Digital Push for Creative Transformation

IO 1.1

Conceptual Framework of Digital Competences in CCS

Co-funded by the
Erasmus+ Programme
of the European Union

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Table of Contents

I. Introduction

Europe's rich social legacy and dynamic social and inventive areas are a piece of European character. Culture and social articulations show themselves well-defined in the everyday existence of the Union's residents and can add to prosperity, dynamic citizenship, normal qualities, social incorporation and the advancement of intercultural exchanges just as of a free, pluralistic and different media climate. The social and innovative areas completely add to the Union's financial turn of events, creating occupations and development, and are essential for Europe's future.

The development of the Cultural and Creative Sectors (CCS) is an important and most discussed issue at present times. For many countries, the cultural industries have been regarded as a leading export sector and enhancing the service sector by creating millions of new jobs. In addition to that cultural industries can work on both global players but as bulwarks of local identity. However, the cultural and creative sectors have been facing many challenges both worldwide and within Europe for the last couple of years, and the currently ongoing coronavirus pandemic has increased this severe crisis. The most demonstrative data is the fact that 30% of the individuals and associations working in this field have lost their possibilities and regular income, and the impact of this negative effect covers a great range of cases from the visual- and fine artists and authors to the performative artists, such as musicians and actors, whose sector is dealing with a vital threat (Bertuzzi, 2021).

The following document "Conceptual Framework of Digital Competences in CCS" (IO1.1) aim at sharing research materials and reflections on the development of Digital Competences in CCS for the promotion of transversal skills and social inclusion. This document will emphasize the problems related to the development of digital resources and their integration into various cultural environments and in the CCS education area. The research aims to identify the digital competences most promoted in CCS youth education contexts and to consolidate the theoretical basis of the DPCT project. Moreover, it will help the project consortium to select the content and digital competences to be promoted in the project online MOOC courses.

II. Defining Cultural and Creative sectors

Generally, the Cultural and Creative Sectors are those areas of coordinated movement that have as their fundamental target the creation or proliferation, the advancement, appropriation or commercialization of products, administrations and exercises of content from social, imaginative or legacy starting points. Cultural and creative sectors are all sectors whose activities are based on cultural values, or other artistic individual or collective creative expressions.

According to the definition described in the Creative Europe Programme (EU Regulation No 1295/2013 on the Creative Europe Programme): "All sectors whose activities are based on cultural values and/or artistic and other creative expressions, whether those activities are market- or non-market-oriented, whatever the type of structure that carries them out, and irrespective of how that structure is financed. Those activities include the development, the creation, the production, the dissemination and the preservation of goods and services which embody cultural, artistic or other creative expressions, as well as related functions such as education or management. The cultural and creative sectors include inter alia architecture, archives, libraries and museums, artistic crafts, audiovisual (including film, television, video games and multimedia), tangible and intangible cultural heritage, design, festivals, music, literature, performing arts, publishing, radio and visual arts".

According to David Parrish, the term "creative sector" alludes to a scope of financial exercises that are worried about the age and commercialization of inventiveness, thoughts, information and data. Although many people think that the words "business" and "culture" are not comfortable looking at each other, the reality is that also non for profit organizations in the arts and cultural sector need to be business-like, even if the traditional business motive of profit maximisation does not apply.

UNESCO characterizes the cultural sector as "businesses that join the creation and commercialization of substances which are elusive and social in nature; these substances are regularly secured by copyright and they can appear as an assistance."

There is an enormous recognition that it is a sector that is also a real contributor, in terms of growth, jobs and economic spill over into other sectors. Indeed, there is increased academic and political interest in better understanding how culture and creativity can leverage economic growth and jobs and there has been much research in this area in recent years, including also on the impact of the digital shift on the sector. Moreover, the market potential of many digital opportunities born in COVID-19 times also raised the question of the shift towards commercially driven economic models that, before COVID-19, heavily relied on public funding (e.g. performing arts and cultural heritage). Next to discussions about the sustainability of digital business models for culture, the increased use of digital tools raised other concerns as well about the readiness of the sector to digitize. While for some the shift to digital formats and solutions was easy due to the availability of in-house expertise, for many other

organisations and freelancers the uptake of digital solutions has not been an easy pathway to follow.

III. What are the Cultural and Creative Sectors?

As said before, the cultural and creative sectors include all sectors whose activities are based on cultural values or other artistic individual or collective creative expressions and which are also defined in the legal basis of the Creative Europe programme.

Support to these sectors is based on data developed by Eurostat in the framework of the European Statistical System (ESS)-net Culture and its work to further coordinate the harmonisation of statistics on the cultural and creative sectors (e.g. by reviewing indicator typologies and terminologies, communication through indicators and relevance for policy making).

The formally recognised individual cultural and creative sectors, also included in the definition of the term CCS, are the following ones:

1. Architecture
2. Museum, libraries and archives
3. Artistic crafts
4. Audiovisual
5. Design
6. Festivals
7. Music
8. Literature and Publishing
9. Performing and visual art

Those regional activities concentrate on potential building, professionalization and ability advancement, information gathering to get it superior to the sections, as well as trade possibilities. They will construct on and addition EU-driven activities proceed as of now carried out over the past long period.

3.1. Architecture

The EU is generating extensive people-centered access to a sustainable increased situation. Besides, architecture has played an important role in creating constructions, public reservations and public sketches that provide to citizens' feature of consciousness. Architectural consulting activities include building design and drafting/planning, town and city planning and landscape architecture.

As discussed in the EU Council Work Plan for Culture 2019-2022 architecture is simply a cross-cutting field and should be supported "as a discipline that encompasses the right

balance between cultural, social, economic, environmental and technical aspects for the common good". That is how many EU policies such as; construction, service efficiency, environment change, experimentation, and coherence can provide a high-quality organized environment, including the cultural policy and actions listed below. Indeed, there is also an uptake of sustainable architecture principles, being architecture considering new practices to reduce the negative environmental impact of buildings by considering more efficient and eco-friendly uses of materials, energy, and relations with the surrounding space.

According to the Architects' Council of Europe (ACE)'s Study 2018, the expected total number of architects in the EU's 28 Member States plus Norway, Serbia, and Switzerland is approximately 562,000 (more than half a million). The arrangement of the profession is as follows:

- 71% of disciplines are one-person practices
- 25% are grouping of 2-5 people
- 3% are grouping of 6-10 people

In terms of gender equivalence, things appear to be growing as 53% of architects in their 30s are female, with 32% in their 50s.

In addition, there are some trends shaping the Architecture subsector such as the new digital tools for architecture. Digital tools such as VR are becoming an integral part not only of project presentation but also of the design process. 3D printing, automation and Artificial Intelligence create new opportunities for architectural design and prototyping.

3.2. Museum, libraries and archives

Clean worries with the pandemic prompted phenomenal terminations of historical center and legacy locales. Around 90% of historical centers universally (in excess of 85 000 establishments around the world) have briefly shut during the emergency, and the leftover 10% may never return due to impressive monetary hardship. The unexpected decrease in incomes (3 out of 5 exhibition halls in the European NEMO (the Network of European Museums Organisations) overview announced losing and normal of 20,300 euros each week because of conclusion and travel halt), altruistic commitments and sponsorships for public and private galleries the same put the monetary supportability of galleries in danger, particularly little exhibition halls. It has brought about diminished wages and lay-offs for a scope of workers (impermanent staff, outside agreements including mediators, part time employees, occupations identified with presentations, distributing of indexes, show and instructive materials, occasions, and other business exercises).

As per a study embraced by the International Council of Museums, 6% of gallery impermanent staff didn't have their agreement reestablished or had it ended, while 16.1% of independent historical center experts have been laid off. In addition, according to survey carried out by NEMO, 70% of museums increased their use of social media

(notably Facebook and Instagram) during the lockdown period. This trend opens up opportunities of deeper cross-sectoral collaborations with the AVM sub sector as well as the ICT sector.

By definition, an archive is an accumulation of historical records – in any media – or the physical facility in which they are located. Archives contain primary source documents that have accumulated over the course of an individual or organization's lifetime, and are kept to show the function of that person or organization. In general, archives consist of records that have been selected for permanent or long-term preservation on grounds of their enduring cultural, historical, or evidentiary value. Archival records are normally unpublished and almost always unique, unlike books or magazines of which many identical copies may exist. This means that archives are quite distinct from libraries with regard to their functions and organization, although archival collections can often be found within library buildings[1].

