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The Great Convergence in eLearning

We analyse the growth of the eLearning market from trends related to technologies and skills in the sector and the dynamics of supply and demand.

When assessing the development of an industry it is easy to focus on the sales trend or the development of its main technologies. This can lead to estimation errors: the world does not continue by linear extension. A broader approach can make all the difference.

Where technology is going: the Great Convergence

In 2022, eLearning is an established reality. Two years after the start of Covid-19, **distance learning** has proven to be a useful solution. Both students and employees and companies have become familiar with the procedures and technological tools. It is only natural that after such an exceptional period for the organisation of work and study, the question arises as to future developments. The main players in the market have already expressed themselves on this subject: eLearning for school and work has arrived to stay, although adapting in form.

Opinions and forecasts on the sector's trend abound. Almost all of them share an underlying optimism. The numbers actually prove them right. For example, the users of Coursera, one of the leading companies in the sector, exceeded 90 million in 2021 alone. Not bad for a company founded in 2012: in less than ten years it has exceeded three billion dollars in capitalisation on the New York Stock Exchange.

The risk, if anything, is to adopt an approach that is too focused on a single sector. While it is easy to observe a growth in users and to reason about the causes, it is not at all easy to ask how this trend might react to a different context, nor whether novelties might not emerge in other sectors. If in 2022 we have the impression that we are better able to react to pandemic waves, issues such as international instability and the price race raise new questions.

Two things can be done to limit this uncertainty:

- Observe **trends in technologies and skills** in the sector
- Extend the analysis beyond the simple **dynamics of supply and demand**.

Looking at underlying trends means considering how technologies and skills have developed over the long term. It is a fact that today we have eLearning as we know it thanks to information technology and telecommunications. It is also true that these have only changed the way the service is used: distance learning is much older. Similarly, the skills needed to provide a training service have changed along with the technological tools: what remains unchanged is the ability to disseminate and instruct.

An interesting analysis is provided by Professor Brian G. Burton, who speaks of a **Great Convergence in eLearning**.
According to this interpretation, the different technologies that contribute to today's distance learning offer and the competences related to them have followed a long path of mutual convergence.
In the same way as the video game and film sectors have moved closer together, sharing technologies and repurposing content, eLearning seems destined to borrow technologies and skills from gaming.

In particular, the skills Professor Burton talks about can be grouped into the following categories:

- Instructional Design
- Game Design
- WebXR

The former refers to the skills needed to design a training course. The **Instructional Designer (ID)** is the figure of reference for the creation of an eLearning course: he or she is the person in charge of designing how to transmit the knowledge to the student in the most effective way. As such, he is the link between the Subject-Matter Expert (SME), the person with in-depth knowledge of all aspects of the subject matter, and the Course Writer, the author of the content.

As a figure of reference, his or her transversal competences embrace technologies in several areas, including:

- Audiovisual document creation skills
- Database management
- Notions of Learning Theory
- Serious Games creation skills
- Ability to integrate elements of Immersive Learning Environments (ILE) into course design

In summary, an ID is a technological pedagogue, able to immerse his or her students in simulations best suited to their interactive learning.

The second group of technological competences concerns **Game Design**. Among others, these apply to:

- 3D Modelling
- Virtual Reality
- Animations
- Real-time CGI
- Graphic engines, such as Unity, for the development of interactive content.

The reference to the game should come as no surprise: it is through this that users put their acquired knowledge into practice and can proceed by trial and error to rework the way they put their skills into practice. Some school curricula provide for the teaching of chess as a training tool; if one considers recent board games, one can understand how their complexity requires players to think carefully about strategic choices to achieve objectives.

Finally, there is a whole range of skills related to the immersive web, or **WebXR**, including tools such as:

- Web programming
- Web design
- Languages such as Html5 and TypeScript
- AFrame, for immersive experiences
- The Babylon Js 3D engine
- Node Js

All of these allow web technologies to be integrated with augmented or virtual reality to create immersive videos.

