. Even if a newspaper outlet stays away from the internet, it still risks to lose appeal to both advertisers and readers, respectively. The readers can get a faster service for free, and the advertisers have a variety of cheaper mediums, so of course they'll have less of an incentive to stay with printed newspapers. Because of this, quite a few newspapers may have doomed their selves with their eagerness to jump on to the bandwagon of internet journalism. In the last few years, quite a few newspapers have declined, which may very well be in part because of online news. (3)

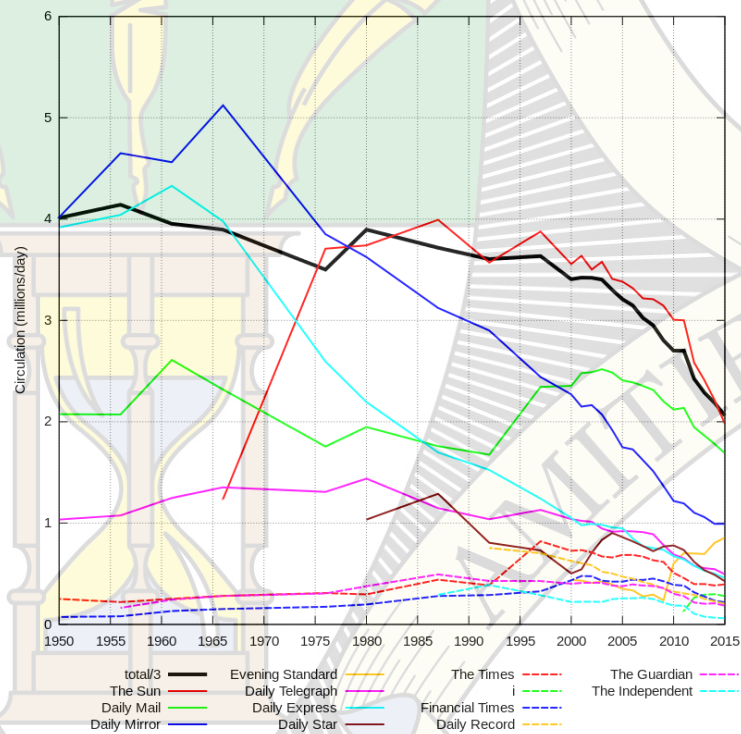


Figure 1:UK Newspaper circulation in the last 50 years

Online news is also more likely to be less reliable and/or accurate. Since the journalists are going to try to provide information as quickly as possible to stay ahead of competition, they might pick inaccurate sources to get new information quickly, and fail to verify the information they get from those sources, because that would waste precious time. That way, they might write about rumours as if these were confirmed, and spread misinformation in the process. It's also easier to get away with writing bad or meaningless articles, and just put a shocking or interesting headline on it. It will still get shared, it will raise conversation, and it will become more and more popular, as long as it can grab a potential reader's attention. On the internet, people tend to have a different mentality than they would otherwise. They tend to have shorter attention spans and jump from page to page, post to post, from one article to another. As a result they don't read news articles to the end, rather only reading the headline, maybe the first few sentences, and then lose interest because they get distracted or simply don't want to take the time to read the whole thing.

But often times, they still send it to their friends, share it on social media, comment on the article even though they haven't gained enough information to form a proper opinion on the subject. This further incentivises writers to write shorter articles, even if it lowers their overall quality. After all, why would they put extra time and effort into their articles if the majority of readers will ignore most of it? This quantity over quality mind set, along with the decreased profitability, could greatly harm the industry. So what can one do to prevent this? Where will one find high-quality news after the rise of online journalism? The answer might lie in weekly newspapers.

Interview with Romain Hilgert

Romain Hilgert, the chief editor of the *Letzeburger Land*, kindly accepted my request for an interview about his thoughts on the impact of the digital age on Journalism. When asked if he himself had experienced a lot of change through digital media, such as their approach to finding sources for articles, he said that he mostly used the same methods as he did before internet journalism became prevalent, since going digital doesn't really benefit the quality or profitability of a newspaper. Other than a digital option for its subscribers and an online archive of old articles, the *Land* remains a classic, printed and paid newspaper. This is in part because weekly newspapers like the *Land* have a very different style from daily newspapers. Rather than trying to get information across as quickly as possible, they focus on further researching the subject and writing longer, deeper articles and analysing the subject matter. This style of journalism is less suited for internet journalism, but also more reliable and trustworthy, as the journalists have more time to verify information and get it from better sources. Daily news works well online because it focuses on getting information across as quickly as possible, even if they have to sacrifice detail and length for it. This fits in with the style of quick, short pieces of information usually found on the internet, where long attention spans are rare at hand. He predicts that, while daily newspapers will struggle with online journalism, weekly newspapers will become more of a luxury, aimed at readers seeking a more sophisticated form of journalism, and who are prepared to pay a little extra for the papers, as they are likely to go up in price due to the declining ad revenue.