A popular trend in recent years is that museums, libraries and archives are increasingly making their collections digitally available. Europeana, Europe's digital heritage platform, currently provides access to over 58 million digitised cultural heritage records from over 3,600 cultural heritage institutions and organisations.

3.3. Artistic Crafts

Arts and crafts describe a wide variety of activities involving making things with one's own hands. Arts and crafts are usually a hobby. Some crafts (art skills) have been practiced since prehistoric times, others are more recent inventions. Craft is a form of making which generally produces an object that has a function: such as something you can wear, or eat or drink from. In the past, craft was considered to be a lesser form of art than painting and sculpture because the objects made had a domestic function. However, during the mid-1800s William Morris began to question the differences between art and craft by bringing an artist aesthetic to a craft object, like wallpaper design. During the twentieth century, the boundaries between art and craft became blurred, particularly at the Bauhaus, as artists started to experiment with craft practices in their art[2].

Understudies participate in focused making researches that touch on mold, useful articles, plan, and embellishing expressions. Specialty understudies center around the obtaining of conventional abilities, close by advanced instruments, exploratory ways to deal with fostering an educated and inventive utilization of materials. Specialty assists understudies with developing an individualized studio practice that is educated by a comprehension of materials and the bigger creative, and social settings. In addition, the transit toward consumer society and digital one offers new opportunities for the recreation and redefinition of the crafts. Together with the crafts as a manual trade, producing goods of utilitarian function, post-industrial society approaches its redefinition by emphasizing expressiveness: the handicrafts are sources of pleasure,

[1] https://en.wikipedia.org/wiki/Archive
[2] https://www.tate.org.uk/art/art-terms/c/craft

emotion and moral value as well as sources of identity, distinctiveness, community involvement and innovation.

3.4. Audiovisual media

The sector including film, broadcasting (tv/radio), video and multimedia activities, has gone through rapid changes due to the technological and digital revolutions of the past decade that have reshaped how audiovisual content is produced, distributed and consumed[3].

The European Commission considers the audiovisual sector as vital to safeguarding Europe's cultural diversity and sovereignty. Therefore, the EU supports the industry in order to increase the general level of media literacy, to strengthen the sector and make it more competitive, and to increase the distribution of audiovisual works across borders in Europe and beyond. According to the updated report "Market Analysis of the Cultural and Creative Sectors in Europe" commissioned by the European Investment Fund (EIF) under the Cultural and Creative Sectors (CCS) Guarantee Facility Capacity Building programme[4], the added value of the Audiovisual media (AVM) sector grew at a 7.2% CAGR between 2013 and 2017 reaching EUR 185 billion where computer programming activities generate more than half of the EU AVM value added, and the sector itself contributes, on average, 2.5% towards value added in each Member State of the EU. In addition, employment in the EU AVM sector grew at a 6.5% CAGR between 2013 and 2017 reaching more than 2.7 million with more than 50% of workers employed in computer programming activities.

3.5. Design

Generally speaking, design is the process of envisioning and planning the creation of objects, interactive systems, buildings, vehicles, etc. It is user-centered, i.e. users are at the heart of the design thinking approach. It is about creating solutions for people, physical items or more abstract systems to address a need or a problem.

Often there is one question that arises. Is the design art of science? While not being exactly an art nor a science, it takes elements from both. Art is about creating something that expresses the author's vision, ideas and feelings. While designers can express feelings and leave impressions through their work, doing so is not their prime objective. So, it takes the creating aspect of art, as it is about crafting an item, a tool, an experience even. In addition, the design as a driver of user-centered innovation contributes substantially to getting good ideas onto the market. It enhances agile and focused product and service development and facilitates the development of better, transparent and more effective public services. Design as part of the creative sector plays a crucial role when it comes to the development, dissemination and marketing of products, processes, services and business models due to radical changes in society and the

[3] https://ec.europa.eu/culture/sectors/audiovisual
[4] https://keanet.eu/new-market-analysis-of-the-cultural-and-creative-sectors-in-europe/

economy. However, the rapid development of digital networks and communication technologies have severe impacts on design: it changes the value-chain from producer to consumer and the work-processes resulting from the use of new tools.

3.6. Festivals

According to UNESCO, festivals are the most effective way for communities to flaunt their cultural expressions. Besides, festivals are of economic value to the communities in which they are hosted. As a result, they constitute an economic activity whose importance to the economic development of the host communities is immense. As economic ventures, arts and culture festivals through their inherent value chain create employment and business opportunities to the host localities[5].

For example, in the last decades, urban transmedia festivals have gained a distinct presence in the European cultural landscape, constituting an alternative to other, more dominant, conceptions of music festivals. Transmedia festivals have proliferated since the turn of the century and are increasingly established across Europe. There are at least forty transmedia festivals in Europe. Transmedia festivals can be defined as a distinct type of arts festival that combines media art, music, and technology. Moreover, transmedia festivals have become part of urban renewal processes being seen as part for culturalization, precarization, and gentrification[6].

3.7. Music

The European Commission estimates the music sector is animated to protect Europe's cultural variety and increase its competitiveness. Music is the universal gesture of people that contains a different, artistic, and coherency potential for both organization and the person. In addition, it has extensive economic importance. Every music area is the third-largest employer within the cultural and creative industries in the EU. Based on small and medium industries, the European music sector is very energetic, innovative and it has majority potential.

Supporting these digital changes and improved competition from global members, the music sector is in faithful conversion. Over the past decade, this has led to fundamental changes in the way music is created, produced, distributed and monetized. Digital world has created many opportunities for individuals and it is also a challenge at every level of the music content. There is a need to develop more digital and business skills for the artists and the utilization of the fair wages in this modern domain.

Maintenance is required in the sector including its members to become extra competitive in the global business and to approach restrictions for Europe's gorgeous musical proposal. It has various rising talents to meet edges. The useful role of musicology in societal and economic cycles is still not completely utilized in European

[5] https://en.unesco.org/creativity/policy-monitoring-platform/arts-culture-festival-guidelines

[6] https://www.researchgate.net/publication/336400097_Transmedia_Festivals_and_the_Accelerated_Cultural_Sector

and national policy making because strong and similar data on this sector, its functions and its completion is needed.

The COVID-19 pandemic has disturbed the worldwide music industry in spite of an expanded interest for music web-based features during lockdown periods. With assessed deals, the music business' yearly income stream is split between the unrecorded music and the recorded music areas, each making up around half of the all-out income.

3.8 Publishing and Literature

Publishing is the activity of making information, literature, music, software and other content available to the public for sale or for free. Traditionally, the term refers to the creation and distribution of printed works, such as books, newspapers, and magazines. With the advent of digital information systems, the scope has expanded to include electronic publishing such as ebooks, academic journals, micropublishing, websites, blogs, video game publishing, and the like.

The publishing sector is one of the highest culture industries in Europe, with a complete market value evaluated at €36-38 billion. The complete book value series (including journalists, booksellers, printers, artists, etc.) is considered to hire more than half a million people according to the 2018 report of the European Publishers Federation. With more than 500,000 signs advertised annually, the European book sector is amazingly rich and distinct.

However, many European books are not available to Europeans. The basic reasons are the exact and geological fragmentation of the businesses and the mastery of books written in English that represent 80-90 % of prepared translations in Europe. The literature of several European countries is too hardly translated into other languages. Consequently, many European professors do not have access to the richness and variety of European literature.

The book sector has also sustained from a slow modification to the digital turn and a regular decline in literary reading. The COVID-19 pressure has further increased these trends and there is an urgent need to maintain the recovery and the competitiveness of the book sector.

3.9. Performing and visual arts

The performing arts range from vocal and instrumental music, dance and theatre to pantomime, sung verse and beyond. They include numerous cultural expressions that reflect human creativity and that are also found, to some extent, in many other intangible cultural heritage domains. Music is perhaps the most universal of the performing arts and is found in every society, most often as an integral part of other performing art forms and other domains of intangible cultural heritage including rituals,

festive events or oral traditions. It can be found in the most diverse contexts: sacred or profane, classical or popular, closely connected to work or entertainment.

The visual arts are art forms such as painting, drawing, printmaking, sculpture, ceramics, photography, video, filmmaking, design, crafts and architecture. Many artistic disciplines such as performing arts, conceptual art, and textile arts also involve aspects of visual arts as well as arts of other types. Also included within the visual arts are the applied arts such as industrial design, graphic design, fashion design, interior design and decorative art.

Some trends in the visual arts sector are that digital sales of artworks are on the rise as art galleries, auction houses and art fairs had to close down during the COVID-19 sanitary crisis. Also, the increased environmental awareness of consumers is pushing the fashion industry towards rethinking established practices impacting the whole product lifecycle.