Thus, in order to offer effective training contents, eLearning can only benefit from a progressive integration with the video games sector. This convergence is being driven by the spread of new generation smartphones, the development of virtual reality technologies and the advent of 5G networks, which allow much more data to be transmitted.

The underlying hypothesis is that technology has an intrinsic tendency to aggregate and continuously renew itself. To understand this, one only has to look at how many tools a smartphone has replaced: landline phone, video camera, stereo, notepad, typewriter, etc. In the same way, we can consider how the convergence of tools such as Augmented Reality and Virtual Reality leads to the creation of Mixed Reality: from simple information projected on wearable visors we pass to the creation of virtual objects with which the user can interact in reality. This tool can be used to train staff directly in the workplace, allowing them to repeat procedures in detail before applying them to real physical objects.

This continuous technological aggregation, which in addition to **Mixed Reality** can involve Artificial Intelligence and aim at the Internet of Things, is that leap of scale capable of activating economies of scale and scope and making long-term developments difficult to predict. This is what we have already seen at the dawn of the Internet, when the possible applications were not yet clear.

Where people go

Another observation that can be made is to extend the analysis beyond the dynamics of the sector. eLearning, like schooling or smart working, are all affected by **economic and demographic dynamics**. For example, there is little point in predicting the spread of smart working if we do not understand its causes among different generations of workers. The same applies to distance learning. We can therefore ask ourselves: where do people and skills go? Here are some possible answers.

Nowhere: remote learning

Thanks to eLearning, people no longer need to travel to learn. Universities providing **distance learning courses** help to reduce the number of students away from home, which has an impact on the rental market. Companies adopting remote learning are helping to reshape the conferencing and training sector: it is no coincidence that competition between remote conferencing tools has increased since the entry of zoom versus Google meet & co.

Everywhere: the globalisation of skills

With the spread of telecommunications technologies, skills have started to travel, even faster than people. As Richard Baldwin illustrates in his book, The Great Convergence: Information Technology and the New Globalisation, it is no longer only advanced economies that have a wealth of up-to-date knowledge and skills. On the contrary, there is an incentive for companies to relocate labour and skills where labour costs are lower. Depending on your point of view, this is either a great opportunity or a frightening threat. The common moral is: keep training, wherever you are. A bit like the story of the lion and the gazelle on the savannah.

Retiring: the Grey Resignation

The grey foxes are retiring. Aided by the pandemic, which has suggested how important it is to preserve the meaning of whatever one does, the over-aged who can afford it have started to choose retirement as a viable alternative to a prolonged working life. In some countries it is favoured by pension policies or by the performance of financial markets, which are growing strongly even after the Covid effect.
In some sectors, such as IT, this leads to significant turnover problems: junior employees lack skills such as those needed to implement basic ERP enterprise resource planning systems. They have largely specialised in digital front-end skills: there has been a focus on usability and interaction, apps, mobile devices, artificial intelligence and data mining.
On the horizon is the need to provide training content to fill this **skills gap** before generational change disrupts their continuity. This is a complex task, involving both institutions and companies.

Towards a new life: the Great Resignation

It is not only seniors who are resigning. Young people are also resigning, albeit for different reasons. If the former are starting to think of retirement as a new, fulfilling phase of life, for the latter it is necessary to reflect on the direction of their work. For workers from Generation X onwards, the possibility of achieving economic security similar to that of their parents is more remote. Taken as a whole, these people have a higher level of education and lower real wages. It is natural that there is a tendency for the most dynamic ones to carefully consider career prospects and to decide to change direction whenever possible: either towards more promising jobs, or towards a more balanced lifestyle. From the perspective of a company, preventing excessive turnover for less skilled positions is an issue that needs to be addressed: one way is to consider training paths to ensure job mobility.
One way is to contemplate training paths to ensure job mobility. This issue is of close interest to those involved in eLearning: the training content for this purpose is strongly oriented towards **upskilling**, the acquisition of practical skills that enable career advancement. If the trend remains, this may lead to a market opportunity for the creation of enterprise-specific training courses, designed for the specific needs of the growth paths of specific companies. Social mobility in the 1920s could be a tailor-made suit, rather than a comfortable size for everyone.

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