4. Books

Although the idea of having an alternative way of reading first came up in the book *The Readies*, written by Bob Brown in 1930 and inspired by early films with sound (which were then known as talkies, hence the title *The Readies*), ebooks didn't really exist until Michael S. Hart started adapting documents into digital text in 1971. He created Project Gutenberg, a movement to make culturally important documents and books easily available by adapting them into a digital archive. It still exists today, recently having exceeded 50,000 documents. Commercial e-books as we know them didn't really exist until Sony created the Data Discman, which read books off of CDs. However, even then it was a very niche product, and no one would have considered it a serious contender to classic books. But once again, the internet made distributing digital documents much easier, which created all-new possibilities for the format. When Amazon released its first ereader, the Kindle, in 2007 it was extremely successful, selling out in less than half a day. In 2010, the iPad was released by apple, which became another popular ereader through the use of the ibooks app.

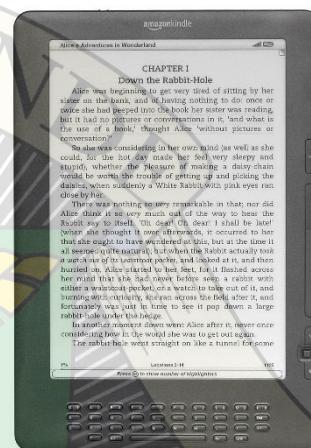


Figure 2: a kindle

Even though a lot of people got really worried that physical books would quickly be replaced by the increasingly popular ereaders, physical books have stayed pretty popular among readers. Lately, it even appears that sales for ebooks are dropping, or at least slowing down (4). However, while big publishers might be selling less, there are more books from independent writers being released as ebooks. Since you don't have to go through publishers to get a book printed, it's a lot easier for aspiring writers to publish their works online. In addition, with ebooks, it's way easier to store and transport books, since they're all contained on one little device which takes up substantially less space than a collection of actual books. This is especially useful if you're travelling. You can also buy books at any point in time, as long as you have an internet connection. You also don't have to worry about whether or not a book store has a particular book in stock.

So why do some people still prefer physical books? From personal experience, I think books have more of a personal value to people than, say, DVDs. People like the feeling of having a book in their hands, of flipping through the pages. Besides, it's a lot more pleasant to read a novel off of real paper than reading it on a screen. You also get an impression of how far you are in the book that you don't get with digital books. There's a certain collector's aspect to having your books standing in your shelves, you can actually see your collection lying around your home. A lot of book lovers like having physical books for these reasons, which I think is a defining factor for their popularity.

5. Music



Digital discs

Both Philips and Sony started experimenting with optical and laser disc technology in the mid 1970's. In 1979, they collaborated to design such a disc that could be used to store and play music. In 1983, they released the compact disc. It was very well received, even though the disc players were quite expensive at first. In 1984, Sony released the Discman, a successor to their portable cassette player, the Walkman, which contributed greatly to bringing CDs to the general public and just to their general popularity. After the CD's inception, there were plenty of upgrades to the format, which allowed for them to be rewritten, interactivity, to store information other than audio, and so on. Thanks to this, CDs have also had other uses next to playing music. However they didn't keep their dominant position for too long, as online alternatives would quickly start appearing.



Figure 3: a Sony Discman

Online music stores

The Internet Underground Music Archive was a very early example of an online music archive, having been created in 1993. It allowed independent artists to easily upload their music for people to download for free. Another notable music shop was Rimoteca.com, which allowed people to browse songs and albums in the form of MP3 files that they could download for 99 cents a song or 9.99 dollars an album. One of the most prevalent online music stores is iTunes. Originally known as SoundJamMP, it was bought by Apple in 2000 and released onto their Mac computers one year later. Today it is best known for being used on Apple devices such as the iPhone, iPad, and iPod.

The iPod was another influential device as far as the digitalisation of music is concerned. The original iPod was not only somewhat of a precursor to Apple's line of smartphones and tablets, but it popularised MP3 players with digital storage. Thus, it did not require its music to be inserted through physical media like cassettes or CDs. Rather, it could hold files downloaded from the iTunes store and transferred to the device's memory. This type of storage allows people to choose to listen to a selection of individual songs, rather than having to listen to albums. Nowadays, smartphones and tablets can be used as music players, but specialised music players are still available. Apple also produces the iPod Touch line of products, which is designed and functions like one of their smartphones, except that it is unable to connect to cellular networks.