With respect to the Performing arts sector, there is an uptake of digital tools advancements in digital technologies that are opening the doors for new ways of content production and distribution making creative content available to larger audiences (e.g.: on-demand experience for theatre), as well as creating more immersive experiences which might attract non-traditional audiences (e.g.: immersive virtual theatre). Moreover, the digital consumption of performing arts content generates new revenue opportunities, as well as the sector inspiring individual and societal change towards environmental sustainability.

It´s important to underline that there is a difference between Cultural and Creative Industries (CCI) and Cultural and Creative Sectors (CCS).

The term "cultural and creative industries" compasses a broad and powerful range of disciplines or sub-sectors with country-specific features. These disciplines are continually developing and cooperating, so it is useless to give clear definitions and explain ideas.

The term cultural industries have been around for more than 70 years. And while the cultural and creative sectors focus more on the activities within themselves, rather than on the financial side behind the ventures, the cultural and creative industries are more oriented towards the further product stages such as the production processes of the manufacturing operations. The definitions of the CCI, which are adopted on a national level strongly depend on both the country's needs and the scope, which is defined within the state's initiatives for development and its policy evaluations.

In addition, there is regularly an inquiry regarding the limits between inventive ventures and the comparative term of creative industries. Creative industries are best depicted

as a subordinate area of the inventive enterprises. Creative industries incorporate enterprises that emphasis on social the travel industry and legacy, exhibition halls and libraries, sports and open-air activities, and an assortment of 'lifestyle' exercises that seemingly range from nearby pet shows to a large group of specialist concerns. Accordingly, creative industries are more worried about conveying different sorts of significant worth—including social abundance and social riches—as opposed to principally offering financial benefit.

IV. Digital Transformation. The role of Digital Competences in CCS

We are in the age of the digital transformation. We live, work and socialize in a digital world that has changed everything about our everyday life. And it's not just about how we communicate, what we watch on TV or read online - it's how we do business and how we make our company grow.

The rapid evolution of information technology is bringing new ways for businesses to innovate, be more competitive and deliver better customer experiences - from driving a web strategy to customer interaction management and to social media marketing.

The digital transformation is just the beginning. It will fundamentally transform every industry and every aspect of the whole society. Over the past year, the term digital transformation has been a huge focus for everyone. This is not a surprise considering the enormous impact of COVID-19.

Companies across a variety of sectors have faced many different challenges the pandemic brought about with short-term fixes. However, many have used this situation as an opportunity to speed up their adoption of new practices and technologies for the long-term too. Some studies have also shown how the process of digital transformation has actually advanced by a matter of years.

- **What is digital transformation and why is it so important?**

No matter in which sector, the business is increasingly competitive. What the global pandemic has done is intensifying this. Customer demand has morphed – their expectations have heightened along with the need for services to be digitised. Not only this, but previously manual processes won't work in the socially distanced coronavirus climate. A company's time to market is under undue pressure and supply chains have been in disarray.

The way in which consumers have reacted – in terms of purchasing decisions and the services they choose to interact with – might change post-pandemic. However, these are behaviours being adopted over a prolonged period of time, so they are unlikely to disappear completely.

Digital transformation is so important because it satisfies customer needs and helps them encounter heightened value. This level of service and experience will, therefore, be the benchmark.

Prior to the pandemic, many businesses viewed technology as a means to save money and reduce unnecessary spending. When data can be analyzed and emails automatically sent when triggered, for example, it frees up the sales team and marketing team to focus on other tasks that cannot be handled through automation and technology. However, a digital transformation also offers businesses tremendous opportunities to innovate and find their way to the front of their industry.

Before the pandemic hit, nearly half of businesses reported that they saw technology as a means of reducing company costs as one of their top three digital priorities. However, with the pandemic spreading and businesses beginning to discover the other values of technology, only 10 percent reported this as a top reason after the beginning of the shutdowns. Instead, more businesses reported that modernizing their capabilities, gaining a competitive advantage, and creating a business culture that was focused around digital technologies all outpaced concerns about reducing costs.

When technology is used well, it offers brands tremendous opportunities to innovate and mature in their ability to engage customers, answer their needs, and move forward in a new way. As brands have begun to embrace the capabilities offered by technology, they have also begun to understand and adopt this mentality.

As the world looks forward hopefully towards an end of the pandemic, many people wonder about the future of the changes businesses have made in response to the COVID-19 pandemic. It is likely that many of these changes are here to stay. Since the pandemic forced brands to eliminate many of the barriers that once stood in their way of digital adoption, such as network security to allow employees to work remotely, it will be significantly easier for companies to operate on a remote basis. Companies have already made key investments to help them protect their digital security while also building a technology stack that allows employees to work from their home office.

It is likely that many of these changes will last, with capabilities such as flexible scheduling to allow people to work from home when needed. Businesses have also begun to see the power and potential of digital adoption. Particularly as it comes to business innovation, adopting technology is not only about saving money, but also gaining an edge over competitors and seizing new opportunities in the industry. As businesses realize these advantages, they will be positioned to keep employing technology and taking advantage of what it has to offer.

In all of the European schools, where students have turned to remote classes in many school systems and universities, teachers have become increasingly adept at creating virtual lesson plans. The potential this holds for education, including opening doors for people who might have previously struggled to attend particular schools because of distance, will not likely be given up quickly.

- **The European Union's Digital Strategy and COVID-19**

Access to the Internet, and with the current uses, has become decisive and vital for our societies and all spheres of our life.

On the 3rd of April 2020, the Broadband Commission for Sustainable Development members launched the Agenda for Action: For Faster and Better Recovery outlining immediate measures that stakeholders can adapt across three pillars: Resilient Connectivity, Affordable Access, and Safe Use for Informed and Educated Societies. The agenda is a framework for the Commission's 50+ Commissioners and their organizations to share and support each other's initiatives, make new commitments, and foster collaboration and partnership combating COVID-19 through digital innovation and transformation.

Resolving rural-urban digital divides is more urgent than ever, including as an opportunity to assert global leadership. In contrast to the nuance underlying gender divides, the differences in internet penetration and access between rural and urban areas generally boil down to economics. Digital supply is constrained by distance, terrain, energy access, dispersed population centres, and, of course, expense, while unmet demand resides with populations that are smaller, more dispersed, and typically unable to afford the true costs.

Meanwhile, China has swiftly responded to digital divides in developing economies, both before and during the pandemic. This digital strategy vis-à-vis developing economies brings new urgency to USAID's own efforts to serve as a pro-democracy counterpoint to China. In Southeast Asia, Africa, the Pacific Islands, and beyond, China has laid high-speed, fiber-optic cables and upgraded mobile phone spectra, significantly closing longstanding gaps. In fact, as summarized by the Brookings Institution, China "has set up a concerted country-as-a-platform strategy, aggressively exporting its digital infrastructure, playing a critical role in the development of technical standards, and developing unique points of control in the digital economy."

Thus, for the U.S. and other democracies, the pandemic and China are forcing new thinking on the core aspects of bridging digital divides. Today, bilateral donors from the U.S., the EU, Australia, New Zealand, Japan, and other democracies are asserting leadership by facilitating a range of market-based connectivity solutions and innovations, with an emphasis- on "last mile" access for isolated communities; and finding creative ways to finance digital transformation, in particular by mobilizing the private sector.

In the post-COVID arena, there will be a doubling-down on efforts to extend ICT infrastructure that supports access to bandwidth. A variety of technologies will support and build-out the worldwide digital economy, including long-haul fibre optic cable networks (terrestrial and submarine); 4G mobile networks; 5G innovations; and high-bandwidth local networks. Moreover, new commitments among western donors to enterprise-driven development—including USAID's Private Sector Engagement policy—will activate new methods of financing that deepen collaboration with ICT companies of

all sizes. Increasingly, developing economies will make catalytic use of available resources and mobilize private capital in a way that unlocks economic opportunity in communities and regions that need it the most.

On 19th February 2020, the European Commission presented the new EU Digital Strategy entitled "Shaping Europe's Digital Future". The strategy was adopted in furtherance of the "A Europe fit for the digital age" priority and set out ambitious goals for the following 5 years, including putting Europe in a position to be the trendsetter in the global debate around digital transformation. This was to be accomplished through the fulfillment of 3 main objectives, namely mastering and shaping technology in a way that respects European values (so-called "technology that works for people"); ensuring a fair and competitive digital economy; and providing for a trustworthy environment with regard to data provided both offline and online ("open, democratic and sustainable society"). The successful pursuit of the aforementioned objectives was almost immediately put to test with the COVID-19 outbreak. One of the main takeaways during the crisis has been the central role digitalisation has played in tackling it. Although measures within the EU have been different, states have generally resorted to solutions such as building information and contact tracing mobile apps, digitalisation of public services and remote working. They have also felt the importance of ensuring swift and reliable exchange of information across national borders. European businesses have also had to adapt by transferring large parts of their activities online.

In light of the above, it is necessary to assess whether the Digital Strategy is still fit to address these new challenges and whether it adequately prepares the Union for the post-COVID world. In doing so, it is appropriate to first determine what the baseline scenario is, i.e. whether the strategy in its current state gives sufficient guarantee that the EU's goal of becoming the trendsetter in digital transformation is not disrupted by the crisis. The next step is to identify deficiencies or vulnerabilities and propose relevant changes or reinforcements to the strategy. Yet changing it does not imply starting from scratch.

Undoubtedly, the spread of COVID-19 has also stressed the importance of digital connectivity. The imposed lockdowns and the closing down of non-essential businesses mean that both public authorities and private enterprises are more reliant than ever on fast Internet connection in order to deliver services and sustain partnerships and internal coordination. Therefore, the European Commission was right to list amongst its priorities under the "technology that works for people" objective achieving Gigabit connectivity.

Another key aspect which is of growing importance due to COVID-19 is the demand for digital skills. Naturally, the changing nature of work and its shift towards the digital environment rather than the physical world indicates how crucial it is for workers to acquire the skills necessary to adapt to this new environment. Additionally, the crisis has severe economic repercussions on the labour market, which in turn exacerbates the need to enhance the framework for online platform workers. Therefore, COVID-19 showcases how essential the strategy's actions such as the Digital Education Action Plan,

the Reinforced Skills Agenda and the improved labour conditions for platform workers are in practice.

Interoperability itself is another area where the EU could set more ambitious goals, especially in light of COVID-19. The strategy envisages the adoption of a reinforced EU governments interoperability strategy in 2021, which would build upon the existing European Interoperability Framework. The current crisis has exposed the desperate need for interoperability in the health sector in order to ensure rapid exchange of health information. According to the strategy, the design of electronic health records based on a common European exchange format is foreseen for after 2022. However, these initiatives do not prescribe any hard law measures. This could lead to a continuous inability to exchange health information in the future. This argument is supported by the significant lack of interoperability within the existing electronic cross-border health services in the EU. The e-prescription and patient summaries health services, part of the electronic cross-border health service, are currently implemented in only a few Member States with the goal to be gradually implemented in 22 of them by 2021, still not encompassing all of them and without a legal obligation to do so. Failure to enact stricter regulation could hamper future cooperation if a similar crisis re-appears in the coming years. Therefore, the strategy could be updated to call for the adoption of such legal framework.

Finally, we should identify the opportunities which COVID-19 provides and put efforts into reaping potential benefits. As a result of the crisis, many private enterprises in the CCS have had to digitalise a substantive part of their activities. It has led to working, learning, performing online theatre, organising online concerts, providing access to e-libraries and many more. This could be an indispensable opportunity to further the connection between the EU Digital Strategy and the European Green Deal. Therefore, the digital strategy could be expanded to include measures to support businesses in their digital transformation triggered in response to the crisis. Measures could include financial compensation for such enterprises during a transitional period over which they could complete their digital transformation. The compensation could be tied with the level of decarbonisation resulting from the transformation. Consequently, an updated version of the digital strategy could also form a part of the post-COVID recovery package.

The emergence of the fourth industrial revolution (4IR) is being accelerated by the measures and solutions governments and organisations are adopting in their efforts to maintain business and operational continuity. The opportunities 4IR presents are far-reaching. Post-pandemic, organizations, businesses, and individuals that hope to take advantage of 4IR will need to rethink their strategic approach to leveraging technology and digitalization. In preparing for 4IR, they will have to reposition technology as a critical component for each sphere of specialization and learn the relevant digital skills to become creators and users of these tools.

It is imperative that businesses and governments digitize their operations and coordinate their activities to enable business and the cultural sector continuity and build resilience to future crises. Industries such as telecoms and media have been less affected

by this pandemic than for instance the cultural sector which have been squeezed by anti-pandemic measures. Companies in lesser impacted industries are better placed to continue with business as usual particularly if they leverage embedded digital channels and tech solutions as part of customer service and other business operations. In fact, many may claim greater market share once the business climate improves in the post COVID-19 world.

The steep rise in virtual working platforms enables organizations to ensure that workforces can continue to be productive. This trend has the potential to reduce operating expenses and point toward the future of work. Microsoft Teams, a virtual collaboration tool which enables communication and interaction within organisations and work teams, has seen a 775% increase in use in countries where social distancing and other confinement measures are in place. So too have Zoom and WebEx Meetings. All of them have been used for different work and leisure activities, as well as theatres, cinemas, music companies could perform in front of audience, organizing their usual cultural activities. Post-pandemic, organizations and governments will be compelled to consider incorporating technology into their operations if they have not already.

Finally, technology is helping to ease global disruptions across many if not all sectors. For instance, massive digitalisation coupled with emerging technologies, such as virtual and augmented realities, can create new forms of cultural experience, dissemination and new business models with market potential. With the lockdown, many public and private providers moved content on-line for free to keep audiences engaged and satisfy the sharply increased demand for cultural content. While the provision of free and digitally mediated cultural content is not sustainable over time, it has opened the door to many future innovations. To capitalise on them, there is a need to address the digital skills shortages within the sector and improve digital access beyond large metropolitan areas, with the additional consideration that digital access does not replace a live cultural experience or all the jobs that go with it.

- **The role of digital competences in the CCS**

The cultural and creative sectors are important for ensuring the continued development of societies and are at the heart of the creative economy. Knowledge-intensive and based on individual creativity and talent, they generate considerable economic wealth. More importantly, they are critical to a shared sense of European identity, culture and values. In economic terms, they show above-average growth and create jobs - particularly for young people - while strengthening social cohesion. Having the right digital skills is not only essential for employers, it also has significant benefits for workers. The Creative Europe programme consists of the Creative Europe CULTURE and Creative Europe MEDIA (audio-visual) as well as the Cross-sectoral strand. The Creative Europe supports cross-border cooperation and networking activities for all cultural and creative sectors and co-finances important platforms and networks. Entrepreneurship and innovation are important topics for the cultural and creative sectors and industries.

In order to maintain correctly the cultural and creative sectors people working in those sectors should develop their:

- Digital Survival Skills;
- Digital Communication;
- Data Management and Preservation;
- Data Analysis and Presentation;
- Critical Making, Design and Development.

Moreover, supporting the cultural sectors and the creative economy as a way to diversify economic activities is a key issue. The media, museums, theatres, cinema, all these infrastructures have a positive impact on society because they allow economic development, the proliferation of ideas and innovation that lead to progress.

When we talk about the transformation in the science and technology field along with the change of the time, the most important component that comes to the surface of the mind is the human element. In many stages of the digital transformation be it interactions of the ecosystem, skills, cultural and collaboration human intelligence plays a crucial role. When we talk about the digital transformation we know that it works for a better, faster and innovative way of finding out business as well as social horizons expansion. Digital transformation impacts a huge number of industries and covers a various number of processes, evolutions, factors, and transaction within as well as outside the organization.

As digital transformation has revolutionaries various industries and business companies' cultural sector is not untouched by the same. As the customer and audience are moving towards more technological platform cultural art and brands have to move to the same. People are searching for suitable places on the web, booking their ticket on the internet and prefer to read online reviews and see a sneak peek of the favourite cultural event before everything.

This change in the habits of the audience is the biggest push behind the digital transformation that includes the cultural sector as well. There is constant pressure to excel in the changing scenario along with more and more adaptation of the digital means has made the challenge mammoth size. Undoubtedly, digital transformation was difficult for the art and cultural sector but with the emergence of numerous science and technology-oriented companies in the cultural sector many has made the task quite possible.

Many cultural organizations do this common mistake and face the challenge of overcrowding the digital reach or the number of the platform they are using. This may lead to the state of confusion and companies could miss the chances of proper exposure of one source. Indeed, the management of the content is essential when it comes to the success of the organization along with the digital transformation. Let us see this through an example of Brooklyn museum which was on many social media resources and blogs. Recently they have cut down the number into the half after realizing what is working with their audience. This includes removing of unnoticed content in their blogging

website so they have realized that Tumbler was doing just as required for them. The main objective of engaging the customer should be the prime motto rather than achieving multiple digital channels that later on are difficult to manage.