Streaming

Another popular business model for music is streaming, which allows users to listen to music without directly downloading it (Although they may offer downloads). Their business models range from free listening to monthly subscriptions. For example, Spotify lets you listen to playlists and internet radio for free, with the occasional ad interrupting your experience. If you choose to pay monthly for the premium version, you can individually select which song to listen to at all times and download songs to listen to without internet access. Apple Music, a new alternative to iTunes, lets you listen to and

download most of the songs available through iTunes, while paying a monthly fee instead of buying songs individually. Napster was originally launched as a peer to peer music service in 1999, which would let people share audio files for other users to download. This service was shut down due to legal issues, however, and eventually bought up by Best Buy. They then struck a deal with streaming service Rhapsody, which integrated Napster into its own service. YouTube, while it was created as a website for anyone to upload videos, now encompasses a variety of different types of content, including music. A lot of big producers upload their music videos to the site nowadays. The newly released paid YouTube Red service further accentuates this aspect, eliminating ads and permitting users to download videos and listen to them in the background. It's very much possible that downloaded and streamed music will soon completely take over the market, since it has already overtaken its physical counterpart. However, Japanese consumers don't seem to want to accept this, as most of the music sales in Japan still come from CDs. Streaming services like Spotify haven't gained a lot of popularity there

However, streaming services make it a lot harder for the music industry to be profitable. Since users no longer pay for every song they listen to, the producers are paid much less per listener. For the last 20 years, the music industry was struggling to bring in profit as they tried to adapt to the rise of the internet and the decline of physical music formats. While physical copies of music are still at an all-time low, the increase in popularity has led to the music industry's revenue increasing for the first time since 1995 (5). This has also helped decrease piracy, since user-friendly streaming services offer a good alternative to illegally downloading music, although it's far from discouraging piracy altogether. However, some people claim that the industry is still far from reaching its full potential because of the relatively low profitability of said services. Taylor Swift, for instance, is strongly against streaming, because she thinks that as art, music should be worth a full price, rather than the relatively low amount that artists earn per listener. She has made quite a few statements against Spotify and Apple, the latter of which have even made some changes to their business model because of pressure from her. On the other hand, some musicians such as Kanye West, Beyoncé, Deadmau5, Coldplay have started releasing some or all of their content exclusively (either permanently or temporarily) on the streaming service Tidal, which was recently acquired by Jay Z. It aims to make streaming profitable for artists, which has even gotten Taylor Swift to join the service, although it hasn't had too much success in doing so.

6. Video Games

Since video games are always played on computers of some kind, obviously they were always digital in the first place. However, as with other forms of media, the growth of the internet has had a huge impact on the industry. In fact, the gaming industry has probably progressed farther than any other medium in terms of online distribution. While physical distribution on consoles is still very common, over 90 % of PC game sales stem from digital downloads (6). This isn't too surprising, since one only uses the disc once to download the game, which prevents you from trading, sharing, or selling your old games. It works the same as downloading the game online, except that you have to go to a shop to buy the disc. It's also a lot more practical to have all your games organised and easily accessible using a digital distribution program, such as Steam. Even on consoles, the utility have of game discs is becoming less and less apparent. Nowadays, a lot of games require an internet connection to play, and even if they don't, the amount of data that has to be downloaded through game updates and downloadable content may well make physical copies seem obsolete. Is it really worth buying physical versions just for a disc and plastic box? In some cases, there are special editions available for collectors, but for those just looking to buy and play a game, it might just be a matter of time before downloading it is the superior option. Whether or not physical game copies will completely disappear remains to be seen.

Aside from changing the way games are distributed, the internet has allowed players to discuss and play their favourite games together, form small communities, give feedback about games, etc. It has also created whole new game genres based around online multiplayer. Over time, the medium has become a lot more popular, and as such, big games usually have way significantly budgets and quality, while independent developers have access to a much wider range of tools, while also being able to finance and sell their games more easily, through crowdfunding and digital distribution sites respectively. However, the internet has also brought some negative aspects with it, primarily with big publishers. For instance, some developers will cut content from their game and make people pay for it in the form of downloadable content, or release partially unfinished games and fix the issues with it in post-release updates, as well as adding in pre-order bonuses to encourage people to pre-order the game instead of waiting and checking reviews once the game is out. Companies like EA and Ubisoft are known to carry out these questionable business practices. Because of the severe increase in piracy through the internet, many games have digital rights management built in, something that limits copying of game files by verifying whether or not the user legitimately acquired the game. Sometimes, this involves the games requiring the player to have an internet connection, even if the game has no online functionality. This can cause issues with server crashes, in addition to being unable to play if one doesn't have an internet connection, or if the game is no longer supported, and the servers are deactivated. Once again, developer Ubisoft specifically has caused quite a bit of controversy about this in the past.

7. Conclusion

There's no doubt that the Digital Revolution has significantly changed media and its distribution and impacted civilisation as a whole. I think that, while media will mostly move on to digital distribution, there will always be someone to fill the niche of classic, physical formats. Maybe it will end up in a similar spot to vinyl records today, wherein some people like using old formats despite their disadvantages, until it becomes a trend in its own. However, it's probably only a matter of time before people in the various industries figure out how to optimise their business models and most physical media completely stops being produced, and with scientific progress ever increasing in speed, we can't know for sure when it completely sinks into obscurity. There's a whole network of readily available content from all over the world, and it's only fitting that humanity should make full use of it. Sure, one may prefer old, familiar ways of absorbing media, but sometimes, you can't let nostalgia get in the way of progress for you. In my opinion, if the newer format doesn't change the experience itself in any way other than providing higher quality, there isn't much of a point in staying with the old one. With that, I conclude this travail personnel. Thank you for reading.



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