As it has been said many times that people are now indulging in digital art. This has been accepted all over the world and examples related to it can be found. Museums are setting up more elaborate and vigorous digital change in the form of online web auctions. Through this approach of transformation, we can initiate the concept of visitor centre innovation and the changes which can go hand in hand with other cultural activities. Along with the better understanding of the target customer, they should also think about what is needed to be done for them.

Apart of this, many times cultural foundations like museums use digital technologies to enhance the experience of the audience. It increases the interest and engagement of the customers for a longer period. Digitization allows a bigger better relevant, strong audience base with foundation, easy billing. An organization like museums, art galleries, cultural heritage, etc. are using many technological reforms and the digital transformation is definitely among it, encouraging better leadership, organization structure, business process as well as investment.

All the changes that occur within the organization is related to interaction of core basic system within main categories like assessment which includes planning and discovering then come the knowledge which includes acquiring knowledge next to it is the experience that means exploration of digital platform to increase the creativity and lastly sharing which has browsing of content, opinions through online digital platform.

To sum it up, it can be said that digital transformation in the field of the cultural and creative sectors is not just one segmental work but a journey that is interconnected with the various divisions of the small ecosystem of the organization that works toward the goal of constant optimization.

V. Best methods for achieving better digital competences for young people with limited digital skills and less qualified youth involved in the CCS

Technology is everywhere around us and nearly all future jobs requires at least basic digital skills. Indeed, since 90% of the jobs require some sort of digital experience nowadays, EU documents like the European Skills Agenda set the objective of reaching 70% in the adult population for those who have digital skills. EU principles like the five pillars of the Digital Compass Framework focus on specific digital targets that should be implemented in the member states, and the Digital Education Action Plan has also been adopted for similar goals. The pandemic has made it clear that there are much more aspects to improve within digital communication - not just in terms of equipment, security or communication standards, but further practices and approaches, which can

avoid a potential future crisis and promote the cultural contributions of the wider society.

Digital competence has become a key conception in debates on the kind of skills and understanding learners need. However, the digital technologies and ICT facilities are not satisfying on their own. First of all, they need to be understood for their optimal use in order to collaborate with the creative sector instead of challenging it, and it is necessary to develop a new methodology for studying and acquiring digital skills as well as taking into consideration the importance of cultural- and ethical awareness, lifelong learning, flexibility and self-direction. Besides supporting creativity and its manifestations, the digital approach can also contribute to problem solving, critical thinking, information management and communication practices in case of responsible and competent users. From one hand, it should be discussed how and what kind of technological developments are needed in the future that could assist creative ideas better, but on the other hand, the distribution of these resources and the proper training and preparation for the society are also needed in order to harmonize the distinct tools and ambitions (Laar & Haan, 2019).

One of the latest educational trends is online or distance learning. Online learning has developed new horizons of possibility at once promising access for new learners, access to learning taking place from non-traditional environments and opportunities for new connections and networks across greater distances. Online learning provides significant flexibility and convenience for learners, because they can participate anywhere they have access to a computer or mobile advice and at different times. Moreover, online education is not only a matter of accessing learning material at a distance, it is also a prime opportunity to meet people from all over the world who share the same interests and may even open doors for youngsters that would have remained closed otherwise. Taking online courses can expand their networking opportunities and may even help them find international friends and partners thanks to the connections they have made online.

Another benefit of the online courses is that they are easier to update. This alone ensures that online education is always relevant and that if young people educate themselves through Internet courses, they are less at risk of falling behind simply because the information they access is always up to date. This is especially relevant when talking about digital skills and their regulation update, since in the era we live it is more than necessary to keep up to date with technology.

However, let´s not forget that while online learning may open up opportunities also for some marginalised people, some learners may require financial support to access technologies and may experience technical difficulties with technology. Lack of practical support or skills development opportunities to access online learning can be an additional barrier to learning even for those with access to the appropriate equipment. This is particularly of relevance for disabled learners who may require assisted technology to engage in online spaces, support to understand online safety and social rules.

Another common issue that can arise in online learning is the lack of motivation and engagement, because connecting via webcam isn´t always easy and takes creativity to keep the learner´s brains stimulated. With the home environment being surrounded by potential distractions, keeping learners engaged, motivated, and interested in the online courses can be one of the biggest challenges of the online learning and teaching. By definition, learner engagement “refers to the degree of attention, curiosity, interest, optimism, and passion that learners show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education.” Engagement is not the same as clicking or interacting with a screen.

The effective online teaching includes the use of audio and visual multimedia. Audiovisual education or multimedia-based education is instruction where particular attention is paid to the audio and visual presentation of the material with the goal of improving comprehension and retention.

According to the Webster dictionary, audio-visual aids are defined as "training or educational materials directed at both the senses of hearing and the sense of sight, films, recordings, photographs, etc. used in classroom instructions, library collections or the likes". There are various types of audiovisual materials ranging from filmstrips, microforms, slides, projected opaque materials, tape recording and flashcards. In the current digital world, audiovisual aids have grown exponentially with several multimedia such as educational DVDs, PowerPoint, television educational series, YouTube, and other online materials. The use of audio-visual provides intrinsic motivation to learners by peaking their curiosity and stimulating their interests in the subjects. Moreover, it improves the learner's critical and analytical thinking. It helps to remove abstract concepts through visual presentation. However, improper and unplanned use of these aids can have a negative effect on the learning outcome. Therefore, online courses should be properly done in order to maximize the benefits of using these aids.

Another very popular method for engaging learners in the online environment is the use of gamification, particularly the use of quizzes. Quiz platforms provide a stage in which all learners are visibly working on the same task at the same time. Assigning certain learners certain quizzes to meet their learning needs, or custom-made feedback based on their answers give that personal touch. Quizzes are interactive and fun to play. They are based on a scientifically proven method of learning (called Active Recall). Active Recall embeds knowledge in the long-term memory more effectively than passive learning. Moreover, quiz platforms give learners complete freedom to learn, how, where, when and with who they want. For example, if e-learning units include in the end a quiz to check what has been learned as well as learners are provided with ongoing record on their quiz scores in their personal accounts, they can be more stimulated to keep following the entire online course and complete it until the end.

Since we are talking about online learning methods. MOOCs should definitely also be mentioned. MOOC stands for Massive Open Online Course. These courses are hosted on a portal. MOOCs have a lot of reading material, lectures, and videos so users can refer to all of them to enhance their learning. MOOCs are all about learning at your own pace.

The learners can log on to the portal whenever they wish and access the course. The development of MOOCs is made possible by the online exchange of information by experts through social networking platforms. The resources are also accessible without any cost through a search engine like Google, Yahoo, etc. MOOCs have the biggest advantage in that learners can access them without any cost[7].

As MOOCs developed with time, multiple conceptions of the platform seem to have emerged. Mostly two different types can be differentiated: those that emphasize a connectivist philosophy, and those that resemble more traditional courses. There are cMOOCs (connectivist Massive Online Learning Courses) where there is a joint development of the course material by the students and the teachers. Such collaborative development is there so that the materials are apt for the future learning of students.

xMOOCs (extended Massive Online Open Courses) have a specified course structure as per which the course must be finished. They are characterized by a specified aim of completing the course obtaining certain knowledge certification of the subject matter. They are presented typically with a clearly specified syllabus of recorded lectures and self-test problems. However, some providers require paid subscriptions for acquiring graded materials and certificates. They employ elements of the original MOOC, but are, in some effect, branded IT platforms that offer content distribution partnerships to institutions. The instructor is the expert provider of knowledge, and student interactions are usually limited to asking for assistance and advising each other on difficult points.

The learning environments of MOOCs make it easier for learners across the globe to work together on common goals. Instead of having to physically meet one another, online collaboration creates partnerships among learners. While time zones may have an effect on the hours that learners communicate, projects, assignments, and more can be completed to incorporate the skills and resources that different learners offer no matter where they are located. However, there are also some challenges and criticisms related to the use of MOOCs. Despite their potential to support learning and education, MOOCs have a major concern related to attrition rates and course drop out. Even though the number of learners who enrolled in the courses tends to be in the thousands range, only a very small portion of the enrolled learners complete the course. Sometimes results are difficult for participants to self-regulate and set their own goals, therefore, they lose motivation to keep using the MOOCs. In addition, learners should have digital literacy in order to make proper use of the online materials as well as for those people from low socio-economic neighbourhoods and countries with very little internet access can experience access barriers.

Hence, they consist of lectures and problems. There is a cost associated with getting the certificates and materials for these courses. Unlike the case of the cMOOCs, student collaboration in such courses is quite limited. It's just limited to consulting each other to ask questions and provide help.

[7] https://elearningindustry.com/mooc-based-learning-advantages-and-disadvantages

Finally, for designing effective e-learning courses and experience for young people, it is crucial to understand what learning content type is most suitable for the target group. E-learning curriculum should be relevant and specific to the learner's needs, roles and responsibilities in professional life. This kind of content like skills, knowledge and all kinds of learning media provided to keep the focus on learner's end. Instructional methods and techniques should be used creatively to develop an engaging and motivating learning experience. It depends upon developing the storyboard that has to be based on a very engaging way of learning programs. Frequent learner interaction is needed to sustain attention and promote learning and scenario-based learning is a good example for this kind of learning media.

VI. Digital Competences for young people working in the CCS

In order to analyse the Digital Competence of young people working in the Cultural and Creative Sectors, the project consortium used the latest version of the Digital Competence Framework for Citizens (DigComp 2.1).

The European Digital Competence Framework for Citizens, also known as DigComp, offers a tool to improve citizens' digital competence. DigComp was developed by the Joint Research Centre as a scientific project and with intensive consultation of stakeholders, and it was first published in 2013 as reference for the development and strategic planning of digital competence initiatives both at European and Member State level. The latest version is labelled DigComp 2.1 and it focuses on expanding the initial three proficiency levels to a more fine-grained eight level description as well as providing examples of use for these eight levels.

Following, these are the 5 competence areas, which are composed by 21 competences and respective 8 proficiency level:

1. Information and data literacy

2. Communication and collaboration

3. Digital content creation

4. Safety

5. Problem solving

In addition, each competence has 8 proficiency levels: Foundation – 1 and 2; Intermediate – 3 and 4; Advanced – 5 and 6; and Highly specialized – 7 and 8.

More information and detailed explanation about each level can be found in the following page.

The DigComp 2.1 framework defines the scope and the components of digital competence for citizens in a clear way, providing an overall, complete and shared understanding of what digital competence is, and offering an updated vocabulary based on consensus building with multiple stakeholders. Therefore, guiding our KA2 Strategic Partnership "Digital Push for Creative Transformation" are the 5 areas of DigComp 2.1.

In order to identify the digital competences most needed by young people working in the CCS, project partners have carefully analysed each of the 5 areas, identifying the digital competences most promoted in the CCS youth education contexts as well as the skills most needed at the different working levels.

Information and data literacy

Data literacy is the ability to read, understand, create, and communicate data as information. Much like literacy as a general concept, data literacy focuses on the competences involved in working with data. It is, however, not similar to the ability to read text since it requires certain skills involving reading and understanding data.

For young people working in the CCS, browsing, searching and filtering data, information and digital content is highly important because it is a skill or set of habits that can be used in service to greater mission or artistic pursuit. The development of software, systems, and infrastructure for data collection it's not the only challenge for the CCS. Equally important is the need to foster the motivation, understanding, and skills required to use that data proactively and effectively among artistic and executive leadership, staff, artists, boards, funders, and civic leaders. Only when young people are able to search and filter data, information and digital content, they can fully exploit the benefits of the digital environment. Indeed, the traditional approaches of information and data literacy education are not always appropriate when it comes to working in the CCS.

However, browsing data as part of daily routines is not enough for young people working in the CCS. They need an innovative and creative ways for searching and evaluating information that can help them to reshape their mind and acquire new knowledge and ideas for future professional development. They need to know how to analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. They need to be always updated and be able to adapt quickly to a modern business culture, where digital transformation and innovation are leading, otherwise youngsters may fall behind simply because they don´t have the agility and awareness to embrace the new waves of modern technology. Thus, we can definitely say that young people working in the CCS need advanced skills for browsing, searching and filtering data, information and digital content.

Equally important is also that young people are able to evaluate the information found. They should know how to measure the potential value of the information and the actual usefulness of the materials - motivation, impact, achievability, instant learning, etc. On the other hand, young people need to know how to critically assess the credibility and reliability of sources of data, information and digital content. The Internet is a significant information resource for people due to ease of access to huge amounts of information, but let´s keep in mind that the quality of information on the Internet varies, so for young people is important to be capable to evaluate information critically and select the one that could be benefiting for them and for their personal and professional development.

As defined by the DigComp2.1, managing data, information and digital content means being able to organise, store and retrieve data, information and content in digital environments as well as to organise and process them in a structured environment.

For example, for musicians and the Music industry, data management is highly important. According to interviews released in the end of 2020, by speakers at one of

the UK´s biggest music conferences[8], the Brighton Music Conference (BMC20), after COVID-19 pandemic musicians have global platforms on which to build audiences and distribute their work, but a lot of digital opportunities are being missed by both musicians and their distributors. The theme of BMC20 was exactly the importance of data management. According to experts, a longer-standing problem for music sector is that although music might have been one of the first sectors to be disrupted by outside digital forces, it has been much slower than others in becoming a properly data-focused business to maximise its revenues and identify new opportunities. Digitisation has stuffed the channel between artist and listener with thousands of middle-men and advertising behemoths from outside the industry. Most of them cream off revenues long before they reach songwriters and performers.

According to Sam Taylor, Commercial Manager of CMU:

“Music companies and everybody in the music business need to understand data. Where perhaps in the past sales reports were a few hundred lines in Excel, now musicians, labels, and other rights owners are dealing with millions, if not billions, of lines of data. Really music companies are now data companies. We need to look at how music data can drive discovery, innovation, and revenue across the value chain – in particular the diverse data sources that are available now, the types of questions we should be asking our data, and how doing this can help you compete in the new music data economy.”

Becoming more data focused it´s not easy, but for young musicians, for example, knowing how to use data that they are getting, means making intelligent decisions. Music distribution itself is increasingly a commodity offering, but a lack of data portability sometimes gets in the way of artists benefiting from a deeper level of service. A number of specialist players understand the data economy much better, and some are trying to give musicians greater control and ownership over their own material. But if young people are independent managers on their own, they should be looking at data, how they are spending their time, what they are spending their time on, what’s getting them the most revenue, what's the most productive, and where they can outsource certain things. Summarizing, managing data, information and digital content for young people working in the CCS its increasingly important, so they should put an extra effort and time for understanding not only how to collect data and information, but also how to manage it.

Communication and collaboration

The rapid development and deployment of digital technology, and an ever-increasing use of information and communications technologies provide artists and creative people with new tools and means of expression. For instance, specialised programmes help architects and designers in their work. Artists experiment with photographic and film-making equipment, digital/electronic musical instruments, music composition programs, and likewise use digital technologies to produce visual art, 3D print sculptures

[8] https://diginomica.com/striking-right-note-importance-data-management-digital-music-industry

and immersive or interactive works of art. Technology helps artists create new genres of creative work, distribute their work in new formats as well as help artist communities to connect with one another.

Digital technology has led to new kinds of creative communities online that are making it easier for people with artistic skills to develop technological skills as well as to interact and learn from each other. To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context, it´s a needed competence for all young people, not only working in the CCS, but in general.

Specifically, for the ones that work or would like to work in the cultural and creative sectors, knowing how to interact in the digital environment also means to find ways to promote themselves and their work, find partners, investors, new markets, etc.

One of the best examples is social media which is an exceptionally powerful marketing tool for artists. Social media gives people a way to share their art with the world, to connect with and be inspired by other creatives, and to get their art in front of a massive audience of potential buyers or curators. Every day, there are thousands of new artists getting thousands of new followers, likes, and up-votes through organic discovery. The whole point of social media is to build connections with other people, so knowing how to interact and share is a must to have skills for young people in the CCS.

According to Kelly Heylen, a gallery owner and curator[9]:

“Our best-selling exhibitions have without fail been those where the artist has a decent social media following, posts regularly, and engages in an authentic way with their followers. The exhibitions that have sold the least have been those where the artist isn’t on social media, or is but didn’t use it to promote their show. This has become important enough **that I now take an artist’s social media presence into consideration when deciding whose work, I will show** — something I didn’t do when I first started the gallery.”

As we can see, being active in social media and having a good digital presence is definitely important for young people working in the CCS. The digital reputation can be a real game changer, so knowing how to maintain and manage it is crucial.

For example, in the music industry it`s often said that a successful musician has talent, ambition, and an online reputation that aligns with his or her goals, because if people can’t easily access the music, how can they be aware of it? Search results of a musician or band name should reflect their image, as well as what they have accomplished in the industry. It is vital for musicians at the first search results to provide a path for fans to take action that progresses their career as well as aspire to only have positive search results on the first two pages of any internet search as it’s the case with the curated social media accounts.

[9] https://medium.com/@demptyspace/marketing-for-artists-zero-budget-social-media-hacks-564c7312804b

Although having digital presence looks like something easy to do since we all have social media channels where we share and interact, using social media correctly is not as easy as it looks like. Social media platforms are excellent places to build a professional reputation, but with so many social media platforms to choose from, how do young people working in the CCS know which ones to use? In fact, a lot of artists find it difficult to stand out on social media platforms, because the competition there is tough and with so much content out there and so many platforms to choose from, promoting music on social media can start to feel pretty overwhelming very quickly. Although there are a few best practices, there's no single way to have a successful social-media strategy.

Indeed, social media is a market full of potential fans who are discovering new music every day but if an artist is not properly engaging with his or her audience, another artist will. However, social media growth can be determined by many factors, and the biggest one is understanding the algorithm of each platform artist is posting on. Since more and more music is being published every day, social media platforms change their algorithms in order to make it harder to reach an audience organically, thus stimulating the purchase of advertising slots. This means that social media platforms are making it harder for artists to see a significant ROI. Consequently, understanding the algorithms will definitely help artists see better results from their marketing efforts and support them find ways on how to use the social media algorithm taking advantage of them.

However, in the social media environment it’s not enough to create content and follow the algorithms in order to connect with the community. It´s needed a netiquette! Simply stated, netiquette is network etiquette, the etiquette of cyberspace. According to DigComp2.1 definition, having intermediate skills in netiquette means for a person to have the ability to express well-defined and routine communications strategies adapted to an audience, and describe well-defined and routine cultural and generational diversity aspects to consider in digital environments. For young people working in the CCS, having a netiquette competence is very important because the netiquette can affect their online presence and digital reputation. On the other hand, when having a good netiquette, they can be helpful for others, creating solutions to complex problems related to digital etiquettes to different audiences and cultural and generational diversity. They can help their team or organizations when inappropriate comments are done in social networks or also create rules to be followed and implemented as a guide for the rest of the team. Netiquette looks like something simple to achieve, but it’s not always like that. Consequently, young people working in CCS should be aware of the norms in the digital environment and always try to be a good example of how a person should act since artists often have a lot of followers that follow their style of being or acting.

One creative area that seems to be constantly influenced by the beating waves of technology is the world of music. As innovations in hardware and software transcended pop culture, new technology in music has changed the way we listen to music and the ways music artists create music. Moreover, artist collaboration is one of the biggest creative forces driving music today. And if a young person is an independent artist

looking to project his or her talents onto a wider audience, it's probably one the best success strategies out there. Collaborations are providing breakthrough opportunities for new acts and reinvigorating the careers of more established ones. The great thing about collaboration these days is that artists don't need to be in the same city, or even country if they want to work with someone. But here comes the question "Do all artists have enough digital competences for collaborating online?".

COVID-19 pandemic brought creative and successful ideas for collaboration such as The Social Distancing Festival[10], founded by Nick Green. The Social Distancing Festival is a site that showcases and celebrates artists and artistic work that was impacted by the need for social distancing. Artists in multiple disciplines could submit their work, which was then posted on the site under the categories Art, Music, Theatre/Opera, and Dance. Through the site, artists were able to have their work offered to a large international audience, which had led to new collaborations, attention being brought to other work, and commissions. Viewers were able to discover new favourite artists, explore new genres and disciplines, and share exciting work within their networks. Specifically, "Long Distance Art" is a great example how artists around the world have collaborated by the idea of working in an interdisciplinary manner, and using digital tools to create new work that will be exhibited primarily online. To date, these projects have included artists in Tallinn, Adelaide, Ojai, Toronto, New York City, Dar-es-Salaam, Zebbugg, London, Calgary, Cleveland, Newcastle-Upon-Tyne, and Mexico City, including different collaboration between painters with musicians, textile artists with graphic designers, dancers with composers, etc.

Besides being a versatile and expressive art medium, technology helps artists gain much-needed visibility and exposure for their works of art. Numerous online art platforms help them promote their work as well as connected with the artistic community.

Following, young people working in the CCS should learn how to use digital technology because it can help them find an inspiration for their work. By implementing new digital tools, they can enhance the creative process towards innovative and unexplored paths as well as they can connect and collaborate with other artists. For being competitive in today´s increased digital market, they need to have advanced collaborative and communicative skills, knowing well how to manage their identity and show the best of their work to the public.

Digital content creation

By definition, content creation is the contribution of information to any media and most especially to digital media for an end-user/audience in specific contexts. Content is "something that is to be expressed through some medium, as speech, writing or any of various arts" for self-expression, distribution, marketing and/or publication. Typical forms of content creation include maintaining and updating web sites, blogging, article

[10] https://www.socialdistancingfestival.com/longdistanceart

writing, photography, videography, online commentary, the maintenance of social media accounts, and editing and distribution of digital media[11].

On the other hand, the digital content creation is the process of generating topic ideas that appeal to the audience and then creating written or visual content around those topics. It is about making information and expertise obvious to anyone consuming the content. Cultural works, like music, movies, literature, and art, are also forms of content. Traditionally published books and e-books are one type of cultural content, but there are many others, such as self-published books, digital art, fanfiction, and fan art. Independent artists, including authors and musicians, have found commercial success by making their work available on the Internet. Technology has also given more people access to the arts, giving art enthusiasts and collectors platforms to build their art collection and share with others. Technologies and social media have revolutionized the traditional art scene by allowing people to express their deepest emotions and beliefs through interactive and highly-engaging digital art pieces and projects. These changes have revolutionized the publishing and music industries and in the digital era we live, undoubtedly, every young person working in CCS should know how to develop digital content as well as integrate and re-elaborate it.

However, more about thinking about how to sell a product on the Internet, artists should think how to advertise their art business without overwhelming their customers with another promotion asking them to buy art. Creating valuable and engaging content it's the best way for promoting an art career and building credibility as an artist. Through interactive blogs, fun videos and photos, artists can give customers something interesting to read, watch, or listen, that will not only hold their attention but will make them share it, and in turn spread the word about the artist' career. Knowing how to create digital content is really important for all young people working in the CCS because valuable content creation could give them an opportunity to express themselves through digital means as well as share their art with the world, and get it in front of a massive audience of potential buyers or curators.

Artists have always sought new art forms and unconventional mediums to express their artistic principles. The development of technology has continued walking hand-in-hand with progressive artistic concepts and has changed the way art is created and shared, enabling ground breaking artists and their innovative expressions to gain expanded access to whole new audience groups beyond the conventional boundaries of the art world. Nowadays, artists don't use technological innovations only as assistants in their creative process. Many artists and art professionals are transforming the art world by leveraging these powerful technologies and tools as an art and design medium, allowing them to create striking, immersive, and highly engaging art pieces that are new and multi-disciplinary mixed media art and installations. The continues digital evolution bring us to the point that understanding how to modify, refine, improve and integrate information and content into an existing body of knowledge to create new, original and relevant content and knowledge is crucial for young people working in the CCS in order

[11] https://en.wikipedia.org/wiki/Content_creation

to be competitive in the market. They need to be ready to re-elaborate and integrate their previous work with brand new techniques.

Being inspired by others' work is intrinsic to the creative process. For example, musicians often use other works to create new compositions, public performances, and recordings. However, for young people working in the CCS it's important not to assume that they can freely use other works and in order to do so, they need to get permission from the copyright holder directly, or license the work according to the terms set by the licensing contract.

On the other hand, when a person writes a story, creates a work of art, composes or record music, or takes a picture, he or she engages with copyright. When artists create something, they should be aware that copyright protection exists from the moment an original works is "fixed" in a tangible medium. For example, fixation occurs when a song is recorded in an audio file or when a musical work is notated in sheet music or a digital file. As musicians are the owner of their work, copyright gives them the right to make and sell copies, distribute those copies, make new works, and publicly perform the work. Consequently, knowing how copyright and licenses apply to data, information and digital content is very important for youngsters working in the CCS, so they need to have at least intermediate proficiency level.

Learning how to program is arguably now a core skill, but yet there is an acknowledged skill shortage between young people working in the CCS, and with it a lack of understanding which holds them from meeting their full potential. Research, design and develop original programs using professional techniques and software, could be very useful for young people in the CCS. Knowing how to place the software that is created within a cultural and theoretical context as well as being able to reflect upon issues relevant for their own professional and creative practice in programming is vital for artists who want to expand their knowledge and stay competitive in the market.

Safety

While cybersecurity protects devices and networks from harm by third parties, digital safety aims to protect the people using them from harm by the devices and networks (and therefor third parties) through awareness, education, information and technology.

Digital safety is very important topic because with more users accessing the Internet, we all need to be aware of the nature of possible threats that we could encounter whilst engaging in online activities. These include security threats, protecting and managing personal data, online reputation, avoiding harmful or illegal content, etc. Only when the risks that are inherently involved with using technology are well managed, the Internet can be enjoyed free from harm and bring enormous benefits.

The majority of young people working in the CCS are depending on the digital technologies for doing their job. Thus, they need to know how to protect their devices and digital content as well as select well-defined safety and security measures. For

artists whose online presence is vital for their grow career, having hacked their social media account could mean losing profit and time. For example, in August, 2020, Callum Donovan-Grujicich, a young sculptor, have warned that his Instagram with 50 000 followers was hacked after clicking on a link looking like the Instagram sign-in page[12]. Indeed, some minutes later Callum received an email threatening to delete his account forever. For the young sculptor his account was essential since he had been working on the account, posting his progress on different projects and even selling pieces of art to help him pay his university fees.

For Callum this story has a positive ending, but police reported that phishing schemes like this happen often and in majority of cases, users do not know how to protect their device and digital identity. Indeed, when searching on the topic on the Internet, project partners found out many examples for young artists who experienced similar online threats and unfortunately, not for all of them there was a happy end. Moreover, within the research that was done, they were not found specific well structure guidelines for young people working in the CCS on how to protect their devices, personal data and identity. Many time young people neither think about all the information they are sharing online and the consequences this could have on their personal or professional path.

Another serious issue that is important to highlight is that many young people do not think seriously on the influence that digital technology have on their health and wellbeing. For young people working in the CCS is very important to know how to apply different ways to protect themselves and others from dangers in digital environments as well as to know different ways to avoid health-risks and threats to physical and psychological well-being while using digital technologies. According to different researches, often for artists who want to gain visibility or grow a following on social media, using apps and online platforms can quickly become a source of frustration and isolation. For some, likes, follower counts, and comments can become a source of validation. But if artists view these interactions as qualifiers for their artwork, they may be headed in a self-destructive direction. Indeed, instead of focusing on growing their following, it is suggested that artists focus on developing a stronger connection to the audience they already have by considering who follows them, and how they can stay engaged with them. Artists should stay artists also in the social media world, so posting as influencer, showing videos of themselves “vlogging” to their audience, or asking questions in the caption of their post to gain more comment can lead artists to distraction from an artist’s practice.

Moreover, numerous studies confirm that artists feel an insurmountable pressure to present their lives as seemingly perfect and idealised. Unsurprisingly, much empirical evidence indicates that such perfectionistic behaviours incite jealousy, constant self-comparison, and increased levels of depression and anxiety. But they are also caused by the way developers and strategists engineer their technologies. For example, visually-orientated apps such as Instagram and Snapchat encourage users to put in-built filters

[12] https://globalnews.ca/news/7289897/durham-teen-instagram-account-hacked/

and edits on their photos and videos to make them appear 'better' than they are in real life. Following, within a classical context, striving for social media perfection has massive implications. Artists' status updates and tweets tend to depict an idealistic, carefree and glamorous lifestyle. A beautifully filtered cityscape hides a performer's jetlag and feelings of missing family and friends. Post-concert postings usually show musicians wearing tuxedos or dresses, laughing and smiling with big bouquets of flowers or bottles of champagne. Musicians also regularly take selfies with well-known colleagues at rehearsals or social occasions, talking about themselves with, in the words of arts marketer Trevor O'Donnell, "overblown self-flattery and grossly exaggerated descriptions" to show "how much other in-the-know people admire them." From a marketing perspective, musicians understandably want to present themselves in the best possible light, and indeed, it is now part of their job to look good online. In fact, many digital media and artist managers encourage their clients to take selfies – yet this self-promotion can create a false impression of the realities of a musician's life[13].

In addition, a lot of artists are struggling with the social media pressure as they experience online abuses, comments and criticism, privacy invasion, neglecting and trolling. Following, young people working in the CCS should know how to protect their health and wellbeing while using social media. Moreover, they should also know how to support other people if they experience bullying, self-absorption, addictions, depression and anxiety, and even suicidal thoughts that could be caused by the used of digital devices and social media. Unfortunately, we have too many examples of artists who took their lives because of malicious internet posts and social media pressure.

Problem solving

As the digital world gains pace, young people working in the CCS are introduced to more challenges in their daily work. They need to explore different ways on how techniques and digital tools can be used, as well as to find effective resolutions to problems. They need to develop solving skills and explore techniques like design thinking. Moreover, as mentioned previously in this document, artists need to understand the importance of using data to make more informed decisions and find solutions to problems.

According to DigComp2.1, solving technical problems means to identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems). Having advanced skills in this specific area means being able to resolve problems with the most appropriate solutions.

The role of young people working in the CCS who use digital tools and technologies for the creation of knowledge and innovative processes and products is vital for our society. Innovation today doesn't solely rely on the technology itself, but mainly on how it

[13] https://www.classical-music.uk/resources/article/how-musicians-mental-health-is-affected-by-social-media

interacts with humanity, solving their problems, needs or challenges. Innovation is driven by human creativity, that is that spontaneous act pushed by intrinsic motivation, through which the individual can improve himself and his world. Moreover, it is possible to stimulate creative thinking, both on an individual and group level, by using valuable techniques and methodologies, with the aim of promoting and generating creativity, breaking preestablished patterns, stimulating the imagination and improving the conditions in which the creative idea is produced.

Technology is influencing artistic activity in many ways. A prominent example of this is the creative coding movement. Creative coding is an umbrella term for computer programming which creates outputs that are primarily artistic. Art made using code is not necessarily online or computer art - creative coding can be a tool for making installations, sculptures, film, music and more[14].

Most artistic activity does not, in itself, necessarily require a deep knowledge of technology. In general, digital creative tools are designed so that while the user needs to understand the tool interface, they do not need to know the underlying programming that created it and/or the details of the hardware technology it is implemented on. Also, artistic activity is not typically trying to develop new technologies for general use, but develop unique experiences. However, there are notable examples where the sophistication of the technology involved in artistic activity, consumer demand and the pursuit of ever higher levels of expressiveness have driven significant developments in technology. Some important and high-profile technological developments have been driven by a desire to solve old artistic problems in the digital realm. The issue of perspective: how can you represent the 3D world accurately on a wall or a painting which is in 2 dimensions? The issue of lighting: how should the colours of objects be represented according to the light that is shining on them? Following, when young people working in the CCS possess advanced knowledge, they can adapt the most appropriate digital tools and technologies to create knowledge and to innovate processes and products. They can resolve individually and collectively conceptual problems and problem situations in digital environments. On the other hand, if they possess a highly specialized knowledge, they can create solutions to complex problems with limited definition using digital tools and technologies as well as propose new ideas and processes to the field.

However, the most important for young people working in the CCS is to be able to understand where there's own digital competence needs to be improved or updated. Young artists have to know where to seek well-defined opportunities for self-developments and keep up-to-date with the digital evolution. Moreover, they need to be able to support others with their digital competence development, contributing to professional practice and knowledge in identifying digital competence gaps.

14 https://www.europarl.europa.eu/RegData/etudes/STUD/2019/634440/EPRS_STU(2019)634440_EN.pdf

VII. Conclusion

Cultural and creative sectors play an important role to ensure the continuous development of societies and creative economy. Intensive knowledge and individual creativity generate considerable economic wealth. More importantly, they are critical to a shared sense of European identity, culture and values. In economic terms, those sectors show above-average growth and create jobs for young people.

Due to COVID-19, the sectors have faced many challenging situations, and young people with low digital skills have been seriously affected by the imposed measures and restrictions. Consequently, equipping young people working in the CCS with digital skills and competences is crucial for their social inclusion in the economy that is increasingly becoming digital. ICTs and the Internet as digital resources need to be fully explored by youngsters and they should be provided with appropriate knowledge and digital skills that can improve their performing in their current employment, or support and increase their chance to find employment. The mass digitization together with emerging technologies such as virtual and augmented realities can create new forms of cultural experience, diffusion, and new business models with market potential that youth involved in CCS should take advantage of.